Implementing Dialectical Behaviour Therapy: An exploratory study of fidelity and the fidelity-adaptation relationship

by:

Nadia Nalini Nandlall

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Abstract

Objective: The aim of this study was to improve conceptual clarity of implementation fidelity, the degree to which a program adheres to the original program protocol, and the relationship between fidelity and adaptation of a complex health intervention, Dialectical Behavior Therapy (DBT).

Methods: Employing a mixed-methods approach, this study utilized secondary DBT client outcome data collected over a one-year period and semi-structured interviews with DBT therapists (program implementers). The study design was informed by the Conceptual Framework for Implementation Fidelity (CFIF) (Carroll et. al, 2007). This framework was adapted to include three categories of factors: individual client (needs, trajectories), programmatic/organizational and program implementer perspectives.

Results: Findings suggest that reconceptualization of fidelity and the fidelity-adaptation relationship may require integrating stakeholder knowledge of organizational constraints, experience and values of front-line staff and heterogeneous client trajectories to allow for a more realistically flexible model that is contextually and situationally sensitive.

Conclusions: Expanding the CFIF framework offered new insights regarding factors that have the potential to affect the fidelity-adaptation relationship.

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CHAPTER 1
Introduction

This chapter includes an introduction to the study problem. The study program is explained and the study rationale is described and positioned within mental health reform. The latter half of the chapter details the research aims, research questions and chapter overview.

1.1 Introduction

Significant amounts of money, time and goodwill are expended when implementing new programs. Bearing in mind the increasing need of program administrators to produce specific results and the decreasing availability of resources needed to administer programs, program implementers are faced with the burden of ensuring that they achieve program success. In order to attain this, program implementers traditionally aspire to follow the prescribed program protocol as closely as possible. This is known as fidelity, the degree to which a program adheres to the original program protocol. However, in reality when program protocols developed in controlled settings are applied in the real world, numerous factors force implementers to adapt the program to suit the specific needs of the local context. This is problematic as all implementers are challenged with maintaining fidelity at some point during implementation due to the fluid needs of program settings. Without a better understanding of the influences on fidelity, it is difficult to attribute a program's success or failure to the program or to the way in which it was implemented when translating interventions from research to real world settings or across diverse settings.

The aim of this study was to improve the conceptual clarity of implementation fidelity, and the relationship between fidelity and adaptation of a complex health intervention (CHI). The concept

of fidelity has been widely addressed in the literature. However, studies to date have generally examined a limited number of factors influencing fidelity. A deeper understanding of fidelity and the fidelity-adaptation relationship is important because decisions on resource distribution, sustainability and program/intervention design development are based on the knowledge of how evidence-based programs were actually implemented in relation to what was originally intended and the extent to which it is was modified.

We intend to offer an expanded view of fidelity through exploring three categories that influence program fidelity: individual client needs/trajectories, programmatic/organizational factors, and program implementer/therapist perspectives. We examined these multiple influences on fidelity in relation to the implementation of a CHI, Dialectical Behavior Therapy (DBT) using secondary administrative data collected over a one-year period and semi-structured interviews with program implementers (therapists). The DBT intervention was developed to treat persons with Borderline Personality Disorder (BPD) and is an appropriate model to examine the three categories associated with program fidelity because of its' comprehensive, multicomponent design. Evaluating individual client needs/trajectories through the comprehensive, multicomponent design of the DBT model has the ability to offer valuable knowledge on how implementers may modify the program to meet diverse individual needs. Exploring the programmatic/organization factors through a community-based DBT program provides an opportunity for in-depth learning about the dynamics between those implementing a program and the support and/or constraints imposed by the organization and/or the program protocol itself. With respect to how program implementer/therapist perspectives influence fidelity, examining fidelity through the DBT model is particularly interesting because the model is designed so that

many different practitioners with varying skill sets, education and expertise are able to implement the program. To clarify, for the purposes of this study we will refer to program implementers as therapists since they are the ones responsible for implementing the DBT program and will refer to program implementers as such when we are speaking about implementers in general.

1.2 A description of the three categories of factors influencing fidelity: Towards a conceptual framework
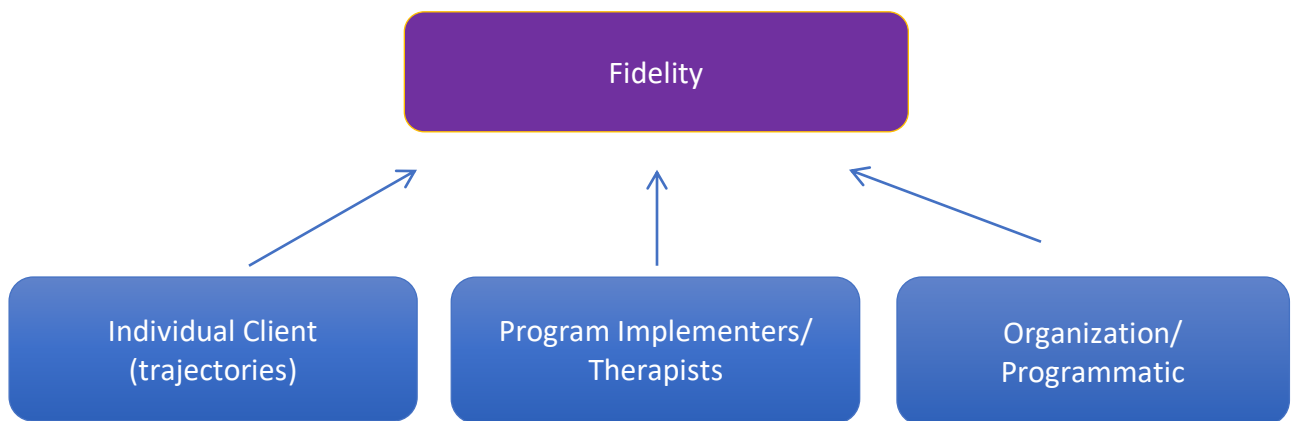
Fig. 1: The Three Categories of Factors Influencing Fidelity

Based on findings of program adaptations in the literature, this study examined the three categories that influence the degree of fidelity during intervention implementation: individual client (needs/trajectories), programmatic/organizational and program implementer/therapist factors (Carmel et al., 2014; Davidoff, 2016; Parker et al., 2012; Vermote et al., 2009; von Thiele Schwarz, 2013). The present study is unique in that it explores the three categories influencing fidelity and its relationship to adaptation of the DBT intervention in a community-based, out-patient setting. Multiple factors within these categories can potentially influence fidelity because they often dictate the degree to which the original program model is followed. The following

describes each category:

The individual client category refers to the diversity among the population. This can refer to client characteristics (i.e. comorbidities, severity of disease), which are the defining features that differ between clients in a target population and/or client trajectory which refers to changes in client outcomes over time. Understanding diversity or heterogeneity among a target population is a valuable concept because it may in fact provide evidence of differential client needs. The philosophy underlying this group of factors is centered on the concept of client-centered care - that the care one receives is reflective of their preference, values and needs (i.e. client characteristics). Health care providers acknowledge that clients will adhere to treatment protocols to differing degrees, particularly for clients with mental illness (Reynolds, 2009). Thus, by recognizing client heterogeneity health care providers are encouraged to look past disease management protocols to more individually tailored treatments (Reynolds, 2009)

Programmatic/organizational category. The programmatic category refers to the theoretical and technical soundness of program components, the perceived effectiveness of program components and the activities involved in delivering the program components. The organizational category refers to the factors that impact program implementation, which are influenced by the organization. For example, factors that influence the context in which care is delivered such as its physical facility, organizational characteristics (i.e. size of organization, geographical location), staff training, and organizational constraints (i.e. resource or personnel constraints).

Program implementer/therapist category refers to various therapist characteristics responsible for implementation and how they interact with the client. The specific approach to which an intervention is implemented is often reflected by the practice preference, values, skill and experience of the program implementer/therapist. For example, program implementers/therapists implementing the same program may differ in their treatment philosophies and thus decide to emphasize different program components to meet the needs of their clients. Capturing the differences in treatment preferences by therapists has implications for fidelity and adaptation, particularly for psychotherapy interventions, because therapist input and perspectives can be used to modify program design for future program cycles.

1.3 Relationships among the three categories influencing fidelity

This study explores the relationships among the three categories influencing fidelity. The literature reflects that each category is not mutually exclusive, and thus each has the potential to influence others. For example, one study of DBT intervention found that 61% of implementation challenges reported by therapists were due to a lack of organizational support (i.e. insufficient protected time to deliver the treatment, absence of management buy-in, funding difficulties, staff turn-over, multiple staff roles and competing priorities, insufficient resources and absence of planning for implementation) (Swales, Taylor & Hibbs, 2012). Similarly, Sobeck and colleagues (2006) studied implementation fidelity of a school-based substance abuse prevention program. They found that fidelity was impossible at the programmatic level due to organizational constraints, stakeholder perception and buy-in (i.e. teachers, principals). Van den Branden et al. (2013) examined qualitative and longitudinal client data over a two-year period to determine the extent of fidelity for an oral health intervention. The authors found that they were limited in their

ability to improve implementation fidelity in response to the outcomes collected over the study time period. Nurses reported that they found it difficult to respond to individual needs over the two-year period due to attrition, program drift, and constraints on resources. The authors concluded that the lack of fidelity was due to organizational constraints (staff turnover, lack of training, time constraints) and nursing practice (education, experience, motivation, and perception of the importance of oral health).

1.3.1 Individual Client Heterogeneity in relation to program implementation

Evaluation studies commonly focus on the 'average' rather than the diversity or variation of client characteristics and trajectories. As Davidoff (2009) explains addressing heterogeneity among a client population is an important factor when evaluating interventions because establishing the efficacy of clinical interventions by studying single participants (clients or care units) (i.e. using n-of-1 studies) risks drawing false conclusions as any single person or care unit might not respond to an effective intervention or might appear to respond to an ineffective one. Consequently, the heterogeneity problem is circumvented in clinical research by measuring the effects of interventions in groups. Thus, failing to address the issue of heterogeneity can misdirect program implementers and other decision-makers on the progress and success of the intervention by overlooking clients with adverse, or at the very least atypical, treatment effects (Djebbari & Smith, 2008).

Realistically, some heterogeneity should be expected as interventions, particularly behavioural interventions, are implemented in social systems that are constantly evolving and those receiving the intervention change over time as well as those implementing the intervention (Hawe, 2015). Thus, the context in which the intervention is implemented is integral to understanding its'

impact. So, it follows that if interventions are designed to improve client trajectories then interventions must be reflective of how trajectories have changed over time.

1.3.2 Description of study program

The following describes the specific DBT program that was studied for this thesis study. The DBT program is offered as a 12-month out-patient clinic at Ontario Shores Center for Mental Health Sciences (OS) and is designed for clients diagnosed with BPD presenting with acute suicidal behaviour and/ or non-suicidal self-injury. The clinic typically treats 30 clients annually. The main goals of the program include: reducing symptomatology associated with BPD, decreasing frequency of admissions to in-client units and ER visits, decreasing length of stay in in-client services, increasing coping skills, and improving quality of life for individuals who have been diagnosed with having BPD. The 12-month DBT program is a DBT model consisting of four major components: pre-treatment consultation, skills group, individualized psychotherapy sessions, and 24-phone consultations, implemented by five DBT therapists. The 24-hour phone consultations are employed to address the needs of clients in crisis and therefore cannot be preplanned but rather are spontaneous in nature. To date, the 24-hour consultation component at OS has been modified. This will be discussed in detail in the results section. The pre-treatment consultation includes 1-4 pre-treatment and commitment sessions at which time an individual therapist is responsible for orienting the client to the treatment program, obtaining a sense of commitment to the therapy for at least the first 6-month cycle of the program and ensuring that the client understands that he/she must attend skills groups simultaneously. Therapists work towards changing targeted behaviours and therapy interfering behaviours, which are facilitated through the creation of treatment goals as per the DBT skills training manual developed by Dr.

M Linehan (1993). The skills group discusses the following topics: emotion regulation skills, interpersonal effectiveness skills, distress tolerance skills, and mindfulness skills. Also integrated into the 12-month DBT program are weekly individual psychotherapy sessions and phone coaching as a way to generalize the skills to their natural environments. Once clients have successfully demonstrated the ability to generalize these skills and have met all program objectives they are ready to graduate from the DBT program. To note, the DBT program referred to in this study is in reference to the *DBT program as adapted by OS* and not the original program as developed by Dr. M Linehan. Please refer to **Appendix A** for the DBT Program Logic Model and Program Theory.

1.4 Study Rationale

The need for mental health reform was acknowledged in a report to the Minister of Health, "Respect, Recovery, Resilience: Recommendations for Ontario's Mental Health and Addictions Strategy" (Minister's Advisory Group, 2010). This report underscored the importance of increasing community resources and support for persons suffering with mental illness through focusing on quality improvement and investments in community-based services. With this mandate in mind, the DBT intervention occupies a significant space along the health care continuum for those receiving mental health services. As a publicly funded, community-based out-patient program DBT is providing mental health services to some of the most vulnerable and marginalized in our health care system today. Despite limited resources, these publicly funded programs are still obligated to provide the most appropriate care to those seeking mental health services. Efforts to sustain an intervention like DBT require evidence that these programs are meeting the needs of their clients. For this vulnerable population, patient-centered care is

essential. Care that is responsive to an individual's need for treatment, respect and choices has not only been linked to improved client outcomes, but is also related to the improved use of resources and the quality of health services delivery (Collins et al., 2010). As discussed earlier, understanding client needs and how clients differ in their response to treatment is important. Knowledge of the heterogeneities among this complex population allows health care providers to tailor treatments to those clients that differ from the norm and is the first step towards providing better patient-centered care. Researchers acknowledge that a one-size-fits-all treatment approach should be replaced by interventions that are more reflective of target population, social conditions and local contexts. In response, we aimed to explore how client needs/heterogeneities, program implementer/therapist, and organization/programmatic factors influence the implementation of a CHI in relation to both fidelity and adaptation.

1.5 Research Questions

Translating CHIs from research to practice can be challenging in real world settings because CHIs are often implemented across organizations, units and individuals within many different contexts. With so many moving parts, this raises questions about the practicality of strict adherence to fidelity as the gold standard by which to gauge intervention implementation. Despite the abundance of literature that examines the influence of fidelity, there is still little direction on the extent of fidelity required for positive outcomes. For example, what does a therapist or program implementer do when a participant or client does not follow the expected or intended impact trajectory? Does he or she follow his/her instincts and modify the program to suit the individual or adhere to the guidelines (often dictated by funding constraints) and implement the program as intended despite individual differences? The knowledge gained by

examining these questions could provide some clarity on how decisions are made when

implementing interventions in real-world settings.

Fig. 2: Study Research Questions

Fidelity

Individual Client
(trajectories)
Quantitative data

Program Implementers/
Therapists
Qualitative data

Organization/
Programmatic
Qualitative data

Research
Question
Addressing
each category

1. *Is there a variation in the length-of-stay among DBT clients?*
2. *Is there an indication of heterogeneous outcome trajectories over a one-year period among a DBT population?*

3. *From therapists' perspective in what ways does the individual client influence the fidelity-adaptation relationship of the DBT program?*

4) *What are the barriers and facilitators to implementing the DBT in an out-patient community setting at the programmatic/organizational and implementer perspectives levels? and 5) How do these barriers and facilitators influence the fidelity-adaptation relationship?*

Note: Presented above are the research questions and the layout of how each research question is connected to the three categories influencing fidelity.

The potential contribution of this study is to provide therapists with a framework for making

implementation decisions that explores more deeply the three categories influencing fidelity. To

achieve our aim, we employed a mixed methods approach to quantitatively examine if client

outcomes were heterogeneous and through interviews we explored if and how implementers

would modify the program to address this heterogeneity. We began with quantitatively characterizing client length-of-stay (LOS)(LOS is a measure of fidelity which is the number of therapy sessions attended by clients) and illustrated individual trajectories of DBT clients based on outcomes at 4 different time points during a one-year period. The purpose of this quantitative analysis was to explore the differences in data obtained through group mean analysis and analysis of heterogeneous trajectories when examining fidelity. This is important for the study of fidelity and adaptation as determining heterogeneity of client trajectories will help build knowledge on the extent of fidelity that can be reasonably expected during the course of the DBT program, given the potential diversity of client trajectories over time. The specific research questions are: *Is there a variation in the length-of-stay among DBT clients? and 2) Is there an indication of heterogeneous outcome trajectories over a one-year period among a DBT population?* To explore how implementers react to differences among their clients at the individual level and the implications of this for fidelity and adaptation during implementation we interviewed therapists to better understand how decisions are made when faced with real world constraints. The specific research question is: *From therapists' perspective in what ways does the individual client influence the fidelity-adaptation relationship of the DBT program?* Through our interviews with therapists we further explored the organizational/programmatic and therapist/program implementer factors that influence how the program was implemented and why, if any, were modifications made in relation to the original protocol. The specific research questions are: *What are the barriers and facilitators to implementing the DBT in an out-patient community setting at the programmatic/organizational and implementer perspectives levels? and How do these barriers and facilitators influence the fidelity-adaptation relationship?*

We argue that recognizing individual differences is consistent with the tenets of patient centered care and should be considered an integral component when developing any program design. Similarly, we argue that the three categories influencing fidelity should also drive program design with the knowledge that 'cook book' models are not ideal when implementing CHIs. From this point of view, the present study provides an opportunity to inform the development of more realistic views of program fidelity in the future.

1.6 Chapter Overview

Chapter 2: Relevant themes, constructs, the conceptual framework and implementing DBT

In this chapter, we will review the constructs of fidelity and adaptation in relation to program implementation. The concept of a CHI will be defined and explained in the context of DBT followed the chosen conceptual framework for this study. The mental health disorder, BPD will be described and positioned within the current research landscape. The components, program logic and theoretical underpinnings of DBT, the most extensively studied and used psychotherapy treatment for BPD, will also be detailed. In the latter half of the chapter the literature on DBT implementation will be reviewed.

Chapter 3: Conceptual Framework

The Conceptual Framework for Implementation Fidelity (CFIF) developed by Carroll et al., (2007) was used to initially guide this study design and analysis. This theoretical premise of this framework will be explained. An expanded version of this framework will also be presented. This expanded framework includes the three categories of factors client (needs/trajectories), programmatic/organizational and program implementer/therapist perspectives) which we believe

may have the potential to modify the extent of fidelity and/or adaptation achieved during implementation.

Chapter 4: Methods

The multi-method approach (quantitative and qualitative methods) for this study will be outlined in this chapter. We will first describe the quantitative methods followed by the qualitative methods. To analysis the quantitative data we conducted preliminary descriptive statistics followed by a hierarchal linear model to determine if there was a significant variance in outcome scores across time periods. To illustrate patient heterogeneity spaghetti plots were used to plot the longitudinal data. Qualitative data was analyzed using content analysis. Methods for therapist recruitment, participants, data collection are also detailed.

Chapter 5: Results

This chapter will describe the results of the quantitative methods followed the qualitative methods. For the qualitative methods results of from analysis of the individual category will be discussed first, followed by the results of the programmatic/organizational category and program implementer/therapist perspectives category.

Chapter 6: Discussion

This chapter discusses a potential strategy for addressing the fidelity-adaptation relationship and key evaluation questions based on the accumulated ideas and conclusions drawn upon throughout this study. Discussion around the factors influencing the fidelity-adaptation relationship and insight into why decisions to adhere or modify the DBT program are potentially

made are provided. In the latter half of the chapter study limitations, the potential contribution of

this study and recommendations for future research is discussed.

CHAPTER 2:
Background: Relevant themes, constructs and implementing DBT

The purpose of this chapter is to provide background information on the relevant themes and constructs discussed in this study and a description of Borderline Personality Disorder and DBT. The program logic, program theory of DBT, CHIs and the conceptual framework will be detailed. Please refer to **APPENDIX A** for a more detailed description of the DBT program logic model and theory. In the latter half of the chapter the literature on DBT implementation will be reviewed.

2.1 Fidelity & Adaptation

The key for evaluators when studying program implementation is determining the extent to which the program was implemented as intended and exploring the ways in which the program was modified from its original protocol. This means that evaluators must contend with two related but potentially opposing constructs. The first is related to program fidelity, "the degree to which delivery of an intervention adheres to the protocol or program model originally developed" (Mowbray et al., 2003, page 315). In the literature fidelity is described across five dimensions: adherence, exposure, quality of delivery, participant responsiveness, and program differentiation (Dane & Schneider, 1998; Durlak & DuPre, 2008; Dusenbury et al., 2003). Program adherence is the extent to which program components are delivered as prescribed by the model. Program exposure (i.e., dosage) is the amount of the program delivered in relation to the amount prescribed by the program model. Quality of delivery is the manner in which a program is delivered in reality. Participant responsiveness refers to the manner in which program recipients/clients react to or engage in a program. Program differentiation is the degree to which

the critical components of a program are distinguishable from each other and from other programs. Evaluators must determine if the intervention is consistent with the program theory or program design, if the intervention reached the intended target population, and the extent to which program implementers tried to achieve the program expected outcomes (Shen et al., 2008).

The second construct is related to program adaptation, which refers to "any addition, subtraction, or modification to the original program model, quality of delivery, or participant responsiveness" (Moore et al., 2013, page 148). The magnitude of adaptations may be large or small and may occur as a result of unforeseen circumstances (unintentional adaptations), or to preemptively address differences in program context. Moore et al., (2013) note that "it is important to recognize that adaptations can occur within the context of high or low fidelity; that is, an adaptation may align with/enhance or misalign with/ distract from the program's original design and/or theory of behavioral change".

Some evaluators contend that implementing a program differently from the originally prescribed protocol can reduce program effectiveness (Becker, 2001; Lipsey & Cordray, 2000). For example, The Treatment Fidelity Workgroup of the National Institutes of Health Behavior Change Consortium (2004) argue that unless fidelity is explicitly maintained, the outcomes of a theory-based intervention cannot clearly be linked to the intervention as the primary mechanism of change. Similarly, some authors contend that fidelity to the original model is vital to preserving the behaviour change mechanisms that made the original model effective (Arther & Blitz, 2000). Fidelity is also perceived as the key for successful intervention translation, such that

anything less than high fidelity may contribute to why interventions that work well in highly controlled trials may fail to yield the same outcomes when applied in real life contexts (Breitenstein et al., 2010).

Conversely, those in support of program adaptation legitimately recognize that interventions may have to be modified to suit the heterogeneities among the target population, differences in local contexts, resource availability, organizational culture or practitioner preference (Castro, Barrera, & Martinez, 2004; Medical Research Council, 2007; Moore et al., 2013; Pawson & Sridharan, 2009; Sridharan & Nakaima, 2011; Stirman et al., 2013; Tannahill & Sridharan, 2013). Some feel that failing to acknowledge differences in context during implementation, can ultimately lead to poor program outcomes. As Castro et al. (2004, p. 42) explain, "model programs having program activities that conflict with local participant needs are *culturally mismatched* and may require program adaptation". The authors go on to explain that the contrasting conditions of the group used to validate a program and the current consumer group were the sources of the 'mismatch effect' and thus "would threaten program efficacy, despite high fidelity in program implementation". Bopp and colleagues (2013) explain that flexibility in intervention design is paramount for tailoring interventions to match the target-population characteristics and local resources, such that programs designed to be adaptable (versus those that have strictly-defined fidelity criteria) are more likely to be sustained and have a public-health impact.

The valid points made on both sides of the argument highlight the challenge for implementers and evaluators who are given the 'recipe' for success but see the legitimate need for context specific program modifications. A closer examination of factors influencing fidelity, and therefore, adaptation, could provide valuable 'real world' knowledge of how programs are

actually implemented, potentially improving future program implementation and design. Given the tension between fidelity and adaptation, the aim of this study is to explore this relationship as a guide for evaluators and program implementers during the implementation and evaluation process.

2.2 Core program components

Given that programs are rarely implemented with 100% fidelity (Dulak & DuPre, 2008), it is important for implementers to have knowledge of the essential elements of a program deemed necessary for positive program outcomes particularly when programs are replicated or scaled up. Broadly, components regarded essential for program success are typically referred to as the 'core components' of a program. Despite various definitions of core components in the literature, there are consistent underlying themes characterizing each which may serve as a guide to help unpack the meaning of these constructs: 1) core components are those that are grounded in the program theory; and 2) core components are those that are essential for positive program outcomes. However, it should be noted that identifying a core component and the extent to which it may be modified is still challenging given that these types of components may function differently from one setting to another and under different circumstances.

In their examination of the diffusion of innovations in service organizations, Greenhalgh and colleagues, (2004), explain that complex innovations can be "conceptualized as having a 'hard core' (the irreducible elements of the innovation itself) …". More specifically, program component functions are specified according to the intervention theory that is, how the intervention accomplishes its intended effects (Hawe, 2015). The reason for linking the program theory to core components is to help clarify the underlying theory base, function and principles

of the core component (Blase & Fixen, 2013). Therefore, the activities of a program should be designed to enact core mechanisms and are thus 'hardwired' into the program. Some researchers argue that these components of the program must be implemented with fidelity to maintain program effectiveness and the other secondary aspects of the program that are not directly linked to the program theory or the core mechanisms may be adapted to meet the needs of different populations (Lee et al., 2008). As an example, DBT comprises of four core components: individual psychotherapy behavioural skills training, supportive process groups, phone calls, and therapist consultation team (Linehan, 1993). These components are said to be theoretically linked and together work to form the causal pathway for the intended behavioural change.

2.3 Complex Health Interventions (CHI)

The above relationships are explored in relation to a complex health intervention (CHI). Pawson and Tilley (2004) defines CHIs as 1) a theory or set of theories; 2) involving the actions of people; 3) a chain of steps or processes, often not linear; 4) embedded in social systems and how they work is shaped by this context; 5) prone to modification; and 6) open systems that are susceptible to change through learning as stakeholders come to understand them.

As an example of a CHI we will explore DBT to improve our understanding of the three categories influencing fidelity. CHIs can be further characterized as a dynamic system thrust into larger systems, having a number of interacting parts, non-linear pathways, and multiple synergistic components (Pawson & Sridharan, 2009; Sridharan & Nakaima, 2011; Tannahill & Sridharan, 2013). In real-world settings interventions are often implemented by different providers with varying levels of expertise in different contexts (Barry et al., 2005; Breitenstein et al., 2010; Glasgow, Lichenstein, & Marcus, 2003), and therefore are at higher risk of variability

because they consist of a chain of steps that could behave differently or fail at each stage (Pawson et al., 2004; Pawson & Sridharan, 2009; Sridharan & Nakaima, 2011). This often precludes the evaluator from developing specific measures in advance (Rogers, 2008). To adjust for variability during the program cycle, evaluations need to be responsive to program changes. Designing evaluations to recognize these emergent outcomes is important because this is a consistent feature of CHIs (Rogers, 2008). This may mean developing more than one logic model to reflect the expected variation of outcomes (Rogers, 2008). This would also require flexibility in data collection and a desire to understand that the path to achieving program goals is not linear and that learning can be expected as the program evolves (Rogers, 2008). Monitoring changes in program behaviour can improve learning from an evaluation by identifying factors that moderate program success or failure, weak links along the causal chain that can be strengthened (MRC, 2007), and the conditions under which these outcomes may occur (Rogers, 2008). Recognizing the way a program may have been adapted can also provide inferences on program trajectory, unintended consequences, and can identify the type of data and range of measures required to assess program outcomes (MRC, 2007). For example, research findings indicate that the development of standardized treatment manuals did not ensure positive outcomes (Forgatch et al., 2005; Schoenwald et al., 2011). In mental health services, programs often lack model specification and/or model adherence as they rely extensively on clinical knowledge and skill (Mowbray et al., 2003). Hence, integrating stakeholder's views is integral to understanding how inventions are implemented and evolve during the program life cycle. It is our view that DBT is a CHI and thus employing complexity thinking allows us to conceptualize the variability, emergent outcomes, and unintended consequences often associated when implementing CHIs (Hawe, 2013; Pawson, Greenhalgh, Harvey, & Walshe, 2004; Pawson &

Sridharan, 2009; Sridharan & Nakaima, 2011; Sterman, 2006). In relation to the present study, this knowledge helped to conceptualize both our research and interview questions

2.4 The conceptual framework for implementation fidelity

As discussed in the introduction, the assumption that programs will be implemented exactly as prescribed by the original protocol is unrealistic across diverse settings. However, knowledge is lacking on how a program can maintain both flexibility in its' protocol, while retaining enough of the relevant program components required for dissemination and spread across different contexts. With the aim of providing some conceptual clarity to implementation fidelity and exploring the fidelity- adaptation relationship (Fig.1), the Conceptual Framework for Implementation Fidelity (CFIF) developed by Carroll et al., (2007) (Fig. 3) was used to initially identify themes for this study. Depicted in Fig. 1, are factors that we want to explore as we propose these factors may also influence fidelity in addition to those outlined in the CFIF.

A description of the three categories of factors influencing fidelity: Towards a conceptual framework
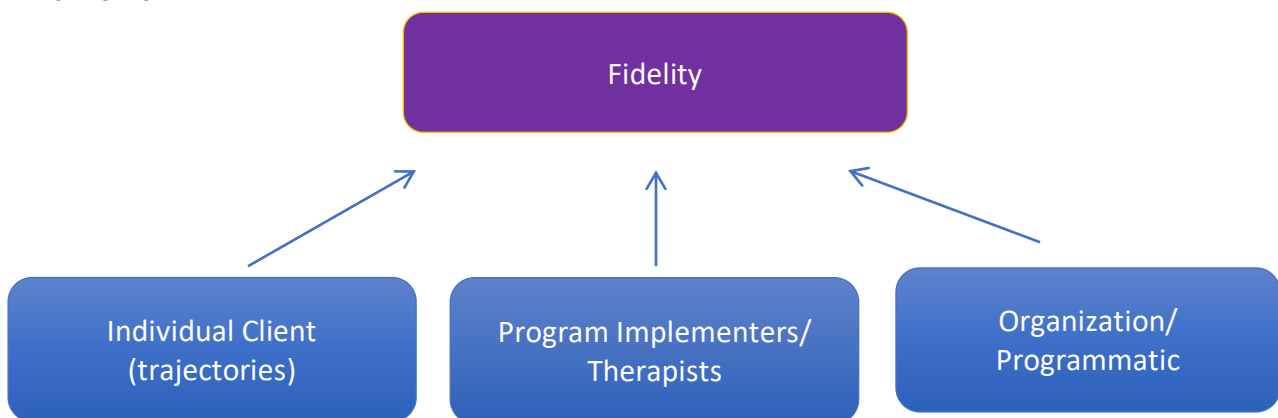
Fig. 1: The Three Categories of Factors Influencing Fidelity

The CFIF was developed to determine the extent of program fidelity during or after implementation with the aim of helping evaluators assess the degree to which outcomes can be attributed to the intervention and if evidence-based interventions were implemented as intended (Carroll et al., 2007). The CFIF provides insight into the role that fidelity plays during the implementation and evaluation process and into the potential moderators that may influence fidelity. However, we assert that the CFIF does not recognize some influences that are vital to fidelity. Essential influences of fidelity such as stakeholder perspectives, particularly the influence of stakeholder perspectives changing over time, are not addressed in the CFIF. We argue that these influences can potentially cause adaptations during program implementation, which may or may not influence program outcomes. It is well documented in the literature that fidelity can occur in the presence of these adaptations (Beardslee et al., 2013; Bowen et al., 2010; Dusenbury et al., 2004; Dusenbury et al., 2005; Shen et al., 2008) however, this is not addressed in the CFIF and thus the nature and extent of this relationship remains unclear. To note, we believe the use of the term of moderators by the CFIF does not accurately represent the influence of these factors on fidelity. The potential moderators in the CFIF should be replaced by the concept of mediators since mediators can explain the relationship between two other variables to reflect how or why certain effects may occur unlike moderators which refers to a variable that that influences the strength of the relationship between independent and dependent variables (Baron & Kenny, 1986, p. 1174-6). For example, according to the CFIF the potential moderator 'quality of delivery' helps to explain how an intervention may be implemented with fidelity and therefore acts as a mediator rather than a moderator. In an effort to keep the language consist with the CFIF and improve clarity we will continue to use the word moderators but will denote the term with quotation marks to indicate our distinction ('moderators').

We sought to add conceptual clarity to implementation fidelity by exploring the three categories that influence fidelity. Thus, the CFIF was relevant to the present study because we used the potential 'moderators' identified in the CFIF to help explain the relationship between client characteristics and heterogeneity and therapist's experience, values and practicing preferences and fidelity. Our goal, therefore, was to build upon this framework by identifying other categories associated with fidelity not acknowledged in the CFIF and to better understand the relationship to fidelity and program adaptations. Both the CFIF and the expanded framework will be further discussed below.

Other fidelity frameworks have been published for program implementation. There are several frameworks for interventions pertaining to school-based curriculum (Ruiz-Primo, 2005; Lynch and O'Donnell, 2005; Lastica and O'Donnell, 2007), clinical training and supervision (Culloty et al., 2010; Reiser & Milne, 2014) and marginalized populations (Keller-Margulis, 2012). However, these models have used different categories of factors, different definitions of factors and focused on different moderating factors than the framework developed by Carroll et al. (2007), thus making comparisons between conceptual frameworks challenging.
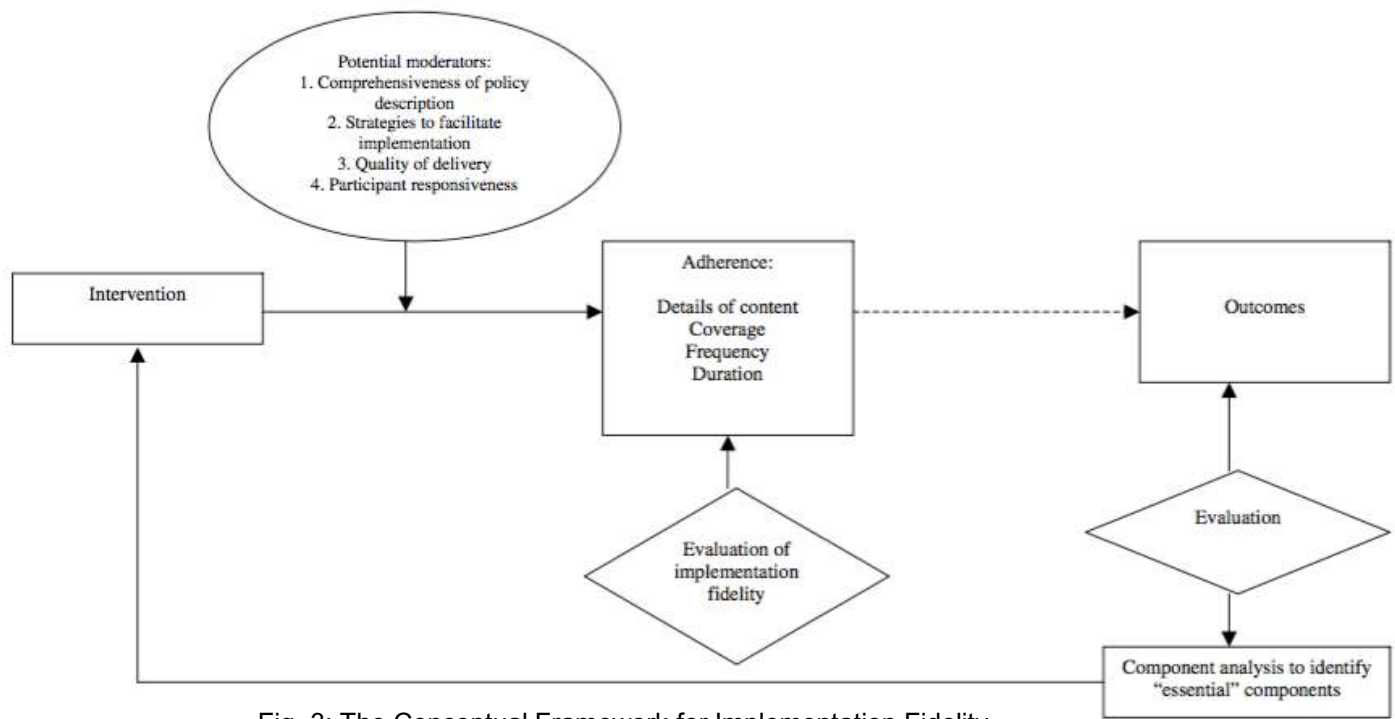
Fig. 3: The Conceptual Framework for Implementation Fidelity

The CFIF (outlined in *Fig. 3*) depicts the elements of implementation fidelity and their relationship to one another. In this schematic, the measurement of implementation fidelity is the measurement of adherence, and includes the subcategories content, frequency, duration and coverage (i.e. dose). For example, to examine fidelity, program adherence can be measured by quantifying how much of the intervention's prescribed content has been delivered, how frequently, and for how long. Thus, if a program fully adheres to the original model the fidelity is said to be high. For the present study, we retained this definition of fidelity and explored additional potential influences that may offer better insight into program fidelity.

The potential 'moderators' outlined in this framework are the variables that are said to influence the degree of fidelity achieved: intervention complexity, facilitation strategies, quality of delivery, and participant responsiveness (Carroll et al., 2007). As stated above we believe that these 'moderators' may actually help to explain the relationship between these variables and fidelity. Recruitment and context were moderators developed and later added to the framework by Hasson et al. (2010). We have chosen to replace participant responsiveness with therapist

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values to reflect out interest in therapists' perspectives and not those of clients. **For the present study, we employed the following potential 'moderators': intervention complexity, therapist values, facilitation strategies, quality of delivery and context**. Please refer to **APPENDIX D** for a description of framework elements and how each element was defined for the present study.

The broken line in Figure 3 indicates that the "relationship between an intervention and its outcomes is external to implementation fidelity, but that the degree of implementation fidelity achieved can affect this relationship" (Carroll et al., 2007). For the present study, we aimed to clarify this relationship by examining the likelihood for program adaptations related to potential 'moderators' and its' perceived impact on fidelity. To determine the extent of fidelity required, the authors suggest that a component analysis may be conducted to identify those components that are essential to the intervention, and must be implemented if the intervention is to have its intended effects. Identifying the essential components of the intervention is important because it can provide guidance on components that should remain intact and those that may be modified to improve fit within local contexts. In view of the tension between program fidelity and adaptability among evaluators, the authors argue that "the intermediate position is therefore that program implementation can be flexible as long as there is fidelity to the so- called 'essential' elements of an intervention" (Carroll et al, 2007). Despite recommendations of high fidelity as described by the DBT program theory, a recent component analysis of DBT program components was unable to demonstrate any significant differences in positive outcomes between a comprehensive DBT program (a program with all components intact) to other DBT programs (programs with modified components) (Linehan et al., 2015). Yet, the literature indicates that

some modified programs have met with little success (Gutteling et al., 2012; Soler et al., 2009). In light of this gap, one objective of this study was to explore the ways in which context may influence the implementation of essential or core components.

2.5 Borderline Personality Disorder & Dialectical Behavior Therapy (DBT)

To achieve our study aims, we assessed a psychotherapy intervention for the treatment of Borderline Personality Disorder, DBT. Implemented in a community-based out-patient setting, DBT provides an appropriate vehicle for examining the three categories influencing fidelity because it consists of various program components that have to be implemented with a great degree skill by a number of different program implementers. While the original protocol advocates for a full and comprehensive design to be implemented, the multi-component nature of the DBT program makes the program both attractive and susceptible to adaptation because each component can to be modified or deleted. Given the resource intensiveness of DBT, many have studied the extent to which the program can be modified. Some have been able to modify DBT with success (Comtois et al., 2007; Linehan, Schmidt, Dimeff, Craft, Kanter & Comtois, 1999; Koons, Robins, Tweed & Lynch, 2001; Verheul, Van Den Bosch, Koeter, De Ridder, Stijnen & Van Den Brink, 2003), while other have found no improvement in program success after modifications were made (Gutteling et al., 2012; Soler et al., 2009).

Borderline personality disorder (BPD) is a serious, complex, long-lasting mental health problem (Centre for Addiction and Mental Health [CAMH], 2009). Affecting approximately 1 in 100 individuals, BPD is as common as schizophrenia or bipolar disorder (CAMH, 2009). People with BPD have difficulty regulating or handling their emotions and controlling their impulses and have been described as living with constant emotional pain (Sempértegui, Karreman, Arntz, &

Bekker, M, 2013). Some common symptoms of BPD include: reacting with intense emotions to small changes in their environment, intense, short-lived bouts of anger, depression or anxiety, impulsive and harmful behaviors such as substance abuse, self-injury, and suicide. Self-inflicted injury is present in 69% to 75% of individuals diagnosed with BPD (Clarkin, Widiger, Frances, Hurt, & Gilmore, 1983), and approximately 10% are suicide completers, which is approximately 60 times higher than the general population in Canada (CAMH, 2012). Even though BPD is as common as schizophrenia or bipolar disorder, research in this area is still developing. Consequently, there are significantly fewer resources for the treatment of this disorder. With consistent treatment, 75% of people with BPD can achieve normal functioning by age 35-40 and 90% can achieve this by age 50 (Paris, 2005).

The most extensively studied and used psychotherapy treatment for BPD is DBT (Sempértegui et al., 2013). In the context of program evaluation, DBT can be defined as a CHI. The Medical Research Council (2008) describes a complex intervention as having "many interacting constituent components, with a large number of discretionary behaviours or actions required among the intervention agents and 'recipients', a large number of groups or levels targeted by the intervention, a large amount of flexibility in tailoring the intervention and high degree of skill required among those delivering". In this context, DBT is a CHI because it is a multi-component, team-based treatment that involves various DBT- trained mental health professionals such as psychiatrists, psychologists, social workers, and counselors.

DBT's comprehensive treatment model consists of essential components for achieving specific target goals. They include: individual psychotherapy behavioural skills training, supportive

process groups, phone calls, and therapist consultation team. Please refer to **APPENDIX B** for core component descriptions. Individual therapy focuses on the client's progress over the past week and group therapy seeks to teach the core skills that facilitate change by improving the client's view of him or herself and improving the client's ability to interact with others (DeVylder, 2010). More specifically, DBT consists of five core processes: 1) motivating the client to change (typically addressed in weekly individual therapy); 2) enhancing behavioral skills (addressed in weekly skills training groups); 3) ensuring the generalization of these skills (using phone consultations with outclient treatment; or, milieu therapy for inclient programs); 4) structuring the treatment environment to support client and therapist capabilities; and 5) enhancing therapist capabilities and motivations (required attendance at a weekly DBT consultation team meeting). The approach to this therapy is to motivate the client to change behaviour while simultaneously validating the client's thoughts and feelings (DeVylder, 2010). This means decreasing interpersonal, emotional, behavioural and cognitive dysregulation and increasing interpersonal and emotion regulation, distress tolerance skills, as well as core mindfulness skills (observing, describing, participating, taking a non-judgment stance, focusing on one thing in the moment and being effective) (Linehan, 1993).

The effectiveness of DBT in the treatment of BPD compared to treatment as usual (TAU)[1] is well supported by numerous randomized controlled trials (Clarkin Levy, Lenzenweger & Kernberg, 2007; Koons, Robins, Tweed, Lynch, Gonzelez, Morse, et al., 2001; Linehan, Comtois, Murray, Brown, Gallop, Heard, Korslund, Tutek, Reynolds, & Lindenboim, 2006; Soler, Pascual, Campins, Barrachina, Puigdemont, Alvarez & Perez, 2005; Turner, 2000;

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[1] TAU refers to emergency hospitalization or private care by a therapist

Verheul, van den Bosch, Koeter, de Ridder, Stijnen, & van den Brink, 2003). Clients receiving DBT, compared to TAU were significantly less likely to drop out of therapy and were significantly less likely to engage in parasuicide [2]. Further, clients receiving DBT were less likely to be hospitalized, had fewer days in hospital, and had higher scores on global and social adjustment [3]. The current wait-time for DBT treatment in Ontario is between 1 and 1½ years. Persons with BPD that are waitlisted are referred to TAU (i.e. paying out-of-pocket, employer's health insurance).

DBT has also been modified successfully to treat different populations. DBT has been found to be effective in reducing depressive symptoms (Lynch, Cheavens, Cukrowicz, Thorp, Bronner & Beyer, 2007), co-morbidities with co-occurring BPD and some substance-dependent populations (Linehan, M. Schmidt, H., Dimeff, L, et al., 1999; Linehan, M., Dimett, L, Comtois, K et al., 2002; Dimeff, et al., 2000). Other populations evaluated have included DBT as a treatment for those with bulimia nervosa (Safer, Telch, Agras, 2001; Telch et al, 2001), other eating disorders (Palmer, et al., 2003), and depressed older adults (Lynch et al., 2003). More recently findings suggest that DBT can be effectively adapted to address suicide ideation, self-harm and general psychiatric symptoms in adolescents (Rathus & Miller, 2002).

2.5.1 The Theoretical Model of DBT

In order to better understand the approach of this study, it is important to understand the origins

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[2] Drop-out rate: DBT 36%, TAU 76%)(Linehan et al., 1999); Reduction in parasuicidal behaviours: DBT 40%, TAU 10% (Koons et al., 2001).
[3] Global social adjustment: DBT subjects had significantly better scores than TAU (F=10.36, df=1, 19, p<0.01) (Linehan et al., 1994); Psychiatric inclient admission DBT 36% TAU 55%; Day hospitalized DBT: median=17.0, Interquartile Range [IQR] 37.75; TAU: median 80.0, IQR=122.25 (Linehan et al., 1991).

and intentions of DBT. Pioneered by Dr. MM Linehan beginning in the 1970's, Dialectical

Behavior Therapy (DBT) is based on the biosocial theory of personality functioning. The

biosocial theory of BPD posits that an individual's biological nature may predispose him or her

with an inability to cope with emotional stressors. This vulnerability may be further compounded

when placed in an invalidating environment, thus producing further emotional dysfunction

(Lynch et al., 2006). For example, during childhood, dysfunctional or invalidating environments

result in an inability to regulate emotions, tolerate emotional distress, and to trust his/her own

emotional responses to events (Linehan, 1993). Such patterns are continued into adulthood

causing an adult to look for external validation having failed to validate their own emotions. This

results in oversimplifying problem solving and thus problems in ones' own life. Consequently,

this oversimplification leads to unrealistic goals that when unmet contribute to self-hate and

punishment (Linehan, 1993). Please refer to **APPENDIX C** for further description of the DBT's

theoretical model.

2.6 Implementing Dialectical Behavior Therapy (DBT)

In an effort to bridge the gap between research and practice, researchers tested the DBT program

design by implementing it across different contexts. They found that the formalization of

treatment (i.e. treatment manual) and empirically tested components of DBT made it a more

effective program that can be replicated across different contexts (Linehan, Schmidt, Dimeff,

Craft, Kanter & Comtois, 1999; Koons, Robins, Tweed & Lynch, 2001; Verheul, Van Den

Bosch, Koeter, De Ridder, Stijnen & Van Den Brink, 2003). Comtois and colleagues (2007)

sought to examine the implementation of a DBT program in a community mental health center

and benchmarked results against three RCTs. The results from the community setting were

comparable to those in the RCTs with the community sample showing a significant reduction in the number of medically treated self-inflicted injuries, psychiatric-related emergency room visits, total psychiatric in-patient admissions, total crisis- related psychiatric hospitalizations, total days spent in psychiatric hospitalization, and number of crisis systems engaged (Comtois et al., 2007).

Others have found that more than one-third of DBT programs were difficult to sustain in practise (Swales, et al., 2012). In fact, studies indicate that just 57% of active DBT programs are fully implemented in 'real world' settings (Swales, Taylor & Hibbs, 2012). Ten percent of therapists report that adapting the DBT model to different settings and/or clients was difficult as these programs were tested in research settings (Swales, Taylor & Hibbs, 2012). Swales et al., (2007), examined 105 DBT programs implemented in the UK across various settings, including both out-patient services and in-patient settings (including prison). Of the 105 programs, 62.8% were actively running, and 37.1% were inactive. The most commonly reported reasons for ending programs were lack of organizational support (68% of cases), high staff turnover (63% of cases) and insufficient allocated time to deliver the program (56% of cases). The highest failure rates were observed during year 2 post-implementation (shortly after training ended by the National Intensive Training event), and during year 5. In terms of degree of implementation, 57% of programs were fully implemented and the remaining programs implemented some adapted version of the comprehensive DBT program (i.e. no 24-hour telephone coaching in out-patient settings).

With respect to modifying the DBT program, several studies have empirically tested the efficaciousness of adapting DBT program components. In a RCT of 108 women, Neacsiu and

colleagues, (2010) tested whether DBT skills use is a mechanism of change associated with treatment efficacy compared to TAU. They found that DBT skills use fully mediated the decrease in suicide attempts and depression and the increase in control of anger over time and partially mediated the decrease of self-harm over time. Another RCT conducted by Soler et al. (2009), compared the efficacy of DBT group therapy to standard group therapy. The authors found that clients in the DBT group had a 30% greater probability of completing treatment than the standard group and had only half the number of dropouts with a retention rate of 65.5%. The DBT skills group showed a greater decrease in depression, anxiety and general psychiatric symptoms compared to the standard group (Soler et al., 2009). These findings are similar to a study conducted by Gutteling et al. (2012), which examined the outcomes of BPD symptoms in a program that exchanged individual DBT therapy for DBT group therapy. The authors did find a reduction in depression, anger, anxiety, and general psychiatric symptoms (Gutteling et al., 2012). Overall, these studies found that some adaptation of the DBT intervention produced some positive secondary outcomes for clients.

Conversely, some of these studies have also found that program adaptations to program components was not successful in reducing suicidal or self-harm behaviour. For example, Soler and colleagues (2009) also found DBT group therapy did not reduce suicide or self-harm compared to standard group therapy (DBT group therapy included all the original skills adapted from Linehan (1993): interpersonal effectiveness, emotion regulation, mindfulness, distress tolerance). Similarly, after exchanging individual DBT therapy for DBT group therapy, Gutteling et al. (2012) did not find a reduction in suicidal or self-harm behaviour. The mixed findings from these studies indicate that exchanging program components (standard group therapy vs. DBT

group therapy or individual therapy vs. group therapy) may reduce program effectiveness for primary program outcomes.

Subsequently, Linehan and colleagues (2015) evaluated the relative importance of DBT skills training compared with other DBT components in reducing suicide attempts and self-harm behaviour (Linehan, Korslund , Harned , Gallop, Lungu, Neacsiu, McDavid, Comtois, & Murray-Gregory, 2015). A RCT and component analysis were conducted to compare standard DBT (individual therapy, group skills training, between-session telephone coaching, and a therapist consultation team) to DBT skills training without DBT individual therapy but with manualized case management and to DBT individual therapy without DBT skills training but with an activities group. They found no difference between DBT programs in that all 3 conditions resulted in significantly reduced suicide attempts, suicide ideation, medical severity of self-harm, use of crisis services owing to suicidality, and improved reasons for living. Although standard DBT was not better than the other two conditions in reducing suicide attempts and self-harm it was found to be superior in reducing client drop-put, reducing the frequency of self-harm behaviours, improving mental health outcomes during treatment, and reducing emergency department visits and hospitalizations after treatment. The authors also add that although not reaching the level of significance, during the follow-up year, the rates of suicide attempts, ED visits, and hospitalizations were each 2.0 to 2.4 times lower in the standard DBT than DBT skills training without DBT individual therapy but with manualized case management. In the context of fidelity and adaptation, the findings from this study are interesting because these DBT programs were modified to a greater extent than in previous studies, yet found no significant differences in primary outcomes despite findings that these outcomes are sensitive to

adaptations. This begs the question to what extent can the DBT program be modified from the original program model without reducing primary client outcomes?

To date, empirical studies have been unable to discern the extent of fidelity and adaptation required for positive DBT client outcomes. This knowledge gap may be likely bridged by engaging stakeholders. Integrating stakeholders' views may provide some insight into how program implementation can be modified and improved. Researchers suggest that understanding how stakeholders feel about the intervention, how they reason, and what motivates them is integral to understanding how and why an intervention failed or succeeded (Pawson et al., 2004). For the present study, this means determining how program implementers view fidelity and program adaptation and why they did or didn't adapt the DBT program and what factors may have influenced these decisions. Engaging stakeholders to better understand these issues will improve the dissemination process of programs by improving knowledge of how a program can maintain both flexibility in its' protocol, while retaining enough of the relevant program components required for program dissemination and spread across different contexts.

CHAPTER 3
The Conceptual Framework

3.1 The adapted framework

The conceptual framework for implementation fidelity developed by Carroll et al., (2007) was used as a basis to guide and analyze our findings by helping to identify themes in the qualitative data (as described in Chapter 2). The CFIF (outlined in *Fig. 3*) depicts the elements of implementation fidelity and their relationship to one another. In this schematic, the measurement of implementation fidelity is the measurement of adherence, and includes the subcategories content, frequency, duration and coverage (i.e. dose). For example, to examine fidelity, program adherence can be measured by quantifying how much of the intervention's prescribed content has been delivered, how frequently, and for how long. Thus, if a program fully adheres to the original model the fidelity is said to be high. For the present study, we retained this definition of fidelity and explored additional potential influences that may offer better insight into program fidelity.

Fig. 3: The Conceptual Framework for Implementation Fidelity

In light of the tension between adaptability and fidelity (as described in the introduction), we built on this existing framework with the aim of providing conceptual clarity of fidelity as it relates to DBT (*fig. 4*). We contend that this existing framework has a limited view of the factors influencing fidelity and we propose that there are three categories individual client (needs/trajectories), programmatic/organizational and program implementer/therapist perspectives) that also have the potential to modify the extent of fidelity and/or adaptation. Testing the potential 'moderators' as outlined in this framework is beyond the scope of this study. These potential 'moderators' were used to identify themes in our qualitative work, providing a level of organization to our findings. Further, we built upon these 'moderators' to determine the extent of additional factors associated with fidelity. Therefore, our research questions for the present study are linked explicitly to these proposed additional factors.
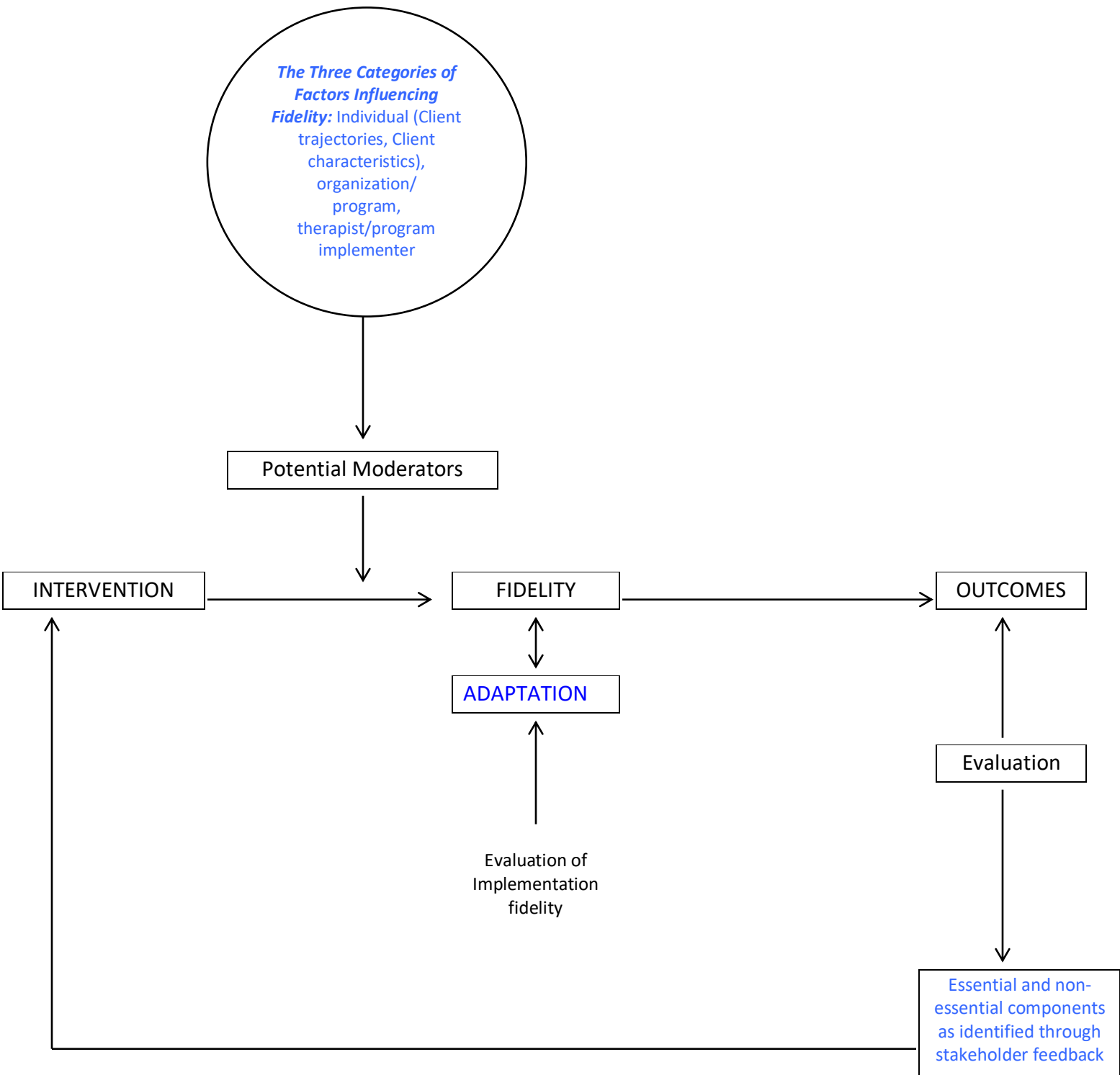
Fig. 4: Adapted Conceptual Framework for Implementation Fidelity

3.2 Potential contribution

The potential contribution of this study is to improve conceptual clarity of fidelity and the fidelity-adaptation relationship by providing an adapted framework to better understand/investigate implementation fidelity. Typically, fidelity has been defined as whether or not core program components have been implemented with less emphasis on how the intervention was delivered and why. Even less emphasis is placed on how client, programmatic/organizational and therapist factors have influenced the degree of fidelity attained. As the literature indicates these categories are not mutually exclusive. We also took this one step further by examining how fidelity may relate to program adaptations. Knowledge of possible program adaptations has the potential to guide and direct such things as implementer training, program design and dissemination. Both new and experienced implementers can benefit from knowledge of the ways in which the program may vary and more importantly what adaptations are not consistent with the program theory so implementers have a better understanding on how to deliver the intervention. This information can help to better structure a program.

CHAPTER 4:
Methods

The methodology for this study will be outlined in this section. We will describe the quantitative methods followed by the qualitative methods'

4.1 Setting

This study took place at Ontario Shores (OS) Centre for Mental Health Sciences in Whitby, Ontario. OS was chosen for this study due to interest by the administration in identifying opportunities for improvement for the DBT program. The Borderline Personality Self-Regulation (BPSR) Clinic located at OS was developed in 2011 in response to the long waitlist for DBT treatment. Program participants are clients that visit the BPSR clinic up to twice a week for group and individual therapy. The goals of the DBT program include: reducing symptomatology associated with BPD, decreasing frequency of admissions to in-patient units and ER visits, decreasing length of stay in in-patient services, increasing coping skills, and improving patient's quality of life.

Quantitative Methods

4.2 Participants

Participants (clients) included 89 women and 10 men aged 18-61 years who met the criteria for Borderline Personality Disorder with or without co-occurring Anxiety Disorders, Major Depressive Disorder, Eating Disorders, and addictions. Participants were excluded from the program if they had Severe Depressive Symptoms, Active Manic Symptoms, Substance Intoxication, Severe Anorexia, a primary Diagnosis of a Psychotic Disorder and/ or active

psychotic symptoms, mental Retardation/ developmental delay/ acquired brain injury or

Antisocial Personality Disorder as these disorders have the potential to interfere with individual

and/or group therapy.

4.3 Data Source

The data sources for this study were administrative data and a set of standardized assessment

measures that were collected at pre treatment, and 3, 6, and 12 months after the initiation of

treatment. These validated measures include: Zanarini Rating Scale for BPD (Zanarini, 2003),

Brief Symptom Inventory (BSI, Derogatis, 1993) as measured through the Global Severity

Index, DBT Ways of Coping Checklist (Neacsiu, Rizvi, Vitaliano, Lynch & Linehan, 2010),

Quality of Life Inventory (QOLI, Frisch, 1992), Borderline Symptom List (BSL-23, Bohus et al.,

2009). See **APPENDIX E** for validation of measures.

4.4 Data collection

Data for program outcomes (administrative data) were collected by therapists at OS

prospectively from July 10, 2012 to March 1, 2015. Data were specifically collected for the DBT

program. Hard copies of this data are kept in a secure file cabinet at OS by the PI, Dr. Robinson.

Clients at the clinic were required to complete all measures as part of standard clinical procedure

to be eligible to receive service at the clinic and were asked to give consent for their data to be

used for research purposes. The research assistant for the program was responsible for obtaining

consent. Before a client agreed to participate, the purpose of the study was explained in detail. If

they agreed to participate, the clients were given an informed consent form to read and sign

outlining the purpose of the study, confidentiality criteria, and the contact information for the

researchers. Please refer to **APPENDIX F** for consent form for use of administrative data. Clients that refused to participate were still eligible for treatment in the DBT program. During pre-treatment clients were asked to complete a battery of standardized self-report measures for clinical evaluation purposes (mentioned above). The self-report measures were administered again post-treatment (at 3, 6 and 12 month intervals after commencement of treatment) in order to evaluate the effectiveness of the therapeutic intervention in terms of reducing symptoms and improving client's quality of life. The measures were selected for their high psychometric quality, relevance to this population, and use in similar research studies. For the clinical procedure, each potential client of the program underwent a phone screening interview (through central intake) where they were provided detailed information about the intake process for the clinic, the program in general, and asked to provide clinical documentation confirming a diagnosis of BPD and by whom they were diagnosed. The clients were then placed on a waitlist to be contacted by one of the staff in the clinic for a more in-depth phone interview to determine eligibility, readiness, and need. The therapists administered the Zanarini Rating Scale for BPD (described above) (Zanarini, 2003) by phone to assist them with their clinical screen and collect the clinical documentation to confirm the BPD diagnosis. If patients fulfilled the eligibility criteria via this screening process they were offered entry into the program. If they did not, they were referred to the appropriate service.

4.5 Data Analysis

Exploratory analysis and client adherence:

Data were first characterized client demographic and treatment characteristics (based on administrative data) using descriptive statistics. Participation in the DBT program was a count

measure of the number of times clients attended individual and group therapy over a one-year period. Pre-treatment scores and scores at 3, 6 and 12 months data were then characterized using descriptive statistics (mean, standard deviations). Box plots were used to explore the variance in patient scores across the study period. To improve familiarity with the data, comparisons of pre and post treatment scores were examined through paired samples t-tests for continuous variables. The purpose of this analysis was to explore patient scores and outcomes and to determine the extent to which patients varied in their response to the DBT program. These analyses identified how many times the overall sample attended a therapy session (participation), what type of therapy session they attended and if they participated for the recommended total length of time.

Longitudinal analysis:

Due to the longitudinal and nested nature of the data, Hierarchal Linear Modeling (HLM) was most appropriate to determine if there was a significant variance in outcome scores across time periods. In program evaluation, analyzing longitudinal data typically involves repeated measures ANOVA. Osgood et al. (1995) explain that ANOVA is not well suited for longitudinal data because it requires that all subjects have all data, continuous predictors and independence of repeated measures factors. For the present study, the assumption of independence of factors and no missing data cannot be met. In contrast, HLM can accommodate non- independence of observations, missing data, small and/or discrepant group sample sizes, and heterogeneity of variance across repeated measures without distorting effect size estimates and standard errors (Woltman et al., 2012). HLM has the ability to analyze relationships both within and between hierarchical levels of grouped data, making it more efficient at accounting for variance among variables at different levels than other existing analyses (Osgood et al., 1995; Woltman et al.,

2012).

Analysis. To examine variance in patient outcomes over the one-year period a 2-level HLM was conducted. In the model, the outcome (dependent) variables were patient test scores (continuous variables) defined as the BSI – Global Severity Index; DBT Skills use; DBT dysfunctional coping; Quality of Life Index; Zanarini; BSL. The explanatory (independent) variables were time defined by four (categorical) variables: pretreatment, 3 months, 6 months and 12 months. Patients with test scores from at least one measure (i.e. Quality Of Life Index) at each time point were included in the analysis. Patient test scores were level 1 units nested in units of time, level 2 with time variables as fixed effects and patient scores as random effects.

Statistical Power. Statistical power for an HLM requires relatively large sample sizes. In order generate high statistical power (.90) to detect cross-level interactions, the data set should include 30 groups with 30 individuals (Hofmann, Griffin & Gavin, 2000; Kreft, 1996). HLM is also flexible in how the sample is assembled. For example, if there is a larger number of groups, then fewer individuals are required (Hofmann, Griffin & Gavin, 2000; Kreft, 1996). Given these parameters, the present study should generate adequate statistical power because there are 99 individuals, 4 different time points and 5 different measures.

Patient heterogeneity:

To illustrate patient heterogeneity spaghetti plots were used to plot the longitudinal data. Spaghetti plots are a method for viewing data to visualize patterns among patients. For clarity, a random sample of 20% was used to illustrate heterogeneity of trajectories. To plot individual

trajectories, the grouped longitudinal data specified the time, outcome variable and patient ID to determine the linear line specific to each client. The x and y axis were specified (time x outcome) and the minimum and maximum scale was inputted.

4.3 Qualitative methods

4.4 Therapist Recruitment

Inclusion criteria:

- Therapists must be trained in DBT therapy

- Therapists must have experience in treating person with BPD, with or without co-occurring Anxiety Disorders, Major Depressive Disorder, Eating Disorders, and Addictions

- Therapists must be currently treating clients

Exclusion criteria (exception: Program Director):

- Therapists not trained in DBT

- Therapists that have no experience in treating BPD

Recruitment began with purposive sampling at OS the organization overseeing this study. The program director at OS made initial contact with the program manager of the DBT Program and the other five therapists at OS. The program director informed the program manager and implementers about the purpose of the study and asked for their participation. The researcher contacted therapists in person at a weekly team meeting at the BPSR Clinic at which time the researcher introduced the study, answered questions and provided consent forms (see **Appendix**

G) for those interested. Therapists were informed that their participation was not mandatory.

Therapists interested in participating were contacted via email within one week after the initial

meeting (see **APPENDIX H** for participating therapists). A consent form was passed to a

therapist not attending the meeting by those in attendance. Via snowball sampling two therapists

from the DBT youth program were identified and contacted by another therapist at OS. Each

were emailed by the researcher and given a consent from the same therapist. Two previous

therapists of the BPSR Clinic were contacted via mail later from Human Resources.

4.5 Data Collection

Face-to-face semi-structured interviews were conducted with the above-mentioned therapists at

the BPSR Clinic. All interviews were digitally recorded with therapists' permission. All

interviews were conducted at the BPSR Clinic. The interviews were conducted between August

2017 and September 2017, and no follow-up interviews were conducted.

For visual representation please refer to **Table 1** for the results of the interview recruiting

process. Five therapists were contacted at a weekly team meeting at the BPSR Clinic. Four of the

therapists are full-time therapists employed at the organization and one therapist is part-time at

the BPSR clinic. Three therapists completed consent forms at the meeting. They were contacted

within one week via email to set-up an interview time. Two of the three therapists that consented

responded via email to set-up an interview time. The third therapist that consented was contacted

3 times after the initial meeting via email and did not respond. The fourth therapist that did not

complete a consent form at the initial meeting was contacted via email within a week of the

initial meeting and did not respond. The fifth therapist that did not complete a consent form at

the initial meeting was contacted within a week of the initial meeting responded and agreed to

participate. The sixth therapist is a full-time therapist but was not present at the initial meeting. A

consent form was passed on and she was contacted via email within a week of the initial

meeting. She responded and agreed to participate. The seventh therapist was the program

director at the organization. There was no response after 5 attempts to contact her via email. The

eighth and ninth therapists are DBT therapists, previously employed at the organization. They

were contacted via mailed letter through Human Resources but did not respond. The program

director was contacted via email a second time to contact previous DBT therapists via Human

Resources and did not respond. The tenth and eleventh therapists are DBT therapists of the DBT

youth program. They were recruited through snowball sampling via email. They did not respond.

It was later decided that their program was too different from the standard DBT program

protocol and thus were not further pursued for interview. In total, 11 individuals were contacted

to participate, 5 consented, and 4 interviews were conducted. Nine out of eleven individuals were

eligible to participate (due to the DBT youth program), and it is not known if the tenth and

eleventh therapists received the letter asking for their participation. Given that it was later

decided that the tenth and eleventh therapists were not suitable for this study this study would

have a 44% consent rate.

TABLE 1: Therapist Participation

Therapists	1st Contact round	1st Contact Snowball Sampling	2nd Contact round	3rd Contact round	Subsequent Contact round	TOTAL
Interviewee 1	Consented in-person		Participated			
Interviewee 2	Consented in-person		Participated			
Interviewee 3	Consented in-person	Did not respond	Did not respond			4

Therapists	1st Contact round	1st Contact Snowball Sampling	2nd Contact round	3rd Contact round	Subsequent Contact round	TOTAL
Interviewee 4			Email - did not respond			Therapists participated in the study
Interviewee 5	Did not respond		Participated-Consented via email			
Interviewee 6	Consented in-person		Participated			
Interviewee 7	Did not respond		Did not respond	Did not respond	Total of 5 emails sent - Did not respond	
Interviewee 8	Contacted via mailed letter – Did not respond		Contacted the Program Director about sending out another letter – Program Director did not respond	Previous DBT therapists at Ontario Shores originally contacted via letter by Human Resources – no ability to follow-up		
Interviewee 9	Contacted via mailed letter – Did not respond					
Interviewee 10		Email - Did not respond		Chose not to include in study due to differences in program implementation and target population of their program		
Interviewee 11		Email -Did not respond				
TOTAL:	**7** potential therapists were successfully contacted					**44%** consent rate

4.6 The interview guide

The interview guide (See **APPENDIX I**) was developed using a phenomenological approach. A

phenomenological approach was most suitable because it seeks to understand how people

experienced the phenomena under study. Phenomenology is predicated on the belief that each

person has a unique view of the world and that each person's social reality is valid and true

(Jackson & Gillis, 2003). This approach is appropriate for examining the fidelity-adaptation

relationship during implementation because it can offer insight into how implementers view this

relationship, what their struggles may be during implementation and why implementers make the decision to adhere or modify the DBT program model.

Consistent with the literature, this guide was developed through borrowing ideas and concepts from the literature and informal conversations with stakeholders (Ontario Centre of Excellence for Child and Youth Mental Health, 2013). Interview questions were generated following discussions with the program developer and the Vice President of Professional Practice and Research (both of whom were not interviewed as part of the data collection for this study) to ensure that the knowledge garnered from this study would be valuable to them. They informed the researcher that they would like to better understand the issues around DBT implementation (i.e. barriers and facilitators), the nuances of DBT implementation for the purposes of training DBT therapists and how to better implement the DBT intervention to increase its' positive impact for clients (i.e. how the program may be modified to meet the unique needs of clients). After these discussions, their ideas were catalogued around the following categories: program implementation, fidelity and adaptation, and the potential 'moderators' from the Conceptual Framework for Implementation Fidelity (CFIF) generated from the work of Caroll et al. (2007). Please refer to **APPENDIX D** for a description of framework elements and how each element was defined for the present study. Interview questions were then generated from a review of the literature on DBT. After the initial interview guide was developed, it was examined by the thesis supervisor. The purpose of this step is to identify poorly worded questions, or questions revealing the researchers' own biases, personal values, or blind spots (Berg, 2001). This also ensured that the interview questions would add new and innovative knowledge to the field of program implementation and evaluation. The thesis supervisor also helped to modify and focus

questions to better link them to the research questions.

Listed below are a few examples of interview questions generated for this study:

Interview questions directed at a CFIF moderator, therapist values (i.e. the implementers enthusiasm when implementing the program) were generated from a systematic review conducted by Chaudoir et al. (2013) of structural, organizational, provider, client and innovation level measures affecting implementation.

Example of interview questions:

- Do you feel respected by your colleagues? If so, why?

- Do you feel respected by your clients? If so, why?

- Do you feel confident implementing the DBT program? If so, why?

This systematic review also helped to shape questions related to individual client characteristics. To distinguish heterogeneity of client outcomes, therapists were asked about the patterns that they might have observed in client outcomes.

Example of interview questions:

- In your experience if you had a client that have an improvement in outcomes over the course of the program would you modify your treatment? If so, in what ways?

- Did you adapt the DBT program for clients who were not experiencing an improvement in program outcomes? If so, did you share with your colleagues the adaptation you made, so that they may use it?

Interview questions about therapist practice preferences/philosophy were generated from a study, which in part interviewed 27 therapists to determine how and why they modified a cognitive behavioural therapy (Stirman et. al, 2013).

Examples of interview questions:

- Have you had to implement the DBT program despite your own conflicting philosophical views or values? If so, please provide an example.

- Do you feel that your implementation of the DBT program differed from your colleagues? If so, in what ways does your implementation of the DBT differ from that of your colleagues' implementation?

Interview questions pertaining to organizational and programmatic factors that may facilitate or impede implementation were drawn from an evaluation study that examined adaptations in relation to the CFIF at the organizational/programmatic level (Schwarz et al., 2013) and from the work of Swales et al. (2012), which examined DBT program survival in health care settings:

Example of interview questions:

- In your experience what organizational factors facilitated the implementation of the program (i.e. support staff, facilities, DBT training courses, access to DBT training and implementation materials)?

- In your experience what programmatic factors were barriers to the implementation of the program (i.e. Not all DBT program components could be implemented, technical components of the DBT program components are unclear, program components are not technically sound, original DBT program did not suit your client population)?

To better formulate questions related to the influence of adaptations and fidelity from the implementer's perspective interview questions were generated from Hasson et al. (2012) as well as the additional file #2 for a sample of their interview questions. These authors also applied the CFIF to determine fidelity and moderating factors of a CHI. The work of Bishop et al. (2014) was also used to formulate these questions.

Example interview question:

- In your experience do you think adaptation is important to the DBT program? If so or not, why?

- In your experience, do you think that it is possible to balance both fidelity and adaptation during implementation?

To better integrate the above questions in the context of the DBT program, DBT literature was reviewed. For example, work from Ditty et al. (2015), Soler et al. (2005) and Swales et al. (2012) were used to better formulate questions surrounding how organizational/programmatic factors may influence DBT implementation.

Example interview questions:

- In your own words, can you describe what a comprehensive DBT program entails?

- Do you currently monitor fidelity of the DBT program? If so, how do you measure it?

Interview questions related to the influence of unintended consequences, and positive and negative side effects were drawn from Dusenbury et al., 2004; Dusenbury et al., 2005; Glasglow et al., 2003; Hansen et al., 2012; and Moore et al., 2013.

Example interview questions:

- In your opinion, is there a point at which modifying the program would be detrimental to program success?

In an effort to provide conceptual clarity to implementation fidelity and provide knowledge to help further disentangle the relationship between fidelity and adaptation, we applied the CFIF (See Chapter 4) to guide the analysis (see Fig. 4). Specifically, the descriptions captured through the phenomenological approach and the potential 'moderators' in the CFIF were used to help organize and catalogue the descriptions. For the individual category in the expanded CFIF model we focused on the potential 'moderator': therapist values (i.e. therapist engagement) and the concepts of fidelity and adaptation (see **Table 2** for the List of Categories). For the programmatic/organizational and /therapist implementers perspectives in the expanded CFIF model descriptions captured through the phenomenological approach were categorized according to the potential 'moderators': intervention complexity, participant responsiveness, quality of delivery, and context in the CFIF and the concepts of fidelity and adaptation (see **Table 3** for a List of categories). These elements were also used to identify themes in our qualitative work.

TABLE 2: List of categories from which themes will be derived using the individual client category of factors influencing fidelity, the potential 'moderators' presented in the CFIF and the concepts of fidelity and adaptation.

CATEGORY INFLUENCING FIDELITY (Expanded CFIF framework)
Individual client
THE CONCEPTUAL FRAMEWORK FOR IMPLEMENTATION FIDELITY: Potential 'moderators' Influencing Fidelity
Therapist Values
CONCEPT: FIDELITY (ADHERENCE)

CONCEPT: ADAPTATION

TABLE 3: List of categories from which themes will be derived using the programmatic/organizational and program implementer/therapist perspectives categories of factors influencing fidelity, the potential 'moderators' presented in the CFIF and the additional concepts of fidelity and adaptation.

CATEGORY INFLUENCING FIDELITY (Expanded CFIF framework)
Programmatic Category (Facilitators)
Programmatic Category (Barriers)
Organizational Category (Facilitators)
Organizational Category (Barriers)
Program Implementer/Therapist Perspectives (Facilitators)
Program Implementer/Therapist Perspectives (Barriers)
THE CONCEPTUAL FRAMEWORK FOR IMPLEMENTATION FIDELITY: Potential 'moderators' Influencing Fidelity
Intervention Complexity
Therapist Values
Quality of delivery
Context
CONCEPT: FIDELITY (ADHERENCE)
CONCEPT: ADAPTATION
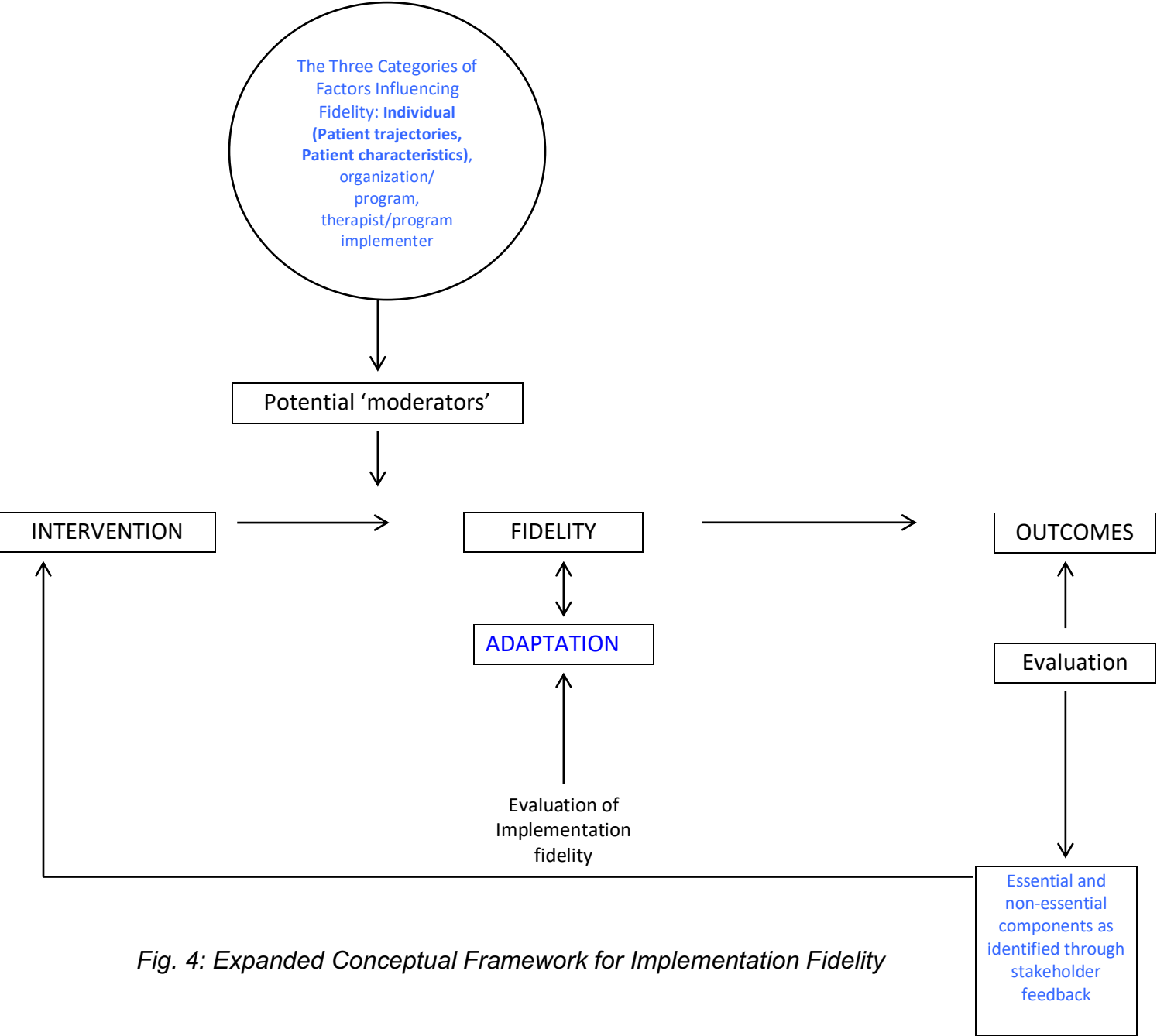
Fig. 4: Expanded Conceptual Framework for Implementation Fidelity

4.7 Data Analysis

Content analysis was used to analyze the data collected from the semi-structured interviews with program implementers. Content analysis is the "systematic examination of written or recorded communication in order to break down, identify, and analyze the presence or relations of words,

word sense, characters, sentences, concepts, or common themes" (Hsieh & Shannon, 2005; Ryan & Bernard, 2000). The ideal purpose of content analysis is to gain insight into a focused research problem or topic and the researcher to recognize patterns that you might miss using other methods and can be used to identify the communication trends of the target population (Hsieh & Shannon, 2005). Directed content analysis was used because it is preferable to conventional content analysis when prior research on the phenomena under study exists, but additional research is needed to conceptually extend or validate existing theoretical frameworks (Hsieh & Shannon, 2005). Traditionally, conventional content analysis is best suited for areas with little prior research where the approach to theme development is guided solely by the transcripts (Creswell, 2009). The main strength of the directed content analysis method is that existing theory can be tested and revised (Hsieh & Shannon, 2005). However, some challenges include the tendency for a strong bias in which researchers find evidence that is supportive rather than nonsupportive of a theory and an overemphasis on theory in which researchers are blinded to contextual aspects of the phenomenon (Hsieh & Shannon, 2005). To mitigate the likelihood of bias Hsieh & Shannon (2005), suggest that existing theory or prior research should be used to identify key concepts or variables as initial coding categories. Thus, in an effort to mediate this bias we employed the CFIF to categorize the themes from our qualitative findings.

Data analysis for the present study followed the structured approach outlined by Zhang & Wildemuth (2005). For directed content analysis, the authors recommend that once the data has been transcribed, the unit of analysis must be determined. For the current study the unit of analysis were the themes that emerged from the data. Next, in the case of deductive coding of categories, categories must be developed from existing theory or model. For this study the potential 'moderators' of the CFIF (quality of delivery, and participant responsiveness) and the

expanded category (the individual) and the concepts of adaptation and fidelity were used to categorize the themes. Once the data is coded it must be tested. Zhang & Wildemuth (2005) suggest that to determine the clarity and consistency of the developed categories a sample of the coded data should be tested by another researcher. It is at this time that doubts and problems concerning the definitions of categories, coding rules, or categorization of specific cases should be discusses and resolved (Zhang & Wildemuth, 2005). After all data is coded it must be assessed for coding consistency. These means the entire data set must be rechecked to check for coding mistakes, to determine if new codes have emerged, and to ensure that coding category definitions have not been altered over time (Zhang & Wildemuth, 2005). Consistent with the directed content analysis approach outlined by Zhang & Wildemuth (2005), the following 4 steps were implemented during this analysis:

1) First, based on the potential 'moderators' of the CFIF and the individual category and the concepts of fidelity and adaptation the researcher developed a preliminary coding scheme (see **APPENDIX J**).

2) The transcripts were read multiple times to ensure a thorough understanding and were coded using the preliminary coding scheme. The interview questions developed for this study were generated directly from the definitions of the potential 'moderators' and the categories of factors. Therefore, there were very few incidents where text was unable to be coded.

3) Early in the process the coding scheme was tested by the thesis supervisor who read through the preliminary coding scheme and one transcript. Coding schemes challenges were discussed and the coding scheme was revised.

4) Interviews were re-analyzed using the revised coding scheme. This iterative process was

repeated five times. The analyses of the data ended when no new content was identified (Burns et al., 2008). All original codes were maintained during the iterative process and no new codes were developed.

4.8 Validation of qualitative findings

For the present study, the data derived from the interview process were validated through the use of member checking. Transparency and accountability of quantitative data will also be discussed.

4.9 Member checking

Member checking is primarily used to validate findings from qualitative research and seeks to improve the accuracy, credibility and validity of what was recorded during an interview (Creswell 2007; Harper & Cole, 2012). Member checking is the last step of data analysis required for phenomenology. This reduces the likelihood of incorrect interpretation of the data, with the overall goal of providing findings that are authentic and reflect the participants' experience and views (Creswell, 2007). For the present study, member checking was completed during the interview process, at which time the researcher restated or summarized the information and then questioned the participant to determine accuracy. The therapists either agreed or disagreed that the summaries reflected their views, feelings, and experiences. The study is said to have credibility because all therapists affirmed the accuracy and completeness of their statements (Creswell 2007; Harper & Cole, 2012).

4.10 Validation of the interview guide

The interview guide was validated for face validity by two experienced DBT therapists not

involved in the study to assess how effective the interview questions will be and whether the information that is obtained is what is actually sought (Berg, 2001). Interview guides were emailed to therapists and interviews related to the validity of the guide were conducted via telephone. The interview guide was revised after each review. The last revision of the interview guide was the version that was used to conduct the interviews for the present study.

4.11 Transparency and accountability of qualitative data

Audit trails are used to ensure the transparency and accountability of qualitative data analyses and to test for reliability (dependability) of the data (Hsieh and Shannon, 2005). This is a process in which the researcher does an audit of the research process documenting all the raw data generated as well as the methods and sources of data generation and analysis decisions (Jackson & Gillis, 2003). This measure limits the influence of the researcher's biases and subjectivity, and provides a chain of evidence to confirm the decisions made in the study (Jackson & Gillis, 2003). For the present study, all interviews were recorded and transcribed, and reviewed by the thesis supervisor. To improve the transparency of this process, a coding audit table is provided identifying the categories of analysis, code definitions, and examples of pertinent quotes. See **APPENDIX J** for Code Definitions.

CHAPTER 5
Results

This chapter will describe the results of the quantitative methods followed by the qualitative methods. For the qualitative methods, results of the individual category will be discussed first, followed by the results of the programmatic/organizational and program implementer/therapist perspectives.

5.0 Quantitative Results

5.1 Characterizing the study population, adherence, participation and patient scores:

The sample consisted of 89 females and 10 males with a mean age 34 years (range 19-61y). The largest proportion of the sample was: single (56%) and has some college or university training (26%) and received social assistance (48%) (see Table 4 for baseline demographic characteristics). The mean number of individual and group therapy sessions was M=35 and M=38, respectively (see Table 5 for participation and treatment characteristics; see Figure 7 for histograms of participation for individual and group sessions). The large standard deviation observed for each session type (individual sessions SD: 28.45; group sessions SD:100.42) demonstrates a wide spread between the number of sessions attended by clients. Quartile ranges indicated that the largest proportion of client attendance were those that attended therapy sessions (3rd quartile - individual sessions: 41%; group sessions: 43%). The median revealed the second largest proportion of sessions attended (individual sessions: 25%; group sessions: 32%). As indicated in an informal post-study interview with a therapist at OS the observed variability in LOS is common among the DBT population for several reasons as many experience crises or are having a reduced response to therapy which may reduce program attendance.

TABLE 4: Baseline Demographic Characteristics

Variable	
Age	
mean (SD), y	34 (11.17)
Gender %	
Male	10
Female	89
Marital status %	
Unknown	3
Single	56
Divorced/separated	17
Married/in a relationship	24
Education %	
Unknown	22
Did not complete high school	13
High school	9
Some college or university	26
Completed college/University/Technical trade	24
Completed graduate studies	4
Source of income %	
Unknown	31
Social assistance	48
Dependent on family	9
Employed	12

TABLE 5: Treatment dropout and adherence

Variable	
Participation	
DBT individual therapy sessions, mean (SD)	35 (28.45)
DBT group therapy sessions, mean (SD)	38 (100.42)
DBT 24-hour phone coaching	.81 (3.8)
% adherence	
DBT individual sessions	67%
DBT group therapy sessions	73%
Quartiles: Individual sessions	
1st (25%)	8
Median (50%)	25
3rd (75%)	41
Quartiles: Group sessions	

1ˢᵗ (25%)	17.75
Median (50%)	32
3ʳᵈ (75%)	43

Figure 5: Histograms of LOS for individual and group therapy session attendance (count) by subject.
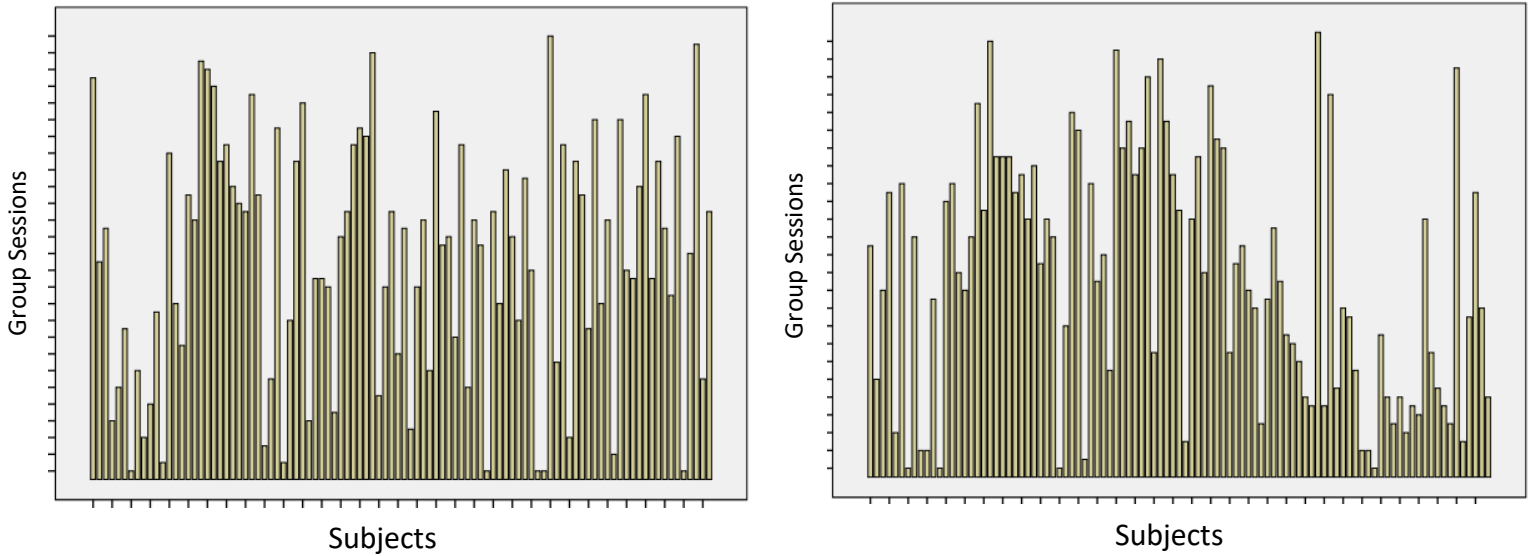
Table 6: Descriptives of client outcomes at each time period (pretreatment, 3, 6, and 12 months)

Variable	N	Range	Mean	Std. Deviation
DBT Ways of Coping Checklist				
Pretreatment	81	3	2.07	.47
3 months	67	2	1.96	.48
6 months	65	4	1.78	.65
12 months	57	3	1.51	.66
Borderline Symptom List				
Pretreatment	81	3	1.42	.63
3 months	67	2	1.70	.58
6 months	65	2	1.92	.54
12 months	57	2	2.00	.59
Quality of Life				
Pretreatment	81	5	23.80	13.28
3 months	66	6	25.56	11.62
6 months	66	1	32.39	16.33
12 months	57	0	35.63	15.12
Global Severity Index				

61

Pretreatment	70	34	61.27	8.64
3 months	65	44	57.23	9.39
6 months	65	50	52.52	10.10
12 months	57	39	48.26	9.86
Zanarini Rating Scale for BPD				
Pretreatment	74	24	17.20	5.01
3 months	64	23	14.63	4.81
6 months	69	26	12.52	5.48
12 months	59	22	9.48	8.64

Descriptives of client outcomes over time periods (Table 6) indicates an improvement in client

scores across all measures as indicated by a reduction in scores over time. Box plots were used to

explore variance in patient scores over the study period (see Figure 7). A mean improvement in

client outcomes can be observed over the study period. A wide variance in scores (between

minimum and maximum scores) can also be observed at each time period. The variance in client

scores at each time point may suggest the prevalence of subpopulations within the sample,

possibly indicating a heterogeneous sample.

FIGURE 6: Box plots depicting each outcome measure over the study period (pretreatment, 3, 6 and 12 months). Unfilled circles represent suspected outliers and filled circles represent outliers.
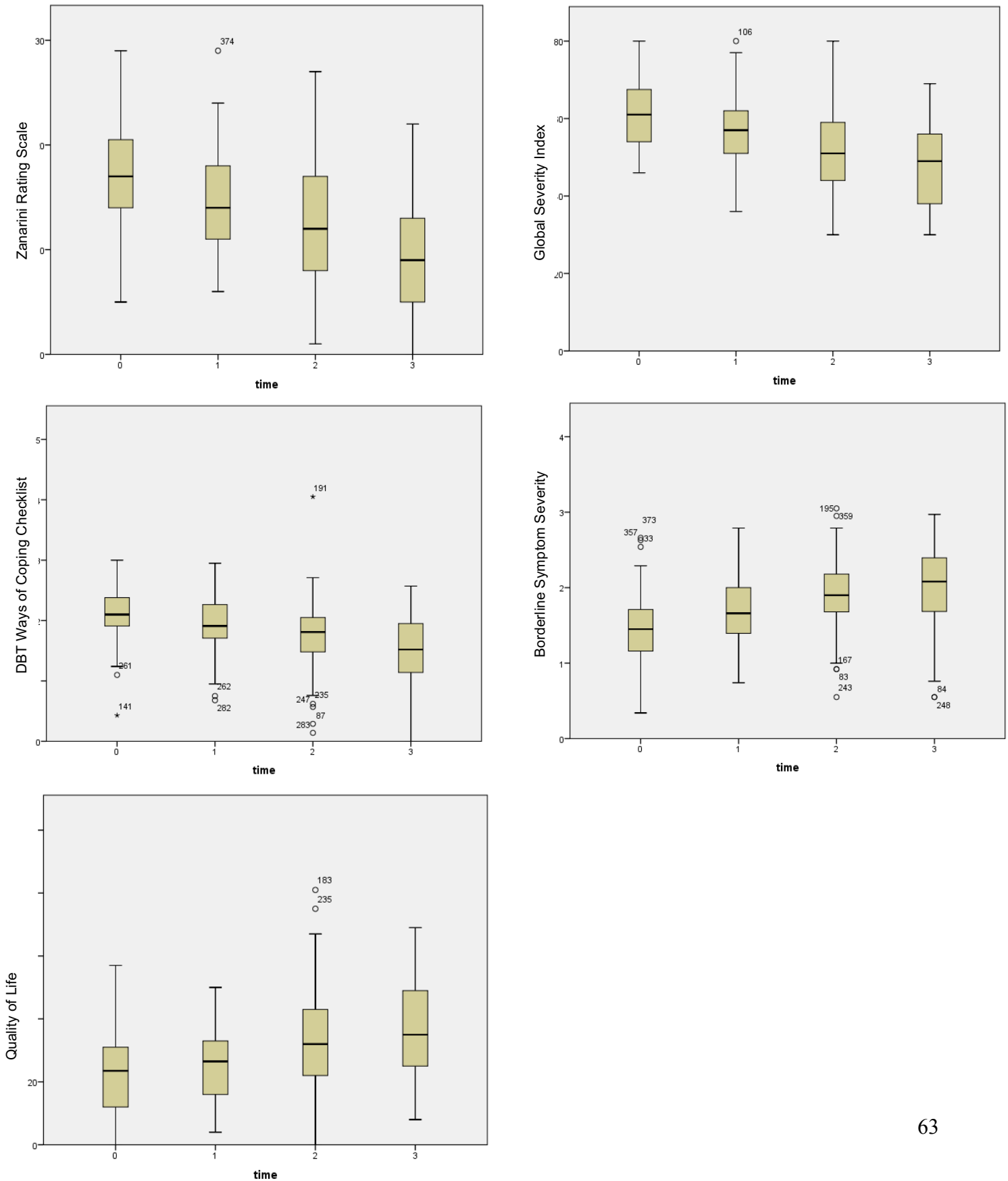
Paired samples test was conducted to explore the mean differences in client outcomes from pretreatment to post-treatment (12 months). Results of the paired samples test indicated a significant difference between pre and post treatment scores: DBT ways of coping checklist (M=.635, SD=.658), t=-5.76 (51), p=.00; Borderline symptom list (M=.558, SD=.698), t=6.96 (51), p=.00; Quality of life (M= -13.77, SD=15.83), t=6.96 (50), p=.00; Global severity index (M=11.91, SD=11.10), t=6.97 (41), p=.00; and Zanarini Rating Scale for BDP (M=7.89, SD=6.86), t=7.80 (51), p=.00. Comparison of outcome measures between each time period indicated significance for only a few outcome measures. This is different from our previous analysis which demonstrated significance across all outcomes measures in pre-post analysis. This may indicate that individual responses to treatment are not linear as suggested through analysis of group means in pre/post analysis or may also suggest that the changes between pre and post measures are gradual. Results of the paired samples test between time points were as follows: pretreatment and 3 months indicated a significant difference only for Borderline symptom list (M=-.288, SD=.645), t=-3.43 (58), p=.01; between 3 and 6 months a significant difference only for Global Severity Index (M=4.71, SD=7.67), t=4.56 (54), p=.00 and Quality of life (M=-5.91, SD=14.67), t=-2.99 (55), p=.04; and between 6 and 12 months a significant difference was only found between Zanarini Rating Scale for BDP (M=3.79, SD=6.269), t=4.45 (53), p=0.01 and Global severity index (M=3.74, SD=8.85), t=3.02 (50), p=.04.

5.1.2 Exploring variance in participant outcomes:

For the HLM approach, we used a two-step procedure: first, the covariance structure was fitted

using restricted likelihood and second the fixed model was refined using 2 log likelihood[4] (2LL) (Verbeke & Molen- berghs, 1997). To examine variance of client outcomes over the one-year period, random intercepts and slopes were evaluated by entering subjects into the model as random effects. We modeled the data with random slopes and intercepts to better reflect the likelihood of differences in client baseline scores and heterogeneity of outcomes across time (Field, 2013). Gender, age, education, marital status and income were entered as fixed effects as it was assumed that their effects on outcomes would be fixed across individuals (Snijders, 2005). Model fit was determined by comparing parameter estimates and 2LL between random and fixed models. For all models, model fit was improved when slopes were random (i.e. parameter estimates, 2LL and degrees of freedom decreased for random models). Patients scores were significant for each outcome measure: Zanarini Rating Scale f 16.88 (88.38), p=0.00, variance of slopes 8.99; Global Severity Index f 85.29 (94.70), p=0.00, variance of slopes 42.65; Quality of Life f 8.06 (72.86), p=0.01, variance of slopes 63.04; Borderline Symptom List f 17.52 (87.34), p=0.00, variance of slopes 0.058; DBT Ways of Coping Checklist f 53.28 (79.50), p=0.00, variance of slopes 0.070. Results of slopes and intercepts of patient scores varying significantly across time, suggests that subjects entered the program with variable levels of severity/baseline characteristics and had a heterogeneous response to treatment during the study period.

5.1.3 Exploring variance in subject trajectories:

Spaghetti plots were used to illustrate client heterogeneity of trajectories for each outcome measure (See Figure 7 for graphical depictions below). Since these plots were implemented to illustrate heterogeneity of trajectory scores, a random sample of 20% was used for simplicity

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[4] 2LL is an indicator of how much unexplained variance there is after the model has been fitted (National Centre for Research Methods, 2011)

(n=23). Graphical depictions of group scores per outcome indicate a variance of outcomes

consistent with findings from our HLM. To illustrate heterogeneity of trajectories, graph 6

depicts the Quality of Life (QOL) outcome over the one-year period for each individual in the

smaller random sample. We can observe a variance in reported quality of life among individuals

over the one-year time period. For example, comparing panel 12 to panel 20 we observe that

individual 12 appears to have reported a reduction in quality of life compared to individual 20

who reported an improvement. We also observe that very few of the random sample had a linear

trajectory over the study period. In fact, it appears that almost half of individuals reported a

decrease in QOL despite reporting an improvement in QOL in the previous time period.

FIGURE 7: Spaghetti plots of scores for grouped individual trajectories for each outcome
measure (graphs 1-5); spaghetti plot of individual trajectories of score for Quality of Life
measure (graph 6)*. Time measured at pretreatment, 3, 6 and 12 months.

3)

Quality of Life

Time

4)

Global Severity Scale

Time

5)

Zanarini Rating Scale

Time

6)

QUALITY OF LIFE: Individual scores

Time

(* 20% random sample)
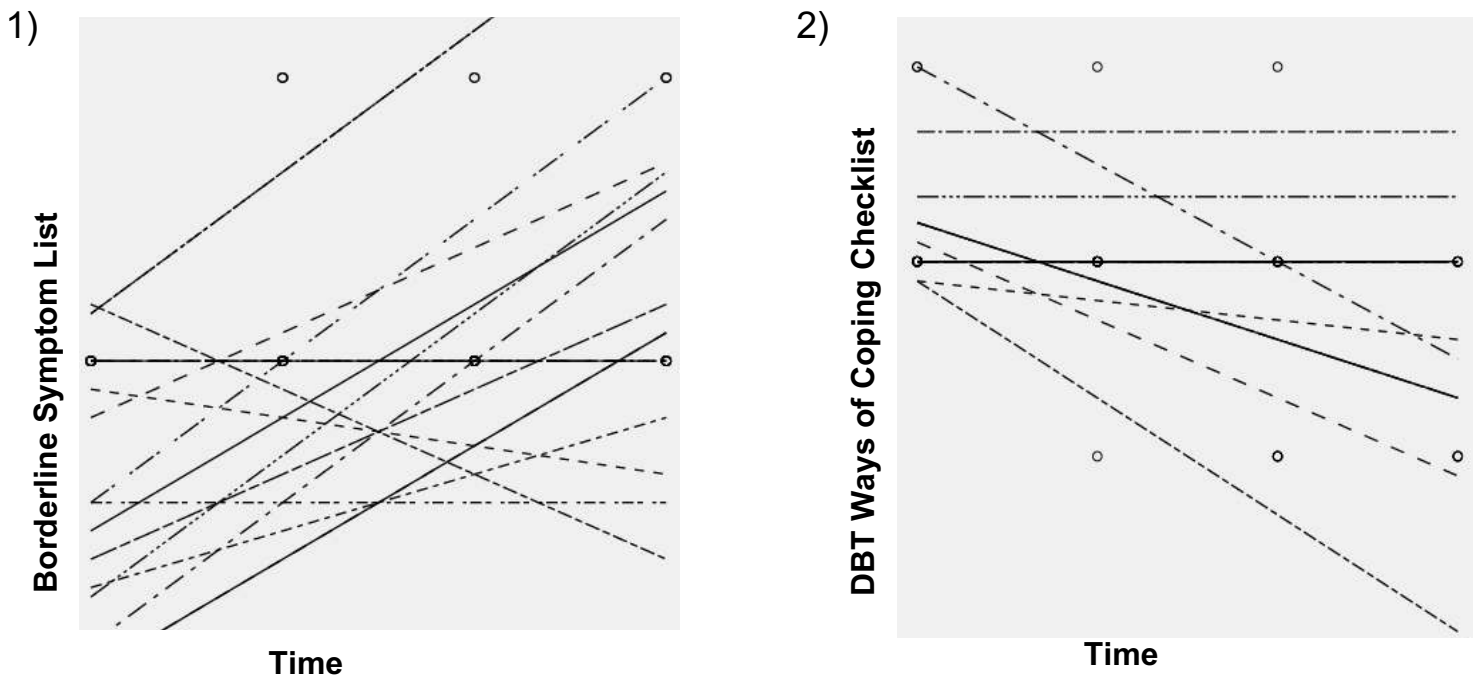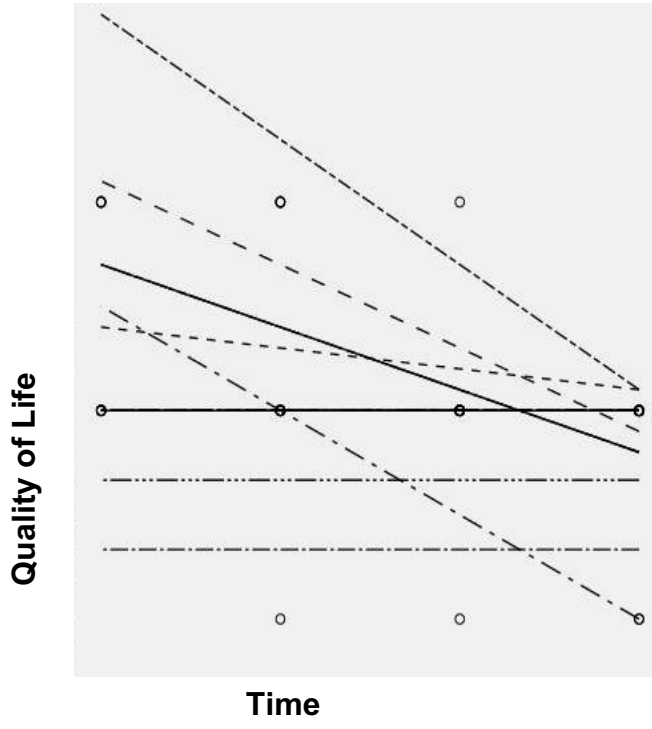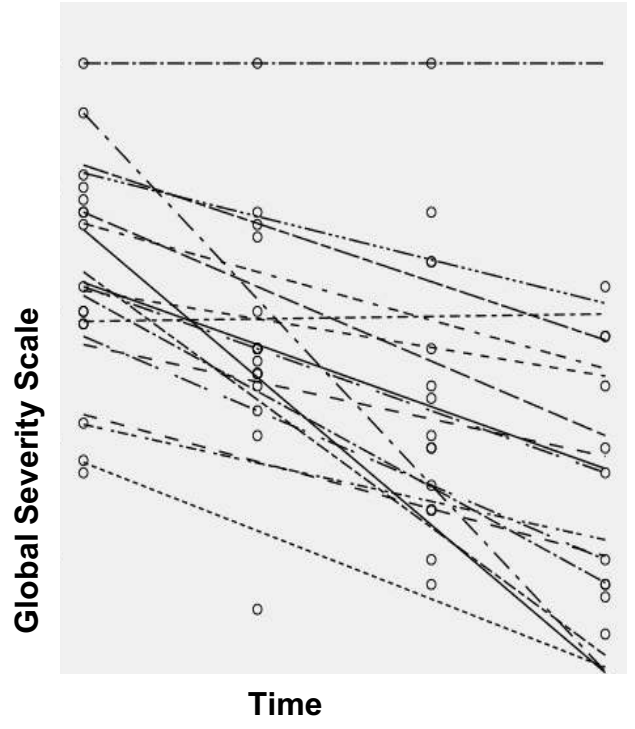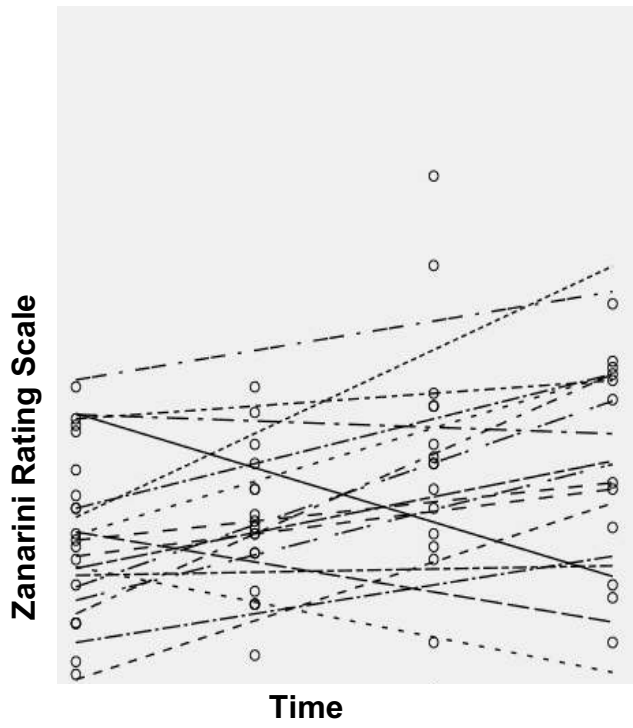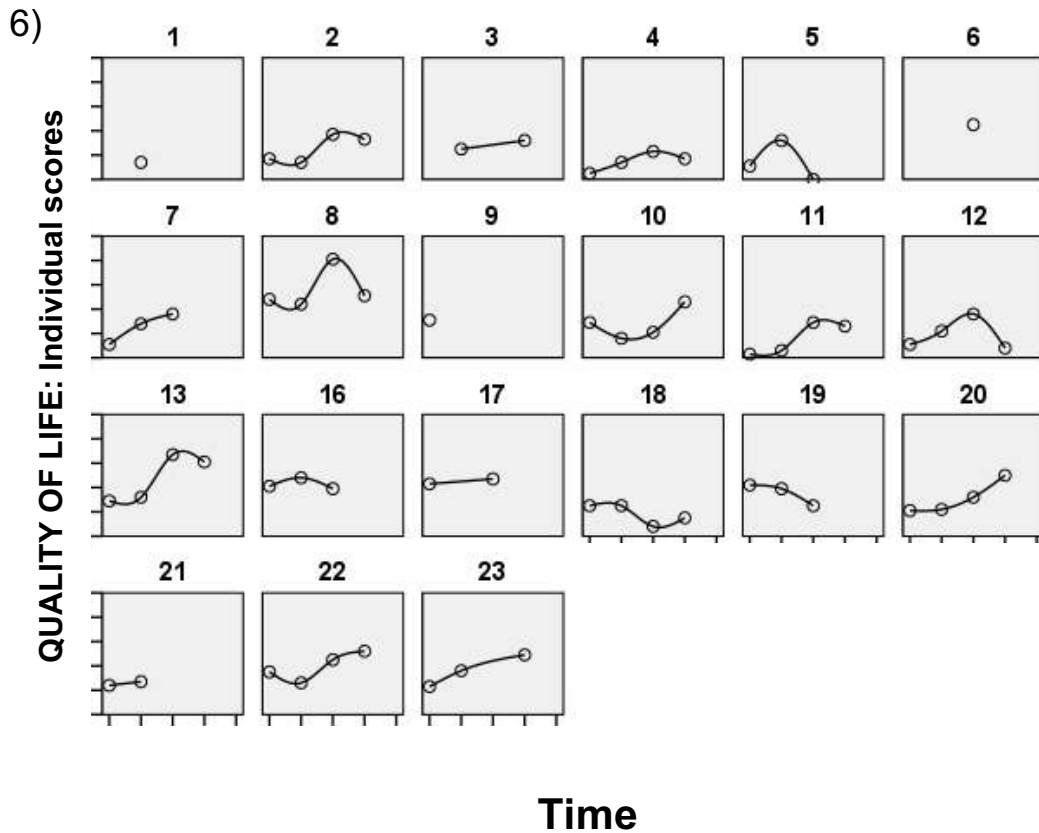
5.1.4 Summary of results

Results of our analysis yielded the following key findings:

1) There was a wide variance in LOS.

2) Estimated group means and multivariate analysis indicate program outcomes consistent with improvement over the study period. However, differences among mean scores between each follow-up period suggest a variability in treatment response among clients.

3) Examination of patient scores over the one-year period suggest heterogeneous outcome trajectories.

The above findings highlight the possibility of heterogeneous trajectories in our sample and that focusing only the analyses on group means may miss heterogeneous longitudinal patterns.

5.2 Qualitative Results

The following summarizes the characteristics of participating therapists. Therapists had 3-6 years of experience with implementing DBT. Three therapists did not implement DBT prior to working at the organization. One therapist practiced an informal model of DBT prior to working at the BPSP Clinic. Three therapists have not held management positions at BPSR Clinic. One therapist held a management position as Team Lead. All therapists reported learning how to implement the DBT program while working at the organization and all participated in DBT training offered by the organization. Presently none of the therapists are officially certified as per the Linehan Board but they are working on having the Team Lead certified over the next year as well as two other implementers. In December 2015, the organization paid for the therapists to take a 5-Day Booster Training course through Behavior Tech (the official DBT certification board). As a result, 3 of the 4 therapists currently have standard training. All therapists have also independently continued their DBT training through DBT classes and on-line training. On-line forums are also used as a means to validate adherence of individual therapeutic techniques.

Drawing on the categories of factors influencing fidelity, the individual client category and the potential 'moderators' presented in the CFIF: quality of delivery and therapist values, this section describes the themes that emerged from the analysis of semi-structured interviews. This section will begin with discussion around the mechanisms that we believe guide decisions to adhere or modify the program and briefly describe the DBT principles. In the last half of this section we will discuss the derived themes from the individual category of factors and the potential 'moderators' from the CFIF. Please refer to Table 7 for a review of code descriptions for mechanisms and categories. For results of the interview recruiting process, therapist and

interview characteristics please refer to **APPENDIX H**.

TABLE 7: Code descriptions of mechanisms and categories

Mechanism: DBT Principles
DBT principles: basis for the DBT belief system which produces desired DBT program results.
Mechanism: Personal Principles
Moral principles: basis for a belief system to do what is intrinsically right, based on one's own experience, values and morals to produce desired DBT program results.
Fidelity
Fidelity: include quotes which refer to the degree to which a program was delivered as intended, the extent to which the implemented program reflects theoretical methods and strategies and the completeness to which program components are delivered and the extent to which the program reached its target population.
Adaptation
Adaptation: include quotes which refer to the deliberate or unintentional modification of a program through: 1) deletions or additions (i.e., enhancements) to program components (e.g., to content, materials, activities); 2) modifications to the nature of the components; or 3) changes in the administration or intensity (i.e., amount or duration) of program components, this may also include quotes which refer to modifications that occur as a result of unforeseen circumstances or to preemptively address differences in program context.
The Three Categories of Factors Influencing Fidelity
Individual patient category: include quotes which refer to individual patient trajectories and characteristics such as changes in patient outcomes over time, the degree to which the patient has achieved the intended program outcomes, and indicating the relative success or failure of the original program protocol or quotes which provide evidence of differential patient needs. This will also include quotes which describe the characteristics of patients.
Programmatic category: include quotes which refer to the theoretical and technical soundness of program components and the perceived effectiveness of program components. *Barriers:* include quotes which refer to any challenges for the therapist that may impede implementation of the DBT program at the programmatic level. *Facilitators:* include quotes which refer to any experiences for the therapist that may improve implementation of the DBT program at the programmatic level. *Program implementer/therapist perspectives:* include quotes which refer to various therapist characteristics responsible for implementation and how they interact with the patient/client. This may include quotes which refer to practice preference, values, skill and experience of the program implementer/therapist.

Barriers: include quotes which refer to any challenges related to therapist characteristics, practice preference, values, skill and experience that may impede implementation of the DBT program at the program implementer level.
Facilitators: include quotes which refer to any challenges related to therapist characteristics, practice preference, values, skill and experience that may improve implementation of the DBT program at the program implementer level.
Organizational category: include quotes which refer to factors that are inconsistent to the original program model that impact program implementation, which are influenced by the organization, this also refer to factors that affect the context in which care is delivered such as its physical facility, organizational characteristics (i.e. size of organization, geographical location), staff training, and organizational constraints (i.e. resource or personnel constraints). *Barriers:* include quotes which refer to any challenges for the therapist that may impede implementation of the DBT program at the organizational level. *Facilitators:* include quotes which refer to any experiences for the therapist that may improve implementation of the DBT program at the organizational level.
Potential 'moderators' Influencing Fidelity in the CFIF Framework
Intervention complexity: include quotes which refer to DBT program comprehensiveness, details of the program, and nature of the program which may also include quotes which refer to DBT theory, program processes, social and organizational systems.
Context: Include quotes which refer to surrounding social systems such as the structure and/or culture of the clinic and the organization.
Therapist values: Include quotes which refer to implementer beliefs, attitudes and enthusiasm and values in accordance with the tenants/theoretical underpinnings of the DBT program. The may also include quotes which refer to the respectfulness one feels from colleagues and patients, and the confidence one feels when implementing the program. This is different from personal principles because therapist values are aligned with those of the DBT program whereas personal principles are based on what is inherently felt by therapists as the correct course of action.
Quality of delivery: Includes quotes which refer to the amount of time one receives to deliver treatment, to prepare for treatment, and monitoring and feedback about the program.

Table 8 catalogues the derived themes from the individual categories of factors and potential

'moderators' presented in the CFIF, the concepts of fidelity and adaptation and the overarching

mechanisms that we believe generate decisions to adhere or adapt the DBT program. Themes

more closely related to the study topic are denoted with an asterisk (*). For the remainder of this

section we will describe the mechanisms followed by the results of the content analysis for each category.

TABLE 8: Derived themes from the individual categories of factors and potential 'moderators' presented in the CFIF in relation to the hypothesized principle-generated mechanisms

Mechanism: DBT PRINCPLES PERSONAL PRINCIPLES	THREE CATEGORIES OF FACTORS INFLUENCING FIDELITY
	Individual Client
	Main theme: Individual DBT trajectories differ among clients.* 2nd theme: Individual characteristics differ among DBT clients.* 3rd theme: Individual clients require specialized care.*
	THE CONCEPTUAL FRAMEWORK FOR IMPLEMENTATION FIDELITY: POTENTIAL 'MODERATORS' INFLUENCING FIDELITY
	Therapist Values
	Main theme: The client-therapist relationship is important to successful implementation for individual clients.
	CONCEPT OF FIDELITY:
	Fidelity (adherence)
	Main theme: Expectation of a level of adherence for individual clients.* 2nd theme: DBT implementation requires an adherent model that can be applied with flexibility to meet individual client needs.*
	CONCEPT OF ADAPTATION:
	Adaptation
	Main theme: Different methods/procedures developed to improve patient-centered care.* 2nd theme: Nuanced adaptations may improve program fit for individual clients.* 3rd theme: Adaptations made to meet individual needs did not violate the DBT program model.*

5.3 Mechanisms

Analyses of the resultant themes identified two possible mechanisms which we believe generate decisions to adhere or adapt the DBT program: DBT principles (See Table 4) and implementer's personal principles. For the present study, mechanisms are defined as the drivers that initiate and guide decisions to adhere or adapt a program. In the context of this study, DBT principles are defined as the basis for the DBT belief system which produces desired DBT program results and personal principles are defined as basis for a belief system to do what is intrinsically right, based

on one's own experience, values and morals to produce desired DBT program results.

5.4 DBT Principles

The DBT principles (see Table 9) are drawn from the DBT program theory. The DBT program theory was generated through a culmination of biosocial theory, dialectical philosophy and behaviorism. Therapists employ the treatment principles ascribed from the DBT program theory within a highly structured treatment frame and structures the therapeutic process into stages, and within stages hierarchically to address client problems (Swales, 2009). For a description of the DBT program theory (including how the biosocial theory, dialectical philosophy and behaviorism work to implicitly inform DBT principles) please refer to **APPENDIX C**.

TABLE 9: Mechanisms of DBT Principles

DBT Principles
1) The primacy of the therapeutic relationship
2) A non-judgmental approach
3) Differentiating from effective and non-effective behaviours
4) Dialectical thinking

While these principles are meant to improve the efficacy of DBT implementation, the course of action taken by implementers to achieve improved program outcomes through these principles may vary. This will be discussed further in section 6.2.4.

Below are the results of the themes derived from the individual categories of factors identified in the therapist interviews. See Table 3 for a list of themes. Please refer to **APPENDIX K** for Deductive Coding Audit Table.

One theme that emerged from the individual category was that *individual DBT trajectories differ among clients.* A second theme that emerged was *individual characteristics differ among DBT clients* and a third theme that emerged was *individual clients require specialized care.* Therapists were asked if they had clients that did not have an improvement in program outcomes over the program duration. All therapists reported that their clients often had an improvement in program outcomes, but also had patients that did not follow this trajectory. For the individual category, it appears that therapists relied on DBT principles (and the DBT model) to determine individual progress through the program. For example, therapist 1 reported that she did not experience many clients that did not have improvement in program outcomes because if clients missed 4 or more sessions they were no longer eligible to participate in the program. Clients that did not perform as expected through the stages of DBT may be characterized as displaying non-effective behaviours such as non-commitment to the DBT program, thereby reducing program adherence. Therapist 2 explained that clients that did not have an improvement in program outcomes often suffered from comorbidities that interfered with treatment participation requiring, in her opinion, more time in the program. Despite the need for more program time, only 2 clients were granted extended participation by administrators during the program's history at the clinic. Therapist 4 provided some insight into why clients may not have experienced an improvement in program outcomes as she explained that it was often due to clients who were not prepared to commit to the program or those who found the treatment process too difficult to adhere too given the

emotional and mental distress often experienced by clients during treatment. Therapist 3

explained that their own internal analysis of client symptomology over a one-year period would

not reflect those clients that dropped out of the program. Similar to Therapist 4, in her experience

those patients that did not experience an improvement in program outcomes are often those for

which the timing of participation was not right for them or that lack of commitment was an issue.

> "DBT has a big belief in its not a one-size-fits-all and timing is a very important thing, timing, commitment. So, in that data wouldn't reflect people that haven't completed the program it would be interesting to look at all of the people that have dropped out to kind and see how that goes…."

5.5 Derived themes: Potential 'moderators' of the CFIF

Below are the results of the themes derived from the potential 'moderators' of the CFIF, therapist

values. Context, intervention complexity, quality of delivery and facilitation strategies are not

addressed. Context refers to organizational structure and/or culture, intervention complexity

refers to program comprehensiveness and clarity, quality of delivery refers to organizational

processes and facilitation strategies refer to access to training and implementation tools and thus

these 'moderators' were not applicable to the individual client category. Please refer to Table 2

for a review of code descriptions for mechanisms and categories and Table 3 for a list of themes.

Therapist values: For this potential 'moderator' the theme that emerged was that *therapists*

believe that the client-therapist relationship is important to successful implementation for

individual clients. Consistent with the first DBT principle, primacy of the therapeutic

relationship, all therapists reported that the quality of the therapist-client relationship was

integral to program success. Therapist 1 stated that the key to DBT implementation was having a

relationship with clients that fosters trust and that if she didn't have a quality relationship with clients she would be unable to implement the DBT program effectively. She reported that she spends a lot of time developing her relationship with clients in an effort to gain their trust and have them accept the program. Therapist 3 reported that the therapeutic relationship was essential for program effectiveness:

> "I pride myself on…I think DBT is most effective based on…the effectiveness is based on how strong your therapeutic rapport is on that foundation of respect. It has to be there… I try to be very genuine with clients and I think that I feel very blessed that they're putting their trust in me to share their deepest experiences and things that they're going through I'm…so it's really quite something to work with someone every week for one year. So it's all about that genuineness."

5.5.1 Derived themes: Concepts of fidelity and adaptation

Below are the results of the themes derived from the concepts of fidelity and adaptation. See Table 3 for a list of themes.

Fidelity: The theme that emerged from this category was that there was an *expectation of a level of adherence for individual clients.* A second theme that emerged was that *DBT implementation requires an adherent model that can be applied with flexibility to meet individual client needs.* Therapists were asked if they would modify the program for individual clients. All therapists reported that they would likely not modify the program outside of the DBT model per se but that there are instances in which they would modify the program for individual clients. For this concept, it appears that the DBT principle, differentiating from effective and non-effective behaviours, determined fidelity to the model for therapists. Therapist 2 explained that if she had a client that was not adhering to the program she would not alter any of the DBT variables but instead would employ more nuanced modifications by modifying the DBT rule that they were

having trouble adhering to. The example she provided was negotiating a reduced limit to the 24-hour rule which states that if a patient self-harms or is engaged in life-threatening behaviours they would have to wait 24-hours before contacting their therapist. The justification for this rule is to not reward dysfunctional behaviour. Therapist 2 explained that she might reduce this rule if a client is frequently engaging in these behaviours to ensure that they have access to treatment. It appears that the DBT model was designed with flexibility embedded into the program components that such modifications can be made without violating the theoretical underpinnings of the program. In another example, therapist 3 explained that the DBT program was designed with flexibility, which enables therapists to modify the program without conflicting with underlying DBT principles and theory:

> "It's become essential on our team that we've become well versed about the underlying principles of DBT so that we can flex according to what those individuals need because previously it was more cut and dry so if they couldn't come then that's it and then off we go. As we understand more about the program and the need to individualize things we've been able to advocate and say… So, we have two clients for example that we've been able to extend to two years. We standby that and not everybody will need that but if we put those people and compare them, the trajectory would still be going up but it would be going up much slower, change is much slower. And that's what we have found even people that have gone through it a couple of times they still got something from it and it made them more ready the next time they came through."

Adaptation: For the concept of adaptation the theme that emerged was that *different methods/procedures were developed to improve patient-centered care*. The secondary theme that emerged was that *nuanced adaptations may improve program fit for individual clients*. A third theme that emerged was that *adaptations made to meet individual needs did not violate the DBT program model*. It appears that program modifications related to tailoring the program to meet individual needs were often based on implementers' personal principles because in some cases these modifications may not fully comply with the DBT program model. However, the stated

intention of these adaptations was to improve program outcomes for clients as reported by

therapists. To some degree, all adaptations reported were not consistent with the DBT program

model or principles, however they were not outright violations of the program. In other words,

these adaptations did not conflict with the underlying principles of the DBT model however, they

were not explicitly included in the DBT program model. For example, therapist 1 reported that,

on occasion, she has booked both individual and group therapy sessions on one day if she felt

that coming to the clinic more than once a week was cumbersome for some clients:

> "…I think it speaks to ethics as well if people are coming from a far distance I will put
> their individual and group on the same day even though I know it's not ideal and you're
> supposed to have separate individual and separate group. If someone's on Ontario Works
> they can hardly make it gas wise to get here. So, I feel strongly not setting up... And
> unless they're on ODSP they have to pay for parking. That's formidable. Are they for an
> entire day going come here to…so those are the types of things that I feel strongly about
> but that I have to make it as easy to get people here. There's enough hoops that they've
> been jumping through all their lives they don't need to jump through that one..."

However, given the flexible nature of the DBT model it may be challenging to differentiate

between those adaptations that are consistent to the model and those that are made incongruent

or 'outside' of the model. Thus, categorizing therapists' actions as adaptations may be

challenging.

Therapist 2 reported recording voice memos for clients in lieu of 24-hour coaching. This is not

written in the DBT manual however, this adaptation is not inconsistent with the DBT principles.

Therapist 3 explained that for clients who had trouble reaching out for help, she would set a goal

for them to contact her X number of times to improve this skill. Again, while this is not

specifically written in the DBT manual, the therapist explained that it is a modification that was

not inconsistent with the tenants of helping to shape a clients' behaviour:

"One thing that we have changing over time is because they're our varying… various effectiveness with the way that we are applying the coaching right now some people feel, some clients don't like to use that method of asking for help or they've tried and pages haven't gotten through and that sort of thing, it's led me to shift a little bit and do more shaping towards using coaching. So, what I'll do is set a goal with the client in asking for help calling and we'll set a goal for per month is that they're going to page me X number of times over the next few weeks just to build up that skill. Or we will pre-schedule coaching sessions with the idea that over time is going to work towards them calling when they need it as opposed to… and I found that very effective… it's like an exposure to…"

This particular example demonstrates how a personal principle can improve program outcomes because the intention of this adaptation is to improve client adherence although not explicitly written into the DBT model or principles. Further, it appears that despite the flexibility embedded in the DBT model, therapists were still inclined to modify the program outside the parameters of the DBT model in an effort to meet individual client needs.

The following results describe the themes derived from the programmatic/organizational and program implementer perspectives of the expanded CFIF framework.

Table 10 catalogues the derived themes from the programmatic/organizational and program implementer perspectives categories of factors and potential 'moderators' presented in the CFIF: therapist values, quality of delivery, context, and intervention complexity, the concepts of fidelity and adaptation and the overarching mechanisms that we believe generate decisions to adhere or adapt the DBT program. Themes more closely related to the study topic are denoted with an asterisk (*). The remainder of this section will first describe the themes derived from the categories of factors followed by the themes derived from the potential 'moderators' of the CFIF and the concepts of adaptation and fidelity. Please refer to **APPENDIX L** for the deductive coding audit table.

TABLE 10: Derived themes from the programmatic/organizational and program implementer categories of factors and potential 'moderators' presented in the CFIF in relation to the hypothesized principle-generated mechanisms

Mechanism: DBT Principles Personal Principles	THREE CATEGORIES OF FACTORS INFLUENCING FIDELITY
	Programmatic Category
	Main theme (Facilitators): All DBT program components are clear and technically sound.*
	2nd theme: DBT program components are principled and theoretically driven. *
	Programmatic Category
	Main theme (Barriers): No programmatic issues were described by therapists as barriers for successful implementation. *
	Organizational Category
	Main theme (Facilitators): Organizational provision of limited DBT training. *
	2nd theme: Disconnect between the organization and DBT implementers about the value of DBT training. *
	Organizational Category
	Main theme (Barriers): Organizational funding constraints create ethical dilemma for program implementers. *
	Program Implementer/Therapist Perspectives
	Main theme (Facilitators): Therapists' personal growth facilitates program implementation. *
	2nd theme: Therapists' practice DBT principles in their own lives.
	3rd theme: Collaborative approach to therapy improves individual therapist knowledge
	Program Implementer/Therapist Perspectives
	Main theme (Barriers): Perceived skill level and experience may impede DBT program implementation. *
	2nd theme: Lack of training in human behaviour may impede DBT implementation. *
	THE CONCEPTUAL FRAMEWORK FOR IMPLEMENTATION FIDELITY: Potential 'moderators' Influencing Fidelity
	Intervention Complexity
	Main theme: Comprehensiveness of the DBT model is well-understood by therapists. *
	2nd theme: DBT is a multi-layered and complex program.
	Therapist Values
	Main theme: Respectfulness among colleagues.
	2nd theme: Camaraderie among DBT implementers is important for successful implementation.

	3rd theme: Therapists' are enthusiastic about the DBT program. *
	Quality of Delivery
	Main theme: Therapists employ various methods for monitoring fidelity. *
	2nd theme: Implementers view monitoring DBT processes as important for implementation. *
	Context
	Main theme: Frequent organizational changes impede implementation dynamics of the DBT program. *
	2nd theme: Program structure dictated by the organization and not shaped by the therapist limits therapists' ability to implement the DBT program with fidelity. *
	3rd theme: A culture of top-down decision making.
	CONCEPT: FIDELITY (ADHERENCE)
	Main theme: Adherence to the original program protocol improves likelihood of program effectiveness. *
	2nd theme: DBT therapists preferred fidelity to the DBT model. *
	CONCEPT: Organizational ADAPTATION
	Main theme: Organizational adaptations from the DBT model impedes program implementation. *
	2nd theme: Organizational adaptations are not consistent with DBT program theory. *
	3rd theme: Organizational adaptations are not reflective of therapists' treatment preferences. *

5.6 Programmatic/organizational category

Overall, therapists reported no barriers to implementation at the programmatic level as they

reported that the comprehensiveness and flexibility of the program model facilitated

implementation. For the organizational category, therapists reported weak facilitators. The

themes that emerged for organizational facilitators were *organizational provision of limited DBT*

training and a second theme identified was a *disconnect between the organization and DBT*

implementers about the value of DBT training. Continual training and personal development is a

key philosophy of DBT for improving and updating skills consistent with the DBT program

theory and principles. All therapists indicated to some degree that the DBT training provided by

the organization facilitated implementation. However, therapist 2 was the only therapist that was

enthusiastic about the level of training provided by the organization. She also reported that the

organization is interested in having therapists pursue DBT certification and pointed out that

financial constraints may impede the organization's ability to provide appropriate training.

Therapist 4 reported that the organization did provide some Mindfulness training and

consultation with Behaviour Tech (Linehans' certification organization), however, because it

wasn't in-depth training she did not find it helpful. Therapist 3 reported that the training was also

not useful because they were already learning on-the-job and the training came much later:

> "So eventually after a lot of advocating we did get online courses and some training but it was like on the job as we were doing it. So, it was kind of like reading the book, go do this but my training didn't come until the fall, but I started in January seeing clients so formal training didn't come until the following September…".

All therapists reported common organizational barriers to implementation such as limited facility

space, lack of administrative assistant and too many managers. Consistent with the

phenomenological approach, which seeks to understand the meaning of participants experience

and to arrive at a composite description that represents the overriding themes in the data, the

researcher focused on the theme that most closely represented the meaning of the experience for

implementers. Consequently, the most persistent theme for organizational barriers that

reoccurred throughout each interview was *organizational funding constraints create an ethical*

dilemma for program implementers. It appears that these constraints potentially created an

ethical dilemma for therapists because they appeared to be compromising the DBT principles

and potentially their own principles, thus in their view negatively impacting clients. For example,

as the therapists explain, group therapy, which is significant both in terms of its' impact on

clients and in time for preparation and implementation, does not receive government funding

under the current funding structure. This means that a large proportion of the work that is needed

for DBT implementation is not funded. In an effort to gain more funding the organization

implemented a policy that requires therapists to either 1) plan video coaching sessions in lieu of 24-phone coaching; and 2) plan for a 10-15 min face-to-face visit with clients before group therapy. This creates an ethical dilemma for therapists because first, phone coaching is not actually crisis counseling in that clients call their therapist to prevent a crisis. Thus, clients are forced to wait until an issue becomes critical. Second, planning a face-to-face visit with clients before group is sometimes not clinically relevant because either the therapist that is conducting the group therapy is not the clients' therapist or because this quick visit is not consistent with the goals of individual therapy sessions as per the DBT principles. Therapist 1 explains:

> "Well, we definitely need to the infrastructure. So that means the tools, that means that if this is what this organization has purchased then they need to follow it. For example, to increase our numbers we were asked to consider check-ins for clients that come to group and before and after group, which is not DBT. And some therapists don't want other people checking in with their clients because we can't possibly know, we know our own, but we don't know what other people are necessarily working on at that time and it would be a false sense in my opinion of… for numbers… Only because individual counts unfortunately group doesn't. Which makes no sense because that is the whole entire reason for DBT. Unfortunately, the LHINs do not recognize it. They don't get the same money here for a group as they as they do for individual. So, it's a false way of capturing that…".

The impression obtained after these interviews was that adaptations can be made to accommodate for the common organizational barriers identified by therapists (albeit not willingly by therapists), however, implementation barriers that created ethical dilemmas, in that they undermined both DBT and personal principles, seemed paramount to impeding implementation in comparison to these other barriers. Further, it appears that the limited ability by therapists to modify the program consistent with their practicing preference likely reduced the potential to balance fidelity-adaptation and thus appeared to impede implementation.

5.6.1 Program implementer perspectives category

From the program implementers perspectives, the themes that were derived from the facilitators to implementation were *therapists' personal growth facilitates program implementation* and the second theme that emerged was that *therapists' practice DBT principles in their own lives*. The themes that emerged for the barriers to implementation was that *perceived skill level and experience may impede DBT program implementation* and a secondary theme is a *lack of training in human behaviour may impede DBT implementation*. Overall, we found that therapists' ability to continually learn about the DBT program and adopt the principles in their own lives facilitated implementation because it improved their knowledge of how to creatively and flexibly implement the program to improve program fit over time. For example, therapist 4 explains that consistent with the DBT principles, which encourages therapists to practice DBT principles in their own lives, her exposure to DBT has made her more mindful in her personal life improving not only her personal life but her ability as a clinician:

> "Mindfulness is just being present in the moment, paying attention, being focused and doing things with intention, and I don't know if I've had that before so I can really see the importance of doing that in my everyday life. Even at home I find that I'm more mindful. I would say balancing acceptance and changes is another… I don't know that I've ever really look at things like that before.. trying to find the dialectic in things really has help me grow as an individual and a clinician and I find that I use most if not all of the skills in my everyday life. Using it with my kids and it's amazing what I'm like okay this is what I would normally do and maybe I would have done something that I would typically do and then I'm like what, what would I do if I was at work and then I do differently and I'm like okay that was much better. It really is easier to live and practice what we're preaching".

Therapists 1, 2 and 3 recognized the need for expert supervision and for continual personal growth. They stated various reasons such as the learning required about how to handle more challenging cases, the experience and expertise required for implementing a complex program such as DBT and the continual evolving of the DBT program. Therapist 1 describes how the DBT program is continually being updated:

> "I think that I'm getting more confident, I don't think this is ever anything that you ever arrive that one day and say 'wow I got it'. Because the beauty of this is that even the skills group in 1993 to the new printing that's changed. So, it's always being updated. It's not like DBT is a static thing that when you take it, it's like it's changing. Behavioral Tech website has changed so there're new concepts there's new information, there're new ways of looking at this."

Overall, it appears that the continual learning necessitated by the DBT program theory facilitated implementation by improving therapists' knowledge of how to creatively and flexibly implement the program to improve program fit. It seems likely that the implementation options provided through the flexibility of the DBT program model improved implementers capacity to balance fidelity and adaptation facilitating implementation.

One factor impeding implementation from the implementers' perspective was knowledge of how to employ a behavioural approach consistent with the DBT theory and principles to improve their therapeutic techniques. We found that most therapists were not trained in this manner and that this lack of training was an impediment to implementing a more effective program for clients. Therapist 2 is a behavioural therapist and she pointed out that when other team members, who do not have that training, employ behavioural techniques they are often more effective. For example, because therapist 1 is a social worker she feels that she lacks knowledge of human behavior and this lack of knowledge impedes her therapeutic ability:

> "… I'm not behavioral meaning that I, I am getting better. I wasn't trained behaviorally. So that's the piece that I still need to be very aware of in terms of contingencies and making sure that I am not reinforcing things that I shouldn't be reinforcing unconsciously. It's not that I mean to do that, it's just like, 'oh yes of course that would make sense'. So that's the piece that I really have to really work on make sure that I am, to make sure that I am doing this properly".

As reported by therapists it appears that cumulative knowledge and experience with the DBT program, and its' underlying theory and principles, facilitated implementation and implementers reported feeling ill-prepared about implementing the program if they were not able to obtain the

knowledge or experience that in their view would be helpful for improving their skills to implement the program.

5.7 The potential 'moderators' presented in the CFIF

Below are the results of the themes derived from the potential 'moderators' presented in the CFIF: intervention complexity, therapist values, quality of delivery, context, and facilitation strategies.

Intervention complexity: The main theme identified for this category was that *comprehensiveness of the DBT model is well understood by therapists*. A second theme that emerged is that *DBT is a multi-layered and complex program*. Therapists described the various interacting, complicated processes involved in implementing DBT which to an extent included engaging clients through a commitment phase, the co-ordination of individual and group sessions for clients, emphasizing the generalizing of DBT skills (which apparently is the most difficult to teach) and the complicated layers of DBT therapeutic technique and analyses required for treatment. Therapist 2 highlighted the complexities within the model and why adhering to the principles of DBT is so critical to implementation:

> "…so in terms of those four components it's about…well there is a number of certain procedures or structures laid out within DBT that it really is a principle driven therapy so I think that's a key piece in adherence and applying some of the protocol sent from the skills and from the CBT book for Marsha… but also then living those principles as a DBT therapist so making sure that are you are you doing all the components from like diary cards to chain analysis to solution analysis, missing link, validation, behavior change strategies layers, layers and layers of this that you almost have to fully integrate and live and not check okay I've validated hear … it's about living it and I think it's the other key component that I, that I understand it."

Overall, therapists reported a complex yet comprehensive program model which provided clear guidance of how to implement the DBT program. The theoretical and principle-based program

components appear to connect to one another in such a way that they when all are addressed, the components inform and enhance each other facilitating implementation. Thus, the adherence to program components appears critical to program success.

Therapist values: The main theme identified for this category was *respectfulness among colleagues*. A secondary theme identified was that *camaraderie among DBT implementers is important for successful implementation*. A third theme that emerged was that *therapists are enthusiastic about the DBT program*. It appears that therapist values facilitated successful implementation because therapists believed in the efficacy of the program and thus reported implementing the DBT program with passion for their clients. All therapists reported that their DBT team was important to implementation because it provided a venue for them to receive feedback on their treatment techniques, provided opportunities to discuss challenging cases and discuss their feelings. Therapist 3 explains that feels respected by colleagues which is demonstrated through the validating environment of the consultation team:

> "I don't know if I've always felt respected but I do at this point. There were times over the years where there wasn't as much of a common vision and I think right now it's quite a nice blend of all of the members. I can honestly say that they are passionate about this work and working with this population and that everybody gives 110% and that's such a difference being here. But why do I feel valued? I don't know. It's just how we talk to each other that feedback comes up in consultation team often. It's a very validating environment, it's very good at highlighting the things that they feel one might be doing well or contributing, we also kind of celebrate things so we have like a structure within our consultation team and we're not just talking about the more challenging cases but we talked about successes and wins and I think that's a big part in valuing and recognizing others."

Therapist 2 reported that she felt the respect she received from the consultation team was because her passion for the DBT program and her clients is clear to the team:

> "Well I think that if I look at my interactions and my experience with this team I think there is respect for the passion that I have for DBT and for the fact that I'm genuinely here for the right reason, but I have passion for the client because I do believe in DBT and because I'm willing and I want to do the work, I think in that regard yeah I would say that."

While we do acknowledge that an implementer's own paradigms, experience and relationship to the client are likely to shape their personal principles, it seems that there may be overlap between the DBT principles and their personal principles given the enthusiasm and believe for the DBT principles reported by therapists. It appears that to some extent DBT principles inform therapists' personal principles as therapists reported employing the principles of DBT in their daily lives as a testament to their conviction of the DBT principles.

Quality of delivery: The main theme identified was that *therapists employ various methods for monitoring fidelity*. A secondary theme is that *implementers view monitoring DBT processes as important for implementation*. Therapists were asked if they currently monitor fidelity both structurally (i.e. implementation of program components) and individually (i.e. therapeutic technique). Therapists reported monitoring fidelity weekly, monthly and yearly and employed a range of monitoring processes such as team consultation meetings to gauge each other's therapeutic technique, Linehan's fidelity checklist and other standardized checklists to monitor their own therapeutic techniques. Therapist 1 stated that they set yearly fidelity goals based on how closely they implemented the program over the last year in an effort to implement a more adherent model. While, all therapists agreed to some extent that their monitoring processes may not be consistent across therapists and over time, it appears that program monitoring facilitates implementation as therapists' report working towards improving fidelity to the model as a result of program monitoring.

Context: The main theme identified for this category was *frequent organizational changes impede implementation dynamics of the DBT program*. A second theme that emerged was that the *program structure dictated by the organization and not shaped by the therapist limits therapists' ability to implement the DBT program with fidelity*. Therapists were asked to describe any organizational changes that occurred over time that may have influenced their implementation of the program. They were also asked if this improved or impeded their ability to implement the program. To some extent all therapists reported different organizational changes all of which impeded their ability to implement the program. The impediments created by these frequent organizational changes impact implementation such that therapists reported that they were unable to adhere to the program model. These changes also seem to occur without therapist feedback and in the therapists' view result in adaptations that were not consistent with the program model or therapists' practicing preference. Therapist 1 explained that they have had 18 managers in 13 years. She explained that this rate of change made it difficult to implement the program consistently due to conflicting or competing interests of each manager. Therapist 2 stated that limited space causes privacy issues as video client coaching had to be implemented in an open cubicle setting. She also indicated that the use of pagers as the mode of contact between clients and therapists has impeded her effectiveness because pages often do not get through to therapists. Therapist 3 indicated that a change to their intake process meant that they could not refuse client referrals, even if clients did not qualify for the program. The problem with accepting referrals from psychiatrists is that some clients are referred despite not having BPD. However, therapists do not have the resources to complete a full clinical profile on each client to make a diagnosis themselves and thus have to rely on the referral. The therapist also indicated

that they've tried to advocate and educate administration about why obtaining a proper diagnosis would be important but the issue has not yet been resolved.

Fidelity: The theme derived from this category was that *adherence to the original program protocol improves likelihood of improved program outcomes.* A secondary theme that emerged was that *DBT therapists preferred fidelity to the model for gauging implementation success.* All therapists reported that fidelity to the model was their goal for the program as they explained that the only way to get the results demonstrated by Linehan was to implement an adherent program model. Therapist 4 explained why adherence to the program was critical and related adherence to program effectiveness:

> "We want to follow the program as close as possible so we get the results that are intended and, and for us all to be doing really good therapeutic work we know this model works and it is evidenced based for the population and clients…that we work with it to make sure that we're following that so that in-turn the clients are getting the best possible outcome and we're doing what we should be doing according to the model".

The enthusiasm and belief in an adherent program model espoused by therapists appears to indicate that therapists perceive fidelity to the model, and thus the DBT principles, as a facilitator to program implementation. However, therapists also reported that they have not yet been able to implement the DBT program with 100% fidelity during the history of the program at the clinic.

Adaptation: The main theme identified was *organizational adaptations from the DBT model impedes program implementation.* A second theme identified was that *organizational adaptations are not consistent with DBT program theory.* A third theme that emerged was that *organizational adaptations are not reflective of therapists' treatment preferences.* Therapists were asked if adaptations were important to implementing DBT, if in their experience they had

to balance both fidelity and adaptation and if there was a point in which modifying the program

was detrimental to program success. Similar to that which was described above, therapists

reported that adapting the model was not preferred but due to organizational constraints they've

had to balance fidelity and adaptation. For example, therapist 3 reported issues with pager use,

crisis response and offering a groups only program (without individual therapy):

> "It's hard for me to answer because we've never actually achieved full adherence to the model. So, there are limitations, for example the phone coaching is a big limitation not only because it's not 24-hours but it's being done currently with pagers which there are issues with the technology because often pages don't come through. It's not the most up-to-date current what therapists are using in 2017. Most are using cell phones. So, the issue is being able to reach… so as I've said we've had challenges with the pagers, the technology, consistency and reliability of the technology, and the other thing is, is that we've had to rely on crisis services after hours which really is detrimental to the program because phone coaching is not meant to be a crisis service. Two, the people who are manning the crisis lines have no knowledge in DBT and aren't reinforcing any of the things that we are teaching or learning. This is a huge organizational barrier. So, I don't know that any of the items were a barrier I certainly have seen where we ran a program that is only group only without the individual and there's lots of studies that that can be effective but what we found from our experience that it has enhanced that much more having the ability to work on someone individually to work on shaping behaviors and refining some of the concepts that they're not getting in group."

Overall, we found that the adaptations which were reported as barriers to implementation were

those that were made by the organization. This is different from the more minor or nuanced

adaptations made by therapists to address client heterogeneity as discussed above. This could

possibly be because organizational adaptations are not consistent with the DBT program protocol

and principles and nuanced adaptations are typically aligned with the overarching intention of

the DBT program protocol and principles.

5.8 Summary of key findings

The results of our semi-structured interviews materialized broadly in several ways: 1) the DBT

population is highly complex and diverse; 2) meeting diverse patient needs requires a flexible

DBT model; 3) therapists appear to be informed by personal principles derived through their

experience when making decisions about adhering or adapting the program to meet individual client needs; 3) the DBT program and principles do not likely present any barriers to implementation; 4) reported barriers to implementation were associated with organizational factors (i.e. organizational policy, organizational change); 5) organizational adaptations to the structure of the DBT model was not consistent with therapists' practicing preference; and 5) balancing fidelity and adaptation during implementation was challenging for implementers when faced with organizational adaptations.

Therapists emphasized the need to adhere to evidence-based practices to ensure that they are practicing responsibly and are therapeutically effective. However, despite the flexibility embedded into the DBT model and organizational adaptations, therapists reported that they have modified the program outside the parameters of the program model, if in their view, these adaptations benefited individual clients. Given the model flexibility and employing their own preferences for treatment, therapists reported being able to implement the program with both fidelity and adaptability. We found that the barriers associated with implementation were largely centered around organizational barriers such that organizational structure and policy conflicted with the DBT program model as reported by therapists. These larger organizational barriers were often reported by therapists to be associated with adaptations which potentially diminished program outcomes. These adaptations not only conflicted with the DBT model and principles but were made without therapists' feedback. Accordingly, therapists did not support these larger adaptations as they were not consistent with their preference for treatment.

CHAPTER 6
Discussion

This chapter discusses a strategy for addressing the fidelity-adaptation relationship, key evaluation questions and conceptual implications based on the accumulated ideas and conclusions drawn upon throughout this study.

6.0 Introduction

In our view, re-conceptualizing fidelity from the traditional view of adherence to the original program model to that which is relevant for a specific context may offer a more appropriate approach to the implementation and evaluation of CHIs such as DBT. We believe a potential strategy to applying this approach begins with a thorough understanding of a 'flexible program model' and assessing the fidelity-adaptation relationship longitudinally throughout the program cycle.

6.1 The flexible program model

We believe that there is value in challenging the boundaries of the flexible DBT model, such that this flexibility is evaluated to not only reflect differences in context but also the needs of program participants and program implementers. In our qualitative work, therapists reported that the flexibility embedded into the DBT program helped therapists address the fidelity-adaptation relationship by permitting them to tailor the program to meet individual client needs. However, despite this embedded flexibility therapists reported limitations in their ability to implement a program with fidelity that could consistently meet individual client needs. It is likely that flexibility embedded into the program model was not broad enough to address all factors that

have the capacity to influence implementation such as organizational constraints, heterogeneous trajectories and incorporating implementers' experience and principles given the complexity of these factors.

In an attempt to address the fidelity-adaptation relationship, a popular approach suggested by evaluators is developing a contingency model. A contingency model is a model in which strategies to address both fidelity and adaptation are integrated into the program model for complex interventions (Berman, 1981) in an effort to improve program tailoring (Durlak & DuPre, 2008; Ridgely & Jerrell, 1996). The key to contingency models is the concept of "flexibility within fidelity" which identifies a distinction between flexible use of a treatment and poor adherence to a treatment (Kendall, Gosch, Furr & Sood, 2008). This is achieved by providing opportunities to adapt the intervention to the individual patient by maintaining fidelity to conceptual and theoretical principles with flexibility in applying core strategies based on individual clinical presentations, psychosocial functioning, and identified treatment targets (McHugh, Murray & Barlow, 2009). In the context of DBT the concept of contingency models has been recently adapted to develop DBT informed therapy. DBT informed therapy utilizes some of the different skills and treatment modalities of DBT and also includes various methods employed by other therapies such as cognitive behavioural therapy to treat populations not including persons with BPD.

While these model types do seek to improve patient-centered care through program tailoring, in our view the contingency model does not address the elements mentioned above that we feel are also critical when making decisions to adhere or modify a program. In light of the shift from in-

patient to out-patient settings for DBT treatment incorporating these elements into the program

model are important given the tendency for adaptation when implemented in community-based

settings (Horvitz-Lennon et al., 2009). For example, organizational constraints are the most

commonly reported barriers to DBT implementation in community-based settings (Carmel et al.,

2014; Swales et al. 2012). In fact, Horvitz-Lennon et al., (2009) argue that implementing DBT in

Assertive Community Treatment programs was not recommended. Given the structure and

resource constraints associated with community-based settings, they assessed that a standard

DBT program required too much time and resource commitment in this setting to effectively

implement a program of this nature (Horvitz-Lennon et al., 2009). Similarly, Swales and

colleagues (2012) reported a DBT program failure rate of 37.1% with 43% of these programs

provided in community-based settings. From the same study, DBT program staff sighted 61% of

implementation barriers were related to organizational support which included: insufficient

protected time to deliver the treatment; absence of management buy-in; funding difficulties; staff

turnover; multiple staff roles and competing priorities; insufficient resources and absence of

planning for implementation. Thus, it appears imperative that adaptations or implementation

decisions should be based on the contextual needs of the program such that they at the very least

reflect the available resources of the organization in which they are implemented.

We believe that the boundaries and/or unexplored potential of DBT program flexibility can be

better understood through improved dialogue among stakeholders. In our interviews, some

therapists reported limited discourse with the organization around the impact of how

organizational policies and program adaptations influenced the DBT program as some therapists

perceived organizational adaptations made to the DBT program as detrimental to program

success and/or may have hindered clients' progress through the program. The importance of implementers' experience, values and feedback may be better understood through complex systems theory. Briefly, in relation to those involved in the intervention, this theory postulates that key actors (i.e. therapists/implementers) in the system create social networks in which interactions and exchanges take place which both facilitate and constrain behaviour such that an actors' role in these networks and the characteristics of these networks determines an individuals' experience and opportunities (Hawe et al.; 2009). The information generated through the relationships within these networks can improve the impact of the intervention (Hawe et al.; 2009). This means enhancing positive feedback (feedback the moves the system towards desired change) and reducing negative feedback (feedback that works in the opposite direction (Hawe et al.; 2009). The resources drawn from the intervention such as skills, knowledge and opportunities for behaviours to be carried out draw on this feedback to strategically develop an intervention (Hawe et al.; 2009). Complex systems theory highlights why implementer feedback is critical to program implementation and decisions to adhere or modify the program: 1) there is value in stakeholder feedback given their experience and knowledge of the intervention; 2) this feedback can be fed back into the intervention to modify strategies to enhance program outcomes (i.e. learning how to balance fidelity and adaptation); and 3) failure to respond to this feedback can result in poor program outcomes (i.e. when organizational policies/constraints are not aligned with implementers' and DBT principles and values).

6.2 Longitudinal fidelity-adaptation relationship

In our view, another key to better understanding the fidelity-adaptation relationship and improving DBT implementation is reframing this relationship as a longitudinal one which is

reassessed along the program cycle. Reassessing this relationship throughout the program cycle offers the opportunity to refine the program theory by way of core components so that they may be more contextually relevant and is an exercise that should continue throughout the program life as implementers (i.e. therapists), participants (i.e. clients) and management (i.e. the organization) acquire new program knowledge, different organizational policies are enacted and funding structures change. Similarly, in a synthesis of the literature, Fixsen and colleagues (2005) suggest that program components should be revised to reflect stakeholder learning. In practice, this means that program components are refined once they've been implemented across different contexts and stakeholders learn what is most important to replicate despite previous extensive research of a component (Fixen et al., 2005). The authors contend that core components can be best identified after "well-evaluated experiential learning (exploration, iteration between facts and theory)" at which time answers to the questions regarding the relative importance of various factors can be provided (Fixen et al., 2005). Given the complex nature of implementing programs in real-world settings, they emphasize that the "well-evaluated experiential learning can lead to an increasingly sophisticated view of the model (because the current view includes learning from all past mistakes) and of the supports required for replicating core components at implementation sites" (Winter & Szulanski, 2001 in Fixen et al., 2005). Identifying core components in this manner is helpful not fool-proof as that which functions as a core component may vary across sites even despite these efforts. Using this approach to identify core components is helpful but not without limitations since that which functions as a core component may vary across sites even despite these efforts. However, this does suggest that knowledge of what works for whom and in what context can be used to refine the program model to the extent that it is more closely aligned to what can be reasonably expected in a specific context and reflective of

the available resources.

6.3 Key evaluative questions:

Given issues of heterogeneous outcome trajectories, incorporating therapists' principles, balancing fidelity and adaptation during implementation and the extent of flexibility embedded in the DBT program we suggest that implementers and organizations reflect on the following key questions:

i. *Heterogeneous outcome trajectories* - An important aspect to implementation is integrating knowledge of heterogeneous outcome trajectories into the program protocol (Vermote et al., 2009). With respect to our findings, there appears to be evidence consistent with heterogeneous outcome trajectories among the DBT client population: Do subpopulations of persons with BPD exist in the DBT population (Vermote et al., 2009)? If so, what are the differentiating characteristics? To what extent do these differentiating characteristics influence DBT implementation (Landes, Chalker & Comtois, 2016)? Is it possible to implement an adherent DBT model while addressing issues of client heterogeneity? Are there ways in which fidelity and adaptation can be balanced to address heterogeneous trajectories? Can balancing fidelity-adaptation help to refine the program model in light of heterogeneous outcome trajectories?

ii. *Incorporating implementers experience and values* - In Chapter 5, we suggested that principles-driven mechanisms guide decisions to adhere or modify the DBT program. These principles could be organized into two categories: DBT principles and personal principles. DBT principles can be defined as the basis for the DBT belief system which produces desired DBT program results and personal principles can be defined as basis for

a belief system to do what is intrinsically right based on one's own experience, beliefs and values to produce desired DBT program results. The underlying premise of a principles-driven approach for disentangling the tension between fidelity and adaptation is guided by the emerging field of principles-focused evaluation pioneered by MQ Patton (2017). In his work, Patton details strategies for gauging the utility and effectiveness of principles to guide intervention evaluation. He suggests that principles should be succinct, pointed, and specific enough to provide direction but open enough to be adapted to a context and that they are "grounded in values about what matters, must be interpreted and applied contextually and situationally, require judgment in application, and can be evaluated for both process (was the principle followed?) and results (did the desired outcome get accomplished?)" (p.45, Patton, 2017): Does this principle reflect the values of those implementing the program? Does this principle reflect the experience of those implementing the program? Are there diverse views of principles by implementers? Are personal principles and DBT principles aligned? Does this principle provide guidance on what extent the program should be adhered too or modified? Does this principle allow for a balance between the fidelity-adaptation relationship in light of organizational constraints? Does this principle inform choices around mediating poor adaptations? Is this principle flexible enough to respond to contextual demands? Are principles discussed with the organization? Does the organization agree with the principles? Are principles aligned with organizational policies and procedures around the DBT program? Can this principle be applied in light of organizational constraints? Can principles be adhered to in light of organizational constraints? Can this principle be adapted contextually in light of organizational constraints?

iii. *Balancing fidelity and adaptation during implementation* - Implementers underscore that
an advantage to implementing the DBT program is the flexibility embedded into the
program model to meet unique client needs (Nickelson, 2013; Swales, 2009). However, it
is unclear if DBT program flexibility is responsive enough to meet unique client needs as
studies suggest that heterogeneous outcome trajectories have implications for program
implementation (Vermote et al., 2009): Is there potential for decisions to adhere or
modify the program to be made along the program life (Shen et al., 2008)? What does a
flexible DBT model mean when implementing the program in real-world settings? Does
flexibility reflect the ability to balance fidelity-adaptation during implementation? In
what ways does flexibility embedded into the DBT program address heterogeneous
outcome trajectories? To what degree does a flexible DBT model improve patient-
centered care? Given the inherent flexibility of the DBT model, why is the model unable
to address the needs of all clients referred to the program?

6.4 Implications

In addition to the above points we suggest the following conceptual implications of this study:

i.   Recognizing patient diversity allows judgments to be made about program strategy for
improving outcomes since it allows implementers to make assessments of what might
work and what will not work for different populations.

ii. Design of more flexible and adaptive program theories which are consistent with program
resources.

iii. The learning acquired by stakeholders during program implementation is used to improve
knowledge of how to balance the fidelity-adaptation relationship along the program life.

6.5 Summary

In our view, the fidelity-adaptation relationship is reflective of the dynamic, evolving and complex programs from which it is embedded and thus requires consistent reevaluation along the program cycle. Given the nuances associated with program implementation and the complexity of implementation in 'real world' settings, reducing a program's model to its' most adherent form may not be consistent with the essence of a program in a given context. We suggest that integrating stakeholder knowledge of organizational constraints, experience and values of front-line staff and heterogeneous trajectories allows for a more realistically flexible model that is contextually and situationally sensitive. To reiterate, evidence to support the implementation of components must still be used to inform program design, but program designers, funders and implementers should not limit their thinking within these confines. What is possibly more effective for refining the program model is the experiential learning during the program life that provides insight into the active ingredients that enables components to work and identify what doesn't work across different contexts. It is likely that researchers, program designers, implementers and participants are responsible for not only refining core components, but for developing strategies for implementation that identify what components should be implemented to ensure integrity of the program and those that can be implemented with flexibility to support implementation in new contexts.

6.6 Potential contribution

The potential contribution of this exploratory study is to improve conceptual clarity of fidelity and the fidelity-adaptation relationship when implementing DBT by offering insight into how

implementers/therapists can potentially balance these concepts during implementation in the face of patient diversity and organizational constraints. We propose that improved learning about principles-driven mechanisms is one way to ensure this balance because it provides implementers with the knowledge of how to adapt the program contextually and situationally without undermining the tenants, intentions and goals of DBT. Moreover, we propose that a better understanding and integration of patient heterogeneity into the DBT model also arms implementers with knowledge of how to better tailor the program to meet unique client needs. Our hope is that the questions posed above spark future debate and innovative ideas around the complexity of heterogeneous outcome trajectories and the importance of the intersection of this heterogeneity, therapist experience and the fidelity-adaptation relationship during implementation.

6.7 Study Limitations

Several limitations were identified for the present study. A limitation of our quantitative analysis is that the exploratory aim of illustrating heterogeneous trajectories may be limited given our statistical techniques. For example, due to our small sample size we were unable to run analyses, that may have provided deeper insight into different types or classes of trajectories within our data. Another limitation is our limited data on client adherence. While we did have data on number of sessions attended, we were unable to link this data to individual clients and thus were unable to examine trends within the data with respect to individual differences of program adherence. Further, since we had to rely on secondary data sources we were unable to control the type of data collected. We lacked data on baseline characteristics and other client information and therefore were limited in exploring heterogeneous client baseline characteristics such as

severity of disease and comorbidities. The literature indicates that this type of information is extremely valuable for identifying heterogeneous trajectories to improve program tailoring (Cloitre, 2015; Vermote et al., 2009). Another limitation is the generalizability of this study as we had a small sample size from a single setting. Relatedly, given the differences between therapies for psychological disorders (i.e. programs that focus more or less on manualized, step-by-step procedures), generalizability of fidelity and adaptation of the DBT program to other settings may be limited. In addition, we focused on outcomes related to the patient. However, therapist variables (i.e., adherence, years of experience) as well as patient-therapist variables (i.e., therapeutic alliance) may also have played a role in the observed differences in patient outcome trajectories (Vermote et al., 2009).

Another potential limitation for this study is the small interviewee sample size. For qualitative research the size of the sample is determined when saturation is reached (Mason, 2010). Unfortunately, given our small sample size, saturation could not be determined. Further, this study may be subject to self-report bias by our interviewees. Given that all therapists worked at the same organization there may be social desirability bias to under report their own clinical adaptations, as deviations from the program model were viewed as implementation failure (Donaldson & Grant-Vallone, 2002). Selection bias may be a limitation in this study as indicated by the low response rate of 44%. This is lower than the average response rate of 54% in healthcare settings (Burns et al., 2008). To increase participation rates participants were emailed up to 5 times. The researcher was not permitted to contact former DBT implementers at the organization directly. The chain of contact went from the researcher to the program director to

Human Resources and finally to the potential participant. There was no way for the researcher to confirm that potential participants received their letter asking for participation.

6.8 Recommendations for future research

The intention of this section is to provide some innovative ideas for future research with the intention of improving program implementation through decisions to adhere or modify the DBT program. There remains a paucity of knowledge with respect to the influence of contextual adaptations on DBT implementation, developing DBT program components consistent with contextual adaptations and the extent to which program components can be modified without undermining DBT's theory of change. For research to advance the study of program implementation through the knowledge of fidelity and adaptation and the relationship between constructs, the following specific recommendations are proposed:

First, future studies should focus on examining heterogeneous trajectories and baseline clinical diagnoses so these characteristics can be integrated into the program model to inform program design as there are many factors associated with the degree to which a client will complete or adhere to the DBT program. For example, DBT clients with less psychiatric distress are more likely not to complete treatment (Landes, Chalker & Comtois, 2016). Some authors hypothesize that this could be due to an inappropriate fit between the DBT program and client needs. For clients with these baseline characteristics some suggest that implementers may want to focus treatment on engagement and commitment strategies to moderate the likelihood of program completion (Landes, Chalker & Comtois, 2016). We also propose that addressing issues of client heterogeneity can be used to update the DBT program consistent with current

cultural/technological practices. For example, Lande and colleagues (2016) found that younger DBT clients are less likely to complete treatment. They suggest that DBT implementers should consider implementing technology such as mobile apps and texting for phone coaching. These types of adaptations may not alter the model per se but may have great value for client adherence. Future studies may also want to further scrutinize each program component separately to ensure integration of patient heterogeneity to determine how the program can be individualized to improve patient uptake and program completion in the future.

Second, future studies should focus on a participatory approach to examining the fidelity-adaptation relationship in which implementers' experience and values are shared and contextualized with organizational goals and mandates. Given the tendency for modifications to be made by both implementers and organizations, a more holistic approach to understanding this balance is needed in which stakeholders (implementers and the organization) collaborate to discuss their experience with adaptations and evaluate the impact of adaptation and fidelity on client outcomes (Carmel, Rose & Fruzzetti, 2014; Gotham, 2006). These discussions should center around funding constraints, consistency with the program protocol and how burdensome adaptations would be for participants, implementers and the organization (Chen et al.; 2012). Given that every organization's context is a unique, this dialogue would provide knowledge that fills in the gaps that empirical evidence alone misses by offering strategies which integrate a fidelity-adaptation balance into the program protocol. A more holistic approach to understanding the fidelity-adaptation relationship would provide more realistic views of this relationship, thus informing program design for future program cycles.

Lastly, despite evidence of program effectiveness for DBT program components, future studies should aim to examine the effectiveness of DBT program components in the context of a program implementation scale. As described in the discussion section of this chapter, in real world settings operationalizing program components in relation to fidelity to the model does not reflect how they are implemented in reality. One approach to developing a program implementation scale is to first, identify the various adaptations implemented in practice for each program component and second, determine the effect on program outcomes. This information can be used to develop a program implementation scale that catalogues the most effective adaptations to the least effective adaptations for a specific program component. This scale could also be developed for specific areas. For example, scales could be developed for program structure (i.e. program components), therapeutic technique, organizational needs and individualized clients. In real-world, fast-paced settings a manual of this nature would be used as a quick and efficient reference for implementers. This scale could also be helpful for mediating conflicting views about DBT implementation between implementers and between implementers and their respective organizations and provide evidence to funders for grant proposals or when requesting further funding.

6.9 Conclusion

Through the exploratory application of the Conceptual Framework of Implementation Fidelity (CFIF) the present study aimed to provide conceptual clarity of fidelity and the fidelity-adaptation relationship. By expanding the CFIF to include three categories of factors that may influence fidelity (individual characteristics and trajectories, organizational and programmatic factors and program implementer perspectives) we were able to start the conversation towards

better conceptual clarity of fidelity, adaptability and relationship between these concepts.

Through the present study we found that DBT client trajectories are likely heterogeneous and that these outcomes may have the potential to influence fidelity. The current study determined that the tension between adaptation and fidelity could be attributed to the differences in the perceived value and principles of the program between implementers and the organization. Despite the perception of fidelity as the 'golden rule' during implementation we also found that DBT implementers had to balance fidelity and adaptation during implementation on a daily basis and from their perspective some adaptations improved program fit for individual clients. The current study also found that competing interests between implementers and their respective organization are among the greatest barriers to implementing DBT with fidelity.

By exploring the influences of fidelity and adaptation and the relationship between these constructs it is anticipated that this study will encourage researchers and implementers to improve our knowledge through further examination of the influences of fidelity, will work towards a consistent meaning of adaptation and begin more collaborative processes when planning and implementing interventions. It is hoped that these collaborative processes will be inclusive of all stakeholders, not only funders, as each can contribute to a better understanding of how these programs can contribute to improving client lives.

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APPENDICES

APPENDIX A: DBT Program Logic Model and Program Theory

A logic model describes the sequence of events in a program by depicting the main program elements often displayed as a flow chart and is a summary of the mechanisms of change that link processes to program outcomes (CDC, 1999; WHO, 2013). This differs from a program theory, which can be defined as a set of assumptions that explain how researchers envision the intervention reaching its expected outcomes (Pawson & Tilley, 2004). Elements of a logic model generally include inputs, activities, outputs, and results (short and/or long-term) (CDC, 1999). Creating a logic model allows stakeholders to clarify the program's strategies and reveals assumptions. Logic models should be developed in consultation with program stakeholders and should integrate previous research evidence (MRC, 2008). Logic models have been criticized as being too simplistic because they do not capture the complex nuances of real world programs, however, it can provide a basic roadmap, or framework from which the program theory can springboard (Guise et al., 2014).

The following diagram depicts the program logic for DBT program. This describes how the program is expected to reach its intended outcomes. The arrows indicate the linkages between program components. Each linkage includes the mechanisms, assumptions/risks that might support or hinder a component from occurring (described below). In other words, the linkages further unpack the program theory and identifies the activities that make the program "work" or not. While program logic models may vary from site-to-site, this program logic model was developed by OS, because it implements a comprehensive DBT program. This model is used in this study to study program implementation of the DBT program.

For the present study, understanding this logic model provides information on the basic program (see Figure 8). We can draw from this logic model the mechanisms, activities and resources required for program implementation. This model identifies the program's core components and how they relate to program mechanisms and activities and provides us with insight into where potential modifications could occur in relation to these components. The program goals described through this model also allows us to gauge the extent of fidelity and program modifications that are acceptable in relation to these goals. Using this program logic model will help to guide our qualitative work by shaping our questions relative to the core components, activities, mechanisms and goals outlined.

Fig. 8: DBT Program- PROGRAM LOGIC MODEL

Assumptions	Inputs/Resources	Activities	Outputs

Assumptions

Adequate funding is available; Services and resources required for treatment are available

OS is committed to improving the lives of persons with BPD

Clients and their family members are committed to the process

Targeting heavy system users

Consent forms have been signed

(Linehan, 1993):
1) Clients are doing the best they can

2) Clients want to improve

3) Clients need to do better, try harder, and be more motivated to change

4) Clients may not have caused all of their own problems, but they have to solve them anyway

5) The lives of suicidal, borderline individuals are unbearable as they are currently being lived

6) Clients must learn new behaviours in all relevant contexts

7) Clients cannot fail in therapy

8) Therapists treating Borderline disorder need support

Inputs/Resources

(Pre-Treatment)

1) Therapist met with client to complete: Zanarini for BPD, QOLI, BSL-23, BSI , client questionnaire

2) Client has been prepared and oriented to treatment using the therapist guide checklist

3) Has established the following: treatment goals, commitment to work goals (4-5 individual sessions 60 min each)

The extent to which this is implemented may vary depending on setting.

Potential Program Adaptations:

Pre-treatment sessions may be increased or decreased to establish treatment goals

Pre-treatment session may be deleted or modified to begin treatment sooner

Activities

(Treatment)

Stage 1: Weekly individual therapy sessions aimed at attaining basic capacities i.e. decreasing or eliminating life-threatening behaviours, therapy-interfering behaviours, etc.

Stage 2: Weekly individual therapy sessions used to assist clients resolve PTSD symptoms

Stage 3: Weekly individual sessions used to assist clients to address issues of self-respect and individual goals, etc.

Other Services: Family education support group

Potential Program Adaptations:

Stages may not occur sequentially or may be repeated; Components may be added or deleted (i.e. removal of individual therapy); Setting may change; Change of providers may affect treatment process; Mode of delivery may be altered; 24 hour crisis response may be modified (i.e. only offered during the day); missed weekly team consultation

Outputs

(Discharge & Graduation)

Client has completed DBT program

107 of clients serviced during program evaluation study

Target Audience: Clients, family members, funders, Ministry of Health

1 → **2** → **3**

Short-term outcomes (1-4 yrs)

Client has achieved desired level of wellness and is ready to 'graduate' from the program

1) Client has decreased or eliminated: life threatening behaviours, hospitalization as a way of handling crises, behaviours that interfere with QOL,

2) Client has increased: behaviours that will enable the person to have a life worth living, behavioural skills that help to build relationships, manage emotions and deal effectively with life problems (increasing dialectical behaviour patterns)

3) Decrease in crisis service utilization

4) Improved evaluation process (through evaluative learning)

Long-terms outcomes (5-8 yrs)

Increased number of individuals served

Improve access to mental health care specialties serving persons with BPD

Increased progress on DBT program goals

Client is able to integrate within the local community

Improved QOL for clients

Build capacity for clients, families, and communities

Improved process and mechanisms of program

Promotion of best practices of DBT for the treatment of BPD

Long-term outcomes (9-10 yrs)

4 → **5**

Actively engaged in life, improved QOL and able to lead productive, meaningful lives

Use of technological advancements to improve outcomes

Potentially Adaptable DBT Program Components:
- Attendance of weekly individual therapy (if registered for Skills Group only program)
- Phone coaching between sessions as a way to generalize skills (24-hour crisis response)
- Other services available such as Family Education Support Group (9-week group)

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Explanation of the DBT program logic model at OS:

Prior to program initiation in the DBT program at OS, all potential clients are screened for eligibility by a clinician. Once screened, the intake clinician presents each new case at weekly administrative meetings and recommendations are made regarding eligibility. If eligible, the client is referred the DBT program. In this logic model all clients will initially meet with a clinician to begin the pre-treatment process (input/resources), which involves four to six in person sessions. The purpose of this process is to inform the client of the program protocol, identifying particular behaviours that the client wishes to change, identify goals specific to treatment needs as well as assessing the client's commitment to therapy. At this time the clinician will administer the following measures: Brief symptom inventory, Zanarini rating scale, Borderline Symptom List, DBT ways of coping checklist, the Quality of Life Inventory, and the client questionnaire. The client questionnaire captures the number of time clients have accessed crisis services (i.e. ED or in-hospital admission). During this stage the program may be modified depending on the therapists ability to earn the trust of the client and the motivation of the client. This may be modified by increasing or decreasing the amount of pre-treatment sessions until goals are generated that are satisfactory to both the client and therapist.

Once a client has met all requirements of pretreatment they will then be eligible for the treatment process (activities). As described above this process includes three stages. It is at this treatment stage that program adaptations are the most likely to occur. Linehan (1993) explains that a client cannot move onto the next stage until the previous stage has been sufficiently met. In some cases, clients may display the skills necessary to move to the next stage but may actually relapse, causing the therapist to modify each program component. This is often an iterative process, in which the client's progress will determine the next phase of treatment. At the treatment stage

modifications may also occur in relation to the resources available for treatment, such as funding for having clinicians on call for 24 hour crisis response.

Description of stages. The first stage is aimed at attaining basic capacities such as decreasing or eliminating life-threatening behaviours, decreasing or eliminating therapy-interfering behaviours (i.e. not showing up for appointments or showing up late), reducing or eliminating hospitalization as a way of handling crises, decreasing behaviours that interfere with quality of life, increasing behaviours that will enable a life worth living, and increasing behavioural skills that help to build relationships, manage emotions and deal effectively with life problems. Stage 2 is used to assist clients with post traumatic stress disorder symptoms and stage 3 is used to address issues of self-respect and individual goals, increasing respect for self, setting individual goals, solving ordinary life problems, and increasing capacity for sustained joy.

Program outputs. The next element in the program logic is outputs. For this program this means that the client has completed the DBT program. The target audience most affected by the output are clients, family members, and funders. As a consequence of the output the next component of the logic model is short-term outcomes (1-4 years). The overarching expectation of this element is that the client has achieved the desired level of wellness and is ready to 'graduate' from the program. What this means is that the client has decreased or eliminated life threatening behaviours that interfere with QOL, the client has increased behaviours that will enable a life worth living, behavioural skills that help to build relationships, can manage emotions and deal effectively with life problems (i.e. increasing dialectical behaviour patterns). Clients have also decreased crisis service utilization. Another outcome that is expected is an improved evaluation

process (via learning from the evaluation). This is expected as a result of learning from the actual evaluation through increased familiarity of the ways in which the program may be adapted by stakeholders and by the formalization of this understanding into the daily activities of the program.

The following element is long-term outcomes and can be described as the expected outcomes over the next 5-8 years. Over the next 5-8 years, the intention of the program developer is to grow the number of clients served. In relation to both short-term and intermediate goals the associated impacts are that clients who have graduated from the program are able to be integrated within the local community and that they have an improved QOL, and that capacities have been built for clients families, and communities. Additionally, it is also expected that we see an increased awareness of BPD, improved process and mechanisms of the program, and promotion of the best practices for DBT. The long-term outcomes (9-10 years), are the increased use of technology to improve client outcomes, and that clients are actively engaged in life, have an improved QOL, and are able to lead productive, meaningful lives.

The DBT Program theory:

The evidence base in program evaluation recommends the practice of developing a program theory before starting any evaluative process (Pawson & Sridharan, 2009; Pawson & Tilley, 2004; Rogers, 2008). This is important because it describes how the DBT program is likely to work and what to expect, provides a framework for understanding results, helps to address key evaluation questions and helps to identify the extent and depth of data needed for the evaluation (Dalkin, Jones, Lhussier, Cunningham, 2012; Pawson et al., 2004).

Developing a program theory entails generating research and experience with the program and pre-existing programs, stakeholder's experiences with the pre-existing or similar programs, and the political landscape in which the program is embedded (Medical Research Council [MRC], 2008; Pawson, & Sridharan, 2009). This will help to determine why the program was established, and the factors and trends that may contribute to the program's success or failure (Bamberger & Segone, 2011; Pawson, & Sridharan, 2009).

The key to this step is to engage stakeholders (CDC, 1999). For the present study, the program developer and the program director at OS were consulted in the development of the program theory through informal conversations. Given the complexity of this social context, engaging stakeholders and incorporating their views and values in this process will contribute to a richer understanding of the program effects (Hawe et al., 2009; Tannahill & Sridharan, 2013). As Sridharan and Nakaima (2011) explain this will inform how the evaluation design can respond to the complexity of the program.

The table presented below (TABLE 11) describes the linkages within the Program Logic. Each link further unpacks the Program Theory by explicating the activities associated with program success that may not be apparent on the surface. This knowledge is attained not only through a search of the literature, but also through the consultation with program stakeholders at OS.

For the present study, the risks and mechanisms involved in the DBT program theory can guide our study of fidelity and adaption by alerting us to where potential barriers and facilitators may occur. This gives us a foundation upon which to ask research questions to better determine how

the three categories influencing fidelity behave and to what extent they impact fidelity. The

program theory will serve as a roadmap to guide this study because we can identify where

complexities exist and thereby ask questions that will further unpack how the program functions

within that particular boundary.

TABLE 11: Program Theory of the DBT Program

Context: Community Mental Health Clinic

Linkages	Assumptions/Risk	Mechanisms/Principles	Evaluation Questions
1	Clients drops out of therapy (risk) Clients and therapists arrive at a mutual, informed decision to work together on helping the client make changes he/she wants to make Therapist modifies dysfunctional beliefs or expectations of the client regarding therapy that are likely to influence the process of therapy and/or decision to terminate therapy	*The therapist gain clients' trust.* *The client accepts the therapist's help.* For example, therapists are able to convince clients about the benefits of psychotherapy and the importance of the role of the psychotherapist. The therapist must 'reframe' psychotherapy as a learning process.	Are these mechanisms adapted to meet the needs of the client? Do implementer's feel confident employing these strategies?
2	A comprehensive clinical assessment has been completed Client is comfortable with the treatment environment Clients is comfortable with the therapist Client is motivated to improve his/her life Targets for each stage have been identified (behaviours that are contradictory to achieving the established goals for that stage) The priority assigned to each treatment target, the amount of attention each target receives, and the nature of that attention may vary depending on the mode of therapy (i.e. individual sessions, phone consultations) Therapist helps client integrate new skills into daily life Transition to stage 2 only occurs once the goals of stage 1 have been primarily met (although	*The therapist takes responsibility of individual clients.* *The therapist modifies the program to suit client needs.* *The client understands their role in achieving program goals.* For example, therapists determine what targets to focus on and how much time to spend on them at each stage. Session agendas are determined by client's day-to-day behaviour and behaviour during session The therapist that is responsible for a particular mode clearly understands what their own hierarchies of targets are with each client and how those hierarchies fit into the overall hierarchy of DBT behavioural targets Client has working knowledge of major behavioural skills taught in DBT	What happens if a large proportion of session agendas have to be modified? Has the therapist had to develop new/different skills outside of DBT to treat a client? Can a client modify the program to suit their needs? What program components are most often adapted from the standard DBT protocol?

Linkages	Assumptions/Risk	Mechanisms/Principles	Evaluation Questions
	therapy develops in an iterative fashion, thus goals in Stage 1 may be dealt with to a certain extent throughout therapy) Stage 3: By the end of this stage the client has developed self-respect independent of the therapist Stage 3: skills learned throughout therapy are generalized to nontherapeutic situations		
3	Client prematurely terminates therapy (risk) Client has completed all three stages of therapy DBT met the client's need (i.e. program was tailored to meet the needs of the client)	*Client is able to independently cope with BPD symptoms* *Buy-in from stakeholders for regular program evaluation* For example, processes are developed to monitor program adaptations. Client exhibits ability to apply DBT strategies to situations.	How do differences in clinical practice among therapists affect client outcomes? How does evaluation of this program influence program implementation? How does evaluation of this program improve learning about this program? How do differences in adaptation among therapists affect program effectiveness?
4	Client stability is sufficient for developing a life worth living Increase in BPD awareness Decrease in mental health stigma Availability of program funding Increase in mental health research	*Increase in program funding* For example, an increase in program funding will contribute to the sustainability of the DBT program and will increase the number of resources available for BPD treatment. The increase in the number of resources can be used to treat more clients with BPD and can be invested into BPD research.	What adaptations can be made to improve the use of resources needed for DBT? How can program delivery be improved? At what point along the health care continuum do programs users (or potential program users) experience difficulty in accessing the DBT program?
5	Improved supportive services for people who have mental illness (i.e. employment strategies, income equality) Discontinued funding (Risk) Prevalence of BPD remains constant	*BPD is identified early.* Early identification can improve treatment outcomes. *Person with BPD is followed-up with periodically to ensure continued integration.* This can ensure continued improvement and prevent relapse.	How does funding impact this program? How will resistance to policy change affect this program over time? How can treatment be improved for persons with BPD?

The following will describe the program barriers and unintended consequences/side effects of the

DBT program theory.

Program barriers. Identifying program barriers is important to understanding the dynamic and

contextual influences on program adaptation because it provides evidence in support of program modifications and logical reasons for occurring. Several barriers to the effective implementation of DBT in a community setting have been identified including: limited funding for services, lack of skill or expertise of implementers (Swenson, Torrey, and Koerner, 2002) and participants lack of trust or commitment to the program (Linehan, 1993). Effectively implementing the DBT program requires significant knowledge and commitment by program implementers and a willingness by program stakeholders to change existing beliefs (Swenson, Torrey, and Koerner, 2002).

An important program barrier is also data capacity. The standard DBT program entails several outcome measures that require a significant amount of time to collect, input, analyze and store. This usually requires the help of a data analyst, therefore increasing the amount of resources needed to implement a DBT program. Time is also a barrier because the DBT program is time intensive. DBT not only requires the weekly collection of data, implementers are also responsible for implementing at least one program component and must attend weekly meetings with other therapists to discuss DBT treatment strategies.

Unintended consequences/side effects. This refers to the unanticipated outcomes or effects as a result of program implementation. For the present study this is an important concept to understanding program adaptation because it may explain why an adaption occurred if the reason was not made explicit or was unknown. In relation to DBT this could refer to not showing up for appointments, arriving late, re-scheduling appointments, not completing homework (i.e. diary cards), and not using video conferencing (in lieu of phone consultation). This could also refer to program termination by the client, an increase in emergency department visits, hospitalizations,

self-harm or suicidal behaviours, or in general psychiatric symptoms. More broadly, this could

also represent a termination of the overall program due to a lack of funding, reduced community

support for the program, and/or high staff turnover due to treatment burnout.

APPENDIX B: Description of DBT Core Components

The following will describe the core components of the DBT program as defined by Linehan's original DBT model: individual psychotherapy behavioural skills training, supportive process groups, phone calls, and clinician consultation team.

1. **Individual psychotherapy behavioural skills training** is held for a minimum of 1 hour per week. The purpose of these sessions is to achieve all primary target goals through specific interventions. Individual sessions focus on improving the client's motivation to work toward obtaining a life worth living, on motivation to change behavior, and the rehearsal of cognitive and behavioral skills important in the regulation of emotions. Individual DBT therapy requires a validating therapeutic relationship and uses cognitive-behavioral techniques to facilitate behavior change and skills acquisition.

2. **The supportive process groups** (structured skills training) was developed to target in-session behaviours that may reflect the problems that each member is having outside of group meetings (Linehan, 1993; p. 187). The rationale is that good group behaviour taught in-session can be translated to good behaviour outside of group sessions. The skills are taught in modules and include mindfulness, interpersonal skills, regulation of emotions, and distress tolerance.

3. Another integral mode of DBT is **phone consultation**. The purpose of phone consultation is to ensure the generalization of DBT skills through effective implementation in real-life situations. Phone calls to the primary or ancillary therapist are encouraged and address the following: 1) decrease suicide crisis behaviours; 2) increase application of skills to everyday life; and 3) resolving interpersonal crisis, alienation, or a

sense of distance between client and therapist (Linehan, 1993; p. 188-89).

4. **The clinician consultation team** is for DBT therapists to enhance the skills of therapists, provide support for therapists and to ensure adherence to the program. Meetings are held weekly and provide a forum for which therapists can consult about their clients and receive feedback from other clinicians. These meetings help to ensure program adherence as clinicians may identify practice and/or treatment patterns that do not follow DBT protocol and help the clinician to maintain a balanced approach to the client.

Although not a core component of DBT, Linehan suggests that family support groups can be an important addition to DBT. Family support groups were developed to help assist the environment of the client to support and reinforce behavioural change and to intervene in the system around the treatment program to ensure effective delivery of the treatment (Swales, 2009). The implementation of family support groups alongside DBT is dependent upon the resources of the organization and the needs of the target audience. For example, some DBT programs are targeted at indigent persons who are often estranged from family members, thus family support groups are not relevant for some populations.

With respect to the biosocial theory, a client's emotional vulnerability is the biological factor and the invalidation is the socially mediated factor, and the interaction of these factors result in emotional deregulation (Lynch et al., 2006). These individuals have difficultly regulating their emotions, and once physiologically aroused take longer to get back to baseline. As a result, clients often experience considerable disruption of their cognitive, emotional, and behavioural systems when emotionally aroused (Lynch et al., 2006).

In the context of the biosocial theory DBT has aimed to modify various aspects of the client's emotion system. The primary focus of DBT is facilitating reductions in emotion dysregulation and increasing behavioural skills to mediate treatment change (Lynch et al., 2006). DBT integrates both acceptance and change-based strategies as it seeks to balance and synthesize these strategies (Lynch et al., 2006).

As a worldview, dialectical philosophy provides a foundation for DBT. Borrowing from Eastern (Zen) practice this philosophy encourages the balance of both acceptance and change and believes that processes in which a phenomenon or behaviour is transformed occurs in three stages (Lynch et al., 2006). The first stage is the beginning in which the initial proposition occurs (thesis). The belief is the interrelatedness or wholeness of the world, not just the individual parts of a system (Lynch et al., 2006). In therapy, this means considering the larger context of behaviours (Huber & Donovan, 2004). The second stage is the contradiction or 'antithesis'. The belief is that reality is not static, but composed of opposing forces. In therapy this means that the therapist must pay attention to the polarities of the dialectic between the client's need to self-

accept and the need to change (Huber & Donovan, 2004). The third stage is the synthesis of the thesis and antithesis (Lynch et al., 2006; Linehan, 1993). During this stage the tension between the thesis and antithesis develops and the synthesis of the two constitutes the next thesis - this is an iterative process (Lynch et al., 2006). The belief is that the fundamental nature of reality is change and process rather than content or structure. In therapy this means that the client becomes comfortable with change (Huber & Donovan, 2004).

The goal of DBT is to increase dialectical behaviour patterns as per Dialectical Philosophy. What this means is helping clients change their extreme behaviour patterns into more balanced responses appropriate to the situation or event (Linehan, 1993). In other words, the therapist helps the client replace ineffective, maladaptive, or unskilled behaviour with skilled responses (Huber & Donovan, 2004). In DBT this is done through classical and operant conditioning in case conceptualization, in which the therapist conducts behavioural analyses to understand both the classically conditioned links in the chain of events leading up to problematic behaviour and the functional (operant) consequences of the behaviour (Swales, 2009). The DBT therapist uses this analysis to develop solutions to the problematic behaviour by employing standard cognitive behavioural problem-solving techniques so the client may learn and refine the skills necessary for changing behavioural, emotional and thinking patterns that interfere with one's quality of life (Linehan, 1993, p. 144; Swales, 2009). More specifically, this means decreasing interpersonal, emotional, behavioural and cognitive dysregulation and increasing interpersonal, emotion regulation, and distress tolerance skills as well as core mindfulness skills (observing, describing, participating, taking a non-judgment stance, focusing on one thing in the moment and being effective) (Linehan, 1993, p. 144).

There are many tenants of DBT program theory that are based upon cognitive behavioural therapy. Although Linehan clearly states that DBT differs significantly from standard cognitive-behavioural therapy, she does highlight similar core principles that DBT has adapted to effectively treat clients with BPD. These core treatment procedures include problem solving, exposure techniques, skill training, contingency management, and cognitive modification (Linehan, 1993, p. 19). Further cognitive-behavioural techniques integrated within structure of DBT program protocol include data collection on current behaviours, operational definitions of treatment targets, collaboration between therapist and client, orienting the client to the therapy program, and mutual commitment to treatment goals (Linehan, 1993, p. 19). Knowledge of these cognitive-behavioural techniques is important for identifying the mechanisms necessary for program success. In other words, it provides an understanding of what activities make the program work.

APPENDIX D

The Conceptual Framework for Implementation Fidelity:

Description and definition of framework elements

The following will describe adherence and the potential moderators of fidelity and how they will

be used to identify themes in the present study.

Adherence:

For fidelity, adherence measures the degree of fidelity in program evaluation. Adherence

measures the content of the intervention, which includes three subcategories: frequency,

duration, and coverage (or dose). For the present study adherence will be defined through any of

the three subcategories of adherence to content. We will use program implementers perspectives

to determine the extent of adherence to the original DBT protocol.

Intervention complexity (Comprehensiveness of policy description):

Intervention complexity was identified as a contributing factor to fidelity because complex

interventions are more likely implemented with low fidelity (Dusendury et al., 2003). If

innovations can be broken down into more manageable parts, are more detailed and less vague,

and have fewer response barriers, they are more likely to be implemented with high fidelity

(Carroll et al., 2007). Thus, the comprehensiveness of the program description may influence

how the program is adapted (Carroll et al., 2007). In order to identify themes in the present

study, intervention complexity will be defined as DBT program comprehensiveness (detail), and

the nature of the DBT program. For the purposes of this study, the nature of the DBT program

will be defined as per Pawson et al.'s (2004) definition of CHIs: 1) a theory or set of theories; 2)

involving the actions of people; 3) a chain of steps or processes, often not linear; 4) embedded in

social systems and how they work is shaped by this context; 5) prone to modification; and 6) open systems that are susceptible to change through learning as stakeholders come to understand them. We chose to expand this definition because we believe that CHIs are multidimensional constructs that extend beyond program details and should also reflect the complexity of constantly evolving stakeholder needs and views and the social systems that they are implemented within.

Facilitation strategies:

Strategies to support and improve fidelity include the provision of manuals, guidelines, training, and monitoring and feedback for those delivering the intervention. As observed in the provision of mental health services, therapists are expected to follow training manuals and guidelines when administering treatment to clients. Thus, support strategies can potentially moderate the degree of fidelity achieved. For example, the more that is done to help implementation, through monitoring, feedback, and training, the higher the potential level of implementation fidelity achieved (Carroll et al., 2007). In the case of complex interventions in which programs are multifaceted and variable, fidelity may be improved by including more standardized the protocols, and thus may require extensive support strategies (Carroll et al., 2007; Medical Research Council, 2000). In order to identify themes in the present study, facilitation strategies will be defined as program adherence /adaptation monitoring, feedback, access to DBT training and implementation materials/manuals, and continued DBT training courses.

Quality of delivery:

Quality of delivery is defined as whether the program was delivered in a way that is appropriate to achieving what was intended. This is important because if the content of what is being delivered is poor, than this can influence the success of the program. For example, provider

preparedness, use of relevant examples, enthusiasm, interaction style, respectfulness, confidence, and the ability to respond to questions and communicate clearly can all impact program outcomes. In order to identify themes in the present study, quality of delivery will be defined as the amount of time one receives to deliver treatment, to prepare for treatment, the respectfulness one feels from colleagues and clients, and the confidence one feels when implementing the program.

Therapist values (Participant responsiveness):

Therapist values refers to the engagement of therapists to the program. Studies have indicated that the belief, attitudes and enthusiasm of the implementers are also factors influencing fidelity (Carroll et al., 2007). In order to identify themes in the present study, we will define implementer beliefs, attitudes and enthusiasm through their own description in accordance with the tenants of the DBT program.

Context:

Context is an important dimension that can moderate program implementation (Pawson, 2013; Pawson & Sridharan, 2009; Rogers, 2008; Hawe, 2013) and can include surrounding social systems, such as structures and cultures of organizations and groups, inter-organizational linkages, and historical as well as concurrent events (Chaudoir et al. 2013; Greenhalgh et al., 2004; Durlak & DuPre, 2008; Dusendury et al., 2003; Lipsey &Cordray, 2000). In order to identify themes in the present study, context will refer to the organizational and programmatic factors that may influence DBT implementation, and target population and to the structure at the clinic and culture at among therapists and at the organization.

Moderators are not necessarily discrete elements as two or more moderators may be related

(Caroll et al., 2007), thus we may observe some crossover between the themes identified in our qualitative work. For example, the provision of training and guidelines on how to deliver an intervention may have a direct impact on the quality on how an intervention is actually delivered, which may in turn affect fidelity of the intervention. Moreover, intervention complexity can impact the interaction effects between moderators (i.e. when the effect of one factor is dependent on the level of another). For example, when participant responsiveness improves regardless of incentives or other strategies (Carroll et al., 2007).

Validity:

Zanarini Rating Scale for BPD (ZAN-BPD)

Description. The Zanarini Rating Scale for BPD is the first clinician-administered scale for the assessment of change in the DSM-IV borderline psychopathology. The assessment questions were adapted from the BPD module of the Diagnostic Interview for the DSM-IV Personality Disorders (DIPD-IV) to reflect a 1-week time frame (Zanarini, 2003). The assessment reflects four core areas of BPD: affective, cognitive, impulsive, and interpersonal symptoms. Each core area is assigned its own symptoms:

Core Area	Symptoms
Affective	Inappropriate anger/frequent angry acts, chronic feelings of emptiness, mood instability
Cognitive	Stress-related paranoia/dissociation, severe identity disturbance
Impulsive	Self-mutilative/suicidal efforts, two other forms of impulsivity
Interpersonal symptoms	Intense, unstable relations, frantic efforts of avoid abandonment

Each of the nine criteria is rated on a five-point rating scale of 0-4 (0- no symptoms, 1- mild symptoms, 2 – moderate symptoms, 3 – serious symptoms, 4 – severe symptoms) with a total score of 0-36.

Validity. To assess the validity of the ZAN-BPD two diagnostic interviews to assess the presence

of BPD were administered to 200 nonpsychotic clients using the DIPD-IV and the Diagnostic

Interview for Borderlines (DIB-R). The ZAN-BPD was also administered. Each client also filled

out a self-report measure of general psychopathology, the Symptom Checklist 90 (SCL-90). The

convergent validity[5] of the ZAN-BPD and the SCL-90 and DIB-R was found to be highly

significant. The discriminant validity[6] of the ZAN-BRD was found to be highly significant,

discriminating 139 clients that met the DSM-IV criteria fro BPD from the 61 clients who did not.

Internal consistency of the ZAN-BPD was high (Cronbach's $\alpha=0.85$). In addition all intraclass

correlations were in the good to excellent range (Zanarini, 2003).

Brief Symptom Inventory

Description. The Brief Symptom Inventory (BSI) is an assessment tool used to evaluate

psychological distress and psychiatric disorders. BSI collects data reported by clients. This test is

a 53-item self-report scale that uses the 5-point Likert scale.

Reliability. The BSI instrument has good internal reliability showing an average rating above .7

for the scales. The range for test-retest reliability was .68 to .91. The BSI is commonly correlated

with the SCL-90- test and was found to be reliable in assessing functional, psychosocial, and

psychological status.

Dialectic Behavior Therapy (DBT) Ways of Coping Checklist

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[5] Convergent validity refers to the degree to which the constructs of two measures that are similar theoretically are in fact similar (Trochim, 2006).
[6] Divergent validity refers to the degree to which the constructs of two measures that are not theoretically similar are not (Trochim, 2006).

Description. The DBT-Ways of Coping Checklist (DBT-WCCL) was modified from the Revised Ways of Coping Checklist and is designed to assess use of skills taught in DBT. The DBT-WCCL captures DBT skills use as well as the use of dysfunctional coping in difficult situations (Neacsiu, Rizvi, Vitaliano, Lynch & Linehan, 2010).

Reliability. Two subscales were developed through factor analysis procedures: one assessing coping via DBT skills, the DBT Skills Subscale (DSS), and one assessing coping via dysfunctional means, the Dysfunctional Coping Subscale (DCS). Principal component, internal consistency, test-retest reliability, and content validity analyses suggested that the scale has good to excellent psychometric properties.

Quality of Life Inventory (QOLI)

Description. The Quality of Life Inventory (QOLI) is based on a model of life satisfaction that has been empirically validated. The model assumes that an individuals overall life satisfaction is a result of the sum of satisfactions in particular areas of life that are of personal importance (Frisch et al., 1992). The theory of life satisfaction assumes that a restricted number of areas of human aspiration and fulfillment that are applicable to both psychiatric and nonpsychiatric populations (Frisch et al., 1992). The QOLI consists of 17 areas of life deemed potentially relevant to overall life satisfaction. Each area is rated in terms of its importance to participants' overall happiness and satisfaction (0 = not at all important, 1 = important, 2 = extremely important) and their satisfaction with the area (-3 = very dissatisfied to 3 = very satisfied) (Frisch et al., 1992).

Validity: Test-retest coefficients for the QOLI ranged from .80 to .91, and internal consistency coefficients ranged from .77 to .89 across 3 clinical and 3 nonclinical samples (Frisch et al.,

1992). QOLI item-total correlations were found to be adequate, and the QOLI had significantly

positive correlations with 7 related measures of subjective well-being, including a peer rating and

clinical interview measure (Frisch et al., 1992). Significant negative correlations were obtained

between the QOLI and measures of general psychopathology, anxiety, and depression (Frisch et

al., 1992).

Borderline Symptom List (BSL-23)

Description: The Borderline Symptom List (BSL-95) is a self-rating instrument for specific

assessment of borderline-typical symptomology. The items are based on criteria of the DSM-IV,

the revised version of the Diagnostic Interview for Borderline Personality Disorder, and the

options of both clinical experts and borderline clients (Bohus et al., 2009). The BSL-23 is a

shorter version revised from the BSL-95 and was developed to reduce client burden and

assessment time.

Validity: A high correlation was found between the BSL-23 and the BSL-95 (range: 0.958–

0.963) and the internal consistency was high for both versions (BSL-23 -Cronbach's α = 0.935–

0.969; BSL-95/ Cronbach's α = 0.977–0.978) (Bohus et al., 2009). Both BSL-23 and BSL-95

discriminated borderline personality disorder clients from clients with an axis I diagnosis (mean

effect sizes were 1.13 and 0.96 for the BSL-23 and BSL-95, respectively) (Bohus et al., 2009). In

addition, comparisons before and after 3 months of dialectical behavior therapy revealed a

numerically larger effect size for the BSL-23 (d = 0.47) compared to the BSL-95 (d = 0.38)

(Bohus et al., 2009).

Evaluation of the Borderline Personality Self-Regulation Clinic at Ontario Shores: An Outcome Study

Consent Form

Principal Investigator/ Research Coordinator:

Shannon Robinson, Ph.D., Ontario Shores Centre for Mental Health Sciences (Tel.: 905-430-4055, ext. 6127)

Co-investigators:

Pamela Wilansky-Traynor, Ph.D., Ontario Shores: Centre for Mental Health Sciences (Tel.: 905-430-4055, ext. 6388), Nadia Nandlall, University of Toronto (647-229-5254)

Purpose:

Ontario Shores has designed a new comprehensive 12 month out-client Dialectical Behavior Therapy (DBT) program for individuals diagnosed with Borderline Personality Disorder (BPD). DBT is a compassionate, scientifically validated treatment for individuals with BPD. This study will assess whether or not the goals of the program have been accomplished in the hopes of achieving a more positive outcome for individuals with BPD, or determine whether improvements need to me made.

Procedures:

In order to evaluate the effectiveness of the therapeutic treatment offered by the Borderline Personality Self-Regulation (BPSR) Clinic, in terms of reducing symptoms and improving adaptive coping methods and quality of life, we will ask you to complete a brief interview and some additional paper and pencil questionnaires immediately prior to beginning treatment and then again at 3, 6 and 12 month intervals after commencement of treatment and at 6 months and 12 months following the completion of treatment. Completion of these measures should take approximately 1 hour. You will also have been asked to complete some measures during your standard screening and assessment appointments at the BPSR.

All of the information gathered in this process is part of the normal assessment and evaluation procedures provided by this program. **However, your consent is needed for any of this information to be used for research purposes.** The use of your information for research may not benefit you directly, but will help Ontario Shores to plan for and improve upon services in the future.

It is important to note that if you choose to decline to have your data used for research purposes you can do so at any time and this will **not** affect your service in the therapy program in any way.

Eligibility:

To participate in this study you must be a client receiving treatment at the Borderline Personality Self-Regulation Clinic.

Confidentiality:

Your confidentiality is very important to us and will only be broken where the law or standards mandates: neglect/ abuse of a child, risk of violence to self or others, sexual abuse by a regulated health-care practitioner, subpoena by the courts. If your confidentiality needs to be breached you will be fully informed and we will work with you to find the best possible outcome with clinical staff readily available to facilitate the process and provide support. In addition, neither your name nor any other personal identifiers will be used in any reports or publications arising from this study. If an article or presentation about the research is produced, participants in the study will be discussed as a group. All information collected will be retained in a locked filing cabinet for the duration as stipulated in the Ontario Shores records retention policy. If you decide to withdraw from the research or the therapy program, the information that you provided up to that point will be kept to help in comparing those who stayed in the study/ therapy program to those who withdrew. The individual and group skills sessions will be audio taped to ensure that the interventions administered by the clinicians adhere to DBT. These audio recordings will remain confidential and will not be shared with any individuals/ parties outside of those in this program.

If any breeches in confidentiality occur, Ontario Shores Privacy Officer and Research Ethics Board will be notified.

Risks and Benefits:

There are no direct risks or benefits to participating in the study. However, the measures from the assessment process may be useful to you in terms of understanding your current difficulties and monitoring your progress as you continue in the program. Overall, this information is vitally important for future planning and improvement of our services. The main risk associated with this study is that the questions may cause you some distress, but we will have clinical staff available to you if you need to talk about any issues that the questions may trigger for you. Secondly, the questionnaires may be inconvenient to complete and may result in boredom and fatigue. We will try to minimize these effects by providing you with many breaks.

Voluntary Participation:

Your participation in this study is completely voluntary. You may choose to withdraw from the study at any time without any negative consequences. Furthermore, if you and /or your treatment team decides for clinical reasons that your participation in the therapy program is no longer to your best benefit and you withdraw from treatment, you may choose to allow us to keep your information for program evaluation/ research purposes or you may elect to be withdrawn from the research as well. Your choice not to participate or to withdraw will not affect any treatment needs that you might have at Ontario Shores now or in the future.

Additional Information:

If you have any questions, you can call the investigators at the numbers above. As well, this study has been reviewed by the Research Ethics Board (REB) at Ontario Shores. You may contact Dr. Ron Heslegrave, the REB chair, should you have any questions concerning your rights as a participant or ethical issues at 1-800-341-6323 x 6996.

I have read and understood pages 1 to 3 of this consent form. I agree, or consent, to allow my personal and clinical health information to be used for research purposes. All questions I have about participating in this study have been answered to my satisfaction. A copy of the consent was given to me.

Name of Individual:_____   Signature:_____

Name of Person obtaining Consent_____   Signature_____

Date:_____

The Borderline Personality Self-Regulation Clinic at Ontario Shores: Fidelity and Program Adaptability

Consent Form

Principal Investigator/ Research Coordinator:

B. Brannon, Ontario Shores Centre for Mental Health Sciences (Tel.: 905-430-4055)

Co-investigators:

Nadia Nandlall, PhD Candidate, University of Toronto (647-229-5254)

Purpose:

Ontario Shores has designed a new comprehensive 12-month out-client Dialectical Behavior Therapy (DBT) program for individuals diagnosed with Borderline Personality Disorder (BPD). For this research project we invite your participation. Given the complex nature of DBT, we are interested in if the program was implemented with fidelity (i.e. implemented as intended according to the original program protocol) and the ways in which this program may have been adapted from the original DBT model. Knowledge of the implications of adaptations on fidelity has the potential to guide and direct such things as implementer training, program design and dissemination. DBT provides a great vehicle for examining program adaptability because it is a comprehensive program that consists of various program components that have to be implemented with a great degree skill by a number of different program implementers.

Procedures:

In order to study the implementation of the DBT program, we ask that you participate in an interview. Completion of an interview should take approximately 1-2 hours. Interviews will be

conducted at Ontario Shores by the co-investigator (Nadia Nandlall). Data collected from these interviews will be used to provide conceptual clarity to the concept of fidelity by providing a more nuanced framework to better understand implementation fidelity.

All of the information gathered in this process is part of the evaluation of the procedures of the Borderline Personality Self-Regulation Clinic. **However, your consent is needed for any of this information to be used for research purposes.** The use of your information for research may not benefit you directly, but will help Ontario Shores to plan for and improve upon services in the future. There is no financial compensation for study participation.

It is important to note that if you choose to decline to have your data used for research purposes you can do so at any time and this will **not** affect your employment with Ontario Shores in any way.

Eligibility:

To participate in this study you must be a employed by Ontario Shores and a Dialectical Behavior Therapy therapist at the Borderline Personality Self-Regulation Clinic.

Confidentiality:

Your confidentiality is very important to us and will only be broken where the law or standards mandates: neglect/ abuse of a child, risk of violence to self or others, sexual abuse by a regulated health-care practitioner, subpoena by the courts. If your confidentiality needs to be breached you will be fully informed. In addition, neither your name nor any other personal identifiers will be used in any reports or publications arising from this study. All audiotapes/audiofiles used for this study will only be labeled with study codes and dates. If an article or presentation about the research is produced, personal identifiers of program staff (implementers) will be removed. All information collected will be retained on a secure database that is password protected. All identifiable information will be kept for 6 months from collection at which point all personal identifiers will be de-identified. All audiotapes/audiofiles will be destroyed (via deletion from the hard-drive) one-year after participation. If you decide to withdraw from the research program, the information that you provided up to that point will be kept to help in comparing program implementation across different program implementers.

If any breeches in confidentiality occur, Ontario Shores Privacy Officer and Research Ethics Board will be notified.

Risks and Benefits:

There are no direct risks or benefits to participating in the study. Overall, this information is vitally important for future planning and improvement of our services. The main risk associated with this study is that the interview questions may be inconvenient to complete and may result in boredom and fatigue. We will try to minimize these effects by providing you with many breaks.

Voluntary Participation:

Your participation in this study is completely voluntary. You may choose to withdraw from the study at any time without any negative consequences. Furthermore, during the study period you may choose to allow us to keep your information for program evaluation/ research purposes or you may elect to be withdrawn from the research as well. Your choice not to participate or to withdraw will not affect your employment at Ontario Shores now or in the future.

Additional Information:

If you have any questions, you can call the investigators at the numbers above. As well, this study has been reviewed by the Research Ethics Board (REB) at Ontario Shores. You may contact Dr. Ron Heslegrave, the REB chair, should you have any questions concerning your rights as a participant or ethical issues at 1-800-341-6323 x 6996.

I have read and understood pages 1 to 3 of this consent form. I agree, or consent, to the data gathered during my interview to be used for research purposes. All questions I have about participating in this study have been answered to my satisfaction. A copy of the consent was given to me.

Name of Individual:_____   Signature:_____

Name of Person obtaining Consent_____   Signature_____

Date:_____

Appendix H: Participating Therapists

For visual representation please refer to Table 12 for the results of the interview recruiting process. Five therapists were contacted at a weekly team meeting at the BPSR Clinic. Four of the therapists are full-time therapists employed at the organization and one therapists is a part-time therapist at the BPSR clinic. Three therapists completed consent forms at the meeting. They were contacted within one week via email to set-up an interview time. Two of the three therapists that consented responded via email to set-up an interview time. The third therapist that consented was contacted 3 times after the initial meeting via email and did not respond. The fourth therapist that did not complete a consent form at the initial meeting was contacted via email within a week of the initial meeting and did not respond. The fifth therapist that did not complete a consent form at the initial meeting was contacted within a week of the initial meeting responded and agreed to participate. The sixth therapist is a full-time therapist but was not present at the initial meeting. A consent form was passed on and she was contacted via email within a week of the initial meeting. She responded and agreed to participate. The seventh therapist was the program director at the organization. There was no response after 5 attempts to contact her via email. The eighth and ninth therapists are DBT therapists, previously employed at the organization. They were contacted via mailed letter through Human Resources and did not respond. The program director was contacted via email a second time to contact previous DBT therapists via Human Resources and did not respond. The tenth and eleventh therapists are DBT therapists of the DBT youth program. They were recruited through snowball sampling via email. They did not respond. It was later decided that their program was too different from the standard DBT program protocol and thus were not further pursued for interview. In total, 11 individuals were contacted to participate, 5 consented, and 4 interviews were conducted. Nine out of eleven individuals were

eligible to participate (due to the DBT youth program), and it is not known if the tenth and eleventh therapists received the letter asking for their participation. If we assume that the tenth and eleventh therapists were successfully contacted, this study would have a 45% consent rate.

TABLE 12: Therapist Participation

Therapists	1st Contact round	1st Contact Snowball Sampling	2nd Contact round	3rd Contact round	Subsequent Contact round	TOTAL
Interviewee 1	Consented in-person		Participated			
Interviewee 2	Consented in-person		Participated			
Interviewee 3	Consented in-person	Did not respond	Did not respond			
Interviewee 4			Email - did not respond			
Interviewee 5	Did not respond		Participated- Consented via email			
Interviewee 6	Consented in-person		Participated			
Interviewee 7	Did not respond		Did not respond	Did not respond	Total of 5 emails sent - Did not respond	
Interviewee 8	Contacted via mailed letter – Did not respond		Contacted the Program Director about sending out another letter – Program Director did not respond	Previous DBT therapists at Ontario Shores originally contacted via letter by Human Resources – no ability to follow-up		**4** Therapists participated in the study
Interviewee 9	Contacted via mailed letter – Did not respond					
Interviewee 10		Email - Did not respond		Chose not to include in study due to differences in program implementation and target population of their program		
Interviewee 11		Email -Did not respond				
TOTAL:	**7** potential therapists were successfully contacted					**45%** consent rate

Therapist and Interview Characteristics

Table 13 provides details on the interview duration and format, and describes the therapists interviewed. Interviews lasted between 50 minutes and 1 hour and 38 minutes, averaging 69 minutes. All interviews were digitally recorded with participants' permission. All interviews were conducted at the BPSR Clinic. The interviews were conducted between August 2017 and September 2017, and no follow-up interviews were conducted.

Therapists were first asked to specify their role at the organization and experience implementing DBT. All therapists reported learning how to implement the DBT program while working at the organization and all participated in DBT training offered by the organization. Presently none of the DBT implementers are officially certified as per the Linehan Board but they are working on having the team leader certified over the next year as well as two other implementers. In December 2015, the organization paid for the therapists to take a 5-Day Booster Training course through Behavior Tech (the official DBT certification board), as a result 3 of the 4 therapists currently have standard training. All participants have also independently continued their DBT training through DBT classes and on-line training. On-line forums are also used as a means to validate adherence of individual therapeutic techniques.

TABLE 13: Therapists and Interview Characteristics

Therapist	Interview Type	Duration	Experience	Role
Interviewee 1	In-person	50 min	Social worker, 6 yrs experience	DBT therapist/Program implementer
Interviewee 2	In-person	1 hr 8 min	Social worker, 3 yrs experience	DBT therapist/Program implementer
Interviewee 3	In-person	1 hr 38 min	Registered nurse, 5 years experience	DBT therapist/Program implementer
Interviewee 4	In-person	59 min	Registered nurse, 3 years experience	DBT therapist/Program implementer

PART I: Interview Script and Questions for Program Implementers Paper #1

Thank you for agreeing to take part in this interview. For my PhD thesis project I am studying the factors associated with DBT fidelity implementation. I will start with a set of broad questions about the barriers and facilitators associated with DBT implementation. I will then move on to more detailed questions that are related to your practicing philosophy of the DBT program.

To ensure that I am clear, I will define some of the terms that I will be using during the interview. First, fidelity will be defined as the degree to which delivery of an intervention adheres to the protocol or program model originally developed. In the context of this study, this will refer to the ways in which the program that was implemented at OS differs from that which was originally intended. Program components will be defined as the evidence-based elements of the program that influence behaviour change mechanisms, such as individual therapy or counseling. When I refer to adapting these components I am referring to the ways in which these components may be modified or implemented differently from that which was originally intended. I will also be asking questions that will be used to determine the factors that influence fidelity at the organizational and programmatic level. The programmatic level will be defined as the activities involved in delivering health services such as the technical and interpersonal actions of DBT therapists. The programmatic level also comprises of the evidence-based parts or components of the program that influence behaviour change mechanisms, such as individual therapy or counseling. This may also include the amount or the duration of the intervention that the client is expected to receive or the number of staff dedicated to implement the program. The organizational level will be defined as the factors that impact program implementation, which are influenced by the organization. For example, factors that affect the context in which care is delivered such as its physical facility, organizational characteristics (i.e. size of organization, geographical location) and staff training.

In Part II of the interview, I will ask you questions that are related to your experience or opinion of DBT implementation for specific clients.

1. What is your role at Ontario shores, and how long have you been working with this organization?
2. How long have been practicing DBT?
3. Have you practiced DBT at other organizations?
4. If so, does the DBT program at OS differ from others implemented at other organizations? In what ways?
5. In your opinion, does Ontario Shores offer a comprehensive DBT program?

6. In your own words, can you describe what a comprehensive DBT program entails?
7. Do you currently monitor fidelity of the DBT program? If so, how do you measure it?
8. Do you think fidelity is important to the DBT program? If so or not, why?
9. Do you think adaptation is important to the DBT program? if so or not, why?
10. In your experience, do you think that it is possible to balance both fidelity and adaptation during implementation?
11. In your opinion, is there a point at which modifying the program would be detrimental to program success?

Next, I will ask you questions about how you feel when implementing the DBT program.

12. Do you feel respected by your colleagues? If so, why?
13. Do you feel respected by your clients? If so, why?
14. Do you feel confident implementing the DBT program? If so, why?
15. What has been your experience with implementing the DBT program?

Next, I will ask you questions about the barriers and facilitators associated with DBT implementation at the organizational and program level.

16. Do you remember what organizational factors facilitated the implementation of the program (i.e. support staff, facilities, DBT training courses, access to DBT training and implementation materials)?
17. Do you remember what organizational factors were barriers to the implementation of the program (i.e. support staff, facilities, lack of time to prepare for clients)?
18. What programmatic factors have facilitated the implementation of the program (i.e. DBT program components are clear, program components are technically sound, goals of the program are clearly established)?
19. Do you remember what programmatic factors were barriers to the implementation of the program (i.e. Not all DBT program components could be implemented, technical components of the DBT program components are unclear, program components are not technically sound, original DBT program did not suit your client population)?

Next, I will ask you questions about any changes made to the DBT program at the organizational level during the DBT program.

20. Do you remember if there were organizational changes made during the course of the DBT program that affected how you were able to implement the DBT program? If so, what were the changes?
21. How did you feel about these changes? Did these changes impede or improve your ability to implement the DBT program? If so, in what ways?

PART II: Interview Script and Questions for Program Implementers Paper #1

In Part II of this interview I will ask you questions pertaining to your experience and opinion in implementing the DBT program for specific clients.

1. In your view, could you please describe the normal symptomology trajectory for clients that have participated in the DBT program for one year?
2. In your experience have you ever had a client that did not follow the normal symptomology trajectory? If so, what about this client made them different from your other clients?
3. How do you respond to client heterogeneity during DBT implementation?
4. If you had a client that XY trajectory, would you modify your treatment? If so, would/did you share with your colleagues the adaptation you made, so that they may use it?
5. Do you think that adaptations did/could improve program effectiveness for clients?
6. Given what you know now, would you make those same adaptations today?
7. What program components do you think interfered with program effectiveness for individual clients, if any?
8. Did you have to develop any new methodologies or procedures to accommodate for these adaptations?

Next, I will ask you questions that are specific to your practicing philosophy.

9. Do you feel that your implementation of the DBT program differed from your colleagues? If so, in what ways does your implementation of the DBT differ from that of your colleagues' implementation?
10. Have you had to implement the DBT program despite your own conflicting philosophical views or values? If so, please provide an example.

Thank you for your participation!

The Three Categories of Factors Influencing Fidelity
Individual category: include quotes which refer to individual client trajectories and characteristics such as changes in client outcomes over time, the degree to which the client has achieved the intended program outcomes, and indicating the relative success or failure of the original program protocol or quotes which provide evidence of differential client needs. This will also include quotes which describe the characteristics of clients.
Programmatic category: include quotes which refer to the theoretical and technical soundness of program components and the perceived effectiveness of program components.   *Barriers:* include quotes which refer to any challenges for the therapist that may impede implementation of the DBT program at the programmatic level.   *Facilitators:* include quotes which refer to any experiences for the therapist that may improve implementation of the DBT program at the programmatic level.
Organizational category: include quotes which refer to factors that are inconsistent to the original program model that impact program implementation, which are influenced by the organization, this also refer to factors that affect the context in which care is delivered such as its physical facility, organizational characteristics (i.e. size of organization, geographical location), staff training, and organizational constraints (i.e. resource or personnel constraints).   *Barriers:* include quotes which refer to any challenges for the therapist that may impede implementation of the DBT program at the organizational level.   *Facilitators:* include quotes which refer to any experiences for the therapist that may improve implementation of the DBT program at the organizational level.
Program implementer/therapist perspectives: include quotes which refer to various therapist characteristics responsible for implementation and how they interact with the patient/client. This may include quotes which refer to practice preference, values, skill and experience of the program implementer/therapist.   *Barriers:* include quotes which refer to any challenges related to therapist characteristics, practice preference, values, skill and experience that may impede implementation of the DBT program at the program implementer level.   *Facilitators:* include quotes which refer to any challenges related to therapist characteristics, practice preference, values, skill and experience that may improve implementation of the DBT program at the program implementer level.
Potential Moderators Influencing Fidelity in the CFIF Framework

Intervention complexity: include quotes which refer to DBT program comprehensiveness, details of the program, and nature of the program which may also include quotes which refer to DBT theory, program processes, social and organizational systems.
Participant responsiveness: Include quotes which refer to implementer beliefs, attitudes and enthusiasm and values in accordance with the tenants of the DBT program. The may also include quotes which refer to the respectfulness one feels from colleagues and clients, and the confidence one feels when implementing the program.
Facilitation strategies: Include quotes which refer to access to DBT training and implementation materials/manuals, and continued DBT training courses.
Quality of delivery: Includes quotes which refer to the amount of time one receives to deliver treatment, to prepare for treatment, and monitoring and feedback about the program.
Context: Include quotes which refer to surrounding social systems such as the structure and/or culture of the clinic and the organization.
Fidelity
Fidelity: include quotes which refer to the degree to which a program was delivered as intended, the extent to which the implemented program reflects theoretical methods and strategies and the completeness to which program components are delivered and the extent to which the program reached its target population.
Adaptation
Adaptation: include quotes which refer to the deliberate or unintentional modification of a program through: 1) deletions or additions (i.e., enhancements) to program components (e.g., to content, materials, activities); 2) modifications to the nature of the components; or 3) changes in the administration or intensity (i.e., amount or duration) of program components, this may also include quotes which refer to modifications that occur as a result of unforeseen circumstances or to preemptively address differences in program context.

APPENDIX K: Deductive coding audit table, individual categories of factors

CATEGORIES OF FACTORS INFLUENCING FIDELITY	
Individual Trajectories	
Main theme: Individual DBT trajectories differ among clients 2nd theme: Individual characteristics differ among DBT clients 3rd theme: Individual clients require specialized care	
Therapist 1	"Yes unfortunately again we've got people, people who've dropped out because they've missed for more than 4 in a row and I've had to let people know that they will be only doing one more module because they have missed so many modules… they're not doing DBT. Not a lot."
Therapist 2	"Yeah so I think there's a couple of variables that happen there. So there is a lot of clients that have other experiences or illnesses compounding so if they have a really intense trauma… experiences… as well like if PTSD is a factor I think we often see that one year doesn't maybe… doesn't have the exact same movement. A truly one year of stage one treatment doesn't seem to be enough. Or we may get that we don't have a lot of resources to move to stage 2 treatment and continue with the skills stage 2 …"
Therapist 3	"DBT has a big belief in its not a one-size-fits-all and timing is a very important thing, timing, commitment. So in that data wouldn't reflect people that haven't completed the program it would be interesting to look at all of the people that have dropped out to kind and see how that goes… So here we are they're trying to learn new ways of doing things and they're building they're awareness and they have not mastered ways of changing the behavior so there in the thick of where are all these emotions coming from and 'it feels completely awful and I feel terrible and I'm not quite confident yet and using these other technics', but I'm moving away from self harm, drinking, from the maladaptive ways. There is that in between phase that almost all clients go through."
Therapist 4	"I'm thinking the ones that don't have much change are the ones that don't even get through the whole six months. If someone has stayed six months or year I would say that they're probably pretty steady like there hasn't been any kind of a 'ha ha' moment. Some clients will report feeling worse so… Well often if they're not seeing a change or reporting that they're not feeling that things are improving or they're feeling worse than… in my situation with some of my clients they've actually… like I've said not been here for themselves or the timing is just not right so they'll just decide and like pros and cons… like 'is this therapy something I want to do right now?' Often they'll just decide not to keep coming".
THE CONCEPTUAL FRAMEWORK FOR IMPLEMENTATION FIDELITY: POTENTIAL MODERATORS INFLUENCING FIDELITY	
Therapist values	
Main theme: Therapists believe that the client-therapist relationship is important to successful implementation	

Therapist 1	"To meet a relationship with the client is the most important thing. And I can't implement anything dazzling if, if I don't have the relationship so I spend a lot of time on the relationship with the clients. If you don't do that doesn't matter how perfect this is they are not going to accept this, they won't trust you enough to do it."
Therapist 2	"Yeah, I think so. There are obviously moments where there more or less respect and I think that there's actually a piece that in terms of the commitment phase of this treatment when you're working with clients talking about structure as well as the principals and we will interact and you're talking a little bit about behavioral principles like behavioral therapy techniques where there's some clients that really would prefer a less adherent or more individual eclectic model like 'I come with this goal help me to solve this problem with whatever tools you need,' as I think sometimes there's a tension that happens where it's like 'this is what I have in my basket if you don't want this I'll help you try to find something that is different'."
Therapist 3	"I pride myself on…I think DBT is most effective based on…the effectiveness is based on how strong your therapeutic rapport is on that foundation of respect. It has to be there… I try to be very genuine with clients and I think that I feel very blessed that they're putting their trust in me to share their deepest experiences and things that they're going through I'm…so it's really quite something to work with someone every week for one year. So it's all about that genuineness."
Therapist 4	"There's just that feeling that there's that mutual respect when they're coming and you know putting in that effort and putting in that effort and all the little details maybe they really struggling but they're putting in the time coming, coming to their appointments or they're still trying to do their diary cards, you know not consistently coming… things that are expected.."

Quality of Delivery

Main theme: Flexibility in program duration for individual clients
2nd theme: Therapists decide treatment duration for individual clients

Therapist 1	"and the other piece of this and this maybe going back to the impediment is that for years where in year 1 I have done one after care for a year. And there has been nothing since. I keep saying we need follow-up this isn't enough for the people. They have been this way since age 6, sorry we need to give them something that they can come to and shore themselves up, they're going back to the community and doing jobs and they need something, they need the skills, a refresher anything. So we're starting to look at that."
Therapist 2	"We have now have a mechanism for consulting and asking for extension. We have one client who kind of fit that picture of trauma and lots of the life-threatening behaviors and participated in our program for two years. And are now discharged with much more control and that they needed that two years. That's a rare… it's the exception."

Therapist 3	"Now the other challenge I guess with the DBT we call it a one-year program but really in Marsha Linehan's clinic or wherever they can be in it for years and years, so it's kind of artificial. How kind of…how we have it. So sometimes I find particularly if there are a lot of complexities, so for example I have one client with severe complex trauma it took me six months to a year to just to get her not to dissociate in group, to get her present enough to be able to participate in group. So I've extended her, but she's not typical. There's always people who need slightly different things. So you can't necessarily compare those two."
Therapist 4	"I would say we've done just a skills only group where there hasn't been individual therapy so we've done that before… I found that it didn't work well. Clients really needed… well first of all you don't have a relationship with those people in the skills group, so you don't know what's going on with them and it can be kind of challenging to have a group and everybody has a diagnosis that you know nothing about what's going on and hope that nothing bad happens so I didn't find that it was great. We did offer like check-in's but… It wasn't effective for them and it wasn't effective for us because you know you always have a few people that really need to have an individual therapist or need somebody for support and you really kind of find out the hard way…"

ADDITIONAL CONCEPT:

Fidelity (adherence)

Main theme: Expectation of a level of adherence for individual clients
2nd theme: DBT implementation requires fidelity with flexibility to meet individual client needs

Therapist 1	"No (would not modify the DBT program outside of the model), I would tell them to hang in there. Just wait … white knuckle it. These are people that are living in absolute misery in their lives, so having insight is not a great thing - okay then what.. So I tell them up front you're going to hate the first three months and we're going to hang in there together because in six months you have all the skills but you don't have.. don't at 3. The literature will show this as well that they're using more DBT at first and then at three months I expect that number to go down I expected the BSL 23 to go up… actually work because they're suffering more because now they're actually aware that their suffering they weren't aware of how much they were suffering before because maybe they were disassociating all the time… not 'yes, this is how this is impacting me'."
Therapist 2	"No, there have been at occasions, I can think of one, where … again programmatically is not changing any of the variables of DBT the thing that would change for that client is negotiating a different limit say around the coaching 24 hour rule for… if they engaged in self-harm or life threatening behaviours. So with the client that we had where there is more of those behaviors, such a high frequency, that would probably never get access to phone coaching if we remained with that 24 hour protocol, there would be an adaptation, we have adopted that for… you choose a certain target for self-harm behaviors and work down from there. But I think that before we did that we consulted with Charlie Swanson some of the key

	kind of DBT leaders to see if this is still DBT, that's where the sort of principal driven stuff comes in."
Therapist 3	"It's become essential on our team that we've become well versed about the underlying principles of DBT so that we can flex according to what those individuals need because previously it was more cut and dry so if they couldn't come then that's it and then off we go. As we understand more about the program and the need to individualize things we've been able to advocate and say. So we have two clients for example that we've been able to extend to two years. We standby that and not everybody will need that but if we put those people and compare them, the trajectory would still be going up but it would be going up much slower, change is much slower. And that's what we have found even people that have gone through it a couple of times they still got something from it and it made them more ready the next time they came through."
Therapist 4	"I think within the DBT framework I would always consult with the team and see what would fit within the DBT framework to see what we could try… that I wouldn't use a different model of therapy or do something that wouldn't be within DBT...I think sometimes it's not always how can we adopt it.. it's… there's other things like is this the time for them to be here? Is the timing right? Or are they here because they want to be here or are they here because someone else wants them to be here? I think there's a variety of factors that sometimes impacts whether someone is successful or not."

ADDITIONAL CONCEPT:	
Adaptation	
Main theme: Different methods/procedures developed to improve patient-centered care. 2nd theme: Nuanced adaptations may improve program fit for individual clients. 3rd theme: Adaptations made to meet individual needs did not violate the DBT program model.	
Therapist 1	"…I think it speaks to ethics as well if people are coming from a far distance I will put their individual and group on the same day even though I know it's not ideal and you're supposed to have separate individual and separate group. If someone's on Ontario Works they can hardly make it gas wise to get here. So I feel strongly not setting up... And unless they're on ODSP they have to pay for parking. That's formidable. Are they for an entire day going come here to…so those are the types of things that I feel strongly about but that I have to make it as easy to get people here. There's enough hoops that they've been jumping through all their lives they don't need to jump through that one. ."
Therapist 2	"I record voice memos for all of my clients… well not all of my clients…on their phones so after hours they can have a recorded message from me to remind them of the skills working or to remind them of certain… AT 9 PM if they can't access me they can get voice recorded skills coaching from the person that they trust in a way… and then if that doesn't work then they have to call crisis then it's like okay. But like they have this first land of skills that they found…"

Therapist 3	"One thing that we have changing over time is because they're our varying… various effectiveness with the way that we are applying the coaching right now some people feel, some clients don't like to use that method of asking for help or they've tried and pages haven't gotten through and that sort of thing, it's led me to shift a little bit and do more shaping towards using coaching. So what I'll do is set a goal with the client in asking for help calling and we'll set a goal for per month is that they're going to page me X number of times over the next few weeks just to build up that skill. Or we will pre-schedule coaching sessions with the idea that overtime is going to work towards them calling when they need it as opposed to… and I found that very effective… it's like an exposure to.."
Therapist 4	"So I guess the way that we figured around it, doing the 24/7 pager, is having a crisis prevention plan for clients when we're not available for coaching, having skills set-up so that they can use, also using the crisis line here at Ontario Shores… if they are having suicidal… to go to the hospital."

CATEGORIES OF FACTORS INFLUENCING FIDELITY	
Programmatic Category	
Main theme (Facilitators): All DBT program components are clear and technically sound. 2nd theme: DBT program components are principled and theoretically driven.	
Therapist 1	**"…**Because the beauty of this is that even the skills group in 1993 to the new printing that's changed. So it's always being updated. It's not like DBT is a static thing that when you take it, it's like it's changing. Behavioral Tech website has change so there're new concepts there new information, there're new ways of looking at this. Kelly Kerner has brought DBT to life for me in terms of the way that she says that she does a lot of her own case formulation which really makes things make sense and it makes sense to the client to use some of her techniques."
Therapist 2	"And for me it's a therapy it just clicked, it just clicked. And I don't think it's just for them it's for everyone. I think this is probably my nature… someone that likes to continue to read, develop and it keeps me going and so this is a therapy where you can continue and that you think you got it and realized 'oh there's all of that so that works'. And I like having the framework and the common principles to rely on when I am feeling at odds in terms of formulating recommendations with client or understanding this, common case formulation or this based on their primary target and the secondary targets, does this make sense? It does… getting this back and fourth, but I like having this framework as opposed to working more eclectically, I've never felt as settle when I worked more eclectically."
Therapist 3	"Yes. Over the years the more adherent we have been, the more beneficial it has been to their relationship and to the outcomes that we have seen. For example we brought behavioral techniques and it really worked from that perspective which is what Linehan had intended…it demonstrates to us over and over why this works. That's why consultation team becomes really important because often there is a disconnect between you feel like you want to respond a certain way but you might be reinforcing the wrong things. So if I take a real behavioral approach it might feel a bit out of my comfort zone because that is not my training but I'm always blown away after that because that has been the most helpful thing. It really reinforces why all of these components altogether work."
Therapist 4	"Yep. I think it all makes sense the only thing like I said earlier was the phone coaching that part doesn't make sense to me… (the Linehan model) that makes sense but the hardest part is for clients to go home and take the skills they're learning and use them in their everyday life, so I think that definitely makes sense the whole program makes sense…"
Programmatic Category	

Main theme (Barriers): No programmatic issues for successful implementation of DBT program components.	
Therapist 1	"No, no. As I 've said to you I'd like to be more behavioural. I think that's… I don't think in those terms."
Therapist 2	Quote referring to programmatic factors that may be a barrier: "No, I don't think so no."
Therapist 3	"No, not within the components themselves it's always been that we have difficulty fully adhering to the model because of other barriers."
Therapist 4	Interviewer: "Are there any DBT factors that have been barriers to the implementation? So for example not all the program components can be implemented, they might not be technically or theoretically sound… I guess you just said a hundred percent you believe it works..?" Interviewee: "Yep."

Organizational Category	
Main theme (Facilitators): Organizational provision of limited DBT training. 2nd theme: Disconnect between the organization and DBT implementers about the value of DBT training.	
Therapist 1	"In terms of training yes, the hospital… it didn't make a lot of sense they opened DBT to the entire hospital so a lot of people were in and out of there…psychiatrists included who never stayed for the full training and now they'll say that they're doing it, DBT but they weren't. Meaning it would've made more sense if it was specific to be BPD because we were doing the DBT program. So it was difficult because…"
Therapist 2	"Absolutely, we have had the benefit of having a several intensive training opportunities from Behavioural Tech. So that's a very key thing that's helpful…the other piece that there has been an organizational buy-in or willingness to pursue being a certified program and while challenging, they also are looking at ways to assist with myself and another colleague to become certified clinicians so, so they've been doing the best they can… again and recognizing the reality of financial strains, different healthcare priorities have been supporting that allows for other training opportunities and that we can use some of the other mechanisms, that are available in terms of education grants and such for those. Even at the point of I was talking to the librarian yesterday creating a reading list of all the resources we have for the new stuff coming on and there are a couple of resources that we would really recommend if you could get them. It was like ok perfect I got $500 to buy them and I bought two new books, so I was like yeah.."
Therapist 3	"So eventually after a lot of advocating we did get online courses and some training but it was like on the job as we were doing it. So it was kind of like reading the book, go do this but my training didn't come until the fall, but I started in January seeing clients so formal training didn't come until the following September. They did do that and that did make a big, big difference. And we've advocated that they do that when people get hired. The downside is that those trainings are not offered very often so it

	becomes difficult when you hire new people if it's only done once a year or twice a year it's hard to get them on the cycle. But that's a bigger systems thing. But we've heard from the organization that they're committed to doing that. They've had Behavioral Tech come in and do some consultation, which was helpful. Initially it was shared between a couple of programs so that part wasn't helpful. It would've been helpful if it was just focused on how to implement and adhere DBT program but we didn't have access to some DBT experts and then they had the training and they brought in the whole team and that was the most helpful thing. That was in 2015."
Therapist 4	"But I think they do try.. they did bring Behavior Tech here to do the training it wasn't the most helpful… no… but they were trying… and same with the Mindfulness training. But they did try to offer us some consultation with Behavior Tech that we actually didn't find entirely helpful but it was… what I'm trying to say here 'we're trying to help you' so I kind of feel like that was them trying to facilitate us to improve our skills and, and get some expert advice. However it didn't work out the way that…"

Organizational Category

Main theme (Barriers): Organizational funding constraints create ethical dilemma for program implementers.

Therapist 1	"Well, we definitely need to the infrastructure. So that means the tools, that means that if this is what this organization has purchased then they need to follow it. For example, to increase our numbers we were asked to consider check-ins for clients that come to group and before and after group, which is not DBT. And some clinicians don't want other people checking in with their clients because we can't possibly know, we know our own, but we don't know what other people are necessarily working on at that time and it would be a false sense in my opinion of… for numbers… Only because individual counts unfortunately group doesn't. Which makes no sense because that is the whole entire reason for DBT. Unfortunately the LHINS do not recognize it. They don't get the same money here for a group as they as they do for individual. So it's a false way of capturing that…"
Therapist 2	"They want us to do skills with an added check-in the day they arrive. On one hand it makes a ton of sense to check-in on the day of skills that relationship. But the message is that you run skills group and get a face-to-face visit and force an individual moment for five minutes with those clients while they're here so you get that, well you get that too. Clinically relevant sometimes for sure and I have no problem doing that… When it's not clinically relevant sometimes I'm like 'wait a minute' and I I'll fall back to the DBT principals and what the adherent way would be instead of what the organization will say."
Therapist 3	"but I often feel that the organization…that because they're so numbers focused and that's how our funding …how I understand it comes from how we are funded everything is on number of visits and we don't get credit for any of the group interactions that we have so it's almost like you didn't see

	anyone that day. I feel that there's a lot of pressure within the organization to have us alter the model… they want us to do PCVC Guest link on everyone which we wouldn't necessarily, if someone didn't show up for an appointment or if they were sick and didn't feel like coming in, that would be a therapy interfering behavior and I wouldn't want to then offer them to do it by…because that would just reinforce… there're a lot of things that we can't do just for the sake of numbers… that has to make clinical sense."
Therapist 4	"…and the clients are really quite draining at times, right? Just by the nature of the client population that we work with, so there's a lot of burnout and, and a lot of stress put on us not intentionally just by the nature of our clients and the therapy. So it's highly stressful and I don't think that that is acknowledged. It's just that you need to make sure you get your numbers then you need to make sure that you're getting funding… So they would like us to use other things like OTN or PCVC where clients… where we can schedule visits over that if you can get five or 15 minutes with a client talking to them that can be considered a face-to-face but you can't plan a crisis call so… none of my clients right now want to use that method of communication…"

Program Implementer Perspectives

Main theme (Facilitators): Therapists' personal growth facilitates program implementation.
2nd theme: Therapists' practice DBT principles in their own lives.
3rd theme: Collaborative approach to therapy improves individual therapist knowledge

Therapist 1	"I think that I'm getting more confident, I don't think this is ever anything that you ever arrive that one day and say 'wow I got it'. Because the beauty of this is that even the skills group in 1993 to the new printing that's changed. So it's always being updated. It's not like DBT is a static thing that when you take it, it's like it's changing. Behavioral Tech website has changed so there're new concepts there's new information, there're new ways of looking at this."
Therapist 2	"So I think main thing is having a willingness to continue on to learn and to really get solid DBT training like I don't think that this is a therapy that you can just walk into and flip through a book and think 'ok, I've got it'. But I think the training needs to happen and the clinical supervision piece needs to happen. And consult plays a role. But I think for me what makes it adherent is like the belief. I believe in the principles and believe in the assumptions they really, are really important and I think you have to have an empathy and a notion of caring towards clients and their pain and suffering. I think that individuals with emotion dysregulation can be challenging sometimes to connect with for many clinicians and I think that that's the part of that."
Therapist 3	"You know, when we've gone to training with Shelly McMain and any of the people that are experts themselves they have their own supervision as well and then that's an important part. And even though we function as a consultation team there is still the personal development that is required given that we've never had kind of an expert here we all started at the same place, it's like the blind leading the blind, we actually don't know what we do well and what we don't. So that would be the other thing to have some

	sort of mechanism to see how we're doing…someone to come in to consult on more of the challenging cases just to ensure that that growth and development is ongoing."
Therapist 4	"Mindfulness is just being present in the moment, paying attention, being focused and doing things with intention, and I don't know if I've had that before so I can really see the importance of doing that in my everyday life. Even at home I find that I'm more mindful. I would say balancing acceptance and changes is another… I don't know that I've ever really look at things like that before.. trying to find the dialectic in things really has help me grow as an individual and a clinician and I find that I use most if not all of the skills in my everyday life. Using it with my kids and it's amazing what I'm like okay this is what I would normally do and maybe I would have done something that I would typically do and then I'm like what, what would I do if I was at work and then I do differently and I'm like okay that was much better. It really is easier to live and practice what we're preaching."

Program Implementer/Clinician Perspectives

Main theme (Barriers): Perceived skill level and experience may impede DBT program implementation.
2nd theme: Lack of training in human behaviour may impede DBT implementation.

Therapist 1	"It made sense to me. DBT, I like it, I'm not behavioral meaning that I, I am getting better. I wasn't trained behaviorally. So that's the piece that I still need to be very aware of in terms of contingencies and making sure that I am not reinforcing things that I shouldn't be reinforcing unconsciously. It's not that I mean to do that, it's just like, 'oh yes of course that would make sense'. So that's the piece that I really have to really work on make sure that I am, to make sure that I am doing this properly. I also really have taken the above and beyond the core training I've taken training with Kelly Kerner in practice ground and case formulation as well as the skills group."
Therapist 2	"And so prior to that I functioned as a behavioral therapist in the organization I have a lot of experience that is more behavioral background which I think is one layer that is a little bit different.. sometimes in consult it's like not uncommon for me to think of reinforcement, stimulus procedures, those sorts of things, that is based on my own experience. I think that's one variable is different. Some of our other team members who have had different training and professional experience .. and don't have that behavioral lens and like have to put it on…'oh yeah I've got to look at it this way'.. I would say that's the only difference and sometime there may be like a difference of an opinion around that, like I would say that's the only, only difference but again can you get that variation in any team, like its only…it's not a problem it's just…"
Therapist 3	"probably the hardest part of the whole DBT thing is because my orientation, and my background, my training is nursing I don't have a strong understanding of behavior and behavior therapy it's almost like someone plopped me in and I'm speaking a whole foreign language. It's

	really different. It's not that I feel conflicted about it, it pushes me to my personal limits or outside of my comfort zone, I guess if you will. Which is not a bad thing really because I've struggled with that over and over realizing oh 'it's me again with my'…if I were to be more behavioral and implement this more consistently… the proof is in the pudding… if I do what Marsha said it actually works."
Therapist 4	"Learning it was very overwhelming because there's so much information to learn, so many words… it's like a different language so it feels very daunting and overwhelming and even to this day when I go to skills group I'm like 'oh I never looked at it that way' or 'there's things I'm still learning'. I'm so… I have a greater appreciation for clients who were coming here and trying to make those changes in their lives and we're giving them one shot at these modules or maybe two…And it's quite overwhelming… as far as when I started using it with clients I felt really kind of underprepared almost in a way because …as much as you can read about it and watch videos it's still really the act of doing it and making it your own and trying to follow the principles is really kind of a challenge because, you know, you can only read so much and watch so many videos and then you have to go get your feet wet and so it's quite intimidating to use."

THE CONCEPTUAL FRAMEWORK FOR IMPLEMENTATION FIDELITY: POTENTIAL MODERATORS INFLUENCING FIDELITY

Intervention Complexity

Main theme: Comprehensiveness of the DBT model is well understood by therapists.
2nd theme: DBT is a multi-layered and complex program.

Therapist 1	"that would involve different components and different processes including first of all meeting with a client and discussing what is involved so they are aware because it is a huge commitment for individual counseling and group skills. If they were agreeable to that we would meet, would meet in treatment for at least 4-6 sessions, depending also on when the groups start because we like to fill the groups. So sometimes we will put the sessions together so we can get someone into a group otherwise they will have to wait eight weeks to start another group. And then they would start treatment and skills group for six months at this point now. If they improve and show that they're making progress we will ask for an extension. So comprehensive DBT I make sure that I'm attending the team consult and that I present cases and as well and I take my education and my courses up definitely because things are changing all the time and information is changing all the time."
Therapist 2	"So there are several components to a comprehensive DBT program. The first being that therapists meet with a client individually, and that they're also a part of a DBT skills group and that there's the option of having phone coaching or skilled coaching and that there's consultation to the therapist. And those are sort of the 4 components.... Yeah, so in terms of those four components it's about…well there is a number of certain procedures or structures laid out within DBT that it really is a principle driven therapy so I think that's a key piece in adherence and applying some of the protocol sent from the skills and from the CBT book for Marsha…

	but also then living those principles as a DBT therapist so making sure that are you are you doing all the components from like diary cards to chain analysis to solution analysis, missing link, validation, behavior change strategies layers, layers and layers of this that you almost have to fully integrate and live and not check okay I've validated hear … it's about living it and I think it's the other key component that, I that I understand it."
Therapist 3	"So a comprehensive DBT program would have 4 components, they would offer individual therapy weekly, a skills training in group, usually about 2 hours in length, sometimes longer…(phone coaching) That's weekly as well, and then there's coaching, phone coaching to help with generalization of skills and then there's a requirement that there is a consultation team… The most difficult part of DBT is probably generalization of skills. So things can make a lot of sense when they're sitting in the classroom, but then when they're out in the world, things are going on, their emotions spike, that's not the first thing that is on their mind. It's kind of to call in those moments before the crisis to help in specifically using skills."
Therapist 4	"A comprehensive DBT program entails having individual therapy, skills group, the consultation team and having telephone coaching available."

Therapist Values

Main theme: Respectfulness among colleagues.
2nd theme: Camaraderie among DBT implementers is important for successful implementation.
3rd theme: Therapists' are enthusiastic about the DBT program.

Therapist 1	"That's an interesting question. I think I'm probably the one who consistently calls people out on things and which isn't always greeted with respect. You know because we've had so many changes in this program it's been difficult to feel like you're landing on something, and everyone has a different styles so the team leaders have a different style and a different way of being able to do this treatment and of their perspective of how the treatment should be done. And then *** took over and I appreciated, and I think *** did a lot for the program in terms of the nuts and bolts and she's always trying to fight for, for, for that isn't DBT, that isn't DBT."
Therapist 2	"Well I think that if I look at my interactions and my experience with this team I think there is respect for the passion that I have for DBT and for the fact that I'm genuinely here for the right reason, but I have passion for the client because I do believe in DBT and because I'm willing and I want to do the work, I think in that regard yeah I would say that."
Therapist 3	"I don't know if I've always felt respected but I do at this point. There were times over the years where there wasn't as much of a common vision and I think right now it's quite a nice blend of all of the members. I can honestly say that they are passionate about this work and working with this population and that everybody gives 110% and that's such a difference being here. But why do I feel valued? I don't know. It's just how we talk to each other that feedback comes up in consultation team often. It's a very validating environment it's very good at highlighting the things that they

	feel one might be doing well or contributing, we also kind of celebrate things so we have like a structure within our consultation team and we're not just talking about the more challenging cases but we talked about successes and wins and I think that's a big part in valuing and recognizing others."
Therapist 4	"we have that relationship where I feel they can come to me and approach me if there are any concerns or issues and we seek mutual feedback …and yeah, I definitely feel heard by them… and it's a really unique question. Like there're times that I didn't feel so respected but I feel that's not the case anymore."

Facilitation Strategies	
Main theme: Access to training and implementation materials. 2nd theme: Paying out-of-pocket for DBT training is expensive.	
Therapist 1	"Compared to what we were doing it was kind of generic. We've had some additional kind of a brush up one for a week for mindfulness I think for a couple of days we had a mindfulness training. Which is helpful. I'm all for any training but it would've made more sense if we could've been trained as a team, if we could've actually been sent you know somewhere or have someone coming in to do that. "
Therapist 2	"Having individual spaces is something that we have to be improved but you know, we do have that space and that's based have a charting system now that is set designs for DBT in MediTech where all of our notes are specific to DBT. We have a DBT case treatment, individual session notes. Our skills note doesn't look like any other like anyone elses', it looks like DBT skills group. That really does facilitate the adherence piece because you can look and your not like 'what strategy did I use…?' No, it's all there."
Therapist 3	"Now having said that we've had no problem getting books and manuals that's sort of thing. Things like training came much later that was also difficult to get at the time that it was needed. So they've done a mass training within the organization in 2011 but very few of the people that ended up working on the team that did that. And by the time the rest of us were hired there was a delay in being able to get the DBT training or something equivalent. We had to kind of self-teach for a while."
Therapist 4	"The organization will pay for, you know, a certain amount, I don't know what the budget is. But if you wanted to go do a training you could go, do it on your own and pay on your own and you could ask for reimbursement but you wouldn't get the full amount.. it's quite expensive to go do your own training. They did paid to have Behavior Tech come here but it was not but at the time we were already doing what we are doing …it wasn't anything groundbreaking or, or useful and they also paid for Mindfulness training which again we do Mindfulness with DBT so for us it was like… that was nice but it wasn't super helpful… no most of our… if we want to do any education we do it on our own…"

Quality of Delivery	
Main theme: Therapists employ various methods for monitoring fidelity. 2nd theme: Implementers view monitoring DBT processes as important for implementation.	
Therapist 1	"We do in the consult team, every week somebody takes turns being the observer which is the one which says whether or not we are on track, what we're supposed to do, that there is less judgment, that our speech is DBT, that our work is about the client not about us, then there is also a timekeeper and there is someone who does the notes and if there is something that we didn't get too we are trying to highlight that so the next person says okay 'we need to come to this first 'and they put that on the board. We also have an adherence checklist that we fill out once a month. Just to say was this happening and did this happen."
Therapist 2	"Well as a we have an informal process for that where we would notice any of those things that are not completely adherent in consult and provide feedback about that like you know ' this should appear like this' like that's part of the consult team and some members of that team are showing clips of sessions and asking for to use a section of the Fruzzetti fidelity ratings and say 'can you rate my level of adherence for this particular strategy or for this particular session' tool… so in way we measure fidelity, I don't think that we have a more formal form as yet."
Therapist 3	"Let me think. We have a fidelity scale that is shared throughout the DBT listserve. So as a team we're always kind of having a look each year. How are we doing, how close, how are we shaping our yearly program goals and see if we can get that much closer to it. So in that regard, yes… I probably should refine my answer it's not as formal as it could be. So it's kind of… so for a number of years the team lead position.. so it was always something that I would look at an once a year with the team we would look at the fidelity scale and where we were and pick one or two goals and then see what we could do and then next, next year…"
Therapist 4	"We try to. We do have the Fidelity checklist that we will go through and we are trying to get closer to being adherent to that as possible.. yeah we're making steps towards that… That is something, that is something that each clinician does personally. I know I'm one of the newer clinicians so I am kind of working towards that, just reading, using the Fruzzetti checklist…doing some of that, some of the clinicians do online courses so I will go through some of those and listen to those case studies…"

Context	
Main theme: Frequent organizational changes impede implementation dynamics of the DBT program. 2nd theme: Program structure dictated by the organization and not shaped by the therapist limits therapists' ability to implement the DBT program with fidelity. 3rd theme: A culture of top-down decision making	
Therapist 1	"…I just want you to know, I told you that I've been here for 13 years, we've had 18 managers in 13 years so you know what that does to a system. It's like starting over… it's been horrendous. To have that many

	managers they all have different ideas. But I've never been with the program that has had that type of change. Constantly."
Therapist 2	"Yeah, getting…that's probably the pieces of the move this was one, one that did alter privacy in the process that has been one of the changes that occurred when we moved on site or when I moved into Shannon's office. One thing I don't know how's it's, is one thing and it's around our pager use… yeah if you … our pager sometimes because likely of the way its set up, fire codes, our pagers don't work all the time and there's not a great ton of solutions around that. So that's one way that is something that has impeded our ability to be as responsive because sometimes pagers are not received and there is no solution. Sometimes you have to send it up and our messages don't get received so that's one thing. I know there is a hope to get a cell phone or something…imagine (laughing). Imagine explaining this to our youngest clients they don't understand we explain you have to enter your number and hit pound…no you don't text to it. Really… yeah"
Therapist 3	"So, for example early on we were told that anybody who was accepted to the waitlist we would have to provide service we could not say no. And then you have DBT that is a voluntary program so people would have to want to change and if they don't want to change and they don't want to do the work it's maybe not the right time for them. And so we've tried to follow the DBT processes through pretreatment and if we got to the end and that person…it didn't seem like they were quite ready yet…it wasn't the best time we didn't have the flexibility to say no to them and keep them. And so in the first few years… We've really tried to advocate and educate the senior admin team around the necessity for DBT to be a voluntary program. But it's still an issue and we've also made some changes about how we do things."
Therapist 4	"when I first started we were down the road and everyone had individual offices which really helped with being able to provide a confidential space to meet with clients it was off, off site which was great because these are out-patients that don't necessarily want to come to this hospital to receive treatment and that was big change for us we were just herded all into one open room… I think that definitely the intake has been a huge struggle for us and we're still continuing to… I'm trying to find out a way to make it work because it's really having a big impact on the work that we do and the move was pretty impactful as well because now we have to share the space which I can see how maybe organizationally and made sense but for individual privacy and having confidentiality issues it seems like it kind of is going backwards…"

ADHERENCE (FIDELITY)

Main theme: Adherence to the original program protocol improves likelihood of program effectiveness.

2nd theme: DBT therapists preferred fidelity to the DBT model.

Therapist 1	"…we are in team consult specifically um…we are trying to be adherent as possible and we're using Marsha Linehan's book, it's the bible we call it, as well as Kelly Kerners and Charlie Swanson, we also use in terms of ways to look at other things. But we're trying to get our team consult to be I'm more honest, on track right now, right now we have perhaps too many

	consults and not enough just being able to update and we are unable to get time to do that. So we are just trying to find time to see how to do this."
Therapist 2	"Well I think … from my own practice the more adherent or fidelity and the more I'm adhering to the model the more effective the treatment actually is. That would be one of my assumptions that I think that I've been able to be, be more effective in terms of my work with clients that can present with say challenging behaviors or challenging interactions if I'm actually adhering to the principals of the model and the structure that I can be a more effective therapist and I can actually be more helpful. So the structure for me I think is very beneficial. I think the biggest challenge is definitely within healthcare context in Canada of applying it fully adherent. But as a program since when I started to now we're way more adherent than we ever were and we're getting more and more evidence of the benefit that that has for our clients and for us as therapists."
Therapist 3	"Absolutely. Within all of the trainings we have done that was, I guess the number one thing conveyed, was to get the results that Linehan got was to, that they knew that those 4 components were the central components. That they couldn't guarantee that if you didn't have all four of those components that you would be able to have the outcomes. So our goal was to get as close to the original model."
Therapist 4	"We want to follow the program as close as possible so we get the results that are intended and, and for us all to be doing really good therapeutic work we know this model works and it evidenced based for the population and clients…that we work with it to make sure that we're following that so that in-turn the clients are getting the best possible outcome and we're doing what we should be doing according to the model."

ADDITIONAL FACTOR INFLUENCING FIDELITY: ADAPTATION	
Main theme: Organizational adaptations from the DBT model impedes program implementation. 2nd theme: Organizational adaptations are not consistent with DBT program theory. 3rd theme: Organizational adaptations are not reflective of therapists' treatment preferences	
Therapist 1	"Something that I wanted to get back too because were only on pagers 8:30 to 4:30 there is a problem here with who answers the phone with the crisis calls. The crisis plan and everything is on the computer in MediTech for some reason they sometimes don't asked the client their names or they don't look them up so they're usually not helpful that's usually the feedback. We usually get clients to do a feedback form but really we need to do better in terms of that response if someone is in crisis… They call into the crisis center and after 11 o'clock it goes to the assessment stabilization unit nurse. But it really depends on who they get some people are greater and other people shouldn't be doing it. And that's the feedback we get consistently and nothing changes. Nothing happens. So again this is the piece. Okay will do this little bubble and then everything else you're just going to have to learn to tolerate. Really?"

Therapist 2	"And unfortunately in the context of… and I in no way want to slander Ontario Shores… and I know the literature shows …that in the having a crisis team do the DBT coaching after hours it isn't DBT coaching, it's crisis response and there's not a great mechanism to even have, have a crisis staff even to use the DBT language. Like even though we have it for them to pull up it's not referred to. I've passed on many complaints around client experience around the crisis team. Yes, I think it has impacted some clients I guess I don't think it's been detrimental but I think that they maybe could've made more enhancement or developed closer to their target goals with that added aspect if I was able to be there as a clinician in the moment and say okay here it is even if it's Friday night."
Therapist 3	"It's hard for me to answer because we've never actually achieved full adherence to the model. So, there are limitations, for example the phone coaching is a big limitation not only because it's not 24-hours but it's being done currently with pagers which there are issues with the technology because often pages don't come through. It's not the most up-to-date current what therapists are using in 2017. Most are using cell phones. So the issue is being able to reach… so as I've said we've had challenges with the pagers, the technology, consistency and reliability of the technology, and the other thing is, is that we've had to rely on crisis services after hours which really is detrimental to the program because phone coaching is not meant to be a crisis service. Two, the people who are my manning the crisis lines have no knowledge in DBT and aren't reinforcing any of the things that we are teaching or learning. This is a huge organizational barrier. So I don't know that any of the items were a barrier I certainly have seen where we ran a program that is only group only without the individual and there's lots of studies that that can be effective but what we found from our experience that it has enhanced that much more having the ability to work on someone individually to work on shaping behaviors and refining some of the concepts that they're not getting in group."
Therapist 4	"I would say I feel like that about the pager coaching because a lot of the times people can't plant a crisis or when they're going to need you to help them with skills, so I have a lot of clients that don't actually use it because they'll say to me well if you had been available say 8 o'clock last night then I would've been able to call or something like that. Yeah, I think it does impact certain clients."