# Collaborative/Therapeutic Assessment with Psychiatric Inpatients Diagnosed with Bipolar Disorder

by

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Abstract

This quantitative dissertation investigates the effectiveness of a four-session Collaborative/Therapeutic Assessment (C/TA) with four adult inpatients diagnosed with bipolar disorder admitted to a psychiatric inpatient unit. The C/TA intervention was considered an adjunct therapy occurring alongside other treatments offered in the inpatient unit (e.g., medication management, group psychotherapy, etc.). A replicated Single-Case Experimental Time-Series Design (SCED) was used. Hypotheses 1 and 2 were partially supported. There was not a statistically significant change in reported levels of distress, hope, or session impact when data streams were compared to baseline. One participant, however, had a statistically significant increase in working alliance that was maintained to the post-intervention session. That said, measures of working alliance and session impact were high and positive for almost all participants. Exploratory analyses of patient-determined idiographic indices found a statistically significant decrease in levels of "anxiety", "relationship with family", and statistically significant increases in levels of "guilt", "serenity", and "silly" (i.e., humour and ability to take oneself lightly) variables. Hypothesis 3 was also partially supported, as the changes observed were largely maintained into the post-intervention session. Lastly, as Hypothesis 4 states, all participants indicated a high level of satisfaction with the intervention. Implications of these preliminary findings include the feasibility and potential clinical usefulness of using C/TA in an acute psychiatry setting with individuals diagnosed with bipolar disorder. Moreover, strong working alliances, session impact, and satisfaction scores contribute to the possibility of increased patient engagement in mental health services upon discharge from the hospital setting. Greater engagement in outpatient services may ultimately mitigate the need for repeat inpatient admissions, potentially saving substantial health care dollars. More longitudinal and large-scale

research studies are needed to better understand the short and long term outcomes of C/TA processes. The findings of this study also hold implications for the underlying mechanisms of change, an area of study that is needed in the C/TA literature.

# Preface

This thesis is an original work by Diana Lynn Armstrong. It received research ethics approval from the University of Alberta Research Ethics Board on March 26, 2019. Full Thesis title: Collaborative/Therapeutic Assessment with Psychiatric Inpatients Diagnosed with Bipolar Disorder, No. Pro00082995.

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## Glossary of Terms

**Collaborative/Therapeutic Assessment (C/TA):** A contemporary approach to psychological assessment that is client-centred, collaborative, and incorporates aspects of both therapy and formal psychological assessment (Finn, 2007; Finn, Fischer, & Handler, 2012; Finn & Tonsager, 1997). C/TA can also be understood as a paradigm of assessment that encompasses both uppercase "TA" and lowercase "ta" (please see below).

**Direction Index:** (Idiographic Index for Participant 2). Participant 2 defined the direction index as the degree to which she was aware of the tasks, objectives, and plans for her day.

**Distress:** As a general term, distress is used in a variety of healthcare professions (e.g., nursing, medicine, psychology) to denote individuals' spiritual, physical and emotional experiences (Ridner, 2004). It has also, at times, been used interchangeably with terms stress and strain and can be used to refer to both physical and emotional/psychological conditions. However, for the present research, the term distress refers to the emotional/psychological type of distress. Ridner (2004) defined psychological distress as "the unique discomforting, emotional state experienced by an individual in response to a specific stressor or demand that results in harm, either temporary or permanent, to the person" (p. 539).

**Hope:** Snyder et al. (1991) defined hope as a cognitive process "that is based on a reciprocally derived sense of successful (a) agency (goal directed determination) and (b) pathways (planning of ways to meet goals)" (p. 570-571). These researchers purported that the two aspects of hope (i.e., agency and pathways) are necessary, along with goal-directed behaviour, when conceptualizing hope. It is through continual iterations of agency/pathway and pathway/agency interactions that hope is derived. Thus, according to Snyder et al., "hope reflects the cumulative level of perceived agency and pathways" (p. 571). Though related, Snyder et al. (1996) differentiated between dispositional hope (i.e., enduring across situations and time) and state-based hope (i.e., affected by proximal events at specific times). Snyder et al. stated that "state hope, as measured in a given moment, provides a snapshot of a person's current goal directed thinking" (p. 2).

**Life Index:** (Idiographic Index for participant 1). Participant 1 defined his life index as a variable measuring the overall quality of his wellbeing.

**Patient Satisfaction:** Patient satisfaction, as defined by Foster and Mash (1999), is a participant's opinions of "(a) the degree of change in ultimate or instrumental goals, (b) the treatment procedures, and (c) the therapist" (p. 314).

**Relationship with Family Index:** (Idiographic Index for Participant 3). The relationship with my family index was defined by participant 3 as his perception of the quality of his relationship with his family at the time of sampling.

**Session impact:** Session impact refers to the immediate effects of a session, including the reactions of the patient and specific aspects of a session (Stiles, 1980; Stiles & Snow, 1984a,b). With regards to session-relevant factors, Stiles (1980) and Stiles and Snow

(1985 a,b) discussed two primary dimensions related to outcomes: depth (i.e., session potency and value) and smoothness (i.e., session comfort and relaxation).

**Silly Index:** (Idiographic Index for Participant 4). Participant 4's inclusion of the silly index is defined as a positive factor that provided a quantitative measure of her sense of humour and ability to take herself lightly.

**Simulation Modeling Analysis (SMA):** A method of data analysis, ideal for SCED research, designed for short-stream (i.e., fewer than 30 data points per treatment phase) data sets with serial dependence or autocorrelation (SMA; Borckardt, 2006).

**Soul Index:** (Idiographic Index for Participant 1). According to participant 1, the soul index measured the degree to which he felt free to walk blamelessly, with authenticity, and without feelings of shame.

**ta:** (i.e., lowercase 'ta') refers to an overarching therapeutic attitude towards the process of psychological assessment, where a respectful and collaborative relationship between assessor and assessee is emphasized to foster positive and transformative experiences for the patient (Finn, 2007; Finn & Tonsager, 1997).

**TA** (i.e., uppercase TA) refers to "Therapeutic Assessment," which is a highly structure, theoretically based approach/model to psychological assessment and testing. The model falls within the C/TA paradigm that includes specified methods, techniques, and an overarching collaborative approach to engaging in psychological assessment (Finn, 2007; Finn & Tonsager, 1997).

**Working alliance:** Working alliance, as defined in this doctoral research, aligns with Bordin's (1979) integrated model of working alliance. Specifically, the working alliance consists of therapist and patient agreement upon tasks and goals in therapy, and the presence of a bond between both parties involved.

## Chapter 1: Introduction

Psychological assessment is a defining activity for professional psychology that has remained a core competency throughout the history of the profession (Camara, Nathan, & Puente, 2000; Gelso et al., 2014; Groth-Marnat, 2009; Norcross, Karpiak, & Santoro, 2005). It is a distinct and valid professional service that contributes positively to patient outcomes (Meyer et al., 2001).

Psychological assessments are commonplace in a variety of settings and are especially common in hospitals/psychiatric inpatient settings (Groth-Marnat, 2009; Norcross et al., 2005). Psychologists in psychiatric inpatient settings field a variety of assessment questions, including inquiries of patient diagnostics and recommendations for treatment planning (Groth-Marnat, 2009). Historically, in answering such assessment questions, a traditional approach to assessment has been employed. The traditional form of psychological assessment (i.e., information-gathering (IG) approach), according to Finn and Tonsager (1997), uses a three-step process: data collection, unilateral (i.e., no patient input) interpretation of results, and posing recommendations. Tests in IG assessment are methods for accessing evidence of patients' behaviours in comparison to a normative sample of their peers. The test scores, and the recommendations made based on test results, serve as the focus in an IG model. Finn and Tonsager argued that the IG approach values the assessor taking an objective stance and embodying the role of expert. In settings such as psychiatric inpatient wards where clarification of patient diagnostics, treatment planning, and monitoring are of central focus, it follows that psychological assessment would be of ongoing usefulness and value. In actuality, however, psychological assessment has had a tumultuous history with its "perceived usefulness wax[ing] and wan[ing] over the years" (Poston & Hanson, 2010, p. 203).

## A Paradigm Shift in Psychological Assessment

Influenced by the humanistic movement of the 1950s and onward, some psychologists found themselves deeply troubled by the dominant medical model of mental health care and the dehumanizing processes and implications of traditional forms of psychological assessment (Fischer, 2000; Gelso et al., 2014). In response, one particularly dissatisfied psychologist, Constance Fischer (1970, 1972, 1978, 1985/1994, 2000), began developing and advocating for a paradigm shift in psychology that included an alternative model of assessment. She called for psychology to establish "an explicit foundation…as a uniquely human science" (Fischer, 1970, p. 70) rooted in existentialism from which to guide practice, including formal psychological assessment.

Ultimately, Fischer aimed to humanize the process of psychological assessment to the degree that it became a centrally helpful, growth-producing experience for patients and practitioners alike. Fischer's model took clinicians away from the role of "expert" commonly seen in traditional, IG types of diagnostic assessment and into a more collaborative position with clients. Fischer believed that effective psychological assessments included the valuing of patients' unique perspectives and personal understandings. In fact, to Fischer, an understanding of patients' life experiences was the primary source of data in assessment to be followed only secondly by the results of psychological assessment measures. Her focus on the development, expansion, and sharing of new understandings between patient and practitioners stemmed from a fundamentally hermeneutic approach to assessment. This approach focused on the "co-labor" or shared development of new understandings between patient and assessor (Fisher, 2000). Fischer's assessment model was seminal in providing the psychological community with a contemporary paradigm that emphasized collaboration, a contextualized focus, holistic patient

descriptions, and a closely held respect for the complexity and ambiguity inherent in working therapeutically with people in assessment (Fischer, 1985/1994, 2000).

Historically speaking, relevant early studies involving clients and patients in assessment processes have been present within the profession of counselling psychology earlier than Fischer's time. The involvement of patients in assessment practices has been a focus within the field of counselling psychology (Duckworth, 1990), particularly in career counselling, from the profession's infancy (Gelso et al., 2014; Goldman, 1961, 1971; Lichtenberg & Goodyear, 1999). For example, in 1946, Bordin and Bixler first explored the therapeutic effect of involving patients in test selection. Through case studies, these researchers found that the active involvement of patients in test selection fostered greater patient engagement and responsibility-taking in assessment processes, enhanced patient understandings of themselves and their issues, and increased compliance with lengthy testing batteries.

In 1950, Dressel and Matteson held the first empirical investigation examining the therapeutic implications of assessment feedback in vocational counselling. Through this study, these researchers discovered that participant self-understanding increased through the assessment intervention. Building upon relevant initial work, the study of psychological assessment to promote therapeutic change with individuals was also of focus for many other early innovators such as Harrower (1956), Luborsky (1953), and Goldman (1961, 1971). It was within the context of counselling psychology's deemphasis on psychopathology and openness for collaborative practice that provided Fischer with the opportunity to publish the paper "The Testee as Co-Evaluator" (Fischer, 1970). Fischer (2000) stated that it was this initial publication that opened the door for additional articles that directly inspired and informed other more contemporary

therapeutically oriented assessment models (e.g., see Finn, 1996, 2007; Fischer, 1994; Gorske & Smith, 2009, 2012; Purves, 2002).

Despite counselling psychology's openness to the integration of collaborative processes in assessment, there has been much scrutiny from the psychological community regarding this alternative assessment paradigm (Fischer, 2000). For example, claims that Fischer's collaborative assessment approach was "unprofessional, unethical, and harmful to patients" (Fischer, 2000, p. 8) were not uncommon. It was Fischer's persistence and connection with like-minded individuals in the assessment and counselling field, such as Stephen Finn (Finn, 2007), that fostered her conviction to continue discussing, writing about, and practicing her model of assessment (Fischer, 2000). Fischer (2000) recounted meeting Dr. Stephen Finn in the early 1990s at the Society for Personality Assessment (SPA) conference and learning about his burgeoning model of Therapeutic Assessment (TA) that built upon her, and others', collaborative models. Indeed, Finn (2007) credits the contributions of Fischer's work in influencing his model, in addition to the work of other such as Leonard Handler (e.g., 1996, 1997, 1999), Caroline Purves (e.g., 2002), and Harry Stack Sullivan (e.g., 1953, 1954).

## Collaborative/Therapeutic Assessment (C/TA)

Collaborative/Therapeutic Assessment (C/TA; Finn & Tonsager,1997; Finn, 2007; Finn, Fischer, & Handler, 2012) is a brief, semi-structured, client-centred, collaborative, and innovative psychological intervention that incorporates aspects of both therapy and formal psychological assessment. C/TA is also understood as a broad paradigm of assessment that encompasses therapeutically oriented assessment interventions including both Therapeutic Assessment (TA) and therapeutic assessment (ta) (Finn, 2007; Finn et al., 2012). According to Finn (2007), the term "Therapeutic Assessment" (i.e., capital 'T' and 'A') pertains to the

structured theoretical model with specified methods, techniques, and an overarching collaborative approach to engaging in psychological assessment. Alternatively, lower-case 'ta' refers to an overarching therapeutic attitude towards the process of psychological assessment, where a respectful and collaborative relationship between assessor and assessee is emphasized to foster positive and transformative experiences for the patient (Finn, 2007; Finn & Tonsager, 1997).

Due to the inconsistency in the nomenclature for therapeutically oriented assessment interventions in the literature, this dissertation uses the term 'C/TA' throughout with the understanding that the interventions discussed in the literature review fit under the broader umbrella C/TA term. The present research uses a condensed modification of Stephen Finn's original TA model and, as such, was thought to be most accurately represented as C/TA to assist with differentiating the present intervention under investigation from Finn's full TA model.

Theoretically speaking, C/TA is shaped by self-psychology (e.g., emphasizes introspection and empathy; Kohut, 1977) and intersubjectivity theory (e.g., includes ideographic, systemic, subjective, and phenomenological perspectives; Atwood & Stolorow, 1984; Stolorow, Brandchaft, & Atwood, 1987). It is also influenced by humanistic psychology (e.g. stresses mutual respect, collaboration, authenticity, and the equalization of power dynamics in the therapeutic relationship), phenomenological psychology (e.g., includes a contextualized understanding to grasp an individual's unique perspectives), and the interpersonal approach developed by Harry Stack Sullivan (e.g., emphasizes patient goals, respect for patients' privacy/confidentiality, the clinician's participant-observer stance, and the potential for the assessment to influence the "self-system" of the patient's; Sullivan, 1953, 1954) (APA, 2017; Finn, 2007; Finn & Tonsager, 2002; Fischer, 1979, 2000).

The C/TA model of assessment incorporates the collaborative nature of Fischer's model; however, it moves beyond by providing a structured framework that can be easily taught and implemented in a step-wise fashion by students and practicing clinicians. The semistructured nature of C/TA requires specified methods, techniques, and an overarching collaborative approach to engaging in psychological assessment (Finn, 2007). Finn (2007) suggested that C/TA encourages the inclusion of client determined assessment questions, exploration of previous assessment-related hurts, and adherence to standardized test administration. The contemporary model of C/TA is guided by five core values, which include collaboration, humility, openness and curiosity, compassion, and respect (Finn, 2009). These values mirror values embodied within the field of counselling psychology, which include, for example, a wholistic, strength-oriented focused approach to patient work, an emphasis on brief interventions, and a dedication to the scientist-practitioner approach to training and professional activities (Gelso, Nutt Williams, & Fretz, 2014).

Finn (2007) states that C/TA assists with the development of clearer, more accurate, and organized patient self-narratives that contribute to patients' abilities to understand and behave in new and different ways. This development of new (and hopefully more adaptive) patient self-narratives is a primary goal of C/TA, which is facilitated through the co-interpretation of psychological test results within the context of a genuine and supportive therapeutic relationship between assessor and patient (Finn, 2003, 2007). The collaborative exploration of test results is an essential feature of the therapeutic processes within the assessment (Finn & Tonsager, 1997). From a C/TA perspective, psychological tests are "*empathy magnifiers"* that assist practitioners in maintaining a "grounded nomothetic perspective on the client's problems" (Finn & Tonsager, 1997, p. 375), while facilitating personal growth with the patient (Finn, 2007; Finn & Tonsager,

1997). Finn and Tonsager (1997) suggest that collaborative assessment processes encourage patient growth and change by addressing the three basic human motives of self-verification, self-enhancement, and self-efficacy/self-discovery experiences. Claiborn and Hanson (1999) argue that social influences significantly contribute to the therapeutic effects of testing on patients. Additionally, a contemporary article by Kamphuis and Finn (2018) explores the efficacy of C/TA within the context of the evolutionarily informed theory of epistemic trust (ET) and epistemic hypervigilance (EH) (see, Fonagy, Lyten, & Alison, 2015).

Finn (2003) states that despite the brief nature of C/TA, these "techniques are powerful because they focus on helping patients "rewrite" the stories they tell themselves about themselves (which psychologists usually call *identity*) when those stories have become problematic or incomplete in important ways" (p. 126). C/TA has been developed to help address "persistent problems in living" (Finn, 2007, p. xvii) experienced by individuals (Finn, 2007; Finn & Tonsager, 1997).

Finn and Kamphuis (2006) suggest that C/TA is ideally used with patients who volunteer to engage in the assessment process, are openly seeking new ways of being and thinking about themselves, and who have had experiences with other treatment modalities (e.g., medication trials, psychotherapy) that were ineffective or unhelpful. Preferably, patients would not have prior negative testing experiences, have adequate emotional support systems, and be "cognitively and psychologically able to take part in a process that invites self-observation, curiosity, and introspection" (Finn & Kamphuis, 2006, p. 190). Given these parameters, and since its formal development in the 1990s, there has is mounting evidence supporting C/TA (or derivatives of this model) as an effective therapeutic strategy for a variety of patient populations and settings (e.g., see Finn et al., 2012). When exploring the effectiveness of this assessment modality in

inpatient settings with psychiatrically ill populations, such as those with bipolar disorder, the empirical research, however, is extremely limited (e.g., Hinrichs, 2016; Little, 2009; Michel, 2002).

## C/TA in Psychiatric Inpatient Settings with Bipolar Disorder

Within Canadian psychiatric inpatient settings, patient care is dominated by an ultra-brief, "Cartesian" style medical model, that emphasizes the primary use of medications to treat mental illness (Shapiro, John, Scott, & Tomy, 2016). This orientation to mental health care, according to Shapiro, John, Scott and Tomy (2016), has resulted in a "conveyor belt approach to patient care, in which spending more time with our patients to understand and address their experience of mental illness becomes a dispensable luxury" (p. 222). Severe psychiatric illnesses, such as bipolar disorder, often require the specialized and intensive services of an inpatient psychiatric setting to address the symptoms and functional impairments that accompany these disorders.

**Bipolar disorder.** Bipolar disorder, an umbrella term for a spectrum of mood disorders (e.g., bipolar I, bipolar II), is a serious and chronic psychiatric illness that holds significant implications for both individuals diagnosed with the illness and their families (Johnson, 2004; Kleinman et al., 2003). A 1996 Global Burden of Disease study determined that bipolar disorder ranked sixth out of the top ten disabling illnesses in the world (Murray & Lopez, 1996), with a lifetime prevalence estimated to fall between 1.1% (Merikangas et al., 2007) to 1.3% (Kleinman et al., 2003) in the United States and 2.2% in Canada (Schaffer et al., 2006). Bipolar disorders are specified by a fluctuation in mood states of both depression and hypomania (e.g., Bipolar II), or primarily mania (e.g., Bipolar I) (APA, 2013). This mood fluctuation can cycle throughout the lifetime, with some rapid cycling individuals experiencing four or more mood episodes within a

one-year period. Under the bipolar disorder category, the DSM-5 also includes cyclothymia, substance/medication-induced bipolar and related disorder, bipolar and related disorders due to another medical condition, Other specified bipolar and related disorders, and unspecified bipolar and related disorder.

The DSM-5 dictates that a diagnosis of bipolar I includes a persistent period (e.g., at least one-week period or less if hospitalization is required) of mania (e.g., abnormally irritable, expansive mood that includes grandiosity, a reduced need for sleep, limited insight, heightened energy, etc.) within an individual's lifetime (APA, 2013). A lack of insight during manic episodes is common and can interfere substantially with engagement in treatment. The manic episode can be preceded or followed by a hypomanic or depressive episode; however, this is not required. The mood episode needs to be severe enough to impair social and occupational functioning and may include psychotic features (APA, 2013). Psychotic symptoms, however, may be present during both depressive and manic episodes (Johnson, 2004). A diagnosis of Bipolar II includes both a current or past hypomanic episode (e.g., elevated mood, decreased need for sleep, grandiosity, etc., that is not severe enough to result in functional impairment or require hospitalization) lasting approximately four days. Additionally, bipolar II requires a past or current depressive episode (e.g., loss of interest in activities, depressed mood, irritability, weight loss, insomnia/hypersomnia, etc.) lasting approximately two weeks in order to meet full diagnostic criteria (APA, 2013). The depressive mood disturbance must result in a functional impairment socially or occupationally that is overtly observable, and which varies significantly from the individual's typical mood state.

As discussed in the DSM-5 (APA, 2013), cyclothymia includes hypomanic and depressive periods within a two-year period, without an individual ever meeting full criteria for

an episode of mania, hypomania, or depression. Manic symptomology can also be induced by illicit substance abuse, prescribed medication, or medical conditions, which provides the rationale for the inclusion of the Substance/medication-induced bipolar and related disorder and bipolar and related disorders due to another medical condition categories in the DSM-5. Lastly, the Other specified bipolar and Unspecified bipolar diagnostic categories are included to capture individuals who are experiencing bipolar-like symptomology but do not meet criteria for bipolar I, II, or cyclothymia (APA, 2013). Age of onset, on average, is around the age of 18 for bipolar I disorder (APA, 2013). The average age of onset of bipolar II commonly occurs in the mid-20s, with individuals experiencing a more chronic course of illness (e.g., more episodes of depression and shorter inter-episode intervals of mental wellness) than typically observed in bipolar I (Judd et al., 2003). Cyclothymia is typically first observed in adolescence or early adulthood (APA, 2013). The course of bipolar disorder varies significantly among individuals; however, many individuals experience a relapse of mood episodes despite regular use of mood-stabilizing psychiatric medication (Johnson, 2004).

***Implications of bipolar disorder.*** Bipolar disorder holds many significant implications for individuals diagnosed with the illness including a heightened risk for comorbid psychiatric conditions, impairment in neurocognitive functioning, issues with psychosocial functioning and heightened distress associated with having a mental health issue, as well as increased risk for suicide (Johnson, 2004; Kleinman et al., 2003).

*Comorbidity.* Bipolar disorders commonly include comorbidity with other psychiatric disorders (Johnson, 2004; Kleinman et al., 2003; Krishnan, 2005). There does not appear to be significant differences in the rates of comorbidity in either bipolar I vs II (Leverich et al., 2003). In brief, lifetime estimates of comorbid substance abuse (e.g., alcohol and/or illicit drugs) has

been found to fall around the 50% mark (Cassidy, Ahern, & Carroll, 2001), anxiety disorders around 49-92% (Freeman, Freeman, & McElroy, 2002; Szadoczky, Papp, Vitrai, Rıhmer, & Füredi, 1998), and personality disorders as high as 29-38% (Brieger, Ehrt, & Marneros, 2003; George, Miklowitz, Richards, Simoneau, & Taylor, 2003). Comorbidity in bipolar disorder has significant implications for the treatment and study of the illness, as it can confound accurate diagnosis and treatment, is often associated with earlier onset, poorer outcomes, longer recovery times, increase chances of relapse, medication nonadherence, and increased rates of suicidality (Frangou, 2002; Kleinman et al., 2003; Krishnan, 2005).

*Neurocognitive impairment in bipolar disorder.* A 2007 study comparing the neurocognitive impairment in bipolar disorder and schizophrenia found there to be a similar, though milder, pattern of impairment in bipolar (Schretlen et al.). Henin and colleagues (2009) suggested that impairments within bipolar disorder, like with schizophrenia, are most prominent within the areas of "executive functioning, working memory, attentional processes, and verbal learning and memory" (p. 231); however, these researchers also caution the generalizability of these neurocognitive impairments due to heterogeneity of bipolar disorders.

A recent meta-analysis (2007) by Torres, Boudreau, and Yatham examined the neurocognitive functioning in euthymic patients with bipolar disorder. Interestingly, this analysis verified the pattern of impairment in executive functioning, attention, verbal memory, and processing speed with impairment found to be within the moderate to large range. The Torres and colleagues meta-analysis suggested that attentional deficits in bipolar disorder are related to "slowed visual-motor processing speed, as well impairment in accuracy and reaction time on sustained attention tasks requiring ability to detect targets" (p. 21). Unsurprisingly, sustained attention was also found to be impacted in patients who are acutely manic (Clark, Iversen, &

Goodwin, 2001). Torres et al. found there to be a robust impairment in memory, particularly regarding explicit memory functions that implicate immediate and delayed recall and learning. Clark, Iversen and Goodwin (2001) suggested that verbal memory is particularly affected in episodes of acute mania.

Measures of executive functioning have suggested impairments in the areas of planning, cognitive flexibility, category fluency and inhibition in individuals with acute mood episodes of depression or mania (Clark et al., 2001; Martinez-Aran et al., 2002). In euthymic patients, the Torres et al. (2007) analysis noted executive functioning deficits in the areas of response inhibition and cognitive flexibility. Verbal working memory deficits were also found to be implicated in bipolar disorder, albeit only moderately (Torres et al., 2007). The notion of global impairments in intellectual ability in bipolar disorder is unsupported by the Torres analysis, due to findings that vocabulary and reading skills were mostly intact for the euthymic bipolar patient group. The Torres et al. (2007) analysis is significant, as it highlights the underlying neurocognitive implications of bipolar disorder which appear not to be mediated by acute mood states. However, Henin et al. (2009) argue that additional research is needed to examine the potential neurocognitive impact of subclinical mood symptoms in euthymic patients that could influence observed functional impairments in bipolar disorder.

*Psychosocial issues and distress in bipolar disorder.* Linked directly to neurocognitive deficits discussed previously, quality of life can be impacted through manic, hypomanic, and depressive symptoms interfering with occupational commitments and goals, interpersonal relationships, financial well-being, and social standing within a community (Hammen & Cohen, 2004; Newman, 2004; Sylvia et al., 2017). These occupational and social implications may contribute to heightened distress, which can exacerbate mood symptoms or precipitate a full

relapse (Hammen & Cohen, 2004). As with neurocognitive impairment, functional impairment has been observed in individuals with bipolar disorder, even in the absence of acute mood episodes. For example, Cooke, Robb, Young, and Joffe (1996) found that individuals diagnosed with bipolar disorder who were euthymic continued to report significant impairments in physical, social, and role functioning. Due to the heterogeneity of this disorder, however, there is variation in the degree of impairment observed between individuals (Hammen & Cohen, 2004).

Common reactions to a diagnosis of bipolar disorder may include denial, anxiety, ambivalence, and anger (Goodwin & Jamison, 1990). These reactions, if they extend for lengthy periods, may have a significantly negative impact on the course of the illness (Scott, 1995). For example, individuals diagnosed with bipolar disorder may be less willing to comply with medication regimes due to such things as disbelief, or even a lack of insight into their mental status. Anger and frustration may interfere with supportive social relationships, including the patient's family and healthcare providers. High levels of anxiety may provoke rigid strategies for symptom monitoring and coping strategies. Further, self-image may be impacted by a diagnosis of bipolar disorder, leading to social isolation and feelings of shame and guilt (Scott, 1995).

Scott (1995) noted that bipolar disorder could result in significant distress regarding the loss of functional and cognitive abilities. For example, the requirement for repeated psychiatric hospitalization may impact an individual's sense of independence. These losses can extend to all areas of an individual's life, including hopes and dreams for the future (Scott, 1995). Feeling out of control regarding ones' illness may also have serious implications for self-efficacy and demoralization, which may only be further amplified when relapse occurs despite compliance with treatment regimens (Khan, 1990). Considering the significant implications of bipolar

disorder, it is unsurprising that suicidality is a common symptom observed in individuals struggling with this disorder.

*Suicidality.* According to the DSM-V (APA, 2013), individuals with a diagnosis of bipolar disorder have a lifetime risk of attempting suicide that is 15 times greater than that of the general population. It is estimated that approximately 25 percent of all deaths by suicide are associated with bipolar disorders (APA, 2013). The risk for suicide attempts has been found to be especially high in individuals with bipolar II (Rihmer & Kiss, 2002), with a lifetime prevalence estimated to be 25-50%, with 1% of these individuals dying by suicide (Fountoulakis, Gonda, Siamouli, & Rihmer, 2009). According to Newman (2004), the prevalence of suicidality is high in bipolar disorder partly because it "brings misery to those who have it, and – by extension – to those who care for them" (p. 265). Indeed, the psychosocial impact of the extreme mood states experienced with bipolar disorder, in addition to implications associated with comorbid illnesses (e.g., substance use disorders and increased impulsivity while intoxicated), contribute to the heightened risk for suicide with this disorder.

Subjective experiences of helplessness and hopelessness in the face of cycling mood episodes may contribute to suicidality in bipolar disorder (Newman, 2004). The negative expectations associated with the state of feeling hopeless is highly indicative of suicidal intent and predictive of suicidal behaviours in the future (Hawton, Sutton, Haw, Sinclair & Harriss, 2005; Weishaar & Beck, 1992). Individuals diagnosed with bipolar II are more likely to use more violent and lethal means of attempting suicide, in comparison to individuals with Bipolar I (Novick, Swartz, & Frank, 2010). Given the heightened risk for suicidality observed in this disorder, accurate assessment and prevention are one of the primary focuses in the treatment of bipolar disorder (Newman, 2004).

***Treatment of bipolar disorder.*** Ghaemi, Boiman, and Goodwin (2000) found that bipolar disorder is inaccurately diagnosed as unipolar depression in 37% individuals upon their initial presentation. Misdiagnosis may put patients at increased risk of harm, given that commonly used antidepressants for treatment of unipolar depression may worsen the course of bipolar disorder (Ghaemi, Boiman, & Goodwin, 2000). Additionally, despite best efforts toward patient-centred care, there continues to be evidence suggesting that individuals admitted to psychiatric inpatient settings with illnesses such as bipolar disorder can find the experience humiliating, oppressive, dehumanizing (Thibeault, Trudeau, d'Entremont, & Brown, 2010), and alienating (Stenhouse, 2011).

In considering the challenges faced by those individuals with bipolar disorder admitted to psychiatric inpatient wards, there are a variety of treatment approaches that have been found beneficial. Given the implications of the illness, many individuals with bipolar disorder benefit from the concurrent treatments commonly offered in inpatient (and outpatient) settings such as psychotherapy and medication management (Miklowitz, 2008). In addition to medication management, research supports psychotherapy in the form of individual, family, and group therapy in preventing/delaying relapses, in the stabilization of mood episodes, and in shortening the duration of mood episodes in bipolar disorder (Miklowitz, 2008; Miklowitz et al., 2007). Individual cognitive behavioural therapy has been found to reduce relapses, reduce hospitalizations and days in the hospital, improve social functioning, and enhance adherence to medication (Lam et al., 2003; Lam, Hayward, Watkins, Wright, & Sham, 2005). Interpersonal and social rhythm therapies have also been found to have demonstrated effectiveness with delaying relapses of depressive mood episodes, as well as a slight impact on suicidality, in comparison to regular clinical management (Frank, 1999; Rucci et al., 2002).

A collaborative intervention, such as C/TA, may be an especially useful intervention for those individuals experiencing bipolar disorder. As Adams, Drake, and Wolford (2007) suggest, integrating shared (i.e., collaborative) decision-making processes into the treatment provided to individuals with severe mental illness are preferred by patients. Indeed, as Tiegreen, Braxton, Elbogen, and Bradford (2012) argue, collaboratively oriented assessment is an ideal approach for working with individuals who have serious mental health issues, difficulty with treatment compliance, and require rehabilitation in multiple areas of their lives. Collaborative assessment processes may also provide individuals with illnesses, such as bipolar disorder, with the opportunity to develop insight into their illness and behaviours, discover the areas in which they require additional treatment and rehabilitation, enhance feelings of control and self-efficacy, and foster positive relationships with healthcare providers (Tiegreen, Braxton, Elbogen, & Bradford, 2012).

Given above implications of bipolar disorder, it is essential to consider how individuals with diagnoses in this spectrum of illnesses would fit Finn and Kamphuis' (2006) parameters for C/TA participation, as was discussed above. For example, since many individuals with bipolar disorder experience relapse of mood states and require repeated inpatient admissions despite treatment compliance (Johnson, 2004; Khan, 1990; Scott, 1995), it follows that C/TA could be an ideal treatment. Recall that Finn and Kamphuis suggest that C/TA is particularly helpful for individuals who have experienced previous treatments that were ineffective or unhelpful. Indeed, repeated admissions and experiences with unhelpful treatment might contribute to patent openness to volunteer in trying a new/alternative intervention geared to help them to think in new ways about themselves.

As Khan (1990) notes, however, repeated experiences with ineffective treatments and repeated hospitalization could lead to an individual feeling demoralized and hopeless to the degree that hinders their willingness to participate in any new intervention. Common features of bipolar disorder, such as lack of insight, could also impact an individual's willingness and ability to engage in C/TA and experience the benefits of self-reflection/introspection throughout the intervention. Also, the propensity for neurocognitive deficits in bipolar disorder discussed above, highlight the possibility that accommodations might need to be made when using C/TA with an individual with bipolar disorder. For example, given the possibility for impairment with verbal memory and processing speed, adequate pacing of the C/TA intervention and the provision of the therapeutic letter at the end of the intervention are paramount.

The frequent need for repeated hospitalizations for individuals with bipolar disorder also increases the possibility of past participation in previous psychological testing. Recall that Finn and Kamphuis (2006) suggest that it is ideal for C/TA participants to have no prior negative assessment experiences. As such, a history of assessment should be clarified, with the opportunity to address any previous negative assessment experiences before engaging in a C/TA. Another consideration put forth by Finn and Kamphuis includes the benefit of an adequate support system for those participating in a C/TA. As noted by Scott (1995), there can be significant psychosocial issues including a lack of social support present for individuals with bipolar disorders and, as such, this is a factor that may need careful consideration when engaging in C/TA with this patient population. For example, it may be more difficult for individuals with a lack of social supports to maintain new coping strategies for symptoms of their illness that are developed within the processes of the C/TA. Of course, given the heterogeneity of bipolar disorder, the degree to which an individual meets the criteria for C/TA participation set by Finn

and Kamphuis needs to be evaluated on an individual basis with appropriate accommodations instituted when necessary.

Taking the intricacies of treating bipolar disorders into account, C/TA may prove to be highly influential in addressing the many issues faced by this patient population, such as enhancing treatment compliance through increased self and syndrome understanding, increasing hope and in reducing distress levels. The use of therapeutically oriented assessment processes with more extreme psychiatric symptomology, such as psychoticism, has only anecdotal support (Norman, & Breitborde, 2014). Indeed, there is a significant gap in the C/TA literature base examining the use of the intervention with individuals living with bipolar disorder in particular. Thus, it was hypothesized that the use of C/TA would provide significant clinical promise in providing a transformative and impactful, albeit brief, therapeutic experience with individuals with bipolar disorder during admission to a psychiatric inpatient setting.

## Considerations for Clinical Research on a Psychiatric Inpatient Unit

Psychiatric inpatient settings pose unique challenges and unavoidable complexities for clinical researchers examining interventions with such patient populations as those with bipolar disorder. For example, researchers need to be aware of history-related threats to internal validity with including patient engagement in recommended concurrent treatments (e.g., pharmacological adjustments and group therapy) and factors related to patient experiences while admitted to a psychiatric unit (e.g., issues with sleeping and heightened stress due to living in a chaotic, noisy setting with acutely ill co-patients). The reality of ongoing comorbid substance use discussed above is also a notable confound that is common with a patient population with bipolar disorder that researchers need to consider. Additionally, the challenge of data collection in fast-paced and

relatively hectic inpatient environments often necessitates the need for small sample sizes and creative approaches.

As such, a variety of research designs were considered, including the randomized control trial (RCT) design. RCTs are widely accepted as the gold standard in providing trustworthy evidence for clinical practice (Persons & Silberschatz, 1998). Methodologically speaking, RCTs minimize threats to internal validity which directly influences the inferences that can be derived from the study (Shadis, Cook, & Campbell, 2002). The process of completing a RCT in clinical settings, however, can be complicated (Domene, Buchanan, Hiebert & Buhr, 2015). For example, the random assignment of participants to intervention conditions can raise ethical concerns. Determining a patient's treatment should be based on presenting complaints and therapeutic needs, not on random assignment to treatment conditions (Domene et al., 2015).

Furthermore, as highlighted by Skinner (1938) and echoed by Smith (2013), mean/group-level research designs and analysis tends to blur the details of change processes, making it difficult to pinpoint the growth-producing mechanisms of interventions. Persons and Silberschatz (1998) also point out that RCTs frequently examine only a single diagnostic label to ensure homogeneous, between-group comparisons occur. These researchers argued that this participant sampling preference is unhelpful to clinicians facing patients with diagnostic co-morbidities. The strong internal validity within RCTs compromises the external validity of the results (Persons & Silberschatz, 1998). The limitations of using a group-based RCT design in clinically based research lends to the consideration of more feasible methodologies, such as single-case experimental design (SCED).

**Single-Case Experimental Design (SCED)**

Once a standard and favoured research method in psychology and physiology research (e.g., Skinner, 1938; Watson, 1925), it is only more recently that Singe-Case Experimental Design (SCED) has begun to make a resurgence in psychological research (Barlow, Nock, & Hersen, 2009; Kazdin, 2011; Smith, 2012). SCED is an ideal design when researchers want to understand how interventions have influenced change, and at what points in the intervention differences could be observed (Smith, 2013). Clinically based SCEDs are also helpful in burgeoning areas of practice to explore new applications and preliminary evidence for a novel intervention. The accumulation of evidence from SCEDs assists in determining whether a full RCT study would be worthwhile and warranted (Borckardt et al., 2008).

**Single-Case Experimental Design (SCED) in C/TA Research**

Given the usefulness of SCED in clinically-based outcome research, it is unsurprising that C/TA researchers have begun to utilize this design more readily. The literature base for SCED design within the C/TA area has routinely utilized a time-series method (e.g., Aschieri & Smith, 2012; Durosini, Tarocchi, Aschieri, 2017; Smith, Eichler, Norman, & Smith, 2015; Smith & George, 2012; Tarocchi et al., 2013; Wolf, 2010). Measurement of the dependent variables (DVs) in a time-series design occurs at uniform intervals. This design enables researchers to assess change in the DV over a set period (Smith, 2012). The effects of an intervention can be observed by contrasting baseline data with data obtained in subsequent phases (Tarocchi et al., 2013).

In designing the present study, noteworthy SCED measurement techniques and experimental control strategies in SCED research were considered. For example, many C/TA focused SCED studies included daily recordings of idiographic indexes on Likert-type scales, which were collaboratively developed with patients. Tarocchi, Aschieri, Fantini and Smith

(2013) examined the impact of C/TA over time with a 37-ye ar-old woman with complex posttraumatic stress disorder (CPTSD). Data included in this study focused on daily idiographic measurement of the patient's anxiety, loneliness, and despair on a 10-point Likert-scale. In another example, Ascheri and Smith (2012) tracked the impact of four sessions of C/TA with a young traumatized woman experiencing interpersonal difficulties. Five daily idiographic indexes were included in this study, that measured (a) how hard the patient was on herself, (b) her ability to express her love and affection toward others, (c) her ability to recognize love and affection from others, (d) her experience of loneliness, and (e) her level of anxiety were collaboratively developed. Borckardt et al. (2008) and Smith, Eichler, Norman, and Smith (2015) argue that using individualized measures enhances the clinical utility and validity of the change observed in the patient and patient data. However, idiographic indexes are not validated measurement tools and, as such, Ascheri and Smith (2012) suggest also incorporating validated measures as part of a SCED to legitimize the findings. The use of ideographic indices can also lead to difficulty with replication. Thus, Ascheri and Smith argue that more experimental control is needed in SCED research to assist with legitimizing the findings from these studies.

Experimental control can be increased in SCED designs through replication. In a methodologically strong study by Smith et al. (2015), C/TA was evaluated using a replicated SCED with ten participants struggling with mood and adjustment issues. This study included three phases: baseline, intervention, and follow-up and the use of daily idiographic indexes, as well as psychotherapy process measures. Several analysis techniques were used in this study, including a repeated-measures analysis of variance to examine the psychotherapy process data collected. All participants reported mood daily, as well as between two and five idiographic indexes, all of which were analyzed using SMA, multilevel modelling, and the *d*-statistic. This

study's inclusion of multiple participants and DVs allowed these researchers to employ a number of statistical analysis techniques adding to the complexity of the design and analysis.

Indeed, there are concerns with SCEDs that require consideration and careful planning. Smith (2012) states that issues can arise with "establishing a representative baseline, managing the nonindependence of sequential observations (i.e., autocorrelation, serial dependence), interpreting single-subject effect sizes, analyzing the short data streams seen in many applications, and appropriately addressing the matter of missing observations" (p. 2-3). SCED studies also have the potential to be impacted by history (i.e., concurrent treatments), maturation effects, and reactive assessment. Kazdin (2011) states that maturation effects occur internally in participants over time due to such things as becoming healthier, stronger, or bored. Related to maturation effects is testing related threats to validity, such as reactive assessment. Reactive assessment refers to changes observed in the data due to repeatedly asking a participant the same questions. Perone and Hursh (2013) and Kazdin (2011), suggest that repeated measurement in SCED designs has the potential for participants to produce "stereotyped answers, thus blocking the test's sensitivity to changes in experimental treatments" (p. 109).

An additional consideration for SCED research, Morgan and Morgan (2001) note, is that inferential statistics cannot be used with single-subject research methodologies. Data obtained in these types of studies are at risk for both type I and II errors due to serial dependency and autocorrelation (Morgan & Morgan, 2001; Smith, 2012). Autocorrelation occurs because of the repeated measurement of a single subject and, thus, result in "the nonindependence of sequential observations" (Smith, 2012, p 14). As such, data collected in SCED studies violate the fundamental assumption of data independence required for traditional parametric and nonparametric analysis techniques (e.g., analysis of variance) (Smith, 2012). Despite the ongoing

debate regarding the analysis of single-case design data, the use of SMA analysis with SCED designs continues to be increasingly present within the C/TA literature. Taking consideration of the strengths and weaknesses of these research designs, specifics of the SCED design used in the current study will now be discussed.

## The Present Study

Despite the growing evidence base supporting C/TA processes, there is a dearth of literature examining the effectiveness of this intervention with individuals admitted to psychiatric inpatient settings diagnosed with bipolar disorder. In response, the research questions and hypotheses guiding the present study are as follows:

### Research Questions

1. To what extent do individuals with bipolar disorder participating in a Collaborative/Therapeutic Assessment (C/TA) in a psychiatric inpatient setting experience change in subjective levels of distress, hope, working alliance, and session impact across study phases?
2. If change occurs, at what point in C/TA do participants begin to experience these changes?
3. What is the trajectory of change observed?
4. Are participants satisfied with C/TA?

### Atheoretical Empirically-based Hypotheses

1. Compared to baseline, participants will experience a decline in distress, increase in hope, increase in working alliance, and increase in session impact, as measured by Simulation Modeling Analysis (SMA; Borckardt, 2006).

2. Participants will report lower distress, stronger working alliance, larger session impact, and greater hope following the initiation of the C/TA intervention (i.e., C/TA subphase 1).
3. When differences in the level of distress, working alliance, session impact, and hope are observed, such changes will continue through to the post-intervention session.
4. Overall, participants will report being satisfied with the C/TA, as measured on the Assessment Questionnaire (AQ; Bunner, 1993; Finn et al., 1995) and compared to the AQ normative sample.

## Research Design

Given the research questions and hypotheses posed, a single-case experimental time-series design (SCED) with four participants ($n$=4) was selected. The inclusion of four participants strengthened this study by providing noteworthy replication that assists with mitigating some of the common shortfalls of SCED designs, as was discussed above (e.g., establishing a representative baseline, maturation, reactive assessment). The data obtained were analyzed using visual inspection followed by Simulation Modeling Analysis (SMA; Borckardt, 2006). Overall, similarities and differences between participants were examined graphically, and individual variability studied.

### Independent Variable: C/TA

The present research study is investigating a modified version of Finn's original TA model, referred to Collaborative/Therapeutic Assessment (C/TA; Finn et al., 2012). The steps of TA, as specified by Finn (1996; 2007), include initial session(s), standardized testing session(s), assessment intervention session(s), summary/discussion session(s), the provision of written feedback, and follow-up session(s). Building upon Finn's model, and inspired by Hinrichs'

(2016) compressed version, this study included a four-session C/TA (see Appendix A). This four-session C/TA model was assumed to provide a reasonable opportunity for patients to discuss, process, and absorb the information discovered in the assessment, while the clinician had the opportunity to integrate as much of Finn's (2007) model as possible. Importantly, the C/TA model (4 sessions over two weeks) was selected to fit the time restraints for admission length within the treatment setting (i.e., for feasibility within the inpatient ward). The C/TA was offered alongside typical treatments available in the treatment setting (e.g., medication management, group psychotherapy, etc.) and, as such, was considered an adjunct therapy.

**Dependent Variables**

The DVs selected for the study were related to relevant factors for the patient population and informed by prior C/TA research. An examination of *distress*, *hope*, *working alliance*, *session impact*, and *satisfaction* were included. A severe psychiatric illness, such as bipolar disorder, presents significant affective, cognitive, functional, and interpersonal issues for those both experiencing the illness and their caregivers (Scott, 1995). It is unsurprising that individuals with the diagnosis experience high levels of distress and hopelessness (Newman, 2004; Scott, 1995). Subjective levels of hope is an essential factor to assess and monitor in this patient population, given the predictive value of state-based hopelessness and an individual's degree of suicidal intent and behaviours (Hawton, Sutton, Haw, Sinclair & Harriss, 2005; Weishaar & Beck, 1992). As such, these two wellness-related DVs were of focus in the present study.

Additionally, the process variables working alliance and session-impact were included. Working alliance is vital in examining the outcomes of psychotherapy interventions (Hatcher & Gillaspy, 2006). There is a robust, moderate association between high alliance scores and positive therapeutic outcomes (Horvath & Bedi, 2002; Horvath, Del Re, Flückiger, & Symonds,

2011b; Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000, Wampold & Imel, 2015). Related to working alliance and psychotherapy outcome, is the concept of session impact. Stiles (1980) and Stiles and Snow (1984a) argue that the measure of session impact enhances the understanding of how session-based processes contribute to the outcomes observed in psychotherapy intervention research. Measures of smoothness and depth, the main components of session impact, are also related to working alliance and the degree to which patients engage in subsequent treatment (Tryon, 1990; Ackerman, Hilsenroth, Baity, & Blagys, 2000).

The measurement of satisfaction also plays an essential role in evaluating treatment outcomes in health care (Cone, 2001). Bunner (1993) and Cone (2001) argue that satisfaction is a significant variable to measure in outcome research, as satisfaction contributes to the likelihood that patients will continue to access services in the future. Given the lifelong negatively impactful nature of bipolar disorder, it is especially important to utilize treatments that individuals find satisfying and, thus, enhance the likelihood that they will stay connected to health care services. Lastly, patient-specific idiographic indexes were included as DVs. These indexes were determined collaboratively at the onset of the study. These indexes embodied patient goals for treatment or intentions for the symptoms they were experiencing. Participant idiographic indexes are delineated in the results section.

**Data Collection**

As advised by Kazdin (2011) and Borckardt et al., (2008), this study included a strict schedule for data collection to reduce the potential for statistical artifacts arising in the data that can commonly occur in SCED research. Data were sampled at the same intervals for each participant throughout study phases. This study included three phases of data collection: Pre-C/TA Baseline, C/TA Intervention (subphase 1-4), and Post-C/TA. The pre-C/TA baseline

period was one week in length, the C/TA intervention phase was two weeks (two subphases/week), and the post-C/TA phase was one week in length.

The baseline period in SCED research is of the utmost importance, as it serves as the control for the remainder of the study (Horner & Spaulding, 2010). Guided by suggestions from Horner and Spaulding (2010), Kratochwill et al. (2010), and Borckardt et al. (2008) for the inclusion of 5 – 10 observations per phase, this study included a one-week baseline period. With regards to the post-intervention period, this study included a one-week period between the last C/TA session and the post-session. The one-week period was thought to provide a reasonable amount of time for participants to withdraw from the C/TA intervention. Ideally, the post-C/TA session should occur at least one month or more following the completion of the assessment intervention, as it has in similar studies (e.g., Durosini et al., 2017; Smith et al., 2015; Tiegreen et al., 2012); however, given the constraints of the psychiatric inpatient setting, one week was the most realistic amount of time that could be guaranteed and standardized for all four participants. An overview of the study design is depicted below (see Figure 1).

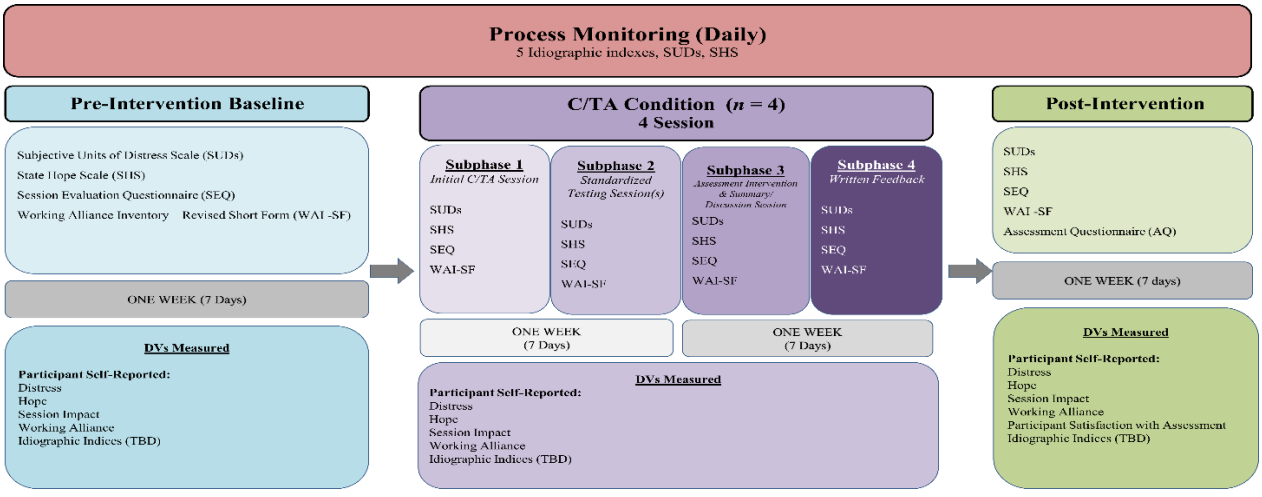


*Figure 1.* Summary of Study Design

**Data Analysis**

The findings were analyzed through both visual inspection and statistical analysis, as is recommended by leaders within the fields of SCED research (Kratochwill et al., 2010; Kratochwill et al., 2011, as cited in Smith, 2012).

**Visual Inspection.** Visual inspection, according to Kazdin (2011), relies on the graphic display of the data to draw inferences. Kazdin argues that the strength of this model of analysis is that visual inspection criteria force researchers to search for interventions with powerful, evident effects. It can also be a weakness, however, in circumstances when more sensitive methods of analysis (e.g., statistical analysis) highlight treatment effects that visual inspection does not detect. There is a lack of consensus on the procedures and criteria to guide visual inspection, and there are several options available that were considered (e.g., see Furlong & Wampold, 1981; Kazdin, 2011; Kratochwill et al., 2010; 2013; Lane & Gast, 2014; Gast & Spriggs, 2014). However, guided by Kazdin (2011), this study's visual inspection included an examination of changes related to the magnitude (i.e., mean and level) and examining changes related to rate (i.e., trend/slope and latency) in each phase of the data.

Changes in means refer to the differences in the average of the data on a specific measure in each phase. Changes in the level "refer to the shift or discontinuity of performance from the end of one phase to the beginning of the next phase" (p. 288). It is important to note that change in mean and change in level are independent, though there can be a shift of both in the same direction observed in data streams. Changes in trend/slope in the data refer to the systematic increases or decreases in the data stream over time. Lastly, the latency of the change refers to the period between the onset of a new phase and the associated change in the data stream or performance of the variable. According to Kazdin (2011), an intervention effect is more easily ascertained when the shift in data occurs immediately after the introduction of the new phase.

However, the type of intervention initiated is a crucial consideration in latency observations. Lastly, Kazdin also discusses the importance of observing the degree to which data from different phases overlaps.

Smith (2012) cautions that visual inspection requires the baseline phase have stability, be free from trend, and have minimal overlap with data in other phases of the study. Data that is considered stable has no trend or slope. Indeed, as Kazdin (2011) and Furlong and Wampold (1981) recommend, when the baseline phase fails to meet criteria for stability, statistical analysis is warranted.

**Simulation Modeling Analysis (SMA).** Given the above limitations of visual inspection, the more rigorous analytic method Simulation Modeling Analysis (SMA; Borckardt, 2006) followed visual inspection within this research. Of all the statistical data analysis methods available for SCED designs discussed in the literature (e.g., see Smith, 2012 for a summary), Simulation Modeling Analysis (SMA; Borckardt, 2006) appears to be one of the most promising in providing statistical power and control for type I errors in short-stream (i.e., fewer than 30 data points per treatment phase) data sets with autocorrelation. SMA enables calculation of effect sizes by comparing changes in mean levels between different phases of data. Determining statistically significant changes in the data is "achieved through bootstrapping methods that rely on simulation of datastreams of similar length and serial dependence or autocorrelation" (Durosini et al., 2017, p. 10). SMA provides the probability of obtaining the calculated effect size in a null distribution (Borckardt et al., 2008). Smith, Borckardt, and Nash (2012) suggest that autocorrelation higher than 0.8 impedes power sensitivity, inferential precision, and the ability to detect true significant effects in the data.

Within this research, the correlation coefficients (Pearson's *r*) produced via SMA was interpreted at or below the .05 significance level (i.e., $p \leq .05$) for the DVs measured daily, including the idiographic indices. For the session-based DV's (i.e., working alliance, session-impact) Pearson's *r* was interpreted at or below the .01 significance level (i.e., $p \leq .01$). The Pearson's *r* statistic was selected to be used throughout all SMA analyses, as is typical in previous SCED TA studies (e.g., Smith et al., 2015). However, for statistical accuracy, the more conservative Spearman's Rho was considered for some DV's (i.e., idiographic indices) due to the ordinal nature of the Likert scales comprising those data streams. Ultimately, Pearson's *r* was chosen for all data streams due to statistical uniformity. Also, Spearman's correlation provided nearly the same estimates as Pearson's *r* and did not change the conclusions drawn.

In using SMA with the present research, some limitations of this analysis were considered thoroughly at the time of design that are worth noting. This study's session-based data streams failed to meet the suggested 5 – 10 data points per phase. While acknowledging these recommendations, it is theoretically feasible, albeit at increased risk for type 1 and type 2 errors, to use visual inspection and SMA in an exploratory nature with the small N data stream for the session-based measures. As Kratochwill et al. (2011) state, there are times when having fewer than five data points is appropriate. Indeed, for the present research, it would have been inappropriate to measure session-based DVs when no session occurred. To help mitigate the potential for type 1 and 2 errors, a more conservative $p \leq .01$ threshold was selected in the SMA analysis of the session-based DV's. In this way, any statistical significance would be notable and warrant a closer examination of the data stream.

In addition to examining the number of observations in each phase of this study, considerations of the management of missing observations were also thoroughly explored. To

address missing data in SCED research Smith, Borchardt, and Nash (2013) recommend the application of an algorithm for maximum likelihood (i.e., the EM procedure; Dempster, Laird, & Rubin, 1977). As such, the EM procedure was considered as a possible solution to address missing data points in the present study. In examining the data streams, however, low percentages of missing data were found (i.e., Participant 1 = 4% (1 data point); Participant 2 = 6% (2 data points); Participant 3 = 14% (4 data points); Participant 1 = 4% (1 data points)). It was concluded that the use of the EM procedure with such low percentages of missing data would not be additive to the analysis. Thus, missing data time slots were simply eliminated.

Guided by this study's research questions and hypotheses, a SCED time-series design was thought to provide a suitable method to examine the effectiveness of C/TA over time with a psychiatric inpatient population. Feasibility of this method is paramount, given the complex research setting. Before discussing the study's methods in detail, I comprehensively review the existing C/TA literature in the next chapter.

# Chapter 2: Literature Review

## Bird's-Eye View of Published C/TA Research

The research examining collaborative and therapeutically oriented assessment practice has been accumulating for decades. In reviewing the C/TA literature base, I searched for articles on PsychINFO from the dates of 1806 to 2020 using the search terms *therapeutic assessment*, *collaborative assessment*, *collaborative/therapeutic assessment, psychiatric illness (exp psychiatric patients, exp mental disorders)*, *bipolar disorder*, and *psychiatric inpatient*. From there, I exhausted all available literature by cross-referencing the citations found with the bibliographies available on the Therapeutic Assessment Institute website (i.e., https://www.therapeuticassessment.com, "Resources" tab), which includes comprehensive citations on Therapeutic Assessment, Collaborative Assessment, and the Utility of Assessment. I also back-checked the references of all identified articles. Through this process, I carefully reviewed approximately 200 articles, book chapters, and dissertations/theses related to C/TA processes and outcomes.

Overall, the studies reviewed focused on either process variables related to therapeutic outcomes (e.g., working alliance) or specific applications of C/TA as a treatment in and of itself. According to Aschieri, Fantini, and Smith (2016), researchers in the C/TA arena are currently concentrating empirical research on the specific applications of C/TA, which aligns with the nature of the current research project. Within the literature base, C/TA has been studied with a variety of age groups, including adults, families with children or adolescents, and couples. It has also been studied in several settings, including mental health outpatient, counselling clinics, inpatient, and forensics. Specific applications of C/TA include a focus on a variety of diagnoses as well as the use of C/TA with culturally and racially diverse populations.

In general, C/TA literature with adults has found positive outcomes with regards to patient wellbeing, self-esteem, and symptomatic factors, in addition to contributions with the development of process variables, such as working alliance (Aschieri, Fantini, & Finn, 2018; Aschieri, Fantini, & Smith, 2016). Both quantitative and qualitative designs are included in the C/TA literature, with a large emphasis on descriptive case studies (e.g., Brown & Morey, 2016; Finn, 2003; Hinrichs 2016). More recently, there has been a move towards inclusion of quasi-experimental single-case designs in the literature (e.g., Aschieri & Smith, 2012; Smith et al., 2014; Wolf, 2010). The literature base also includes some experimental designs, such as RTCs (e.g., De Saeger et al., 2014). Lastly, there is one notable and highly referenced meta-analysis completed by Poston and Hanson (2010).

Strength of the studies available includes in-depth descriptions of the intervention, which aids with replication and evaluation of treatment fidelity. The prominence of case study research also provides preliminary evidence of the use of C/TA with novel patient populations and settings. The notable number of descriptive case studies present in the C/TA literature base, however, point to the necessity for the inclusion of more quasi-experimental and experimental studies moving forward. An added consideration that arose through my review of the literature involves the nomenclature for C/TA oriented assessment processes. There are a variety of terms used for collaborative and therapeutic assessment processes, which could contribute to confusion. Due to this, the interventions of focus in all the studies reviewed were carefully scrutinized. Studies were excluded if thought to diverge significantly from Finn's (2007) model. For example, the research on the Collaborative Assessment and Management of Suicidality (CAMS) framework (e.g., see Ellis, Green, Allen, Jobes, & Nadorff, 2012; Ellis, Rufino, &

Allen, 2017; Jobes, 2012; Jobes, Wong, Conrad, Drozd, & Neal-Walden, 2005) was excluded for this reason.

The literature selection process was informed by the recommendations for evaluating research evidence set out by the CPA (2012), Dozois (2013), and Dozois et al. (2014). As such, the studies included are thought to provide a sound evidence base for the current study. After a critical examination of the available literature, sixteen of the most relevant studies were selected including four seminal studies, six focusing on a variety of psychiatric illnesses, and five studies examining C/TA in psychiatric inpatient settings. All the studies selected were published within the last 30 years, with most of the studies focused on C/TA with psychiatric illness and in inpatient settings occurring within the 2000s.

## Summary of Reviewed Literature

The literature examining the use of C/TA in psychiatric inpatient settings is a burgeoning area that is in dire need of additional rigorous empirical research. This literature review focuses on studies examining the use of C/TA with adults experiencing psychopathology, such as personality, mood, and psychotic disorders (e.g., Durosini, Tarocchi, & Aschieri, 2017; Finn, 2003; Hinrichs, 2016; Morey, Lowmaster, & Hopwood, 2010; Tiegreen et al., 2012; Wolf, 2010) and those who are admitted to psychiatric inpatient settings (e.g., Fowler, 2012; Hinrichs, 2016; Little, 2009; Michel, 2002). First, however, foundational empirical studies, such as Finn and Tonsager (1992), Newman and Greenway (1997), Ackerman, Hilsenroth, Baity, and Blagys (2000), and Hilsenroth, Peters, and Ackerman (2004) are reviewed because they highlight the importance of the intervention, while also providing initial evidence on commonly studied DV's from which ongoing research in the area has expanded.

Of the sixteen studies reviewed, six were descriptive case studies (i.e., Brown & Morey 2016; Finn, 2003; Fowler 2012; Hinrichs 2016; Michel, 2002; Tiegreen et al., 2012), with two utilizing a single-case experimental design (i.e., Durosini et al., 2017; Wolf, 2010). Amongst the studies that used a quantitative, group-based design, two were graduate student research projects (i.e., Bunner, 1993; Little, 2009), and six were completed by established researchers (Ackerman et al., 2000; De Saeger et al., 2014; Finn & Tonsager, 1992; Hilsenroth, Peters, & Ackerman, 2004; Morey et al., 2010; Newman & Greenway, 1997). The empirical studies reviewed involved sample sizes ranging from 16 to 128 participants, with many of the studies involving approximately 30 participants in each treatment condition. Participant groups included in the research reviewed ranged from college students, outpatients with personality, mood, and psychotic disorders, to psychiatric inpatients with more severe psychopathology (e.g., borderline personality disorder, narcissistic personality disorder, mood disorders, substance use disorders). In general, research questions included in the empirical studies were informed by clinical research in the area and were, as a result, largely atheoretical. These studies examined the effect of C/TA processes on such variables as treatment termination, therapeutic alliance, patient engagement, patient satisfaction, treatment outcome, patient well-being, symptom reduction, and the influence of patient variables on outcome.

The quality of the research reviewed is mainly high, with some notable weaknesses. The descriptive case studies discussed provided a detailed account of clinicians working with patients throughout the C/TA model. These studies were helpful for providing other clinicians and researchers with comprehensive examples for how to implement this assessment model in clinical work and research. As an initial exploratory step, the quasi-experimental SCED studies provided preliminary evidence supporting the use of collaborative assessment processes with

specific populations and also introduce a new element to C/TA research that quantifies the descriptive findings from the case study research. The empirical studies reviewed, in general, used an adequate number of participants and described the demographics of the study sample. Randomization was also used in some studies (e.g., De Saeger et al., 2014; Morey et al., 2010), which strengthened the validity of the findings from those studies. Further, like with the case studies, the empirical research reviewed included a description of the interventions with delineated study procedures. This descriptive inclusion assists with replication studies in the future. Given that this research base involves the examination of an intervention, therapist effects did not appear to be considered in much of this research. However, some studies did include multiple therapists (both psychologists in training and licensed professionals, e.g., Hilsenroth et al., 2004), which assists with accounting for treatment effects due to therapist factors.

Given the qualities of the studies available, evidence is accumulating that highlights positive effects of C/TA practices (e.g., Ackerman et al., 2000; Finn & Tonsager, 1992; Hinrichs, 2016; Newman & Greenway, 1997). The one reviewed RCT (e.g., De Saeger et al., 2014), reports compelling empirical evidence ($d$= 0.40 - 0.68) and mirrors previous meta-analyses of psychological assessment as a therapeutic intervention (Poston & Hanson, 2010). In a meta-analysis by Poston and Hanson (2010), therapeutically oriented assessments were found to demonstrate clinical effectiveness with aggregate effect sizes hovering around 0.40 (Cohen's $d$). These researchers also found there to an effect size of $d$=1.11 for process-related factors that contributed to the underlying mechanisms of change in collaborative assessment practices. Therapeutically oriented assessment models positively impact symptoms of distress (Aschieri & Smith, 2012; Finn & Tonsager, 1992; Little, 2009; Newman & Greenway, 1997; Wolf, 2010), foster therapeutic relationships (Ackerman et al., 2000; Hilsenroth et al., 2004), enhance patient

engagement in treatment (Hilsenroth et al., 2004) and increase patient satisfaction with treatment offered (Little, 2009; De Saeger et al., 2014; Wolf, 2010). With this summary in mind, a more thorough in-depth analysis of individual studies is provided below. When considered collectively, these analyses directly inform this dissertation.

**Foundational Empirical Evidence**

In a seminal C/TA study, Finn and Tonsager (1992) examined the therapeutic benefits of providing feedback with post-secondary students waitlisted for psychotherapy at their college counselling centre. Using a repeated measures design that included two group conditions over three time periods, 60 participants were randomly assigned into either a supportive therapeutic condition that did not include the administration of the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) ($n$=28) or a brief C/TA condition that included MMPI-2 administration and feedback ($n$=32). Each condition provided equivalent therapeutic time for each subject. Both groups reported equivalent levels of distress and self-esteem at baseline. The intervention protocol included an initial session and development of assessment questions, the administration of the MMPI-2, followed by a collaborative feedback session focused on the findings of the MMPI-2. The research questions were: “Does telling client their test results benefit them? If so, what are the benefits of test feedback and how long do they persist? If benefits occur, which aspect of the feedback session was responsible for these changes? And last, if test feedback is beneficial, which clients benefit most?” (p. 279). It was (atheoretically) hypothesized that the participants who received MMPI-2 feedback “would report (a) significant decrease in symptomatic distress and (b) significant increase in self-esteem” (p. 281).

Overall, Finn and Tonsager (1992) found that participants who received MMPI-2 feedback immediately experienced a decrease in symptomatic distress and an increase in both self-esteem and hope in comparison to the support-oriented group. Following a two-week time interval, students in the experimental condition reported a continued increase in self-esteem and hope, while symptomatic distress decreased. Specific strengths of this study include a relatively representative sample of patients (70% of participants were women) from the counselling centre where the research was performed (68% of the patients who access services at that clinic were women). As another strength, the size of the sample ($n$=60) provides adequate statistical power. Weaknesses of this study include 'therapist effects," due to the use of only one therapist for all conditions. This design flaw could account for the group differences observed in this study. Furthermore, the therapist who administered the intervention was aware of the hypothesis, further confounding the findings due to possible confirmation bias. Lastly, since this study includes the administration of the MMPI-2 to only one treatment condition, there may be unaccounted for treatment effects related to the completion of MMPI-2 testing.

Building upon the work of Finn and Tonsager (1992) with an improved design and method of analysis, Newman and Greenway (1997) examined the effect of providing MMPI-2 feedback to 60 Australian college students waiting for counselling services. A repeated measures design, which included two group conditions and 3-time periods, embodied this study. Again, students were randomly assigned to either an experimental condition, which included MMPI-2 feedback ($n$=30), or a control condition in which feedback was provided after the completion of the study ($n$=30). In addressing a limitation of Finn and Tonsager's design, this study incorporated the administration of the MMPI-2 to both conditions, which helped to control for any treatment effects related to the completion of testing. The questions guiding this research

mirrored those provided by the Finn and Tonsager study: “Does telling clients their test results benefit them? If so, what are the benefits of test feedback and how long do they persist? If benefits occur, which aspect of the feedback session was responsible for these changes? And last, if test feedback is beneficial, which clients benefit most?” (Finn & Tonsager, 1992, p. 279). Newman and Greenway hypothesized that the participant group who received MMPI-2 feedback would “report (a) significant decrease in symptomatic distress and (b) significant increase in self-esteem” (p. 123). In consideration of the limited evidence available on test feedback, these hypotheses are atheoretical. Newman and Greenway opted to calculate patient change via residual gain scores, instead of raw gain scores as was utilized by Finn and Tonsager, arguing that residual change scores allow for the initial level of patient disturbance to be accounted for, resulting in more reliable statistics measuring change in self-esteem and symptomatic distress.

Mirroring the findings of Finn and Tonsager, Newman and Greenway (1997) found that participants in the experimental condition experienced an immediate increase in self-esteem following the provision of MMPI-2 feedback, that continued to increase for up to two weeks following feedback. Also, subjective distress continued to decrease immediately and following a two-week delay for the experimental condition. Newman and Greenway suggest that therapeutic benefits were not due to the completion of the MMPI-2, as these therapeutic gains were not observed in the control group. Specific strengths of this study include Newman and Greenway’s decision to use residual gain scores (i.e., controlled for the initial level of disturbance) instead of raw scores. By using residual gain scores, these researchers avoided potential regression to the mean and enhanced the reliability of their analyses. The decision to include the administration of the MMPI-2 for both conditions was also a study strength. Akin to Finn and Tonsager’s design, Newman and Greenway failed to account for potential ‘therapist effects’ by using one therapist

for all conditions. Researcher bias was also a limitation of this study due to the therapist knowledge of the study hypotheses. Regardless, these two studies are significant in providing initial empirical evidence supporting the therapeutic benefits of providing assessment feedback.

Expanding upon the empirical evidence put forth by Finn and Tonsager (1992) and Newman and Greenway (1997), Ackerman and colleagues (2000) studied the therapeutic impact of a modified version of C/TA on psychotherapy outcomes. More specifically, these researchers compared the effect of C/TA versus traditional psychological assessment (IG) on therapeutic alliance, in-session processes during the assessment, termination rates, and the likelihood of patients following through on assessment recommendations. The study occurred in an outpatient community-based university counselling clinic and included a representative participant sample, some of whom met criteria for a mood disorder. The IG group held 90 participants, and the C/TA group included 38 participants. Rooted in theory and past empirical research, these researchers hypothesized:

1. Compared to an IG model of assessment, the use of a collaborative [C/]TA model will decrease the number of patients who terminate treatment AMA.
2. Coefficient alpha and adjusted item-to-scale correlations would demonstrate that a measure of psychotherapy process (SEQ) and measures of therapeutic alliance (CASF–E and HAq–R) can be used reliably during the assessment phase of treatment.
3. The collaborative [C/]TA model would have a meaningful impact on how patients experience the assessment feedback session and alliance with the clinician.
4. The therapeutic alliance developed between the patient and clinician using the collaborative [C/]TA model will be related to alliance early in psychotherapy (p. 85).

A 2 x 2 chi-square was utilized to examine the termination rates between the IG and TA groups. Pearson *r* correlations were used to analyze treatment phase process and alliance aspects, in addition to process and alliance in the feedback phase of the assessment.

Ackerman et al. (2000) found that the C/TA group held lower rates of termination (*n*=5, 13%) in comparison to the IG assessment group (*n*=30, 33%). Additionally, patients in the C/TA group found their therapeutic alliance with their clinician to be more positive, which was correlated with higher ratings of feedback sessions related to depth, fullness, value, and impact than those who participated in the IG group. Ackerman et al. also discovered that patients valued a longer assessment that was designed to develop a deeper and more thorough exploration and understanding of their underlying problems in living. Participants in the C/TA group were more likely to abide by the assessment recommendation to continue with psychotherapy (33%) than were participants in the IG condition who received the same recommendation (13%). The collaborative process of C/TA appeared to contribute to positive patient rating feedback sessions. Positive feedback session ratings were also found to be predictive of patient alliance ratings in session three of subsequent psychotherapy work (*r*=.63). Overall, Ackerman et al. found that C/TA contributed significantly to the development of a strong therapeutic alliance in psychotherapy, fostered accurate mirroring for the patient (self-verification), enhanced patient feelings of being deeply understood by another (self-enhancement), and instilled patient capacity and motivation for change with the collaborative support of an empathetic clinician (self-efficacy).

Regarding the strengths of this study, Ackerman et al. (2000) included an analysis of possible confounds in both demographic and diagnostic variables. These researchers found nonsignificant relationships in sample demographics (e.g., age, sex, marital status, diagnoses,

etc.), assessment length, and intake Global Assessment of Functioning (GAF), and the likelihood of patient continuation into therapy. This analysis enhanced the reliability and validity of the study findings. Also, the use of 18 clinicians for the IG condition and 10 for the C/TA condition may have mitigated therapist effects and increased the generalizability of the study. However, it is unclear how many assessments were completed by each therapist and whether the therapists provided C/TA or IG interventions exclusively. As a result, both the replicability of this study and the evaluation of possible therapist effects are impacted.

Extending their previous work (i.e., Ackerman et al., 2000), Hilsenroth et al. (2004) quantitatively examined the effect of a C/TA on the therapeutic alliance extended into psychotherapy treatment. Participant data from Hilsenroth, Ackerman, Clemence, Strassle, and Handler (2002) was also included as a subset, with 42 participants in total. The hypotheses guiding this study built upon previous empirical evidence regarding the effect of positive therapeutic alliance on processes and outcomes in psychotherapy. The hypotheses included:

> (a) the therapeutic alliance reported by the patient and therapist during the assessment phase of treatment would be significant and positively related to their subsequent alliance ratings (respectively) early in formal psychotherapy, (b) the therapeutic alliance reported by the patient and therapist during the assessment phase of treatment would be significant and positively related to their subsequent alliance ratings (respectively) late in formal psychotherapy, and (c) the therapeutic alliance of patients who take part in a more collaborative and therapeutically oriented model of psychological assessment would report a significantly greater level of alliance than those receiving a standard model (i.e., assessment as usual) of psychological assessment (p. 335).

The quantitative statistical data analyses included repeated measures ANOVA for changes in alliance across three data selection points. Variation across alliance scores was further examined through Scheffe's procedure for post hoc comparisons. Hilsenroth et al. also included Pearson's *r* product-moment correlations to examine the relationship between alliance scores across the three data selection points. Lastly, a comparison between alliance scores for the C/TA group versus the control group was included.

Hilsenroth et al. (2004) found a significant and positive relationship between the development of a strong therapeutic alliance in the C/TA process (both for therapist and patient) and the subsequent alliance ratings in early and later stages of psychotherapy. Overall, 83% of the sample indicated stable positive alliance scores across treatment phases in this study. Alliance ratings were also found to be notably higher for participants in the C/TA condition, as compared to the IG condition, both early in psychotherapy and in later sessions (session three and four). As an extension of the Ackerman et al. (2000) study discussed above, Hilsenroth et al. expanded the data set (i.e., an increased number of patient-therapist dyads) and included a larger scope of analyses, which strengthened the findings of the current study. The use of 18 therapists in this study is also an area of strength, as therapist effects could more easily be accounted for; however, the inequality in the number of assessments completed by each therapist is noteworthy. For example, it is not reported whether the therapists who completed more assessments achieved different outcomes than therapists who completed only one assessment. A final weakness of this study involves the inclusion of only three data collection periods to assess alliance. This limited assessment reduces the ability to detect potential variation across each session.

The initial evidence reviewed above suggests that collaborative and therapeutic assessment models hold much therapeutic promise. Some researchers have even suggested that

therapeutically oriented assessment procedures might be of particular assistance to individuals living with severe mental illness, such as mood and psychotic disorders (e.g., see Tiegreen et al., 2012).

**C/TA Studies Involving Psychiatric Diagnoses**

In a doctoral dissertation, Wolf (2010) studied C/TA with adult outpatients diagnosed with major depressive disorder (MDD). Using a case-based time-series design methodology, this researcher examined the effectiveness of C/TA in treating depression with three adults (one female and two males) recruited through a clinic connected with the University of Tennessee clinical psychology doctoral program. The study occurred over 98 days and included a 2-week baseline, 5-8 week intervention (7 session C/TA model), followed by a 4-week follow up period. Wolf posed five research questions related to both hopefulness/wellbeing and symptom variables:

1) Does the client improve on daily measures of hopefulness/wellbeing?
2) Does the client meet criteria for meaningful improvement in the periodic measure of wellbeing?
3) Does the client improve on daily measures of symptoms?
4) When compared to baseline, at follow-up does the client meet criteria for symptom improvement on the periodic measure of symptom status: Beck Depression Inventory (BDI-II)?
5) When compared to baseline, at follow-up does the client meet criteria for meaningful improvement on the pre/post measures of symptoms: the OQ-45 Symptomatic Distress Index, the SCL-90 Global Severity Index (GSI), and the SCL-90 Positive Symptom Distress Index (PSDI)? (p. 26-27).

Data included daily measurement of five items measuring "overall distress, overall psychological wellbeing, hopefulness about the future, feeling depressed, and self-esteem" on a nine-point Likert scale (Wolf, 2010 p. 20). Periodic (i.e., pre/post and weekly) measure of depression and psychological health and wellbeing was measured by the Beck Depression Inventory-II (BDI–II; Beck, Steer, & Brown, 1996) and the Schwartz Outcomes Scale-10 (SOS-10; Blais et al., 1999) respectively. Pre-post measurement of distress and psychological functioning were measured by the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1977) and the Outcome Questionnaire-45.2 (OQ-45.2; Lambert et al., 1996). Lastly, examining participant satisfaction, Wolf (2010) asked participants to provide written answers to two open-ended questions, 1) "What part(s) of the assessment did you find most valuable?" and 2) "What changes do you think have occurred as a result of the assessment?" (p. 22). Participants also completed the Client Satisfaction Questionnaire-Revised (CSQ-R; Larsen, Attkisson, Hargreaves & Nguyen, 1979) and the Assessment Questions Rating Form (AQRF) in the follow-up session. For analysis, Wolf used a combination of SMA, calculation of Reliable Change Index, graphing data, and interpretation of changes within the context of measure specific cut scores.

Overall, the findings of this study suggested that C/TA was therapeutically valuable for treating symptoms of depression for all participants. Results of the daily measurements found that one participant had a statistically significant improvement in the hopefulness/wellbeing composite, and two participants reported improvements in daily measure of symptoms.
All three participants reported improvement in periodic measures of both wellbeing and depression, as was measured by the SOS-10 and BDI-II. Pre/post measurement of distress and psychological functioning found meaningful improvement with one participant's reported levels of distress. Regarding satisfaction, all participants indicated they were satisfied with the C/TA. In

answering the open-ended questions, participants reported, in general, that they found the testing and discussion of the assessment findings to be helpful. One participant reported experiencing significant changes in their self-understanding as a result of the C/TA, and one reported an enhanced ability to cope positively with life challenges as a result of learnings acquired during the C/TA, and the third reported no subjective changes in their life as a result of the C/TA.

This study provides a substantial contribution to the C/TA literature base given its focus on the use of C/TA with unilateral depression (i.e., MDD). Further, Wolf's use of the quasi-experimental design (i.e., case-based time-series design) and associated quantitative analysis assist with validating the findings of this study. However, the dual role of clinician-researcher that Wolf took in this study is a significant weakness that introduces the potential for methodological and ethical challenges. For example, the results of the study could have been biased or unduly influenced by the researcher's prior knowledge of the study hypotheses and desire to find positive outcomes. It is also possible for researchers in such a dual role to respond differently than a typical clinician in the therapeutic setting because they are influenced by their researcher role requirements. An additional consideration of this study is the lengthy period of investigation (i.e.,7-session C/TA, full protocol was 98 days), which is typically not feasible in a psychiatric inpatient setting. Overall, more research is needed in this area not only to verify these findings but also to examine the effectiveness of more condensed C/TA models with individuals with psychiatric illnesses, such as bipolar disorder.

In 2003, Finn provided a comprehensive step-wise description of C/TA after working with a 28-year-old man with a childhood diagnosis of Attention Deficit Disorder (ADD). Finn described his interactions with the patient's referring psychotherapist, as well as other collateral sources, such as the patient's psychiatrist, and the patient himself. The questions put forth by the

patient driving the assessment were primarily interpersonal; however, the patient also inquired about the veracity of his ADD diagnosis. The referring therapist contributed questions regarding accurate diagnosis and the possibility of a repressed sexual abuse history. Through the process of the assessment interview, standardized test administration, and assessment intervention sessions, Finn described working collaboratively with the patient to gain a better understanding of the patient's current problems in living. Early childhood experiences were also highlighted as significant contributing factors to the patient's current presentation. There were no hypotheses put forth by Finn, as it was a descriptive case study.

Finn's (2003) case study included the Attention Deficit Scale of Adult (Triolo & Murphy, 1996), the Dissociative Experiences Scale (Bernstein & Putnam, 1986), the MMPI-2, and the Rorschach using Exner's Comprehensive System (Exner, 1995) into the assessment battery. Guided by the treatment hypothesis that the patient's attentional problems were the result of emotional flooding, Finn selected the Digit Span subtest from the Wechsler Adult Intelligence Scale–III (Wechsler, 1997), and select cards from the Thematic Apperception Test (TAT; Murray, 1943) to use experientially in the assessment intervention session. Through the intervention session, Finn and the patient had the opportunity to observe the impact of the patient's emotional elevation on his performance on the WAIS-III subtest. This collaborative, experiential process fostered patient insight. Namely, the patient discovered that his problems in living were not the result of repressed childhood sexual abuse or ADD; instead, it was his avoidance and emotional dysregulation that impacted him most significantly. Indeed, Finn thought that anxiety, depression, and possibly some hypomanic tendencies were impacting the individuals' ability to focus and concentrate. Finn comments that C/TA fosters patient change through "helping clients "rewrite" the stories they tell themselves about themselves…when those

stories have become problematic or incomplete in important ways" (p. 126). In this case, C/TA assisted the patient in moving from the belief that he had ADD to "I have too many emotions I've never dealt with that are overwhelming my thinking" (p. 126). This case study is a compelling example of how effectively C/TA can be used when working with patients with psychiatric symptomology and diagnoses. The level of detail provided by this case study provides an informative jumping point for the empirical study of C/TA within the literature. Of course, being a case study, it is more limited when considering generalizing these findings to other populations or settings.

In an empirical study focused on C/TA with personality disorders, Morey, Lowmaster and Hopwood (2010) compared the effect of Manual-Assisted Cognitive Therapy (MACT; Tyrer et al., 2004) with borderline personality disorder versus the use of C/TA as a pre-treatment augmentation to MACT. In a repeated measures design, sixteen participants (13 women, 3 men) were recruited at the Texas A&M University Psychology Clinic. Through random assignment, participants were placed in either experimental condition (MACT vs C/TA + MACT), both of which included six weeks of treatment. This study had two hypotheses, based on clinical literature and thus are considered atheoretical. Firstly, Morey et al. sought to "explore the utility of MACT as a stand-alone outpatient treatment for BPD and BPD-related suicidality" (p. 532). Secondly, these researchers hypothesized that C/TA would facilitate patient engagement and, thus, increase retention rates in the MACT program. Fluctuation in levels of suicide and borderline features was examined using the Personality Assessment Inventory (PAI; Morey, 1991, 2007). Data analysis included repeated measures ANOVA of baseline and post-treatment measures of suicidality and borderline features. The analyses also included an examination of group by time interaction effects regarding outcome variables measured at post-treatment.

In contrast to the MACT alone group, the C/TA augmentation condition (i.e., C/TA + MACT) was found to have a larger reduction in suicidal ideation (*d*=1.75) and lessening of affective instability (i.e., suggesting overall treatment response) (*d*= 4.35) in comparison to the MACT condition (*d*=0.77 and *d*=0.85 respectively). However, no effect on retention rates or number of attended sessions was observed between the two experimental groups. Given that this was a pilot study, the choice to include a C/TA augmentation is both innovative and additive to the literature. This study also verified previous research findings regarding retention rates for individuals with BPD accessing psychological treatment. These researchers note that only seven participants participated in the intervention to completion across both study conditions, which limited the scope of this study. Given that this is a group-based design, this study's ANOVA analysis was limited by the low *n* and the related lack of statistical power in the analyses. Replication with a larger sample size would enhance the power needed to verify the outcomes.

In a more recent randomized control trial, De Saeger et al. (2014) examined the impact of C/TA (operationalized into four sessions) versus a goal-focused pre-treatment intervention (GFPTI). Using both ANOVA and MANOVA analyses, 74 individuals awaiting treatment for severe personality pathology were examined. The study design included a standardized intake session, placement on a waitlist, and computer-assisted random assignment to either the C/TA or GFPTI conditions. Data collection occurred at four points in the study: prior to random assignment, immediately post C/TA or GFPTI, six weeks following C/TA or GFPTI, and six weeks following the commencement of regular psychotherapy. Measurement of outcome variables included treatment readiness, perception of progress, outcome expectancy for treatment in the future, alliance, demoralization, symptomology, and patient satisfaction. Instrumentation included the Assessment Questionnaire (AQ; Finn & Tonsager, 1992), the Expectancy for Future

Treatment Scale (EFTS; available from De Sager), the Revised Helping Alliance Questionnaire (HAq-II; Luborsky et al., 1996), the Demoralization scale from the MMPI-2 (RCdem; Tellegen et al., 2003), Brief Symptom Inventory (BIS; Derogatis, 1975), and the Client Satisfaction Questionnaire (CSQ8; Larsen, Attkisson, Hargreaves, & Nguyen, 1979).

The four-session C/TA condition included: (1) initial interview and administration of the MMPI-2, (2) administration of performance-based measures (e.g., Rorschach), (3) assessment intervention session, (4) assessment feedback session. The GFPTI condition also included four sessions of goal-oriented manualized treatment: (1) psychoeducation regarding the impact and potential for changing maladaptive behaviours, (2) discussion of the patient's primary issue, (3) review of the dilemma of change for the patient, (4) the re-appraisal of the patient's primary issue and goal-setting for next steps in treatment. Thirteen therapists with graduate degrees in clinical psychology (both students and licensed psychologists) participated in the study and were randomly assigned to either condition. Guided by previous empirical evidence, these researchers hypothesized that participants in the C/TA condition would have a stronger therapeutic alliance, a reduction in demoralization, higher expectations for outcomes and future treatments, and be more satisfied with the treatment provided.

Overall, these researchers found an effect size around 0.40-0.68 (Cohen's *d*) for the C/TA condition. As compared to the GFPTI condition, the C/TA group reported higher satisfaction with treatment ($d$=0.68), had more explicit expectations and direction for the next stage of therapy ($d$=0.68), and indicated moderately stronger alliances with therapists ($d$=0.46). However, differences in symptom reduction and demoralization were not apparent between each treatment group. The comparison of the full model of C/TA with an empirically supported intervention adds to the strength of this study. This design feature legitimizes and validates the comparative

effects observed in the C/TA condition. The use of a computer program to complete the random assignment, arguably, eliminated systematic bias within the study sample. As a consideration for this study, these researchers discussed the possibility of therapist effects influencing the differences observed between groups. Therapist effects may have been amended by the therapists administering treatments for both conditions.

The use of C/TA with severe psychotic illness is another area that researchers have only started to explore. Tiegreen et al. (2012) argue that the collaborative nature of this approach to assessment align with preferences that individuals with severe mental illness have for collaborative engagement in their recovery and rehabilitation (Adams, Drake, & Wolford, 2007). In a 2012 descriptive case study, Tiegreen and colleagues examined the use of C/TA with a 29-year-old African American veteran with previous diagnoses of schizophrenia and schizoaffective disorder, depressive type. The participant was seen for the C/TA in an outpatient clinic following his discharge from a psychiatric inpatient admission. The PAI was selected as the primary assessment measure included in this case study, given the previous research supporting the integration of the PAI into C/TA processes (e.g. see, Morey et al., 2010). Additionally, the Working Alliance Inventory-Short Form (WAI-S; Tracey & Kokotovic, 1989) was administered to convey to the participant the researcher's intention for a collaborative therapeutic alliance and to monitor changes in the alliance. Upon the initial interview, the alliance scores from the WAI-S were found to be at a low-to-moderate level (WAI-S = 38), which paralleled the participant's observed levels of paranoia and mistrustfulness of the clinicians. He also had a history of treatment noncompliance. The participant's extreme scores on the PAI, in addition to his presentation, and his psychosocial history resulted in diagnoses of schizoaffective disorder, depressive type, alcohol abuse, and personality disorder NOS. The researchers also viewed these

scores as an indicator of the high level of distress the participant was experiencing. Given the case study method used in this research, no hypotheses were stated.

Tiegreen et al. (2012) did not include an assessment intervention session (see Finn, 2015; Finn & Martin, 1997). Instead, they focused on providing feedback informed by Finn's (1996, 2007) tiered approach. Feedback given in this manner facilitated the participant's identification of key life stressors, increased awareness of his negative coping mechanisms, and contributed to the collaborative development of a plan for treatment. Tiegreen et al. suggest that the C/TA contributed to a positive therapeutic relationship with the patient, improved his insight and understanding of his illnesses, enhanced his engagement in rehabilitation, and increased his adherence to treatment. Following the C/TA, the participant began to engage regularly in individual and group therapy. At three-months follow-up, the participant's WAI-S scores indicated that there had been a notable improvement in the working alliance (WAI-S=48), which was a significant finding given the degree of initial paranoia and mistrust held by the participant. This case study was detailed, which aids in replicability for other clinicians/researchers. Additionally, these researchers provided an additive demonstration of how C/TA "is a clinical benefit even when a 'cry for help' profile is produced" (p. 519). Despite this initial evidence supporting of the use of C/TA with an individual with severe mental illness and in acute distress, this study's case-based method highlights the need for empirical research to clarify the effectiveness of C/TA with individuals with high levels of psychopathology.

In another case study, Brown and Morey (2016) examined the integrated use of C/TA and traditional information gathering (IG) assessment (Finn & Tonsager, 1997) to guide triage decisions. Guided by the evidence that collaborative processes in assessment can have on therapeutic alliances and patient retention rates (e.g., Ackerman et al., 2000), Brown and Morey

discussed their approach to integrating collaborative assessment practices into their outpatient training clinic for triage. In an exemplar, these researchers provided a case study of a 32-year-old Caucasian male patient who was previously diagnosed with attention deficit and hyperactivity disorder (ADHD) and who was prescribed stimulant medication. Following the initial interview and the collaborative development of assessment questions, the PAI was administered. The results from the PAI were consistent with the patient experiencing symptoms observed in individuals who have schizoaffective disorder, bipolar type. Again, due to the case-based nature of this research, no hypotheses were developed or reported.

The feedback session avoided the use of diagnostic labels and, instead, highlighted the patient's disordered thought processes, difficulty with mood regulation, and the negative impact of his substance use on these symptoms. Brown and Morey (2016) note that this feedback appeared to validate the patient's lifelong experiences with his symptoms, resulting in a notable increase in the patient's engagement in the session and voiced optimism for follow-up assessment and treatment. With the patient's consent, the assessor referred the patient to a mental health clinic for a medication review and more intensive treatment. Brown and Morey report that three months following the feedback session, the patient presented at the assessment clinic in an acutely agitated and psychotic state, which was remedied by an inpatient admission. They observed that despite the ultra-brief model, the C/TA appeared to positively enhance the working alliance to the extent that this patient viewed the assessor as a support in a time of crisis. These researchers highlighted the positive impact of the C/TA and how they observed significant therapeutic benefits with a patient experiencing severe psychopathology. Brown and Morey also note the complementary nature of the C/TA and the IG approach to assessment in their clinical experiences, a notion that was initially posited by Finn and Tonsager (1997). This case study is

additive to the literature base in providing evidence that C/TA processes are helpful in addressing extreme symptomology, even when the intervention itself was abbreviated, integrated aspects of IG assessment, and utilized only a single psychological measure. However, the descriptive case study design of this research limits the empirical conclusions that can be drawn about using C/TA with psychiatric illnesses. Again, more empirical research is much needed in this area.

A recent study by Durosini, Tarocchi, and Aschieri (2017) out of Italy examined the use of C/TA with persistent complex bereavement disorder (PCBD) utilizing a single-case time-series design methodology ($n$=1). Guided by the structure of Finn's (2007) model, these researchers explored the use of C/TA with a 51-year-old cardiologist diagnosed with PCBD comorbid with PTSD and MDD in a seven-session model of C/TA (109 days total). This study made use of three self-report Likert-scale indices for bereavement. These included the participant rating their daily sense of loneliness, level of suffering, and missing the deceased person. Additionally, they focused on the participant's "ball state" and his sense of failure. This "ball state" referred to a coping behaviour the participant engaged in compartmentalization to cope with his overwhelming emotional experience. Akin to single-case experimental methodologies (Smith, 2012), this use of daily tracking allowed these researchers to assess changes in symptomology and psychotherapy trajectory throughout the three phases of the study (i.e., baseline, intervention, and follow-up). Additionally, the Outcome Rating Scale (ORS: Miller, Duncan, Brown, Sparks, & Claude, 2003) was used before each of the sessions to measure and track the outcome. The C/TA included the MMPI-2-RF (Minnesota Multiphasic Personality Inventory-2 Restructured Form; Tellegen & Ben-Porath, 2011) and the Early Memory Procedure (EMP; Bruhn, 1992a, 1992b). Using Simulation Modeling Analysis (SMA: Borckardt, 2006)

Durosini et al. (2017) compared each of the study phases. A slope-change analysis was also utilized to measure the trajectory of symptom change.

In a comparison of the baseline and intervention phase, Durosini et al. (2017) found an initial increase in the patient's sense of longing for the deceased individual and no change in the other indices. However, contrasting the follow-up phase and the intervention phase found a non-significant decrease in symptomology that suggested symptomatic improvement after the completion of the C/TA. Baseline and follow-up comparisons indicated moderate to small decreases in symptomology. Interestingly, this study noted a non-linear reduction in symptomology that included the initial worsening of symptoms during the intervention, followed by subsequent moderate improvements for the participant. These researchers noted that the findings of this study had been observed previously within the C/TA literature (e.g., C/TA with children/families; Tharinger et al., 2009) and speak to the process of change operating within C/TA. For example, within the Durosini et al. study, the participant's maladaptive defences or coping mechanisms were openly explored and challenged. Though initially distressing for the patient, this process resulted in gradual improvements in adaptive functioning post-intervention.

Durosini and colleagues (2017) point out how their study mirrored findings within the literature (e.g., Tarocchi, Aschieri, Fantini, & Smith, 2013) that suggest that C/TA "accelerat[es] the emergence and the possibility of processing previously well-defended emotional states" (Durosini et al., 2017, p. 14). This study is additive to the literature, as it focuses on a diagnostic area (e.g., complex grief) not yet explored with C/TA processes. Further, the quasi-experimental SCED design is a strength of this study, as it legitimizes and empirically quantifies the study of only one participant beyond the use of a descriptive case study. However, replication studies are needed to verify these findings and determine the external validity of these findings. Lastly,

Durosini et al. argued that C/TA is an effective short-term treatment. Unfortunately, when considering the length of stay for patients admitted to inpatient settings, the 109 days utilized within the Durosini et al. study is not feasible. More research is needed exploring the use of C/TA with shorter time frames akin to what is observed in inpatient settings. Table 1 is a summary of the C/TA studies involving psychiatric diagnoses with adults.

Table 1 - *Summary of C/TA Studies Involving Psychiatric Diagnoses*

| Study | Diagnosis Studied | Research Design | Overall Findings |
|---|---|---|---|
| Wolf (2010) | Major Depressive Disorder (MDD) | Case-Based Time-Series Design (*n*=3) | • Overall, C/TA was therapeutically valuable for treating symptoms of depression<br>• One participant had a statistically significant improvement in hopeless/wellbeing composite<br>• Two participants had improvements in daily measure of depressive symptoms<br>• One participant had meaningful improvement in distress levels<br>• All participants were satisfied |
| Finn (2003) | Attention Deficit Disorder (ADD), anxiety, depression | Case Study (*n*=1) | • Patient presented with concerns about a repressed sexual abuse history and childhood diagnosis of ADD.<br>• C/TA assisted the participant in building insight into how avoidance of emotional states (related to anxiety and depression) were impacting the individuals' ability to focus and concentrate |
| Morey, Lowmaster & Hopwood (2010) | Borderline PD | Repeated Measures Design (*n*=16) | • The C/TA augmentation condition found a larger reduction in suicidal ideation (*d*=1.75) and lessening of affective instability (i.e., suggesting overall treatment response) (*d*= 4.35) in comparison to the MACT condition (*d*=0.77 and *d*=0.85 respectively).<br>• No effect on retention rates or number of attended sessions was |

| | | | |
|---|---|---|---|
| | | | observed between the two experimental groups. |
| De Saeger et al. (2014) | Severe Personality Disorder | RCT (*n*=74) | • Overall C/TA condition effect size around 0.40-0.68 (Cohen's *d*)<br>• In contrast to GFPTI condition, the C/TA group reported:<br>  • Higher satisfaction with treatment (*d*=0.68)<br>  • More explicit expectations and direction for the next stage of therapy (*d*=0.68)<br>  • Moderately stronger alliances with therapists (*d*=0.46).<br>• No difference in symptom reduction and demoralization between treatment groups |
| Tiegreen et al. (2012) | Schizophrenia/ Schizoaffective Disorder - Depressive Type | Descriptive Case Study (*n*=1) | • Researchers reported the C/TA contributed to:<br>  • A positive therapeutic relationship<br>  • Improved participant insight/understanding of his illnesses<br>  • Enhanced participant engagement in rehabilitation<br>  • Increased participant adherence to treatment<br>• At three-months follow-up, working alliance scores indicated a notable improvement – significant in the context of significant paranoia |
| Brown and Morey (2016) | Schizoaffective disorder, Bipolar Type | Descriptive Case Study (*n*=1) | • PAI feedback validated the patient's experiences with his symptoms, resulting in:<br>  • Increase in patient engagement in the session<br>  • Optimism for follow-up assessment and treatment<br>• C/TA enhanced the working alliance at 3 months follow-up |
| Durosini, Tarocchi, & Aschieri (2017) | Persistent Complex Bereavement Disorder (PCBD) | Single-Case Time-Series Design (*n*=1) | • Non-linear reduction in symptomology that included the initial worsening of symptoms during the intervention, followed by |

| | | | |
|---|---|---|---|
| | comorbidity with PTSD and MDD | | subsequent small to moderate improvements for the participant<br>• Preliminary evidence of C/TA being effective for unresolved loss |

**C/TA Studies Conducted in Psychiatric Inpatient Settings**

In a master's thesis investigation, Bunner (1993) examined the therapeutic impact of providing test feedback to psychiatric inpatients. This study included a sample of 34 psychiatric inpatients hospitalized for mood and substance use disorders who recently participated in psychological assessment. The Assessment Questionnaire II (AQ-II; Bunner, 1993; Finn, Schroeder, & Tonsager, 1995) was utilized to examine patient satisfaction with their assessment experiences. This study included two experimental conditions: a feedback group ($n$=14) and a no-feedback group ($n$=20). A two-way ANOVA (2:Diagnosis x 2:Group) was included in the analysis, with the AQ-II total score as the DV. No a priori predictions were made in this research; however, post hoc comparisons included an examination of other variables contributing to assessment satisfaction scores. Bunner hypothesized that patients who received any form of feedback on their psychological assessments would be more satisfied than those who receive no feedback on testing.

Bunner (1993) found that patient diagnosis was not related to AQ-II total score. Participants reported higher levels of satisfaction with their assessment experience when they received feedback, versus when they did not receive any test feedback. Of those who did not receive any feedback, 40% stated they were either very or somewhat dissatisfied with their assessment experience. Finn and Tonsager (1997) point out that the findings of this study mirror the findings of Newman and Greenway (1997), previously discussed. Both Bunner's research and Newman and Greenway's study highlight how important providing test feedback is for patients to have positive gains in their participation of psychological assessment, regardless of

setting or level of pathology. Indeed, as Bunner argues, the inpatient adult sample in this study demonstrates how, regardless of the level of pathology, patients who receive assessment feedback are more satisfied. It also provides preliminary evidence that C/TA processes can assist patients who are experiencing mood disorder. Two significant weakness of this study included a lack of control regarding the form of assessment feedback, and who (psychiatrists vs psychologists) provided the feedback. More research is needed in this area to determine whether, for example, satisfaction might be higher if feedback was provided by the psychologist completing the psychological assessment. Additionally, it is unclear whether the way feedback was provided impacted patient satisfaction. Although this study provides initial evidence that assessment feedback enhances satisfaction for inpatient populations who are experiencing severe psychiatric illness such as mood and substance use disorders, much more research is needed in this area.

Michel (2002) explored the use of C/TA with patients admitted to an inpatient ward for eating disorders through a descriptive case study ($n$=2). Specifically, C/TA was used as a brief intervention to assist with treatment planning and to determine personality features that might impact treatment. The assessment was also used to examine the patient's self-reported mood state, to determine his or her understanding of their eating disorder symptoms, and to expose psychosocial and relational issues in the individual's life. The procedure used for the C/TA included a clinical interview and the collaborative development of assessment questions, the administration scoring and interpretation of a standard battery, followed by a verbal feedback session. Michel noted that the patients were also observed on the unit and in group therapy, which assisted with attaining behavioural observations of the patients. A standard assessment battery included the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) and the Eating

Disorders Inventory–2 (EDI–2; Garner, 1991), Beck Depression Inventory–II (BDI–II; Beck, Steer, & Brown, 1996), the Minnesota Multiphasic Personality Inventory–2 (MMPI–2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989; Hathaway & McKinley, 1989), the Millon Clinical Multiaxial Inventory–III (MCMI–III; Millon, 1994), and the Rotter's Incomplete Sentences Blank (Rotter & Rafferty, 1950). The results of the assessment were shared with the patient's family members, with the patient present. Given the case study nature of this researcher, no hypotheses were specified.

Michel (2002) observed that the use of C/TA in this setting appeared to be an effective intervention for overcoming patient resistances, increasing patient and family engagement, and fostering collaborative psychoeducation. Michel reported that the self-verifying information that was discovered within the C/TA was particularly helpful for these patients in solidifying their ready held self-views, in addition to fostering self-discovery. The collaborative nature of the assessment was also found to be helpful in providing this patient population, who so often struggles with issues related to control, with a sense of control in the assessment process. These case studies contribute to the literature base by providing preliminary evidence that C/TA can be effectively used with a diagnostically complex patient group in an inpatient setting. The information provided was thorough, aiding in other researchers' ability to replicate the study. Although clinical effectiveness was observed and noted descriptively in these two case studies, the findings would have been strengthened if Michel had included empirical features within the study design to back her observations. For example, through a single-case experimental design, the reductions in these patient's levels of depression as an indicator of intervention effectiveness could have been examined statistically. Also, this clinical research was limited by the confounds present in the assessment setting. Specifically, it is not clear what other factors (e.g., socializing

with co-patients, interactions with other health care providers) may have contributed to the patient improvements observed. Michel acknowledged the need for empirical research in this area.

The first in-depth empirical investigation of C/TA in a psychiatric inpatient setting was undertaken by Little (2009). In this unpublished doctoral dissertation, a three-group randomized experimental field design was utilized. This researcher contrasted C/TA (C/TA, *n*=30), supportive psychotherapy (SP, n=31), with a control condition (treatment-as-usual (TU), *n*= 32) in an inpatient psychiatric setting. Using a two-session schedule, Little focused the initial session of C/TA on deriving assessment questions and completing test administration. Session two focused on providing feedback to the patient. The SP condition included a two-session manualized version of supportive-expressive psychotherapy as developed by Blais, Jacobo, and Smith (2001). The control condition (TU) included patient participation in group therapy, daily meetings with psychiatry, psychotropic medication, and exposure to the therapeutic environment of the hospital unit. Study participants included adults with an assortment of serious mental illnesses, including mood and psychotic disorders. Five graduate student clinicians under supervision completed the interventions.

The variables of interest in this study included therapeutic alliance, treatment outcome (i.e., level of change in psychiatric symptomology), patient satisfaction, and both the therapist and patient's ratings of the intervention(s). Measures included the Schwartz Outcomes Scale-10 (SOS-10; Blais et al., 1999), Brief Symptom Inventory (BSI; Derogatis, 1993), Working Alliance Inventory-Revised Short Version (WAI-SR; Hatcher & Gillaspy, 2006), Session Evaluation Questionnaire (SEQ; Stiles & Snow, 1984), and the Client Satisfaction Inventory (CSI). Guided by previous clinical and empirical evidence, these researchers hypothesized 1) that

there would be the largest improvements in alliance, treatment outcomes, and patient well-being and satisfaction ratings in the C/TA condition, 2) that therapist and patient impressions of each individual session will differ between the SP and C/TA conditions, and 3) that patient factors predict change in scores of alliance, satisfaction, well-being, and outcome. A between-subjects ANOVA design was utilized to determine treatment effects, a within-subjects ANOVA was used to explore pre-post differences between each condition, and linear regression analyses were used to examine which patient factors "predict improvement/change in alliance, satisfaction, and outcome" (p. 66).

Overall, Little (2009) found that the patients in the C/TA condition reported stronger therapeutic relationships, greater well-being, lower distress from psychiatric symptoms, and more satisfaction with the care they received in contrast to the comparison groups. Although patients did not indicate a difference in session impact between the C/TA and SP conditions, therapists reported the feedback session of the C/TA to be significantly smoother and deeper than the SP condition (second session). There was no significant relationship between patient features, such as full scale intelligence quotient (FSIQ) and the treatment rejection scale of the PAI, and outcomes. Little did note that the participants appeared capable of participating in both C/TA and SP, regardless of negative factors (e.g., low FSIQ). This initial empirical evidence provided by Little was much needed and provided only more encouragement when considering integrating collaborative assessment practices in an inpatient setting with the psychiatrically unwell, such as those with bipolar disorder. The use of three comparison groups was a strength of this study to increase the control needed to examine and compare these three interventions effectively. However, the participants included in this study were a part of a voluntary hospital admission program, which, as Little commented, may have resulted in participants having a greater

willingness to participate in the treatments offered. This may have resulted in elevated levels of collaboration that may not be observed in other psychiatric inpatient units with involuntary patients. Also, given that Little included a heterogeneous participant sample and did not appear to analyze for treatment outcomes related to patient diagnostics, it is not clear if certain diagnostic groups benefitted differently from the interventions studied. Lastly, given that Little's 2-session C/TA intervention did not include all aspects of Finn's models, such as an assessment intervention session, it is unknown if a full C/TA intervention with those experiencing severe mental illness in an inpatient setting would replicate the findings in Little's study. Indeed, replication of this study and further empirical investigation of C/TA with psychiatric illness in inpatient settings is desperately needed.

Expanding upon the use of C/TA practices in inpatient settings with severe symptomology, Fowler (2012) explored the use of C/TA to address a therapeutic impasse between a suicidal psychiatric inpatient adult and her therapist ($n$=1). The 19-year-old patient in this descriptive case study had a childhood history of trauma and six suicide attempts in the previous two years, all of which were followed by psychiatric hospitalization. The patient also experienced auditory command hallucinations and dissociative symptoms. She had a history of polysubstance abuse as well as a series of abusive relationships with drug dealers. C/TA was sought by the treating therapist to foster understanding of the patient's suicidality and enhance psychotherapy. In the assessment, the patient was administered the Wechsler Adult Intelligence Scale-III (WAIS-III; Wechsler, 1997), Thematic Apperception Test (TAT; Murray, 1943), human figure drawings, and the Rorschach inkblot test (Exner, 2003). Given that this research is a case study, no hypotheses were provided.

Results of the assessment indicated the patient had a violent and disturbing inner world with glimpses of longing for human connection. Within the feedback session, the patient had the opportunity to discuss how she purposefully used self-harm behaviours to evoke connection and caring from individuals in her life, including her therapist. This self-expression and acknowledgement on the part of the patient, Fowler (2012) argues, was crucial in allowing the patient "to claim responsibility for her actions and gave…[the therapist and client] an opening to explore this dynamic" (p. 130). Fowler comments that when working within the C/TA framework with serious psychiatric illness including psychoticism, personality pathology, "and multiple treatment-resistant disorders, the goals and aspirations of consultation are necessarily tempered by the reality of the situation" (p. 114). This researcher suggests that clinicians should expect the treatment effects from the assessment to be notably "slow and uneven" (p. 129). Despite this cautionary note, this case study is additive to the literature base in that it demonstrates how C/TA processes can be impactful for individuals experiencing severe mental illness. Indeed, Fowler speculates that the collaborative nature of the assessment intervention appeared to be the contributing feature of C/TA that fostered active patient involvement in her treatment. Unfortunately, conjecture does not provide the necessary evidence required to justify the use of one therapeutic technique over another. More empirically based research is needed to better understand collaborative assessment processes across patient groups and settings.

In a recent use of C/TA with psychiatric inpatients, Hinrichs (2016) adapted Finn's (2007) model for use with a patient with narcissistic personality disorder and substance dependence admitted to an inpatient ward. Again, a descriptive case study approach was utilized ($n$=1). The adaptations made by Hinrichs on Finn's (2007) model were designed to accommodate the time constraints of the inpatient setting and incorporated a clinical interview

and assessment administration in sessions one and two. Session three included the integration of the intervention session with the summary and discussion session, which the researcher commented may have impacted, to a certain extent, the collaborative uncovering of the test findings. The final (and fourth) session included the review of a therapeutic letter, which Hinrichs suggests may have occurred too quickly following the third session. He suggests that the patient may have lacked adequate time to process, integrate, and apply the assessment information to their life. Again, no hypotheses were stated due to the case-based nature of this research. However, Hinrichs speculates that the use of C/TA in an inpatient setting might "bolster inpatient treatment effects and increase patient self-understanding with digestible and compassionate assessment feedback" (p. 112).

Outcome measures indicate that there was an increase in the patient's overall functioning, therapeutic alliance, and well-being. Hinrichs (2016) also discussed the patient's enhanced level of insight into his behaviours and unhelpful ways of coping. Interestingly, this assessment model also appears to increase unit staff empathy and compassion for the patient. This case study provides an in-depth understanding of the application of C/TA to an inpatient setting. Hinrichs (2016) suggests that condensing of Finn's model into four sessions was essential to accommodate the length of hospital admission, while also providing enough flexibility to accommodate patient availability and agreeability to meet. The emphasis on flexibility in the application of the intervention also provided Hinrichs with the ability to consider patient functional capabilities that could have hindered engagement in the C/TA processes. These findings are further encouraging when considering the use of C/TA with complex patients who have, as Hinrichs states, a "'hard to reach' personality" (p. 111). Hinrichs admits to selecting this specific case due to the clear diagnostics and positive outcomes observed. Thus, the use of C/TA

in an inpatient setting may not always result in similar results. More empirical evidence is needed to examine the outcomes involved with C/TA in a psychiatric inpatient setting. Table 2 is a summary of the C/TA studies conducted in psychiatric inpatient settings with adults.

Table 2 - *Summary of C/TA Studies Conducted in Psychiatric Inpatient Setting*

| Study | Diagnoses Studied | Research Design | Overall Findings |
|---|---|---|---|
| Bunner (1993) | Mood Disorder and Substance Use Disorder (psychiatric inpatients) | Between Subject Design (Two-Way ANOVA) (*n*=34) | • Participants who received feedback reported higher levels of satisfaction with the assessment experience in comparison to those who did not receive feedback.<br>• 40% of those who did not receive feedback stated they were either very or somewhat dissatisfied with their assessment experience |
| Michel (2002) | Eating Disorder | Descriptive Case Study (*n*=2) | • C/TA found to be an effective intervention for:<br>  • Overcoming patient resistances<br>  • Increasing patient and family engagement<br>  • Fostering collaborative psychoeducation<br>• Self-verifying information in the C/TA was helpful for solidifying patient ready held self-views<br>• C/TA fostered self-discovery<br>• The collaborative nature of the C/TA was helpful in providing a sense of control in the assessment process |
| Little (2009) | Serious Mental Illness | Randomized Experimental Field Design (Three group) (*n*=93) | • In contrast to other study conditions, participants in the C/TA condition reported:<br>  • Stronger therapeutic relationships<br>  • Greater well-being<br>  • Lower distress from psychiatric symptoms<br>  • More satisfaction with care received<br>• Therapists reported the feedback session of the C/TA to be significantly smoother and deeper |

| | | | |
|---|---|---|---|
| | | | than the second session of the SP control condition<br>• Participants were found to be able to participate in all study conditions despite negative factors (e.g., low FSIQ) |
| Fowler (2012) | Psychiatric Inpatient<br>• Suicidal<br>• Hx of trauma<br>• Command hallucinations<br>• Dissociative symptoms<br>• Polysubstance abuse | Descriptive Case Study<br>(*n*=1) | • Results of the assessment suggested longing for human connection<br>• Feedback session contributed to patient self-expression and acknowledgement of the function of her self-harm behaviours in evoking connection and caring from individuals in her life<br>• Speculation that the assessment intervention appeared to be the contributing feature of C/TA that fostered active patient involvement in treatment |
| Hinrichs (2016) | Narcissistic PD<br>Substance Dependence | Descriptive Case Study<br>(*n*=1) | • Outcome measures indicate an overall increase in:<br>• Patient functioning<br>• Therapeutic alliance<br>• Well-being<br>• Insight was also noted to increase<br>• C/TA appeared to increase unit staff empathy and compassion for the patient |

**Gaps in the literature**

Despite the growing literature base examining C/TA, there remain important gaps and methodological shortcomings that, if filled, would expand our understanding in meaningful ways. The present study aims to address some of these gaps and, in the process, provides a notable addition to the C/TA literature base. Firstly, this study offers a unique contribution by examining the processes and outcomes of C/TA when applied to both a novel diagnostic area (i.e., bipolar disorder) and treatment setting (i.e., psychiatric inpatient setting) with adults. The present study also adds to the field by using a research method (i.e., SCED) that is empirically stronger than the commonly used descriptive case study design. The SCED method selected

includes design features (e.g., replication and control for therapist bias) that addresses some of the issues in the C/TA literature highlighted previously.

With regards to a new diagnostic area, and as discussed above, there is accumulating evidence supporting the use of C/TA with adults experiencing a variety of psychiatric diagnoses. Previous literature has demonstrated positive outcomes of C/TA processes with individuals experiencing symptoms of depression and psychiatric disorders that have a mood-based component, such as schizoaffective disorder. In brief, positive outcomes such as symptomatic improvements, increased satisfaction, and enhance patient self-understanding were observed when using C/TA with individuals experiencing depression in Brunner (1993), Finn (2003), and Wolf's (2010) studies. Additionally, other researchers such as Ackerman et al. (2000), Hilsenroth et al. (2004), and Little (2009) included individuals with mood disorders in their broader participant samples and found evidence supporting the use C/TA on a variety of outcome variables (e.g., enhanced therapeutic alliance, decreased distress). In examining other psychiatric disorders with a mood-based component, Brown and Morey (2016) and Tiegreen et al. (2012) provided case studies that suggested the use of C/TA with individuals experiencing schizoaffective disorder, bipolar and depressive types contributed to, for example, positive working alliances and increases in patient insight, treatment adherence, and optimism. Given this accumulating evidence supporting the use of C/TA with depression and mood-related disorders, a study focusing exclusively on bipolar disorder is a natural and necessary next step in the field.

With regards to the treatment setting of this study, empirical research focused on C/TA with adults in psychiatric inpatient settings is in its infancy, with only a handful of studies available (e.g., Fowler, 2012; Hinrichs, 2016; Michel, 2002), two of which are student research projects (Bunner, 1993; Little, 2009). The studies that do examine C/TA in inpatient settings

highlight positive outcomes of the intervention including fostering patient satisfaction, enhancing patients experiences of control, lowering distress, and contributing to therapeutic alliance amongst other findings discussed previously. The positive outcomes available provide further rationale for the present study and highlights how it offers an important contribution in furthering our understanding of C/TA in inpatient settings.

Lastly, from a methodological standpoint, the prominence of the descriptive case study design in the field (e.g., Brown & Morey 2016; Finn, 2003; Fowler 2012; Hinrichs 2016; Michel, 2002, Tiegreen et al., 2012) sets the stage for more studies that employ empirical methods. Although the use of quasi-experimental designs, such as SCED, do not necessarily rectify problems with past research like the inclusion of small sample sizes and homogeneous participant samples, they do introduce a much needed quantitative element and additional empirical control to C/TA research that enhances the reliability and validity of the study findings. For example, the quasi-experimental design of the present study required a pre-determined C/TA protocol and a strict schedule for data collection that enables future replication by other researchers, while also providing quantifiable findings beyond the anecdotal evidence offered in descriptive case-studies. Additionally, by including four separate SCEDs with four hypothesis-naïve clinicians, the findings in the present study are strengthened through replication, while also providing some control regarding therapist effects and therapist bias. In particular, the negative implications of therapist effects and therapist bias on study outcomes in some of the literature available (e.g., Finn & Tonsager, 1992; Newman & Greenway, 1997, Bunner 1993) are highlighted as areas upon which to improve. Lastly, the strengths of the SCED method used in the present research also contributes to the literature base by providing valid and

reliable data that can be considered for inclusion in future randomized control trials (RCTs) examining C/TA.

In sum, by examining the effectiveness of C/TA with individuals diagnosed with bipolar disorder admitted to a psychiatric inpatient setting with a quasi-experimental SCED design, this study makes a substantial contribution to the field.

# Chapter 3: Method

A condensed 4-session C/TA (Finn, 1996, 2007; Hinrichs, 2016) was under investigation within this research.

## Participants

### Patients

Study participants were adults (*N*=4) with psychiatric histories who were readmitted for inpatient psychiatric stabilization and referred for psychological consultation. All participants had prior diagnoses that fell within the bipolar disorder spectrum and comorbidity with substance abuse. They ranged in age from 18 to 64 years old (*M*= 48.5, *SD* = 15.15), with an equal number of men and women. All participants were Canadian citizens, with three identifying as White/European and one as North Indian. They varied in educational level from high school to a Ph.D. level of qualification. The number of previous psychiatric admissions, including the admission at the time of the study, ranged from 4 to over 15 (*M*= 8.57, *SD* = 5.18). No participants reported a prior history of psychological assessment.

### Clinicians

Four advanced student clinicians from a Canadian Psychological Association accredited doctoral program in Counselling Psychology undertook the C/TA intervention within this study. There were two women (one White, one Latin-American) and two men (one Chinese Canadian, one White). All were Canadian citizens with an average age of 28.75 (*SD* = 0.5). Two clinicians were in year 3, and two were in year 4 of their doctoral programs. Three were matched and ready to enter their final residency year at the time of the study. As such, each clinician had extensive graduate-level coursework and advanced assessment practica. Importantly, each clinician had prior C/TA coursework and practicum experience during their graduate training. The clinicians'

theoretical orientations included ACT, humanistic and attachment-focused, CBT, and psychodynamic.

**Supervisor**

The clinical supervisor (*n*=1) in this study was a female, doctoral-level registered psychologist who identified as White/European. She had been working in the study setting for almost 30 years, and her practice in the hospital included a combination of psychotherapy and psychological assessment. Her primary theoretical orientation was third wave CBT; however, she also integrated interpersonal and psychodynamic concepts into her clinical work. In addition to her extensive training and clinical experience with psychological assessment, the study supervisor was also proficient in the C/TA model.

## Research Site

This research was conducted at Alberta Hospital Edmonton (AHE), which is a fully accredited psychiatric hospital in Edmonton, Alberta, Canada. This facility has a large catchment area, providing acute psychiatric and forensic services to Canadians in Alberta, Northern Saskatchewan, Northern British Columbia, as well as the Yukon, Northwest Territories, and Nunavut. The services provided at AHE include acute psychiatric assessment, diagnosis, treatment, rehabilitation, as well as forensic services. AHE also holds education and research as an integral component of the services offered. Health care professionals employed through this hospital include psychiatrists, pharmacists, psychologists, psychometrists, nursing staff, occupational therapists, social workers, addictions counsellors, dieticians, recreation therapists, and physiotherapists. Patients admitted to the AHE can be either voluntary or formal under the Mental Health Act (MHA, 2016). The Adult Acute Services program at AHE provides treatment for an adult population between the ages of 18 – 64 years old. A heterogeneous patient

population experiencing a diverse array of psychiatric and medical comorbidities accesses treatment at AHE. Those who are admitted are typically in the acute stage of severe and persistent psychiatric illness (AHS, 2017). Patients admitted to Adult Acute Services will be experiencing one or more of the following admission criteria: "Severe and persistent mental illness, Organic brain syndrome with definite psychopathology, Dangerous to themselves or others due to mental disorder, Experiencing an acute crisis" (AHS, 2017, p. 1). According to Alberta Health Services (AHS, 2017), the typical length of stay in the Adult Acute Services units at AHE is around eight to twelve weeks. All study sessions occurred off the inpatient unit in a quiet and confidential office at the hospital site in order to mitigate potential issues related to the study setting influencing study outcomes (i.e., noise on the inpatient unit).

## Measures

### Research Measures

Four self-report research measures were selected to monitor and track study DVs (*distress*, *hope*, *working alliance,* and *session impact*) throughout the study. Additionally, *patient satisfaction* was measured once in the post-intervention session.

**Subjective Units of Distress Scale (SUDs)**. The Subjective Units of Distress Scale (SUDs; unpublished) is a one-item scale designed to measure the subjective intensity of distress (Kiyimba & O'Reilly, 2017; Benjamin et al., 2010). Participants' subjective level of distress was notated on a Likert-type scale from 0 (no distress) to 100 (extreme distress), which represented their subjective experience of distress at that moment in time (Benjamin et al., 2010). Initially developed by Joseph Wolpe in 1969, this measure is frequently used as an evaluative measure of treatment progress, particularly in exposure-based Cognitive Behavioral Therapy (CBT) (Kiyimba & O'Reilly, 2017), as well as in other behaviorally oriented therapies (e.g., EMDR)

(Kim, Bae, & Chon Park, 2008). As Kiyimba and O'Reily (2017) suggest, this measure can also be used to assist with determining a baseline measure of participant's current levels or experiences of distress in an initial assessment session. Additionally, these researchers state that SUDs ratings can be used as a measure of the progression of treatment "both between and within sessions" (p. 5). Indeed, SUDs scores have been used as a method for measuring participant response to treatment process and outcome within the literature (e.g., see Griffin, Resick, & Mechanic, 1997; Jaycox, Foa, & Morral, 1998; Wilson, Silver, Covi & Foster, 1996).

In a relatively recent validation study of the SUDs, Tanner (2012) examined the global use of SUDs measuring both physical and emotional discomfort. This researcher found that the emotional SUDs scale has a moderate correlation with the MMPI-2 A scale ($r$=.35) and a negative correlation with a clinician-rated GAF ($r$=-.439), which was to be expected since the SUDs and GAF are inversely scored. Also, the SUDs ratings differentiated between participant physical and psychological discomfort. Kaplan, Smith, and Coons (1995) also examined the convergent validity of the SUDs through contrasting it with the Multiple Affect Adjective Check List (MAACL; Zuckerman & Lubin, 1965) and State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970). Kaplan et al. found the SUDs to correlate with both the MAACL ($r$=.53) and the STAI ($r$=.69), which further validates the SUDs. Lastly, in a study examining the use of SUDs rating scale in EMDR procedures, Kim, Bae, and Chon Park (2008) examined the validity of the SUDs. Regarding convergent and discriminant validity, these researchers determined that original SUDs scores are correlated with initially reported levels of patient depression (Spearman rho=.28) and state anxiety (Spearman rho=.31). However, it was not found to be significantly correlated with trait anxiety (Spearman rho=.21) or other factors such as participant age, education or income. Predictive validity was also demonstrated.

Significant correlations were observed between the SUDs scores taken at the end of the initial session, second session, and third session with the therapy termination scores on the Clinical Global Impression-Change scale (CGI-C; Guy, 1976) (Spearman rho=.32, .51, .61 respectively).

Due to the initial evidence supporting the psychometric properties of the SUDs and the ease of use/brevity of this measure, it was used to measure psychological distress. SUDs ratings provided information between sessions (i.e., daily), as well as within the sessions (i.e., post-session for each phase of the study).

**State Hope Scale (SHS)**. The State Hope Scale (SHS; Snyder et al., 1996) was selected to measure hope. Based on Snyder's conceptualization of hope and hope theory (e.g., see Snyder, 1994, 1995, 2002), the SHS consists of six items on an 8-point Likert-type scale. Participants are asked to indicate from one (definitely false) to eight (definitely true) how they think about themselves "right now," in the current moment. Of the six items included on the SHS, three items are focused on agency (perceived belief in one's capacity to reach a goal), and three items are focused on pathways (perceived ability to determine the routes necessary to accomplish goals) of hope (Snyder et al., 1996). The SHS provides a total score and the two subscale scores, with interpretive ranges including scores <30 = significantly less hopefulness than most, 30-44 = normative levels of hope, and >44 = significantly more hopefulness than most.

Initial investigations of the SHS (Snyder et al., 1996) found that the SHS is both reliable and valid when measuring malleable state-based hope. Factor analyses confirm both agency and pathways as factors loading on the SHS. Also, Snyder and colleagues found the total score Chronbach's alpha to range between 0.79 to 0.95. Chronbach's alphas for the agency subscale was found to be 0.76 to 0.95 and for the pathways subscale 0.53 to 0.93. Within the Snyder et al. study, test-retest reliabilities were determined to fall between 0.48 to 0.93, which is to be

expected given the varying nature of state-based hope. Correlating the SHS with measures of hope (i.e., Dispositional Hope Scale; Snyder et al., 1991), self-esteem (i.e., State Self-Esteem Scale, Heatherton & Polivy, 1991), and affect (i.e., Positive and Negative Affect Schedule; Watson, Clark, & Tellegin, 1998), Snyder et al. found evidence supporting the concurrent, discriminant and convergent validity of the measure. When used with individuals with serious mental illness, Malinovsky et al. (2013) found lower internal consistency for the SHS, suggesting that the reliability ranges from adequate to good with this population. The SHS has also been used as a measure of therapeutic change in inpatient settings (Irving, Crenshaw, Snyder, Francis, & Gentry, 1990; Snyder, 2002; Steen, 2004). Overall, the SHS provides a brief, reliable, and valid measure of hope that was additive in the present research.

**Session Evaluation Questionnaire (SEQ)**. To best measure session impact, the Session Evaluation Questionnaire (SEQ; Stiles, 1980; Stiles & Snow, 1984a, b) was selected. The SEQ is a 24-item bipolar adjective scale, which includes a 7-point differential format scale for each adjective pair. At the end of a session, respondents are asked to place an "X" to represent their experience. The SEQ is divided into two sections (12 items in each section) inquiring into 1) the participant's opinion of the session and 2) their subjective mood/feeling immediately post-session. Through factor analytic techniques, Stiles (1980) and Stiles and Snow (1985b) determined there to be two highly important, unrelated, and internally consistent evaluative session dimensions on the SEQ. Factor one included the depth/value of a session, and factor two specified the patient's perception of the session smoothness/ease. The internal validity of the data obtained by these evaluative dimensions was verified in both the session and patient level in a replication study by Stiles et al. (1994). Thus, smoothness and depth scores appear to hold much stability across time, settings, and therapeutic orientations (Stiles et al., 1994) and are related to

patient engagement in treatment and working alliance (Ackerman et al., 2000, Tryon, 1990). As such, the present research will include an analysis of these two factors.

Factor analyses of SEQ also noted two post-session mood dimensions. Factor loadings have been observed for positivity (Stiles, 1980; Stiles & Snow, 1984a, b), and arousal indexes (Stiles & Snow, 1984a, b). Stiles (1980) found that patients indicated their overall affective state to be more positive in the instances when they and their therapists rated the therapy session as smoother and easier. Interestingly, therapists were noted to indicate a more positive affect post-session when sessions were reported to be deeper and valuable by both themselves and their patients. Due to the variability observed in session to session ratings on the SEQ, Stiles and Snow (1984a) suggested that 3–6 session be undertaken for the SEQ data to hold test-retest reliability of .80. These researchers suggested that data be collected for 7–13 sessions to reach test-retest reliability of .90. The relative simplicity and focus of the SEQ suggest that this measure provided essential information on session-based processes within this research. The SEQ was administered at the end of each session throughout all phases of the study.

**Working Alliance Inventory-Short Revised Version (WAI-SR).** The Working Alliance Inventory-Short Revised Version (WAI-SR; Hatcher & Gillaspy, 2006) is a refined 12-item self-report measure of the strength of the working alliance between therapist and patient in a therapeutic setting. This measure was derived from the Working Alliance Inventory (WAI; Horvath & Greenberg, 1986) and the Working Alliance Inventory-Short (WAI-S; Tracey & Kokotovic, 1989). The WAI-SR assesses the working alliance based on Bordin's model of effective therapeutic relationships (1979). Specifically, the WAI-SR measures Bordin's three subcomponents of the therapeutic relationship: 1) agreement on goals of therapy, 2) agreement on tasks of therapy, and 3) the bond between therapist and patient. In addition, WAI-SR

produces a total alliance score. The inventory takes patients between 2–5 minutes to complete, and each of the 12 items is assessed on a 7-point Likert scale.

As a shorter and less burdensome measure, the WAI-SR is highly correlated with the WAI ($r$= .95) and is, thus, a feasible alternative to the original scale. Initial investigations of the WAI-SR suggest it has high internal consistency (alpha = 0.92) and is a reliable measure (Hatcher & Gillaspy, 2006). In a more recent validation study, Munder, Wilmers, Leonhart, Linster, and Barth (2010) examined the use of WAI-SR with inpatients. These researchers verified that the psychometrics of the WAI-SR include an alpha greater than 0.80 and that convergent validity with another measure of alliance (Helping Alliance Questionnaire; Luborsky, 1976) was substantially correlated at $r$=.64. Confirmatory factor analysis also determined that the WAI-SR is a good fit within the Task-Goal-Bond model from which the original WAI was derived. Overall, Munder and colleagues found that working alliance in an inpatient setting was lower than an outpatient sample, but that the WAI-SR was an appropriate measure of alliance to use in this setting. The WAI-SR will provide invaluable information in the present study on the therapeutic alliance between participants and the clinician. The WAI-SR was administered at the end of each session throughout all phases of the study.

**Assessment Questionnaire (AQ).** The Assessment Questionnaire (AQ; Bunner, 1993; Finn et al., 1995) was developed to capture a patient's satisfaction with their experiences in participating in an assessment. The AQ is an empirically refined measure of patient satisfaction of psychological assessment in comparison to the initial version: Assessment Questionnaire (AQ; Finn & Tonsager, 1992) (Newman & Greenway, 1997). The AQ includes a total of 48 items developed through factor and item analytic techniques. There are four moderately correlated factors included in the AQ designed to measure variables directly related to an individual's

experiences of psychological assessment. These include new self-awareness/understanding, accurate positive mirroring, positive relationship with the examiner, and negative feelings about the assessment. The AQ also provides a measure of a patient's overall general satisfaction (GS) with the assessment (Finn et al., 1995).

Psychometrically speaking, the data obtained from the AQ has demonstrated good internal consistency between the four subscales with three different patient populations (i.e., outpatients 0.84 to 0.92, psychiatric inpatients 0.79 to 0.93, and college low self-esteem 0.88 to 0.90) (Finn et al., 1995). Test-retest for the college samples four subscales was found to fall between 0.75 to 0.84.

Research is ongoing with this measure through the Center for Therapeutic Assessment in Austin, Texas. Thus far, factor analysis has specified alpha coefficients for the four factors of the AQ to be 0.89 for factor 1, 0.87 for factor 2, 0.87 for factor 3, and 0.85 for factor four (S. F. and D. A. personal communication, August 16, 2017). Further unpublished research on the AQ has demonstrated high correlations between total scores on the measure and the GS factor score, allowing users of the AQ to interpret the total score accordingly (S. F. and D. A. personal communication, August 16, 2017). Lastly, Dr. Finn and his colleagues at the Center for Therapeutic Assessment have more recently developed norms for the AQ as well as an associated scoring program that is available and was used in the present study. According to Finn, it is uncommon to have AQ T-scores fall above 55. The AQ is a vital measure to include in this current research, as it is commonly used by C/TA practitioners and will provide valuable information on patient satisfaction and experiences with the C/TA. Satisfaction is a particularly important variable to measure in light of its contribution toward patient willingness to continue accessing mental health services (Bunner, 1993; Cone, 2001). Given the significant negative

implications of bipolar disorder, it is imperative that the treatments offered facilitate the continued engagement of individuals with their mental health supports. The AQ was administered at the end of the study in the post-intervention session.

**C/TA Standard Assessment Battery**

This research included a standard assessment battery, which is not typical in C/TA due to participant-derived assessment questions usually solely directing test selection. A test battery was included in this study simply to provide a standardized assessment base across all participants. The testing battery consisted of select measures that are commonly used in psychological assessment in the setting where this research occurred. Additional measures were included when appropriate and relevant to the collaboratively derived assessment questions driving the C/TA. All participants completed the following measures:

**Personality.** The Minnesota Multiphasic Personality Inventory – Second Edition, Revised (MMPI-2RF; Tellegen & Ben-Porath, 2011) is one of the most widely used and researched self-report measures of personality and psychopathology available (Hays, 2013). In reviewing the MMPI-2RF, Acheson and Thorpe (2017) suggest that it provides a measure of relevant symptomology, personality characteristics, behavioural tendencies, interpersonal functioning, and interests of adult participants. The MMPI-2RF is a 338-item self-report measure that takes approximately 30 to 50 minutes to complete. Its 51 scales are grouped into validity (nine scales), higher-order (three scales), restructured clinical (RC) (nine scales), specific problem (23 scales divided into the somatic, internalizing, externalizing, and interpersonal domains), interest (two scales), and personality pathology (five scales) areas. Building upon the MMPI and MMPI-2, the MMPI-2RF boasts greater psychometric sophistication and verification of the MMPI-2 normative sample. Reliability and validity of the MMPI-2RF have been found,

for the most part, to be more than adequate. For example, test-retest reliability ranges from 0.51 to 0.94.

**Projective.** The House-Tree-Person (H-T-P; Buck, 1948) is a widely used projective instrument used to assess developmental and emotional functioning for children and adults (Gordon, Rudd-Barnard, & Smith-Wexler, 2018). The H-T-P measure requires participants to draw a house, then a tree, followed by a person on separate pages of paper. Following the drawing phase, participants can describe, explain, and interpret their drawings and provide answers to open-ended questions posed by the assessor. As noted by Gordon, Rudd-Barnard and Smith-Wexler (2018), there are protocols available to guide open-ended questions (e.g., see Handler, 1996). The drawings are then interpreted for information regarding personality variables and indicators of interactions between the participant and their environment. Interpretation typically is qualitative, "in which the examiner subjectively analyzes the drawings and the responses to questions in a way that assesses client's personality" (Gordon et al., 2018, p. 3). Gordon and colleagues suggest that "the H-T-P can be interpreted utilizing both structural and content variables, and as in a holistic, impressionistic manner" (p. 3). There have been several interpretive methods posed over the years (e.g., Leibowitz, 1999; Van Hutton, 1994). Of interest to the current study, Gordon and colleagues suggest that the H-T-P can be a useful measure to foster exploration in psychotherapy.

**Cognitive.** Weschler Adult Intelligence Scale-Fourth Edition (WAIS-IV; Wechsler, 2008) is a widely used assessment of general intellectual functioning that takes approximately 59 to 100 minutes to complete. The WAIS-IV provides a comprehensive and valid assessment of intellectual functioning through 4 cognitive domains: (1) Verbal, (2) Perceptual, (3) Working Memory, and (4) Processing Speed. The WAIS-IV is typically used to inform decision-making

processes in which intelligence is a factor (Canivez & Schraw, 2010). In reviewing the WAIS-IV, Canivez and Schraw (2010) suggest that it holds high internal consistency with 0.97 to 0.98 (Full Scale IQ), 0.87 to 0.98 (factor index scores), and 0.71 to 0.96 (subtest level). Test-retest reliabilities range from good (mid 0.70s) to excellent (upper 0.80s). Construct and criterion-related validity, specifically the four-factor model of the WAIS-IV, have been supported through confirmatory factor analyses. Criterion-related validity is good when the WAIS-IV has been compared with other measures of achievement. Evidence has been found supporting both convergent and discriminant validity (Canivez & Schraw, 2010).

## Procedure

### Participant Recruitment

As is common practice in the setting where this study occurred, newly admitted patients are initially interviewed and assessed by a unit psychiatrist. Following this, patients are then referred for psychological consultation. Upon receiving patient referrals, potential participants in this study were recruited through a multi-clinician screening process to ensure participants met inclusion and exclusion criteria: 1) meeting the requirements for formal admission to a psychiatric hospital under the Alberta Mental Health Act (MHA, 2016), 2) having a history of a bipolar disorder that has been documented at more than one psychiatric admission, including the current presentation, 3) no previous participation in psychological assessment (including C/TA or TA), and 4) no presentation of aggressive or violent behaviours at the time of the study.

Upon the principal investigator (DA) receiving a referral, patients identified as holding a primary diagnosis within the bipolar spectrum were flagged for additional screening. Potential participants' clinical backgrounds were reviewed through chart documentation available on the inpatient unit. Individuals meeting the inclusion were flagged as potential participants in the

study and the principal investigator passed the referral to the clinical supervisor and notified the referring psychiatrist. In order to avoid any coercive influence of the principal investigator or student clinicians on patient participation, the referring psychiatrist was asked to inquire if the patient may be interested in partaking in a clinical study and, if so, if they would like to speak with a student clinician about this study. Once a potential participant agreed to be approached by a study clinician, the student clinician's supervisor provided the referral to the student clinician. The student clinicians then approached potential participants for scheduling and meeting for the pre-intervention session. Patients were actively involved in scheduling appointments with the study clinicians to ensure sessions occurred at feasible times for the participant and to mitigate potential confounds such as participant fatigue.

**Clinician Training**

All clinicians were trained to criterion in study-specific procedures prior to commencing their involvement in the study. Training preparation for this research consisted of: 1) student clinician independent review of the study training protocol (developed by the principal investigator [DA]), 2) one 3-hour training session to review the C/TA intervention and the study data collection procedures with the principal investigator (DA), and 3) one full practice C/TA completed under the supervision of a registered doctoral-level psychologist (the study clinical supervisor) with consultation with the principal investigator. The 3-hour training session included a guided review of the study intervention, study-specific data collection procedures, and refreshment of essential C/TA techniques via role-play. As with the student clinicians, the clinical supervisor was provided with a detailed study protocol and participated in significant consultation with the principal researcher prior to the commencement of the study.

**Data Collection Schedule and Intervention**

Three phases of data collection were included in this study: Pre-C/TA Baseline, C/TA Intervention (subphase 1-4), and Post-C/TA. The pre-C/TA baseline period was one week in length, the C/TA intervention phase was two weeks (two subphases/week), and the post-C/TA phase was one week in length.

**Phase one: Baseline/Pre-Intervention Session.**

Within the pre-intervention session, the student clinician outlined the details of this research project, the general process of the intervention, and the data collection requirements (e.g., daily completion of SUDs, SHS, and indexes). The participants were given ongoing opportunity to consent or decline to participate in the study. Any questions voiced by potential participants were fully addressed. No patients declined to participate in the study. The consent form used is in Appendix B.

Upon patient agreement to participate and the completion of the consent form, the student clinicians proceeded with a semi-structured clinical interview (see Appendix C). Through this process, inclusion criteria were confirmed. Following the completion of the clinical interview, the participant's idiographic indexes were devised collaboratively by the patient and clinician. These indexes, along with copies of the SUDs and SHS, were then placed on the participant's medication administration record (MAR) for daily completion. The nursing staff on the inpatient unit prompted participants to complete the measures each morning. The principal investigator (DA) collected the completed questionnaires from the participants' MAR regularly. The final task of the pre-intervention session with the student clinician included the participants' completion of all post-session self-report measures (i.e., SUDS, SHS, SEQ, and WAI-SR).

**Phase two: Intervention.**

**C/TA: Four sessions/subphases.** One week following the pre-intervention session, the C/TA intervention (grouped into four unique subphases over two weeks) was undertaken by the student clinician. A complete summary of the four-session model is provided in Appendix A, and additional specifics on each participant's C/TA are provided in Appendix D - G.

***Subphase one: Initial session.*** The initial C/TA session included the collaborative development of assessment questions and any additional interviewing relevant to the derived assessment questions. Following the completion of the session, the student clinician administered the SUDs, SHS, SEQ, and WAI-SR.

***Subphase two: Standardized testing session(s).*** Subphase two focused on the administration of the standardized test battery discussed above, with the inclusion of extended inquiry when time permitted. The battery included an assessment of personality (e.g., MMPI-2RF), a projective (e.g., H-T-P), and cognitive abilities (e.g., WAIS-IV). Additionally, guided by the assessment question(s), clinicians could (and did) supplement the basic battery as relevant to the questions guiding the assessment and in consultation with the clinical supervisor. The student clinicians had access to an extensive test library at the research site. Notably, this subphase had the flexibility to include the administration of testing over two back-to-back days to accommodate patient stamina and conflicting patient appointments. However, the bulk of the testing was completed during the first testing session. Study relevant data collection occurred on the first testing day to ensure the standardized phase length and sampling. Limiting testing to a maximum of two days ensured the student clinician had a suitable amount of time to score and discuss the results with their clinical supervisor in preparation for the next subphase/session.

***Subphase Three: Assessment Intervention and Summary/Discussion Session.*** Subphase three commenced with additional extended inquiry (if needed) and was followed by the

assessment intervention and summary/discussion of the assessment findings. Again, the student clinician had the participant complete the study outcome measures at the end of the session. Between subphase three and four, the student clinician completed a draft of the results of the assessment in a therapeutic letter to share in the fourth subphase.

***Subphase Four: Written Feedback.*** The fourth subphase focused exclusively on the provision and discussion of written feedback to the participants. Participants were provided with a draft of the therapeutic letter and encouraged to make suggestions for revisions. Again, the student clinician was responsible for administering the study's outcome measures at the end of the session.

**Phase Three: Post Intervention.** One week following the completion of the intervention phase, a post-intervention session and measure of the DVs were completed. Within this final session, the student clinician met with the participant in session to check-in and to collect the outcome data (i.e., SUDs, SHS, SEQ, and WAI-SR). Data on the participant's satisfaction with the assessment process was obtained through the administration of the AQ. Throughout the third and final phase, participants continued to complete their daily idiographic, SUDs, and SHS ratings until the day of the final session. Table 3 is a summary of the procedures/data collection for each phase of the study.

Table 3 - *Summary of Data Collection*

| | Pre-Test | C/TA Session 1 | C/TA Session 2 | C/TA Session 3 | C/TA Session 4 | Post-Test |
|---|---|---|---|---|---|---|
| Session-based | SUDs<br>SHS<br>SEQ<br>WAI-Sr | SUDs<br>SHS<br>SEQ<br>WAI-SR | SUDs<br>SHS<br>SEQ<br>WAI-SR | SUDs<br>SHS<br>SEQ<br>WAI-SR | SUDs<br>SHS<br>SEQ<br>WAI-SR | SUDs<br>SHS<br>SEQ<br>WAI-SR<br>AQ |

| | | | | | | |
|---|---|---|---|---|---|---|
| Daily Monitoring | SUDs<br>SHS<br>5 Indexes | SUDs<br>SHS<br>5 Indexes | SUDs<br>SHS<br>5 Indexes | SUDs<br>SHS<br>5 Indexes | SUDs<br>SHS<br>5 Indexes | SUDs<br>SHS<br>5 Indexes |

**Plan of Analysis**

Multiple approaches were used to test the study hypotheses, with a primary focus on statistical analysis explicitly designed for time-series methods (i.e., SMA, Borckardt, 2006). Initially, all the raw data and phase means were graphed and visual inspection, guided by Kazdin's (2011) recommendations, was included as an initial exploratory analytical tool. Following this descriptively oriented visual inspection, Simulation Modeling Analysis (SMA; Borckardt, 2006) was used to examine each DV measured throughout the study except for satisfaction. With regards to the participant's idiographic indices, no a priori predictions were made of these variables; however, post hoc exploratory analyses based on hypothesis 1-3 of each of the participant's idiographic indices were included. There were three separate SMA analyses available for each variable that were applied sequentially, depending on the findings from the first analysis. First, the baseline phase was compared with the intervention and post-intervention phase combined (i.e., Analysis 1). Upon determining statistical significance to the degree that the null hypothesis could be rejected in analysis 1, two further analyses were run to address hypothesis 3. Specifically, in analysis 2 the intervention phase was compared with the post-intervention phase to examine for the presence of an enduring change in the DV of interest. The inclusion of a custom phase vector in SMA analysis 3 provided additional statistical evidence for the hypothesized trend observed within the data streams for variables that were statistically significant in analysis 1.

Given the analyses available, Hypothesis 1 was addressed via visual inspection and through the results of SMA analysis 1. Hypothesis 2 was answered through the SMA results of

analysis 1. Hypothesis 3 was addressed through SMA analysis 2 and 3. Lastly, concerning satisfaction, hypothesis 4 was addressed via the comparison of participant AQ scores to the AQ normative sample and the simple calculation of *z* scores (i.e., $\mathcal{Z} = \frac{(x-\mu)}{\sigma}$ where x = data mean, μ = population mean, σ = population standard deviation).

**Intervention Fidelity**

Multiple steps were taken to verify clinician competence and adherence to study procedures. Firstly, session-based checklists were referenced and used by all clinicians prior to and within each session to verify inclusion and adherence to each aspect of the C/TA. Additionally, C/TA worksheets (Smith & Finn, 2011) were provided to clinicians to guide their progression through each of the C/TA sessions, to aid with conceptualization, and to streamline their assessment letter writing process. All clinicians received supervision before and following each of the study sessions with the clinical supervisor. The study checklists and worksheets were reviewed and used to guide supervision with each clinician Total supervision time amounted to approximately 1-2 hours a week.

Due to the rigorous training and monitoring of the clinicians in their administration of the C/TA intervention, and through verification processes (i.e., use of session-checklists and C/TA worksheets) there were no differences noted between the planned and actual implementation of the C/TA. Thus, we can, therefore, conclude that this study held significant intervention fidelity.

# Chapter 4: Results

Four hypotheses guided this study. These hypotheses related to the effectiveness of the C/TA intervention for each participant and, as is customary with SCED dissertations (e.g., see Wolfe, 2010; Fowler, 2011), the results are presented by participant case. A brief history and summary of each participant's progression through the study and C/TA intervention is provided to contextualize the case, followed by the results. The four hypotheses tested were:

1. Compared to baseline, participants will experience a decline in distress, increase in hope, increase in working alliance, and/or increase in session impact, as will be measured by Simulation Modeling Analysis (SMA; Borckardt, 2006).
2. Participants will start reporting lower distress, stronger working alliance, larger session impact, and/or greater hope following the initiation of the C/TA intervention (i.e., C/TA subphase 1).
3. When differences in the level of distress, working alliance, session impact, and/or hope are observed, such changes will continue through to the post-intervention session.
4. Overall, participants will report being satisfied with the C/TA, as will be measured on the Assessment Questionnaire (AQ; Bunner, 1993; Finn et al., 1995) and compared to the AQ normative sample.

## Participant 1: Mark

### Brief History

Mark (pseudonym) was a 29-year old single white male. He was initially diagnosed with Bipolar I Disorder when he was 22 years old and, since that time, he experienced four psychiatric admissions. This was his fifth psychiatric admission. Mark was stabilized in an acute psychiatric unit for approximately two weeks before being referred to psychology and participating in the

current research. During these two weeks, he participated in unit activities and medication adjustments. Additional history on Mark can be found in Appendix D.

**Summary of Mark's Study Progression**

Mark's schedule for the study is depicted in Figure 2 and included 6 sessions (4 intervention sessions) over 25 total days (baseline N = 7, intervention N = 11, post-intervention N = 7). Mark and his clinician adhered fully to the study protocol, and a detailed description of his participation in the C/TA intervention is provided in Appendix D. Direct participant quotations were acquired from student clinician process notes.

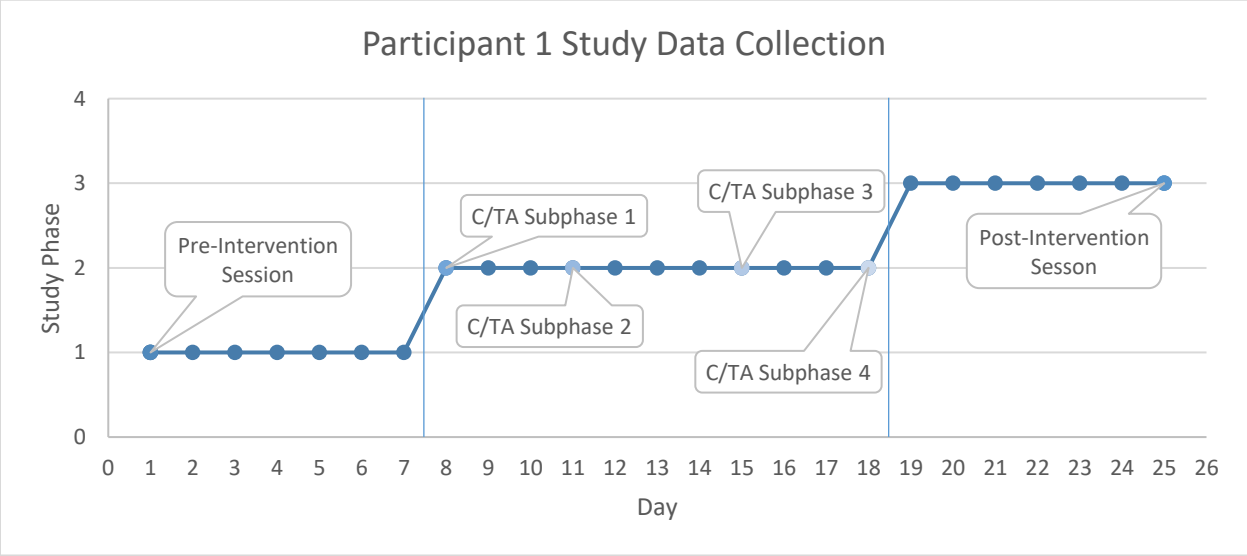


*Figure 2*. Mark's Study Data Collection Schedule

## Results

### Hypothesis 1

**Distress.** Visual inspection of *distress* (see Figure 3) noted variation in the baseline period (i.e., lack of stable data during the first 7 days). This is illustrated in the high standard deviation in the pre-intervention phase (*SD*=11.69) (see Table 4). There also appears to be overlapping data points when the baseline and intervention phases are compared, which further

impacts any conclusions that can be drawn through visual inspection. There appears to be a small decrease in means when the pre-intervention phase was compared to the intervention and post-intervention phases. There was only a small difference noted between the intervention and post-intervention phases (i.e., Pre-intervention *M*=8.33, *SD*=11.69; Intervention *M*=4.55, *SD*=5.22; Post-Intervention *M*=4.29, *SD*=5.35). With regards to changes in level, there was no change in the level of distress observed between the baseline and intervention phases; however, there appears to be a slight decrease in level between the intervention and post-intervention phases. Regarding the rate of change, there is a downward slope in the baseline phase, but there does not appear to be any notable trend/slope or latency of change observable within the data stream. Due to the variability and slope in the baseline, and guided by Kazdin's (2011) recommendation, statistical analysis (e.g., SMA) is recommended.

SMA analysis of Mark's daily *distress* did not show a statistically significant effect when comparing the pre-intervention phase with the intervention phase and the post-intervention phase combined (r=-.239, *p*=.469) (see Table 5).

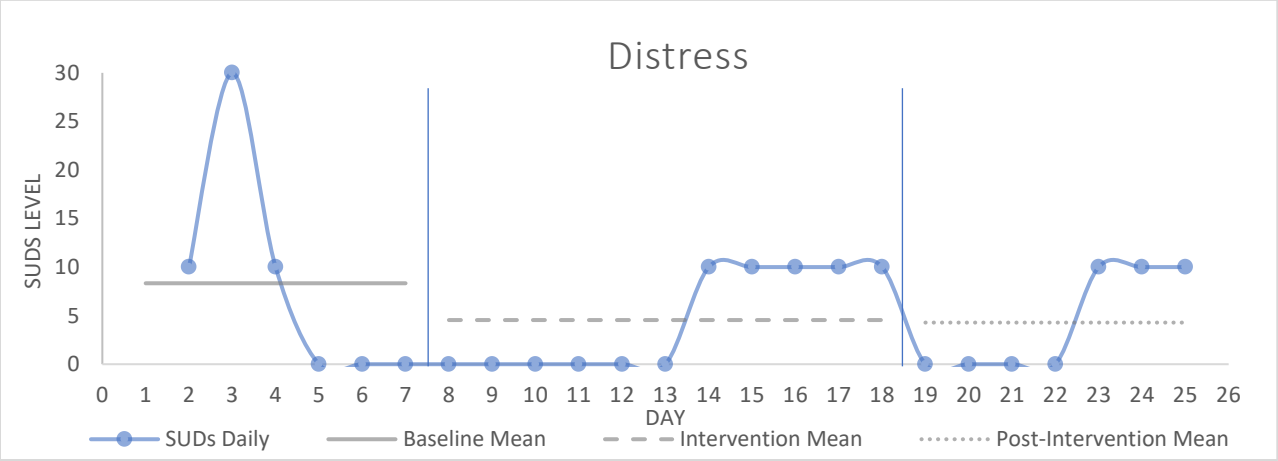


*Figure 3.* Mark Distress

**Hope.** Visual inspection of *hope* (see Figure 4) found minimal variability in the baseline period; however, there were overlapping data points when the baseline and intervention phases were compared. When examining the change in means across phases, there does not appear to be a notable difference (Baseline *M*=46.33, *SD*=1.03; Intervention *M*=46.55, *SD*=1.29; Post-Intervention *M*=46.57, *SD*=0.98) (see Table 2). With regards to changes in levels observed between phases, there also does not appear to be any large change observed on this criterion. Lastly, visual inspection found no trend/slope or any indicator of latency of change within the *hope* data stream. Overall, visual inspection did not find any indication that the intervention was associated with a change in hope. On average, Mark's hope scores fell in the above average range, indicating that he is significantly more hopeful than most (SHS>44; Snyder et al., 1996).

Unlike what was predicted, SMA analysis of *hope* did not find a statistically significant increase in the DV when the pre-intervention phase was compared with the intervention phase and the post-intervention phase combined (r=.089, *p*=.73) (see Table 5).

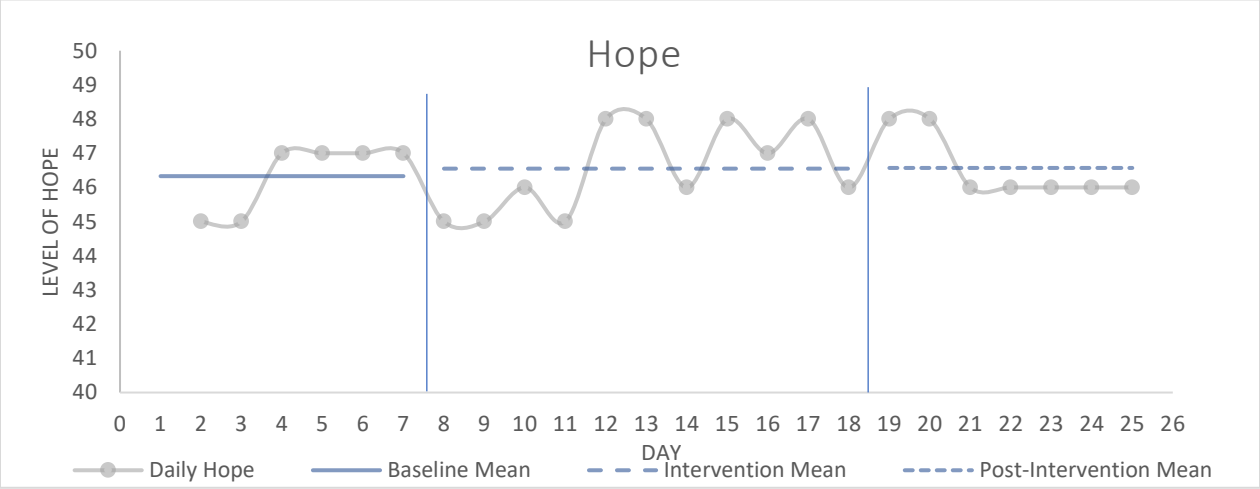


*Figure 4.* Mark Hope

**Working Alliance.** Visual inspection of *working alliance* (see Figure 5) found there to be strong (i.e., ≥5) total scores throughout all phases of the study (Pre-Intervention WAI-SR total

score=5; Intervention WAI-SR total score *M*=5.92, *SD*=0.55; Post-Intervention WAI-SR total score=6.92) (see Table 4). Visual inspection found there to be nonoverlapping data in this data stream. With regards to changes in means across the three phases of the study, there appear to be increases in this variable within each phase. There does not appear to be a notable change in the level of the variable between phases, however. There is a notable upward trend/slope in total working alliance scores throughout the three phases of the data stream. Notably, there was a delay (i.e., latency) in a change in the level of this variable that occurred at the C/TA testing session (i.e., C/TA subphase 2).

Exploratory SMA analysis of *working alliance* (total) did not find a statistically significant increase when the pre-intervention phase was compared to the intervention phase and the post-intervention phase combined (r=.62, *p*=.19) (see Table 6).

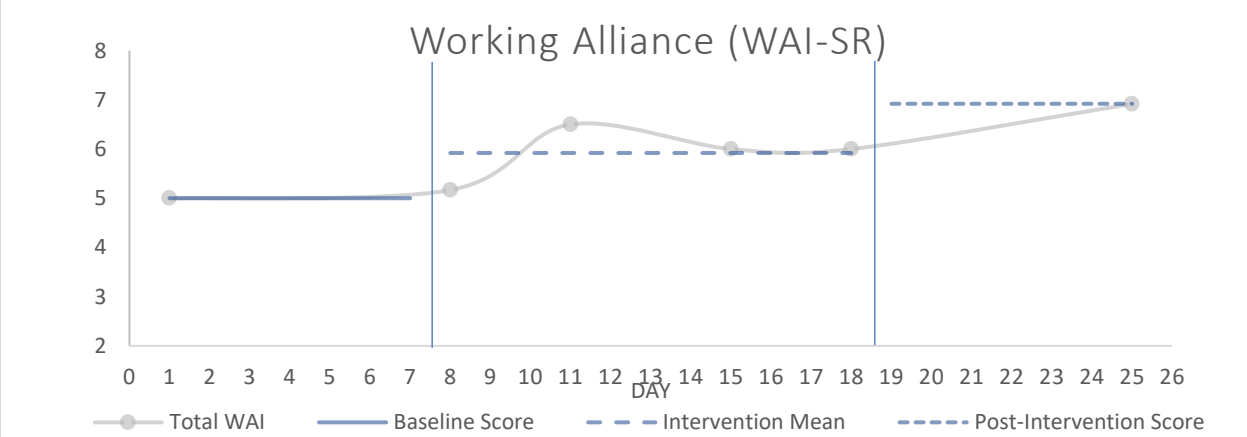


*Figure 5.* Mark Working Alliance (WAI-SR)

**Session Impact.** Visual inspection of *session impact* (see Figure 6) suggested that all sessions throughout the data stream were highly rated (i.e., ≥4), which included measure of the session being relaxed/comfortable (Smoothness: Pre-Intervention=7; Intervention *M*=6.7, *SD*=0.35; Post-intervention=7) and powerful/valuable (Depth: Pre-Intervention=4.2; Intervention *M*=6.25, *SD*=0.57; Post-intervention=5.2) (see Table 4). On all four criteria

discussed by Kazdin (2011) (i.e., mean, level, trend/slope, latency) the measure of session smoothness found no notable changes and significant overlapping of the data over time. Visual inspection of depth noted a significant increase in the mean between the baseline and intervention phase; however, this was then followed by a decrease in the mean in the post-intervention phase. Changes in level were noted between the baseline and intervention phase, and, to a lesser extent, between the intervention and post-intervention phase. There was also an increase in slope between the baseline and intervention phases. However, due to the lack of data points in both the baseline and post-intervention phases, interpretation should include a degree of caution. Of note, Mark reported the highest depth score during the C/TA session 3 – assessment intervention/discussion session.

Unlike what was hypothesized, *session impact* was not found to increase significantly, as analyzed in an exploratory SMA analysis of the pre-intervention phase versus the intervention and post-intervention phase combined (Smoothness: r=-.31, *p*=.56; Depth: r= .77, *p*=.075) (see Table 6).

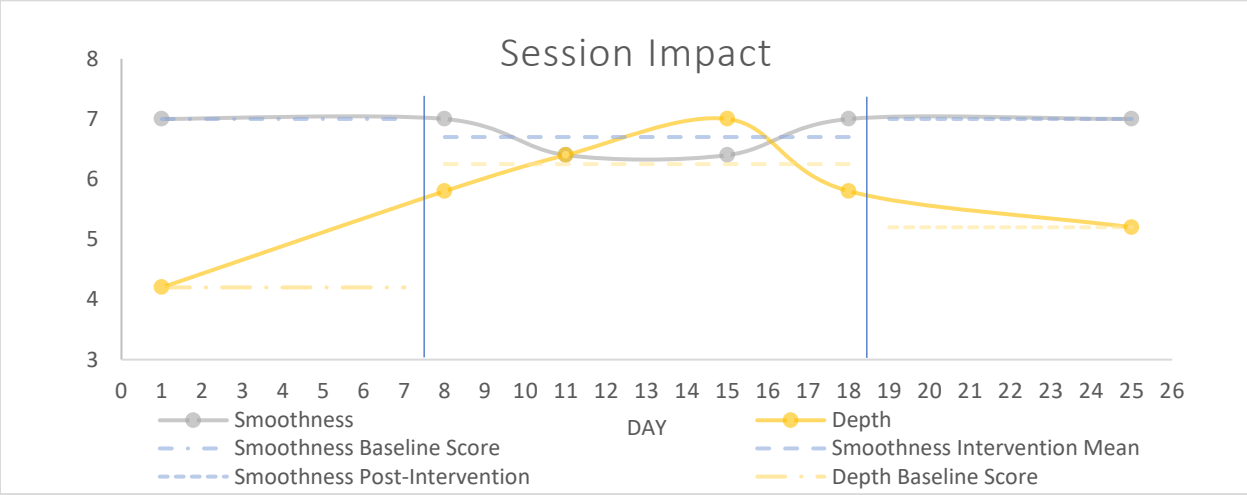


Figure 6. Mark Session Impact (SEQ)

**Idiographic indices:**

Mark opted to include daily monitoring of his levels of energy, anxiety, life, soul and sadness. With regards to his "life" variable, Mark stated that he wanted to track the overall quality of his wellbeing. The "soul" variable, according to Mark, measured the degree to which he could walk blamelessly, with authenticity, and without feelings of shame.

**Energy.** Visual inspection of the *energy* variable (see Figure 7) noted a significant downward trend in the baseline period, in addition to the overlapping of the data between the baseline and intervention phases. In examining the means across the phases there appears to be a decrease when the means of the baseline and intervention phases were compared (Pre-Intervention $M$=3.29, $SD$=1.11; Intervention $M$=2.64, $SD$=0.81); however, there was a small increase in the mean in the post-intervention phase (Post-Intervention $M$=3.29, $SD$=0.49) (see Table 4). With regards to changes in levels between the phases, there appears to be little to no level changes. In addition to the downward trend in the baseline phase, there is an upward trend in the intervention phase. The trend within the baseline phase complicates the accuracy of conclusions that might be drawn from visual inspection procedures. In examining the data stream overall, no conclusions could be made with regards to the presence of any latency of change. Statistical analysis is needed to verify the presence of any significant change in this data stream.

According to SMA analysis, there was no statistically significant change in *energy* detected when the pre-intervention levels of energy were compared to the intervention and post-intervention levels combined (r=-.21, $p$=.56) (see Table 5).

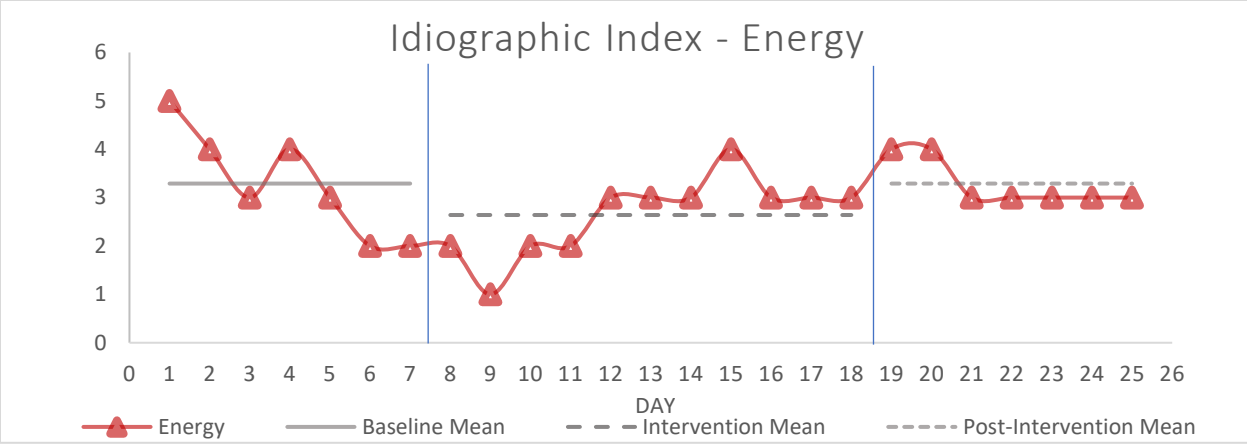


*Figure 7*. Mark Energy

**Anxiety.** Visual inspection of the *anxiety* variable (see Figure 8) illustrated some variability in the baseline period and notable overlapping of the data between the baseline and intervention phases. In examining the means across the phases, there appears to be a decrease when the mean of the baseline phase was compared to both the intervention and post-intervention phases (Pre-Intervention $M$= 1.57, $SD$=0.79; Intervention $M$=1.09, $SD$=0.30; Post-Intervention $M$=1, $SD$=0) (see Table 4). With regards to changes in levels between the phases, there appears to be little to no level changes. There is a slight downward trend in the baseline phase, with little to no phases in the intervention and post-intervention phases. With regards to latency, there appears to be a notable decrease and flattening of anxiety within the intervention phase that continued into the post-intervention phase. Overall, statistical analysis is needed to verify the presence of any significant change in this data stream.

According to SMA analysis, there was a statistically significant decline in reported *anxiety* when the pre-intervention phase was compared to the intervention and the post-

intervention phases combined (r=-.473, *p*=.042) (see Table 5).

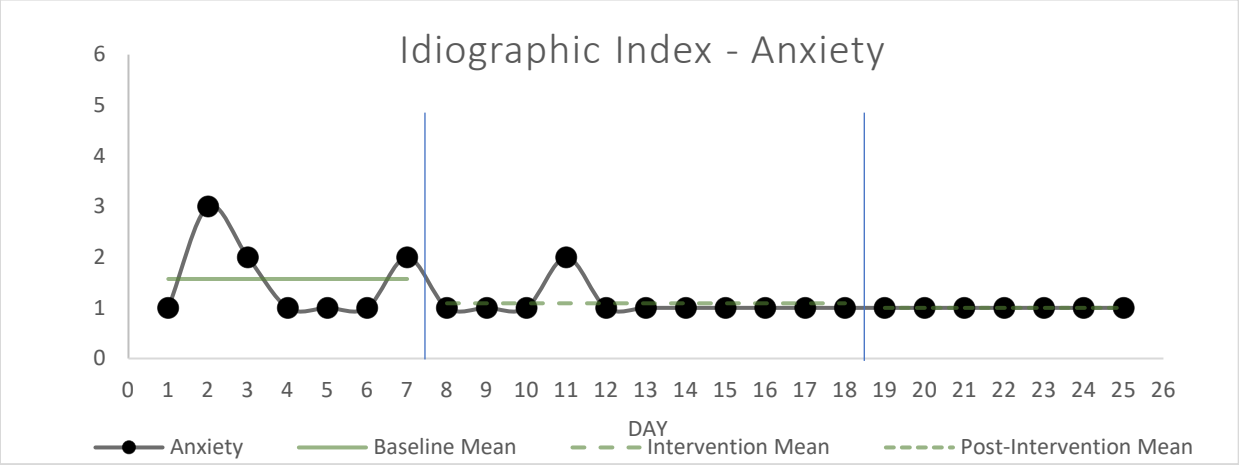


*Figure 8*. Mark Anxiety

**Life.** Visual inspection of the *life* variable (see Figure 9) indicated variability throughout the data stream with significant overlapping data between the baseline and intervention phases. There is a slight increase in means across study phases (Pre-Intervention *M*=3.71 *SD*=0.95; Intervention *M*=3.82, *SD*=0.60; Post-Intervention *M*=4, *SD*=1.0) (see Table 4). There does not appear to be any significant change in level between study phases. No notable trend or slope is apparent in the data stream, which is impacted by the significant variability. In examining the data stream, no conclusions could be made with regards to the presence of latency of change. There does not appear to be a notable increase in the life variable with the onset of the intervention.

There was not a statistically significant change, as analyzed by SMA, detected in the *life* variable data stream when the pre-intervention phase was compared to the intervention and the post-intervention phases combined (r=0.10, *p*=0.569) (see Table 5).

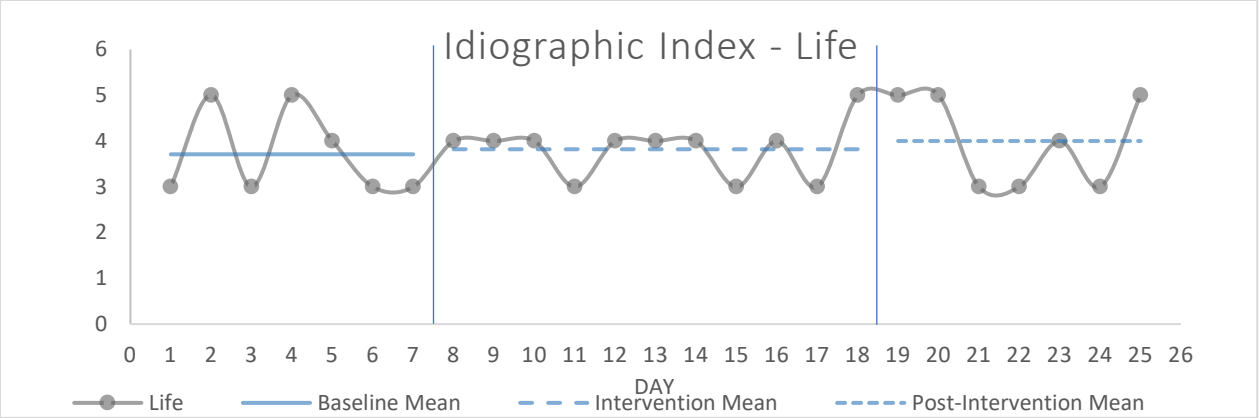


*Figure 9.* Mark Life

**Soul.** Visual inspection (see Figure 10) highlight no change in mean, level, trend/slope, or latency in the participants reported *soul* variable throughout the study.

There was no reported change in the *soul* variable throughout the study and, as such, no analyses were run on this variable.

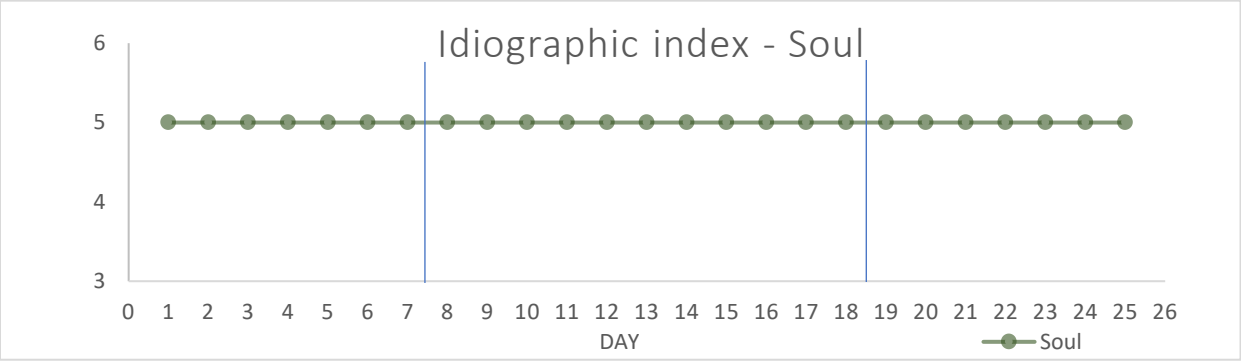


*Figure 10.* Mark Soul

***Sadness.*** Visual inspection (see Figure 11) determined there to be change in the means across study phases (Pre-Intervention *M*=1.14, *SD=0.38*; Intervention *M*=1, SD=0; Post-Intervention *M*=1, *SD*=0) (see Table 4). There did not appear to be a notable change in the level between study phases or trend in the data stream. With regards to latency, the data stream did not appear to have immediate or delayed changes following the introduction of the intervention.

There was not a statistically significant change, as measured by SMA analysis, found in the reported levels of *sadness* when the pre-intervention phase was compared to the intervention and post-intervention phase combined (r=-.327, *p*=.106) (see Table 5).

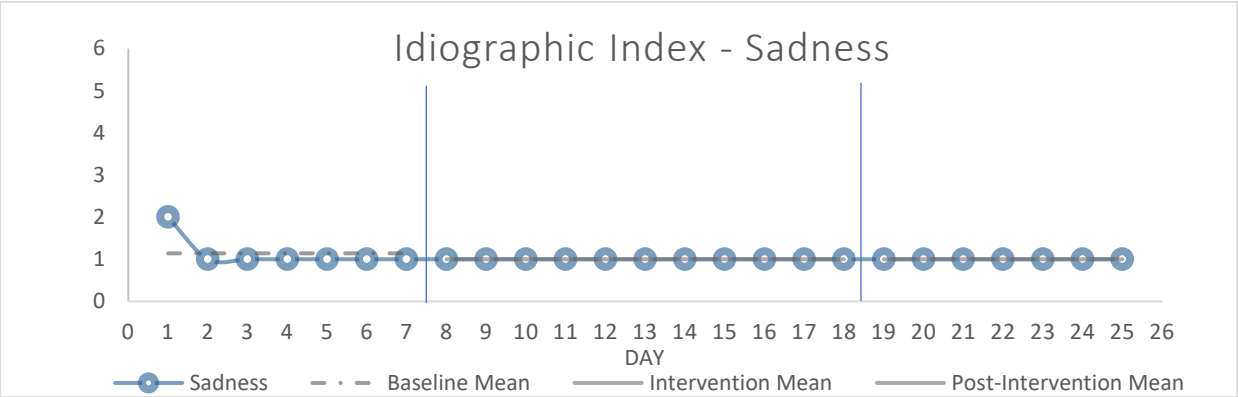


*Figure 11.* Mark Sadness

**Hypothesis 2**

SMA analysis 1 did not support the presence of a statistically significant change in Mark's *distress, working alliance, session impact,* or *hope* results. However, exploratory analysis of the idiographic index *anxiety* found a statistically significant decline in that variable following the initiation of the C/TA intervention. SMA analysis included the comparison of the pre-intervention phase with the intervention and the post-intervention phases combined (r=-.473, *p*=.042) (see Table 5).

**Hypothesis 3**

**Anxiety.** As was predicted, a decline in *anxiety* levels was found to endure (i.e., there was no statistically significant change) when the intervention phase was compared with the post-intervention phase as measured in analysis 2 (r=-.193, *p*=.421) (see Table 5). This finding suggests that there was not a statistically significant change in anxiety from the intervention to the post-intervention session. In a follow-up analysis comparing the *anxiety* variable to an

estimated data trend (i.e., custom vector |12|12|12|12|12|12|12|11|10|9|8|7|6|5|4|3|2|1|0|0|0|0|0|0|0|) the *anxiety* data stream did not significantly correlate as measured in analysis 3 (r=.428, *p*=.068).

Table 4 - *Descriptive Statistics: Mark's Self-Reported Process Variables*

| | Pre-Intervention | | Intervention | | Post-Intervention | |
|---|---|---|---|---|---|---|
| Daily Variable | **Mean** | ***SD*** | **Mean** | ***SD*** | **Mean** | ***SD*** |
| Distress (SUDS) | 8.33 | 11.69 | 4.55 | 5.22 | 4.29 | 5.35 |
| Hope (SHS) | 46.33 | 1.03 | 46.55 | 1.29 | 46.57 | 0.98 |
| Idiographic 1 (ENERGY) | 3.29 | 1.11 | 2.64 | 0.81 | 3.29 | 0.49 |
| Idiographic 2 (ANXIETY) | 1.57 | 0.79 | 1.09 | 0.30 | 1.00 | 0.00 |
| Idiographic 3 (LIFE) | 3.71 | 0.95 | 3.82 | 0.60 | 4.00 | 1.00 |
| Idiographic 4 (SOUL) | 5.00 | 0.00 | 5.00 | 0.00 | 5.00 | 0.00 |
| Idiographic 5 (SADNESS) | 1.14 | 0.38 | 1.00 | 0.00 | 1.00 | 0.00 |
| **Session-Based Measures** | | | | | | |
| Total WAI-SR | 5.00 | - | 5.92 | 0.55 | 6.92 | - |
| SEQ - Smoothness | 7.00 | - | 6.70 | 0.35 | 7.00 | - |
| SEQ - Depth | 4.20 | - | 6.25 | 0.57 | 5.20 | - |

Table 5 – *Mark's Daily DV SMA Results*

| | **Analysis 1** | | | **Analysis 2** | | | **Analysis 3** | | |
|---|---|---|---|---|---|---|---|---|---|
| | Baseline vs Intervention + Post-Intervention | | | Intervention vs Post-Intervention | | | Custom Phase Vector | | |
| **Dependent Variable** | **r** | ***p*-Value** | ***pAR*** | **r** | ***p*-Value** | ***pAR*** | **r** | ***p*-Value** | ***pAR*** |
| Distress (SUDS) | -.239 | .469 | .50 | - | - | - | - | - | - |
| Hope (SHS) | .089 | .73 | .23 | - | - | - | - | - | - |
| Idiographic 1 (ENERGY) | -.21 | .56 | .57 | - | - | - | - | - | - |
| Idiographic 2 (ANXIETY) | -.473 | .042* | .16 | -.193 | .421 | -.065 | .428 | .068 | .16 |
| Idiographic 3 (LIFE) | .10 | .569 | -.18 | - | - | - | - | - | - |
| Idiographic 4 (SOUL) | - | - | - | - | - | - | - | - | - |
| Idiographic 5 (SADNESS) | -.327 | .106 | -.001 | - | - | - | - | - | - |

*Note:* Custom Phase Vector Anxiety: |12|12|12|12|12|12|12|11|10|9|8|7|6|5|4|3|2|1|0|0|0|0|0|0|0|

Table 6 – *Mark's Session-Based DV SMA Results*

| | Analysis 1 | | |
|---|---|---|---|
| | Baseline vs Intervention + Post-Intervention Custom Phase Vector (011111) | | |
| **Dependent Variable** | **R** | ***p*-Value** | ***pAR*** |
| WAI – Total | .62 | .190 | .16 |
| SEQ - Smoothness | -.31 | .560 | .20 |
| SEQ – Depth | .77 | .075 | .21 |

*Note:* Level of significance $p \leq .01$

## Hypothesis 4

As predicted, Mark was satisfied with the assessment, as measured by the AQ (see Table 7). His total satisfaction score fell slightly above average in comparison to the normative sample ($z$=0.65, T=56.5). More specifically, Mark reported that the assessment brought him a high level of new self-awareness/understanding ($z$=0.88, T=58.8), significant positive accurate mirroring ($z$=0.67, T=56.7), and a strong positive relationship with the examiner in comparison to the normative sample ($z$=0.85, T=58.5). Interestingly, Mark also reported higher than average negative feelings about the assessment ($z$=0.62, T=56.2).

Table 7 – *Mark's Satisfaction Results*

| | Assessment Questionnaire | | | | |
|---|---|---|---|---|---|
| | New Self-Awareness/ Understanding | Positive Accurate Mirroring | Positive Relationship with the Examiner | Negative Feelings about the Assessment | Total Satisfaction |
| Mean | 4.77 | 4.5 | 4.67 | 2.82 | 4.31 |
| T-Score | 58.8 | 56.7 | 58.5 | 56.2 | 56.5 |
| Z-Score | 0.88 | 0.67 | 0.85 | 0.62 | 0.65 |

## Participant 2: Grace

### Brief History

Grace (pseudonym) was a 56-year old single white female. Grace had a history of traumatic brain injury and Bipolar I Disorder. She had 10 previous psychiatric inpatient admissions, a documented history of medication noncompliance, and chronic polysubstance abuse.

Grace was stabilized in an acute psychiatric unit for four days before being referred to psychology and agreeing to participate in the current clinical research. In the first week of her admission, Grace was observed to calm in her mental status, sleep throughout the night, and to have an increasingly euthymic mood. However, this trajectory toward wellness was disrupted by Grace's return to substances. On approximately day 10 of the study, she admitted to drinking alcohol and smoking cannabis while on a day pass out of hospital. On around day 16 of the study, drug paraphernalia was found on Grace (i.e., a crack pipe) and she was observed to be acting in a bizarre, elated, and disorganized manner. As such, on day 16 she was transferred to an intensive care unit to detox from the substances she had taken. On day 20, she returned to the acute psychiatric unit significantly more stable and willing to continue meeting with the study clinician. Notably, Grace's toxicology screening identified cocaine usage on days 20, 26 and 27 of the study. Additional history can be found in Appendix E.

**Summary of Grace's Study Progression**

Grace's schedule for the study is depicted in figure 12 and included 6 sessions (4 intervention sessions) over 25 total days (baseline N = 7, intervention N = 11, post-intervention N = 7). Grace and her clinician adhered fully to the study protocol, and a detailed description of her participation in the C/TA intervention is provided in Appendix E. Direct participant

quotations were acquired from student clinician process notes.

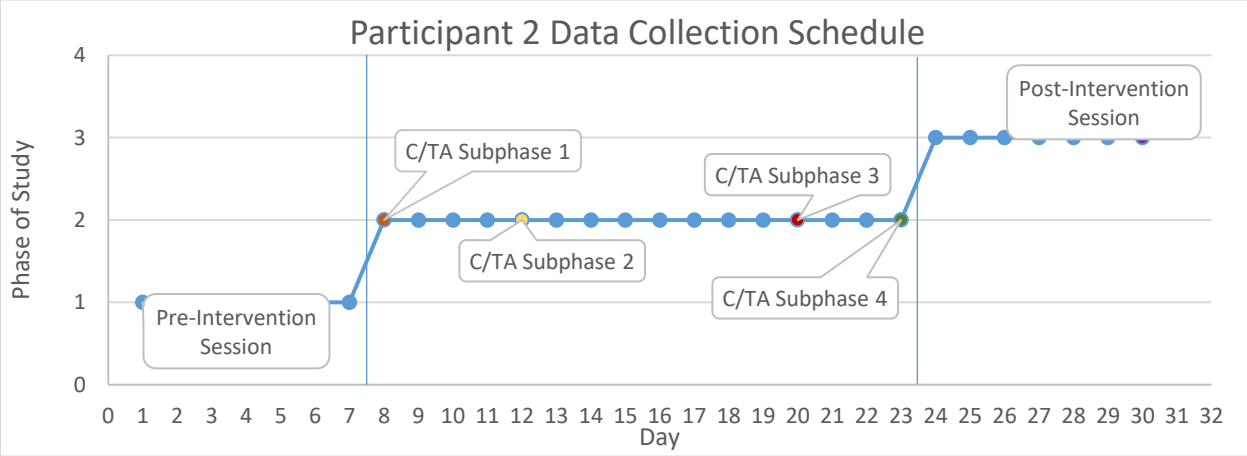


*Figure 12.* Grace's Study Data Collection Schedule

## Results

### Hypothesis 1

**Distress**. Visual inspection of *distress* (see Figure 13) noted the presence of significant variability in both the pre-intervention and intervention phases, followed by a flattening in the post-intervention phase (Standard deviation: Pre-Intervention *SD*=16.73; Intervention *SD*=22.61; Post-Intervention *SD*=0). Additionally, there is notable overlapping of the data in the baseline and intervention phases. When comparing changes means across the data stream, a decline in distress is observable (Pre-Intervention *M*=40; Intervention *M*=36; Post-Intervention *M*=10) (see Table 8). Additionally, in examining the data stream, there appears to be an overall downward trend/slope throughout the data stream, but particularly in the intervention phase. Notably, there appears to be a change in the level of *distress* between day 20 to day 21 (i.e., the day following C/TA session 3 and Grace's return from the intensive care unit). The decrease in distress reported between days 20 and 21 could be indicative of a longer period of latency between when the intervention was introduced and the onset of the change; however, the external factors co-

occurring are notable and likely contribute to her results on both the distress and hope (see below) data streams. Recall that a UDS found cocaine metabolites on day 20 and that day 21 was the day following C/TA session 3 and Grace's return from the intensive care unit. Due to the highly unstable baseline period and overlapping data, statistical analysis is needed to verify any change in magnitude or rate present within the data stream.

Contrary to what was hypothesized, SMA analysis of daily *distress* did not show a statistically significant effect when comparing the pre-intervention phase with the intervention phase and the post-intervention phase combined (r=-0.238, *p*=0.428) (see Table 9).

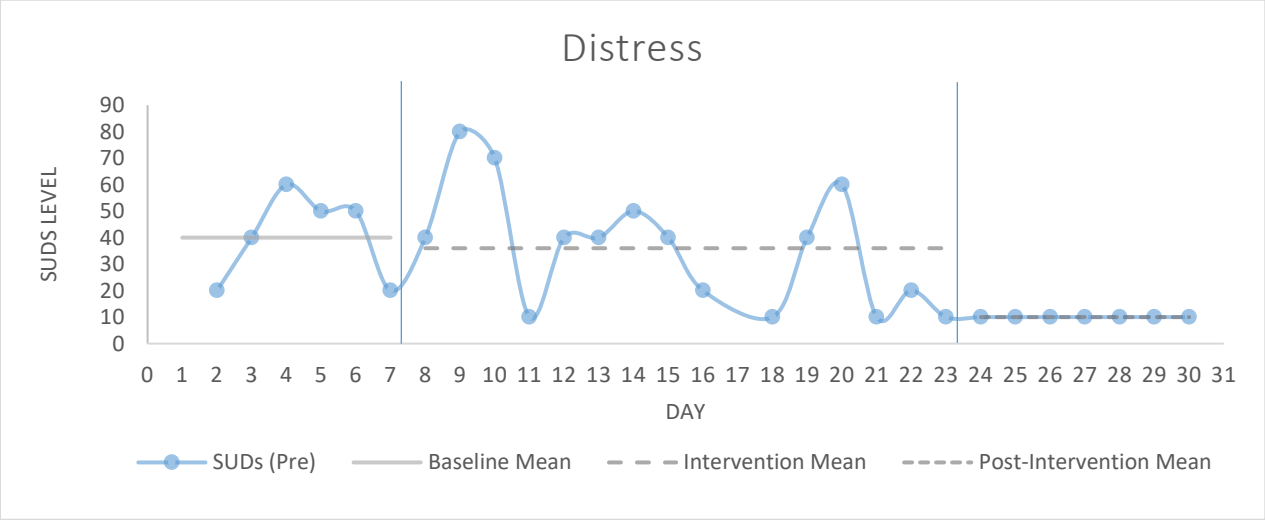


*Figure 13.* Grace Distress

**Hope**. Much like Grace's distress findings, visual inspection of *hope* (see Figure 14) noted significant variability in both the baseline and intervention phases, but very little in the post-intervention phase (Standard deviation: Pre-Intervention *SD*=4.46; Intervention *SD*=11.78, Post-Intervention *SD*=0.49). Again, there were overlapping data between the baseline and intervention phases. When comparing means across the data stream, there appears to be an initial decrease in mean levels of hope between the baseline and intervention phase; however, this was followed by a significant increase in *hope* during the post-intervention phases (Pre-Intervention

*M*=31.33; Intervention *M*=28.87; Post-Intervention *M*=47.71) (see Table 8). Like with the distress variable, there appears to be a change in the level of *hope* on between days 20 and 21. Again, this observation of her data stream needs to account for the external factors influencing her mood, etc. at the time of measurement. However, this notable shift may be evidence of changes in this variable related to the C/TA that are latent in the data stream. Lastly, it is difficult to ascertain the slope within each phase of the data but taken as a whole gestalt there appears to be an upward trend/slope upward throughout the data stream. Despite these observations, the unstable baseline period, outside factors, and notable overlapping of data in the first two phases warrant statistical analysis (e.g., SMA) to verify significant change. Overall, Grace's hope scores ranged between low levels of hope to high levels of hope throughout the data stream (SHS = 12 – 48).

SMA analysis of Grace's daily *hope* did not demonstrate a statistically significant effect when comparing the pre-intervention phase with the intervention phase and the post-intervention phase combined (r=.124, *p*=.75) (see Table 9).

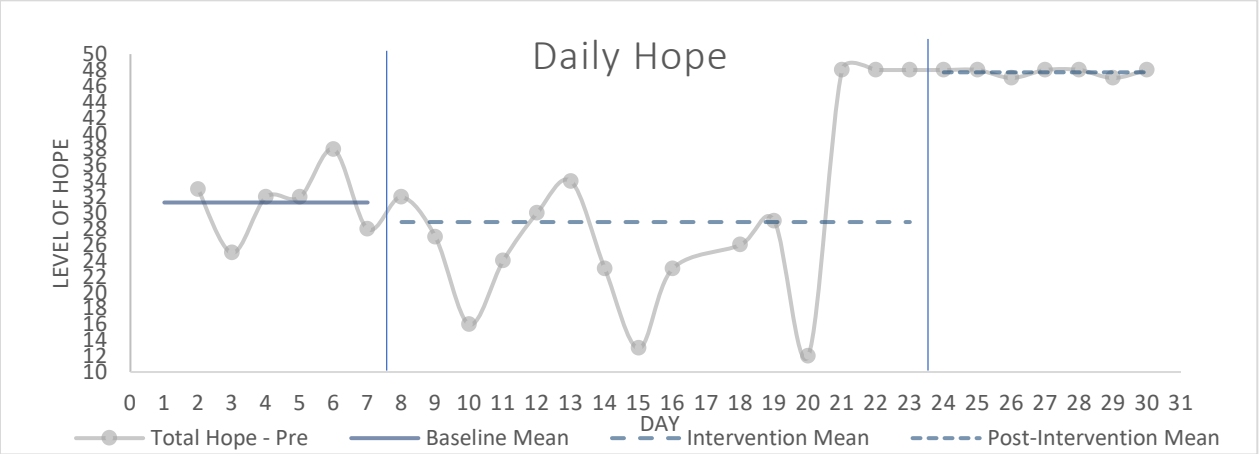


*Figure 14.* Grace Hope

**Working Alliance.** Visual inspection of Grace's *working alliance* data stream (see Figure 15) found high (i.e., ≥5) total scores throughout all phases of the study (Pre-Intervention

WAI-SR total score=6.42; Intervention WAI-SR total score *M*=6.33, *SD*=0.41; Post-Intervention WAI-SR total score=6.67) (see Table 9). There is no notable change in level between phases nor significant or trend/slope in total working alliance scores throughout the data stream. The lack of change noted in mean, level, and slope suggest there is no change in the data stream from which to analyze for the presence of latency of change.

SMA analysis of Grace's *working alliance* variable did not result in a statistically significant change when the pre-intervention phase was compared to the intervention phase and the post-intervention phase combined (r=-.031, *p*=.96), as was hypothesized (see Table 10).

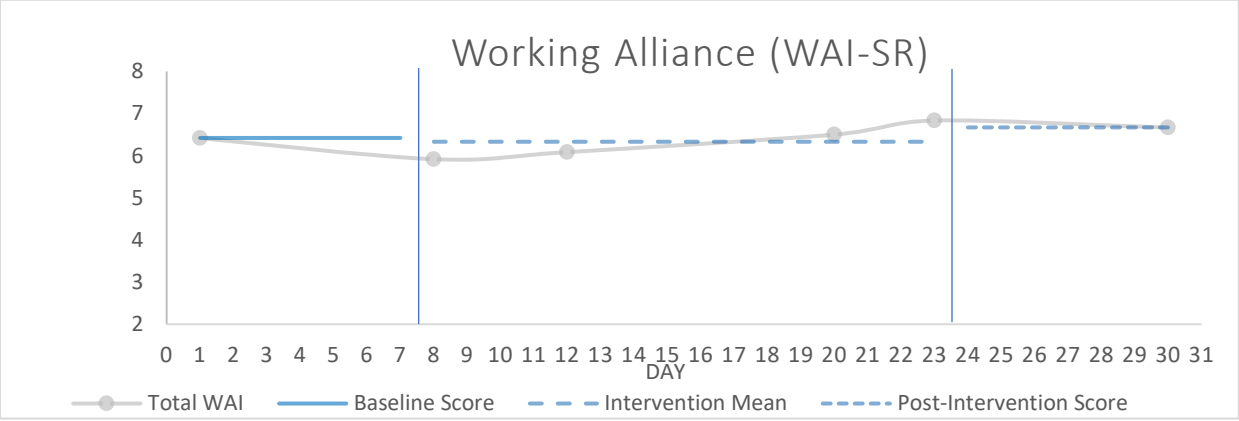


*Figure 15.* Grace Working Alliance (WAI-SR)

**Session Impact.** Visual inspection of *session impact* (see Figure 16) suggested that all sessions throughout the data stream were highly rated (i.e., ≥4). Results on the SEQ indicated that the session were found to be relaxed/comfortable (Smoothness: Pre-Intervention=6; Intervention *M*=6.7, *SD*=0.38; Post-intervention=5.8) and powerful/valuable (Depth: Pre-Intervention=7; Intervention *M*=6.7, *SD*=0.38; Post-intervention=5.6) (see Table 8). Due to the lack of data points in the baseline and post-intervention phases, comparisons of means are based on one score for those phases. With the lack of data points considered, smoothness was observed to initially increase in the intervention phase and then decreased in the post-intervention phase.

Depth was initially high in the baseline phase, which was followed by an overall decrease throughout the phases. Changes in levels occurred most notably between the baseline and onset of the C/TA intervention for the smoothness variable, followed by notable decreases in level for both smoothness and depth between the end of the C/TA phase and the post-intervention session. Overall, there did not appear to be a notable trend in the data, nor was any latency of effect observed.

Contrary to study predictions, SMA analysis of Grace's *session impact* scores did not demonstrate a statistically significant increase in session impact when comparing the pre-intervention phase with the intervention phase and the post-intervention phase combined (Smoothness: r=.41, *p*=.319; Depth: r=-.37, *p*=.448) (see Table 10).

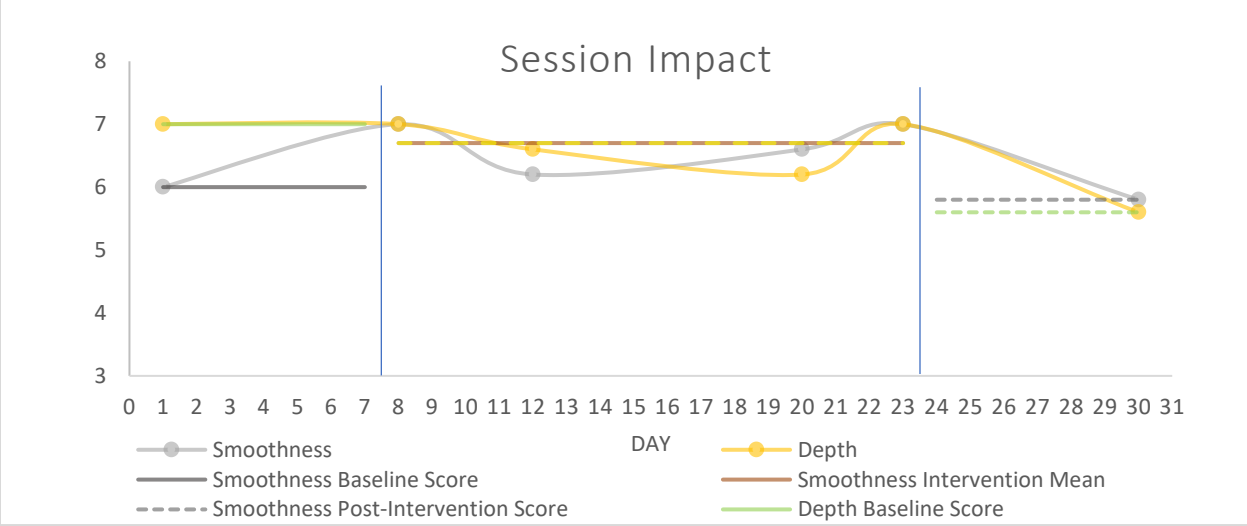


*Figure 16.* Grace Session Impact (SEQ)

**Analysis – Idiographic indices:**

Grace was adamant that she did not want to use negative words for her idiographic indices, as she felt it might impact her mindset each day. As such, she chose to monitor her levels of happiness, sadness, feelings of guilt, and energy levels. She also chose to monitor her

"direction" each day, which she reported referred to the degree to which she was aware of the tasks, objectives, and plans for her day.

**Happiness.** Visual inspection of idiographic index *happiness* (see Figure 17) noted a relatively stable baseline period. In examining the means of each phase, there were small differences observed that included similar means between the baseline and post-intervention phases and a lower mean in the intervention phase (Pre-Intervention *M*=3.57, *SD*=0.53; Intervention *M*=2.93, *SD*=1.39; Post-Intervention *M*=3.86, *SD*=0.69) (see Table 8). In looking at the change in level around days 20 and 21, like with other variables, Grace reported an increase in this DV. There was no notable change in level between the phases. There does not appear to be a notable trend/slope within phases or throughout the data stream. With regards to the presence of any latency of change, again, the confounding factors occurring around days 20-21 impact any determinations.

SMA analysis of the *happiness* idiographic index failed to find the presence of a statistically significant change when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=-.132, *p*=.59) (see Table 9).

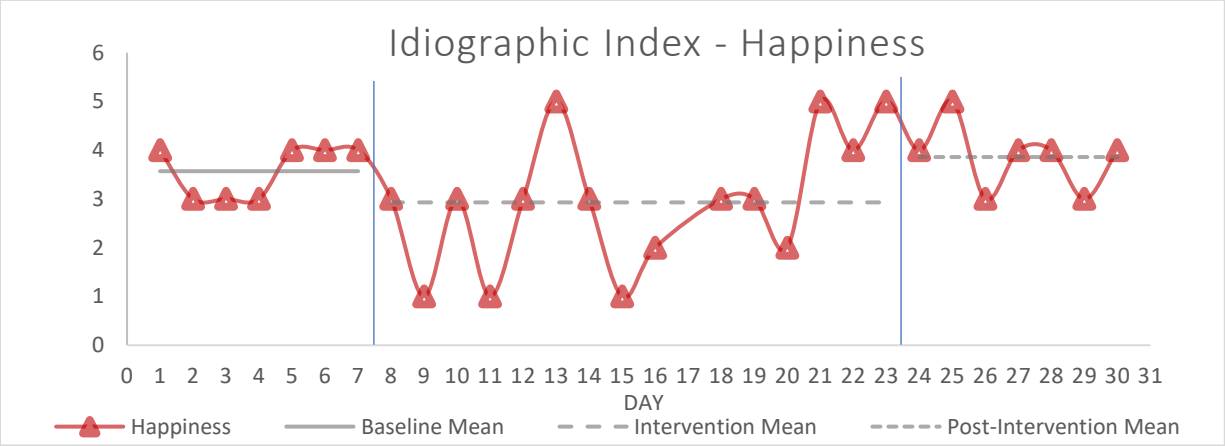


*Figure 17.* Grace Happiness

**Energy Level.** Visual inspection of idiographic index *energy level* (see Figure 18) noted a baseline period with relative stability (i.e., 5 out of 7 days = 3); however, there was notable overlapping of the data across the study phases. In examining the means of each phase, there appears to be only slight differences with an initial decrease in the intervention phase, followed by an increase in the post-intervention phase (Pre-Intervention *M*=3.00, *SD*=0.58; Intervention *M*=2.67, *SD*=1.40; Post-Intervention *M*=3.86, *SD*=0.69) (see Table 8). With regards to changes in levels observed between the phases, there is a decrease between the baseline and intervention phases. Overall, there also appears to be a slight upward trend/slope throughout the data stream. It is difficult to determine the presence of any latent changes.

SMA analysis of Grace's idiographic index *energy level* did not find a statistically significant effect when the pre-intervention phase was compared with the intervention phase and the post-intervention phase combined (r=.017, *p*=.95) (see Table 9).

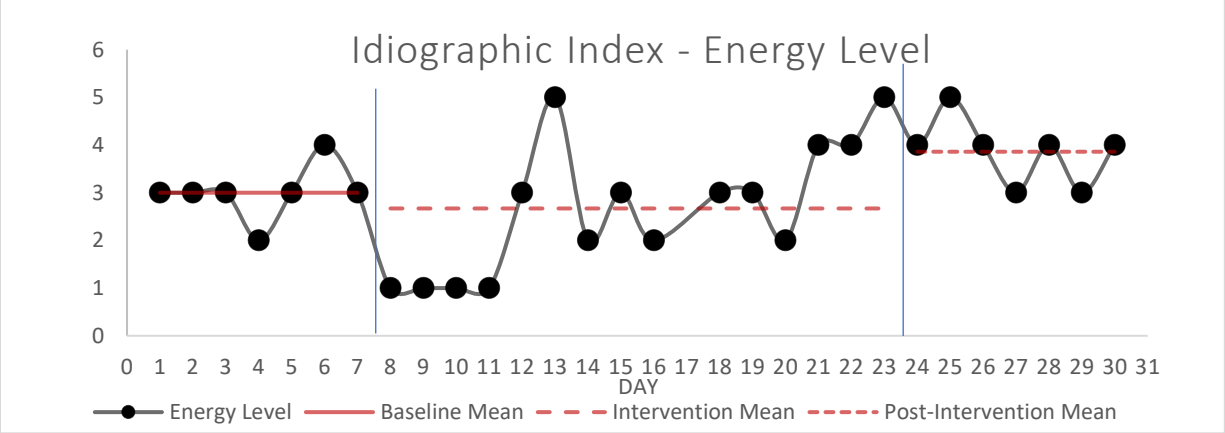


*Figure 18.* Grace Energy Level

**Direction.** Visual inspection of idiographic index *direction* (see Figure 19) noted a relatively stable baseline period, with notable overlapping data throughout the study phases. In examining the means of each phase, there appears to be no difference between the pre-intervention and intervention phase, and a slight increase in the post-intervention phase (Pre-

Intervention *M*=3.0, *SD*=0.82; Intervention *M*=3, *SD*=1.07; Post-Intervention *M*=3.86, *SD*=0.69) (see Table 8). There does not appear to be any significant changes in level between the study phases. There does not appear to be any notable latency of change present or trend/slope throughout the data stream.

SMA analysis of Grace's *direction* index did not result in a statistically significant effect when comparing the pre-intervention phase with the intervention phase and the post-intervention phase combined (r=.121, *p*=.61) (see Table 9).

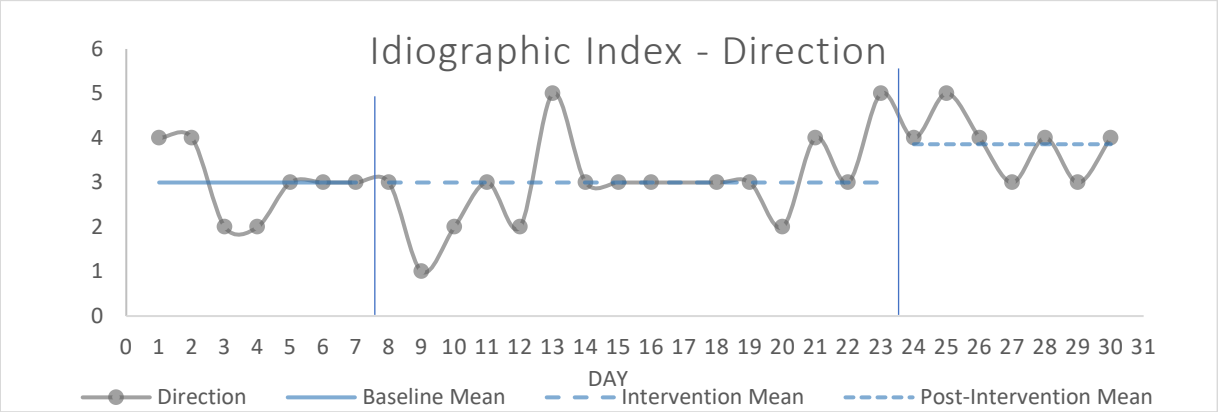


*Figure 19.* Grace Direction

**Sadness.** Visual inspection of idiographic index *sadness* (see Figure 20) noted a relatively unstable baseline period with significant overlapping data between the baseline and intervention phases. Examination of the means of each phase suggests there was little difference between the pre-intervention and intervention phase, and a slight decrease in the post-intervention phase (Pre-Intervention *M*=2.57, *SD*=1.13; Intervention *M*=2.73, *SD*=1.28; Post-Intervention *M*=2, *SD*=1.53) (see Table 8). It is difficult to determine any latency of change or slope due to the high variability throughout the data stream.

Grace's idiographic variable *sadness* was analyzed with SMA comparing the pre-intervention phase with the intervention phase and the post-intervention phase combined. No statistically significant change was found (r=-.024, *p*=.93) (see Table 9).

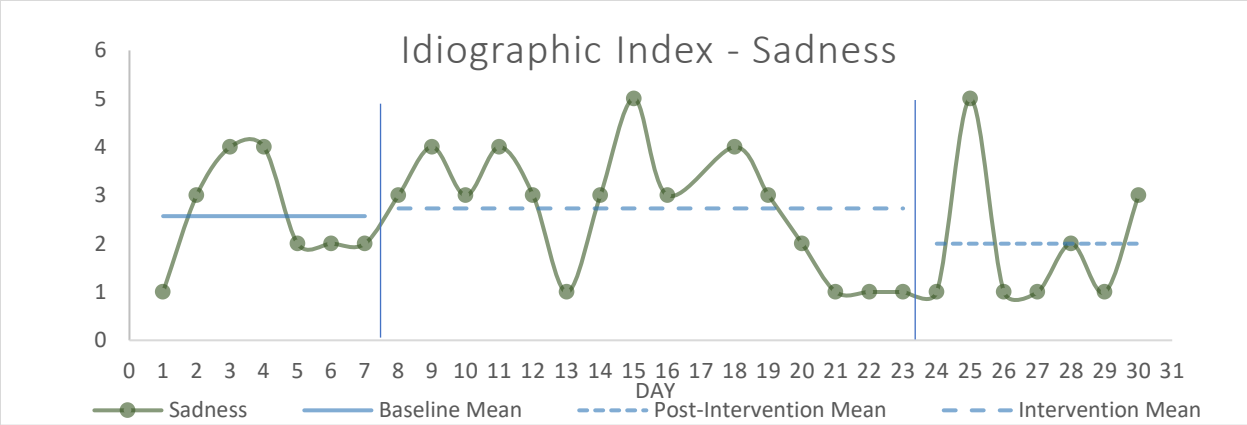


*Figure 20.* Grace Sadness

**Guilt.** Visual inspection of idiographic index *guilt* (see Figure 21) noted a relatively stable baseline period (i.e., 6 out 7 days varied between scores of 2 and 3) and notable overlapping of the data between the baseline and intervention phases. There is notable variability in the intervention phase. In examining the means of each phase, there appear to be only small differences between the phases of the study, with an initial increase when the baseline was compared to the intervention phase and a decrease in the post-intervention phase (Pre-Intervention $M$=2.29, $SD$=0.76; Intervention $M$=2.67, $SD$=1.45; Post-Intervention $M$=1.71, $SD$=0.76) (see Table 8). There does not seem to be a notable change in levels of the data between the phases. Like with previous variables, the variability present within the data stream complicates any determinations with regards to changes in trend or latency of change.

SMA analysis of the *guilt* DV did not find a statistically significant effect when comparing the pre-intervention phase with the intervention phase and the post-intervention phase combined (r=.028, $p$=.89) (see Table 9).

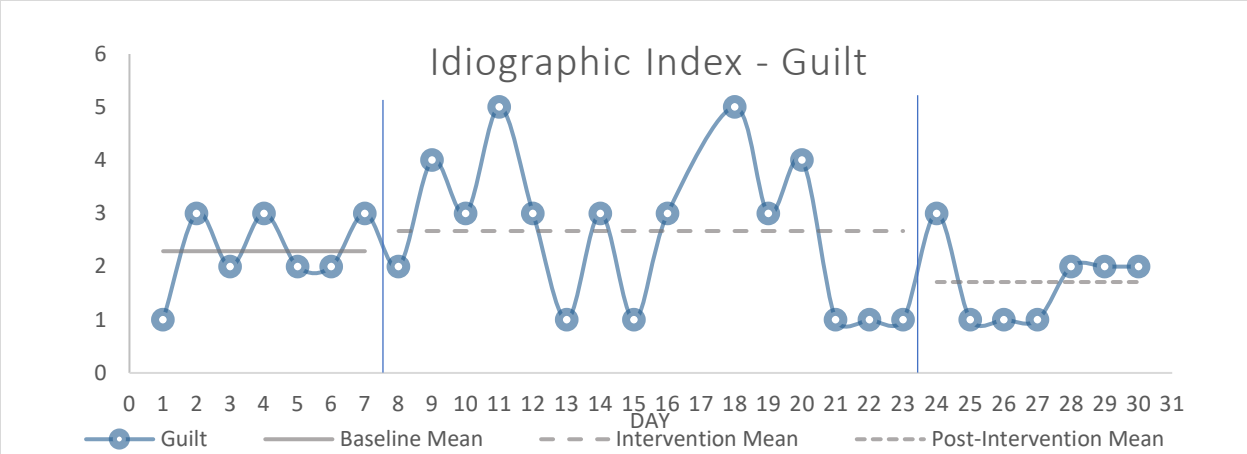


*Figure 21.* Grace Guilt

**Hypothesis 2**

Initial SMA analysis (i.e., analysis 1) did not support the presence of an intervention effect in Grace's results. As such, no further analyses were completed, and the null hypothesis was retained.

**Hypothesis 3**

No differences were detected in the levels of the DVs analyzed (i.e., analysis 1 was non-significant). As a result, no additional analyses were completed. The null hypothesis was retained.

Table 8 - *Descriptive Statistics: Grace's Self-Reported Process Variables*

| | Pre-Intervention | | Intervention | | Post-Intervention | |
|---|---|---|---|---|---|---|
| **Daily Variable** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| Distress (SUDS) | 40.00 | 16.73 | 36.00 | 22.61 | 10.00 | 0.00 |
| Hope (SHS) | 31.33 | 4.46 | 28.87 | 11.78 | 47.71 | 0.49 |
| Idiographic 1 (HAPPINESS) | 3.57 | 0.53 | 2.93 | 1.39 | 3.86 | 0.69 |
| Idiographic 2 (ENERGY LEVEL) | 3.00 | 0.58 | 2.67 | 1.40 | 3.86 | 0.69 |
| Idiographic 3 (DIRECTION) | 3.00 | 0.82 | 3.00 | 1.07 | 3.86 | 0.69 |
| Idiographic 4 (SADNESS) | 2.57 | 1.13 | 2.73 | 1.28 | 2 | 1.53 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Idiographic 5 (GUILT) | 2.29 | 0.76 | 2.67 | 1.45 | 1.71 | 0.76 |
| **Session-Based Measures** | | | | | | |
| Total WAI-SR | 6.42 | - | 6.33 | 0.41 | 6.67 | - |
| SEQ - Smoothness | 6.00 | - | 6.70 | 0.38 | 5.80 | - |
| SEQ - Depth | 7.00 | - | 6.70 | 0.38 | 5.60 | - |

Table 9 – *Grace's Daily DV SMA Results*

| | **Analysis 1** | | | **Analysis 2** | | **Analysis 3** | |
|---|---|---|---|---|---|---|---|
| | Baseline vs Intervention + Post-Intervention | | | Intervention vs Post-Intervention | | Custom Phase Vector | |
| **Dependent Variable** | **r** | ***p*-Value** | ***pAR*** | **r** | ***p*-Value** | **r** | ***p*-Value** |
| Distress (SUDS) | -.238 | .428 | .47 | - | - | - | - |
| Hope (SHS) | .124 | .75 | .67 | - | - | - | - |
| Idiographic 1 (HAPPINESS) | -.132 | .59 | .24 | - | - | - | - |
| Idiographic 2 (ENERGY LEVEL) | .017 | .95 | .47 | - | - | - | - |
| Idiographic 3 (DIRECTION) | .121 | .61 | .19 | - | - | - | - |
| Idiographic 4 (SADNESS) | -.024 | .93 | .21 | - | - | - | - |
| Idiographic 5 (GUILT) | .028 | .89 | .18 | - | - | - | - |

Table 10 – *Grace's Session-Based DV SMA Results*

| | **Analysis 1** | | |
|---|---|---|---|
| | Baseline vs Intervention + Post-Intervention Custom Phase Vector (011111) | | |
| **Dependent Variable** | **R** | ***p*-Value** | ***pAR*** |
| WAI – Total | -.031 | .96 | .52 |
| SEQ - Smoothness | .41 | .319 | -.62 |
| SEQ - Depth | -.37 | .448 | -.28 |

*Note:* Level of significance $p \leq .01$

**Hypothesis 4**

As predicted, Grace was highly satisfied with the assessment, as measured by the AQ (Table 11). Her total satisfaction score fell significantly above average in comparison to the normative sample ($z$=1.06, T=60.6). More specifically, Grace reported that the assessment brought her a

high level of new self-awareness/understanding ($z$=0.67, T=56.7), significant positive accurate mirroring ($z$=1, T=60.0), and that she experienced a notably positive relationship with the examiner when compared with the normative sample ($z$=1.22, T = 62.2). Grace reported lower than average negative feelings about the assessment ($z$=-0.14, T = 48.6).

Table 11 – *Grace's Satisfaction Results*

| | Assessment Questionnaire | | | | |
|---|---|---|---|---|---|
| | New Self-Awareness/ Understanding | Positive Accurate Mirroring | Positive Relationship with the Examiner | Negative Feelings about the Assessment | Total Satisfaction |
| Mean | 4.54 | 5.00 | 5.00 | 1.45 | 4.77 |
| T-Score | 56.7 | 60.0 | 62.2 | 48.6 | 60.6 |
| Z-Score | 0.67 | 1.00 | 1.22 | -0.14 | 1.06 |

## Participant 3: Rob

### Brief History

Rob was a 45-year-old divorced North Indian male. He was initially diagnosed with Bipolar I Disorder seven years ago; however, Rob believed that he had undiagnosed bipolar disorder since childhood. This was his fourth psychiatric admission. Rob was stabilized in an acute psychiatric unit for one month prior to being referred to psychology and agreeing to participate in the current clinical research. During this period of stabilization, Rob's mediations were restarted, and he was encouraged to attend hospital programming. Additional history on Rob can be found in Appendix F.

### Summary of Rob's Study Progression

Rob's schedule for the study is depicted in Figure 22 and included 6 sessions (4 intervention sessions) over 28 total days (baseline N = 7, intervention N = 14, post-intervention N = 7). Rob and his clinician adhered fully to the study protocol, and a detailed description of his

participation in the C/TA intervention is provided in Appendix F. Direct participant quotations were acquired from student clinician process notes.

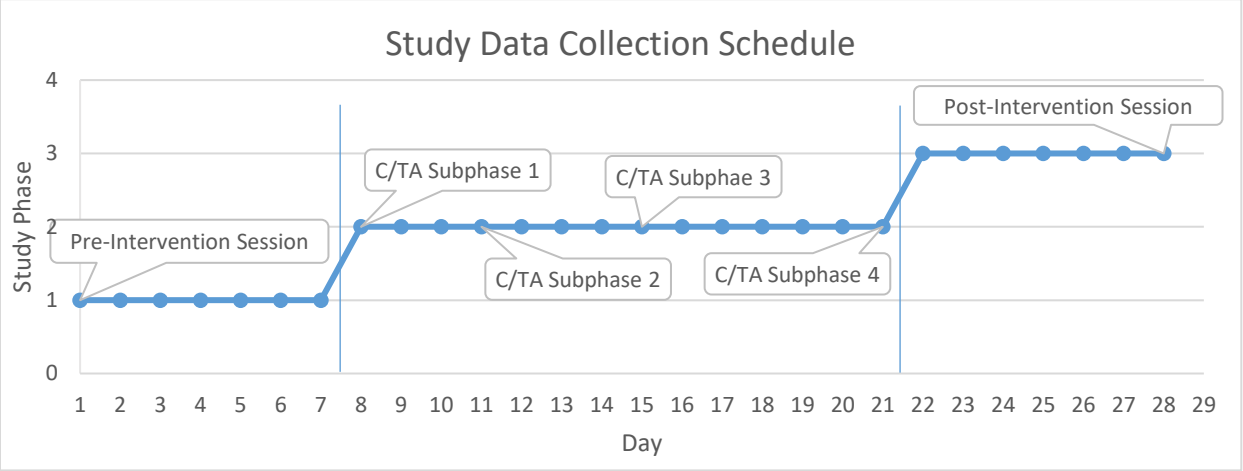


*Figure 22.* Rob's Study Data Collection Schedule

## Results

### Hypothesis 1

**Distress.** Visual inspection of *distress* (see Figure 23) illustrated variability in both the pre-intervention and intervention phases, with less variability noted in the post-intervention session (Standard deviation: Pre-Intervention *SD*=10.95; Intervention *SD*=14.85, Post-Intervention *SD*=6.90). There is a notable overlap of the data between the baseline and intervention phases. When comparing means across the data stream, an increase in distress is notable between the pre-intervention and intervention phase. When the means of the intervention and post-intervention phases are compared, there is a decrease observed (Pre-Intervention *M*=28; Intervention *M*=42.50; Post-Intervention *M*=31.43) (see Table 12). There is an increase in level of the variable between the baseline and intervention phase. There does not seem to be any evidence of latency of change. There does not appear to be any trend in the baseline and post-intervention phases; however, the initial spike of distress that accelerated between days 7-10 was

observed to decelerate throughout the remaining intervention phase. It is unclear what influenced this spike in distress.

Unlike what was hypothesized, SMA analysis of daily *distress* did not show a statistically significant effect when comparing the pre-intervention phase with the intervention phase and the post-intervention phase combined (r=.321, *p*=.369) (see Table 13).

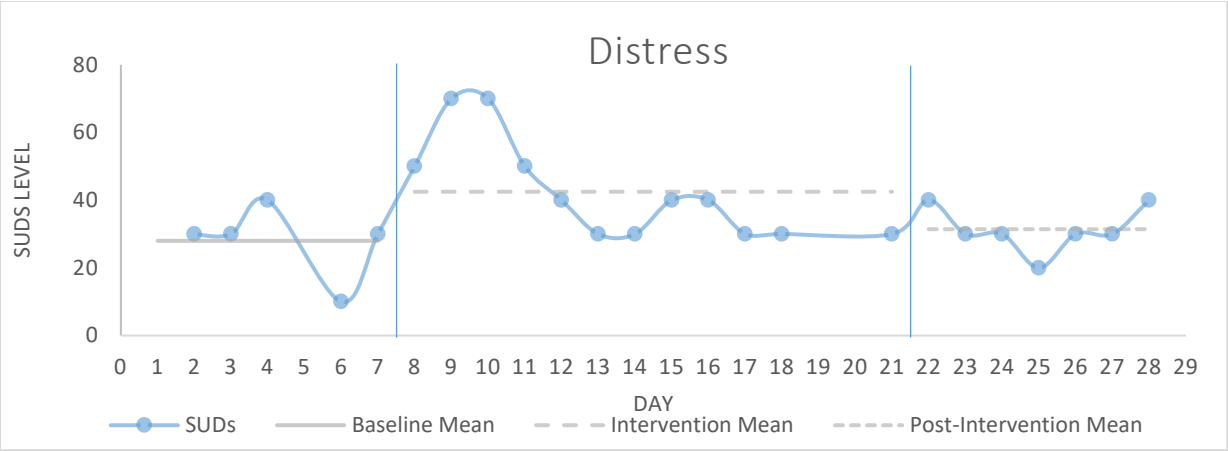


*Figure 23.* Rob Distress

**Hope.** Visual inspection of Rob's daily *hope* (see Figure 24) suggested variability in both the pre-intervention and intervention phases, followed by less variability in the post-intervention phase (Standard deviation: Pre-Intervention *SD*=3.51; Intervention *SD*=3.70, Post-Intervention *SD*=0.53). In general, there is an overlap between the data across all phases of the study. When comparing means across the data stream, there appears to be a small decrease when the baseline and intervention phases were compared, which was then followed by an increase in the post-intervention phase (Pre-Intervention *M*=41.10; Intervention *M*=37.25; Post-Intervention *M*=40.43) (see Table 12). With regards to changes in level, there was a decrease in level between the baseline and intervention phases and then an increase in level between the intervention and post-intervention phases. Like with distress, there was a spike (in the negative direction) of hope around day 9. It is possible that the initiation of the C/TA contributed to an initial decrease in

Rob's reported levels of hope; however, it is not definitively clear what may have contributed. There does not appear to be any latency of change present. In examining for trend/slope, there appears to be no significant trend in the baseline or post-intervention phases. However, there appears to be a slight upward trend in the intervention phase data stream. Overall, Rob's hope scores fell within an average range (i.e., SHS = 30-44; Snyder et al. 1996), except for a score of 46 on day 3 and a score of 29 on day 9.

Contrary to what was hypothesized, SMA analysis of Rob's daily *hope* did not result in a statistically significant effect when comparing the pre-intervention phase with the intervention phase and the post-intervention phase combined (r=-.322, *p*=.221) (see Table 13).

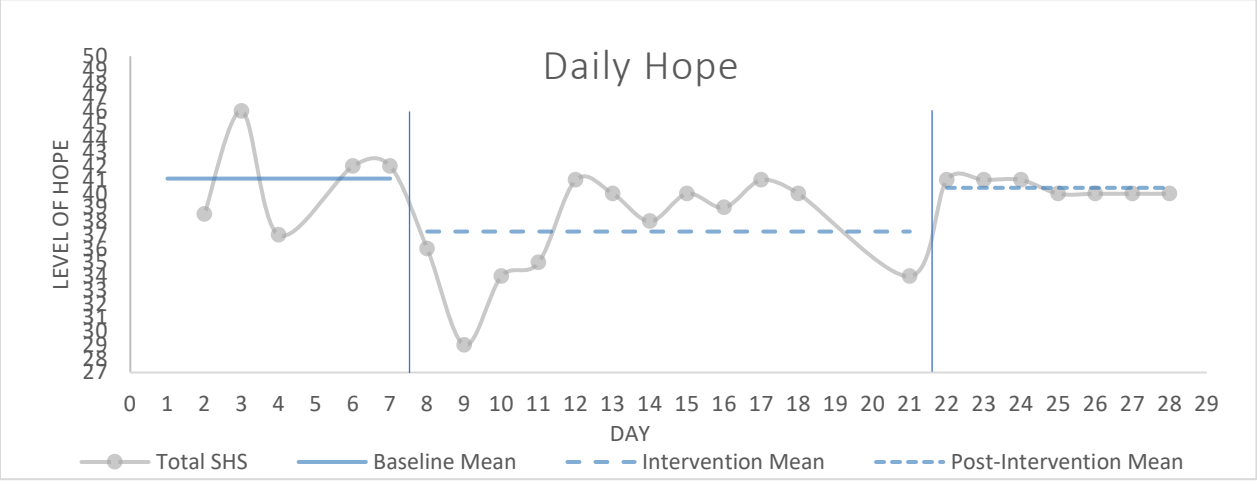


*Figure 24*. Rob Hope

**Working Alliance.** Visual inspection of the *working alliance* data stream (see Figure 25) suggests little magnitude changes (i.e., mean and level) or rate of change (i.e., trend and latency) throughout the entire data stream with high (i.e., ≥5) total scores reported in all phases of the study (Pre-Intervention WAI-SR total score=6.58; Intervention WAI-SR total score *M*=6.33, *SD*=0.31; Post-Intervention WAI-SR total score=6.83) (see Table 12).

In contrast to hypothesis 1, SMA analysis of Rob's *working alliance* variable did not find a statistically significant increase in working alliance when the pre-intervention phase was

compared to the intervention phase and the post-intervention phase combined (r=-.178, *p*=.73) (see Table 14).

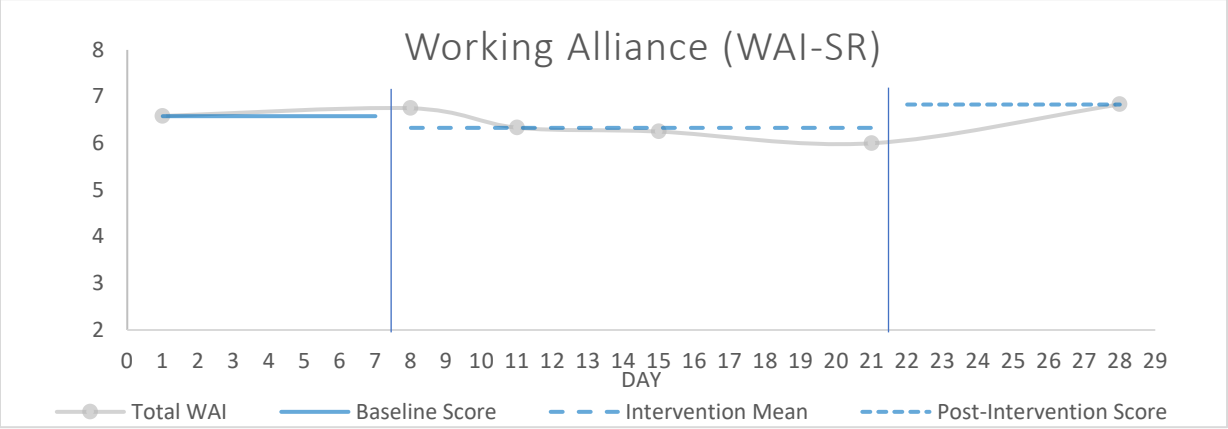


*Figure 25.* Rob Working Alliance (WAI-SR)

**Session Impact.** Visual inspection of *session impact* (see Figure 26) found that all sessions were highly rated (i.e., ≥4) and that there were minimal changes observed in magnitude or rate throughout the data stream. Overall, Rob reported that the sessions were relaxed/ comfortable (Smoothness: Pre-Intervention=7; Intervention *M*=6.65, *SD*=0.70; Post-intervention=7) and powerful/valuable (Depth: Pre-Intervention=7; Intervention *M*=6.9, *SD*=0.20; Post-intervention=7). The measure of both session smoothness and depth suggested a slight decrease during the test administration session (i.e., C/TA subphase 2) when Rob was feeling ill.

SMA analysis of Rob's *session impact* scores did not find a statistically significant effect when comparing the pre-intervention phase with the intervention phase and the post-intervention phase combined (Smoothness: r=-.20, *p*=.695; Depth: r= -.20, *p*=.666) (see Table 14).

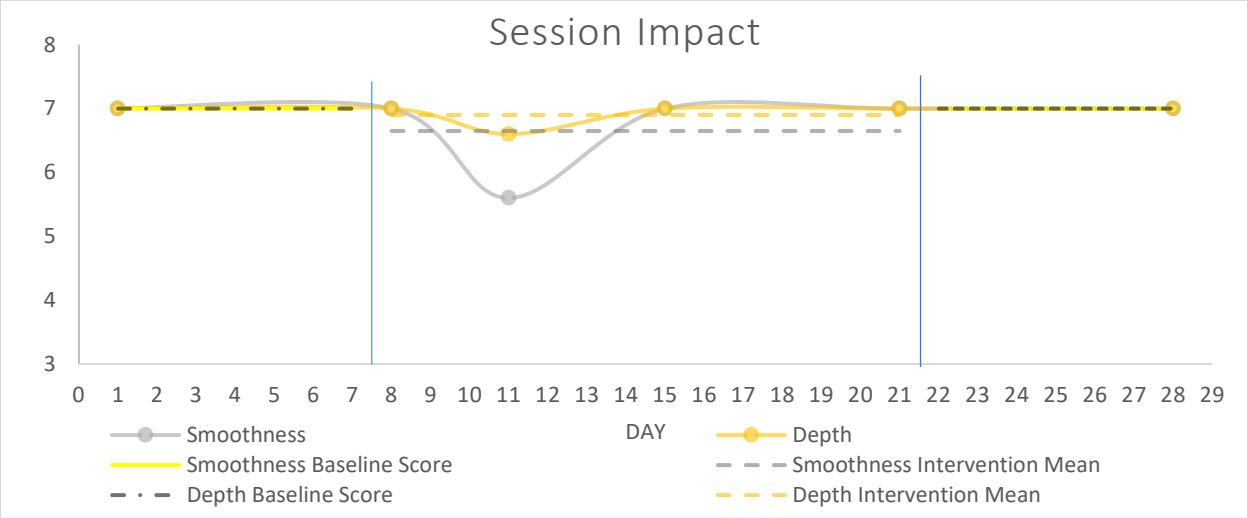


*Figure 26.* Rob Session Impact (SEQ)

**Analysis – Idiographic indices:**

Rob's idiographic indices included daily monitoring of his levels of agitation, anxiety, sadness, guilt, energy levels, and anger. Rob also wanted to include a daily measure of his "relationship with my family" that was of central importance for him in light of a complex and highly conflictual dynamic at home.

**Agitation.** Visual inspection of Rob's idiographic index *agitation* (see Figure 27) found there to be a relatively unstable baseline period that included notable overlapping data in comparison to the intervention and post-intervention phases. The data stream was observed to stabilize as the study progressed, with the post-intervention phase appearing to have no variability. In examining the means of each phase, there appears to be a small initial increase in mean in the intervention phase, followed by a decrease in the post-intervention phase (Pre-Intervention $M$=2, $SD$=0.89; Intervention $M$=2.42, $SD$=0.79; Post-Intervention $M$=2, $SD$=0) (see Table 12). Like with Rob's previous variables, there appeared to be a spike in this variable around day 9. With regards to changes in level, there does not appear to be a notable change

between the study phases. It is difficult to get a clear sense of any trend/slope throughout each phase of the data stream. There does not appear to be any latency in change present.

SMA analysis of the *agitation* idiographic index did not detect a statistically significant change in the DV level when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=.162, *p*=.474) (see Table 13).

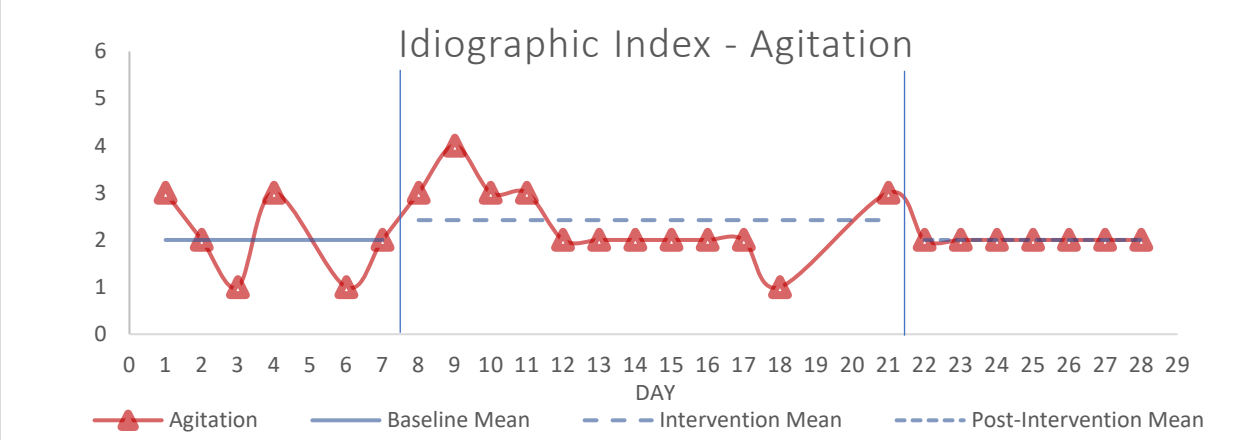


*Figure 27.* Rob Agitation

**Energy Level.** Visual inspection of Rob's idiographic index *energy level* (see Figure 28) observed the presence of an unstable baseline. Again, there is notable data overlap across the study phases. Similar to the previous DVs, there appeared to be a negative spike in the data stream around day 9. Additionally, the data was noted to stabilize as the study progressed, as there was no variation observed in the post-intervention session. There was an initial decrease in the study means between the baseline and intervention phases; however, the post-intervention phase indicated an increase (Pre-Intervention *M*=3.83, *SD*=0.75; Intervention *M*=3.17, *SD*=0.83; Post-Intervention *M*=4, *SD*=0) (see Table 12). There did not appear to be significant changes in levels between the study phases. It appears that there was an accelerating trend in the baseline period, which is followed by an initial deceleration and then flattening of the data in the

intervention phase. Again, it is unclear what contributed to these findings. There does not appear to be any latency of change in this data stream.

SMA analysis of the *energy level* idiographic index did not find a statistically significant change when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=-.204, *p*=.478) (see Table 13).

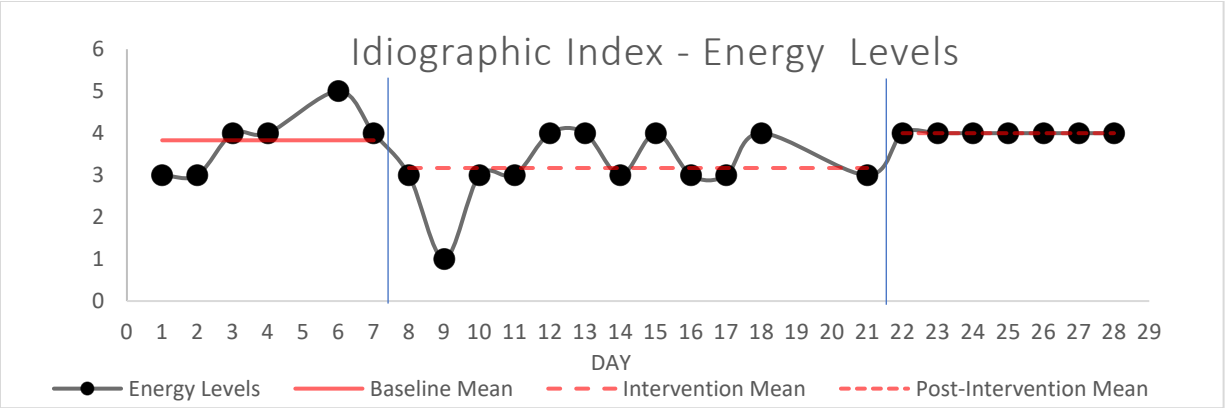


*Figure 28.* Rob Energy Level

**Anxiety.** Visual inspection of idiographic index *anxiety* (see Figure 29) found variability in the baseline period and overlap of data points between all phases of the data stream. Akin to the previous variables inspected and described, the data stream for *anxiety* was found to stabilize over time and have no variation in the post-intervention phase. With regards to changes in means, there was little detected across each phase (Pre-Intervention *M*=2, *SD*=0.89; Intervention *M*=2.33, *SD*=0.49; Post-Intervention *M*=2, *SD*=0) (see Table 12). There did not appear to be any notable changes in levels between the phases, and there was no notable trend/slope observed within the phases or throughout the entire data stream.

SMA analysis of the *anxiety* idiographic index did not detect a statistically significant change in the variable level when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=.166, *p*=.377) (see Table 13).

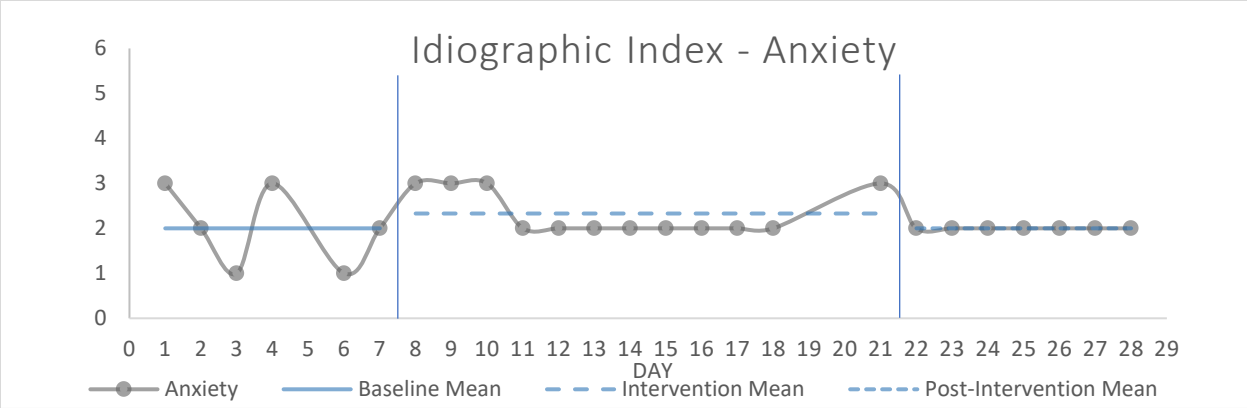


*Figure 29.* Rob Anxiety

**Sadness.** The idiographic index *sadness* (see Figure 30) was also visually inspected. The baseline period had notable variability, which stabilized throughout the data stream in a similar pattern to the *agitation*, *energy level*, and *anxiety* variables. As with these other variables there appeared to be a negative spike in this variable around day 8, which could be linked to the introduction of the C/TA intervention or an external factor impacting Rob's emotions on that day. In comparing the means of the *sadness* variable, there were only slight differences observed (Pre-Intervention $M$=2.33, $SD$=0.82; Intervention $M$=2.58, $SD$=0.90; Post-Intervention $M$=2, $SD$=0) (see Table 12). There was a notable increase in level between the baseline and intervention phase. There was a slight downward trend/slope observable in the baseline phase, which was followed by a decelerating slope in the intervention phase after the spike in sadness on day 8. There does not appear to be any latent changes present in the data stream.

There was no statistically significant change found in the *sadness* idiographic index, as analyzed via SMA, when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=-.020, $p$=.93) (see Table 13).

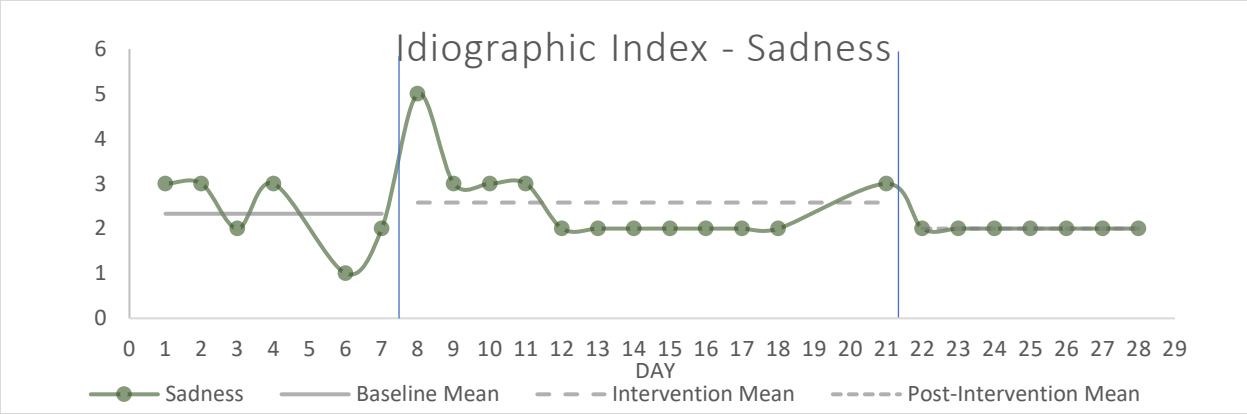


*Figure 30*. Rob Sadness

**Guilt.** Visual inspection of idiographic index *guilt* (see Figure 31) noted instability in the baseline period and overlapping of data across the phases. Like with the previous idiographic indices examined (i.e., *agitation*, *energy level*, *anxiety,* and *sadness*), the *guilt* variable was observed to stabilize over time. In examining the means of each phase, there appears to be a gradual increase in the variable with the largest difference present when the pre-intervention and intervention phases were compared (Pre-Intervention *M*=2, *SD*=0.89; Intervention *M*=2.67, *SD*=0.49; Post-Intervention *M*=2.86, *SD*=0.38s) (see Table 12). There appear to be no changes in level between study phases. Overall, there appears to be an upward trend/slope throughout the *guilt* data stream; however, statistical analysis is needed to verify any significance. There is no evidence of latency of change in this data stream.

SMA analysis of the *guilt* idiographic index determined there to be a statistically significant increase in the variable when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=.494, *p*=.012) (see Table 13).

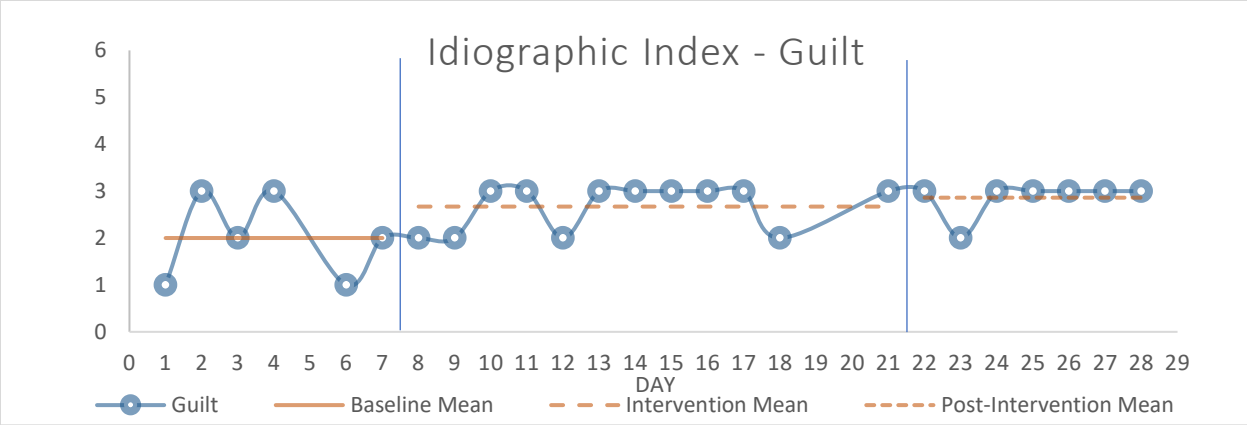


*Figure 31.* Rob Guilt

**Relationship with Family.** Visual inspection of Rob's idiographic index *relationship with family* (see Figure 32) found, as with the other idiographic variables, an unstable baseline period followed by more stability in the intervention and post-intervention phases. Again, there was an overlapping of data across the data streams. Compared to the pre-intervention phase, the means of the intervention and post-intervention phases were lower (Pre-Intervention $M$=4.17, $SD$=0.82; Intervention $M$=3.17, $SD$=0.39; Post-Intervention $M$=3.14, $SD$=0.38) (see Table 12). There was a slight decrease in level between the baseline and intervention phase. With regards to the rate of changes observed, there was a downward trend/slop observed throughout the entire data stream. There does not appear to be any delay in changes observed (i.e., latency). Statistical analysis is needed to determine any significance in the changes observed.

There was a statistically significant decrease in the level of the *relationship with family* idiographic index, as measured by SMA, analysis when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=-.681, $p$<.01) (see Table 13).

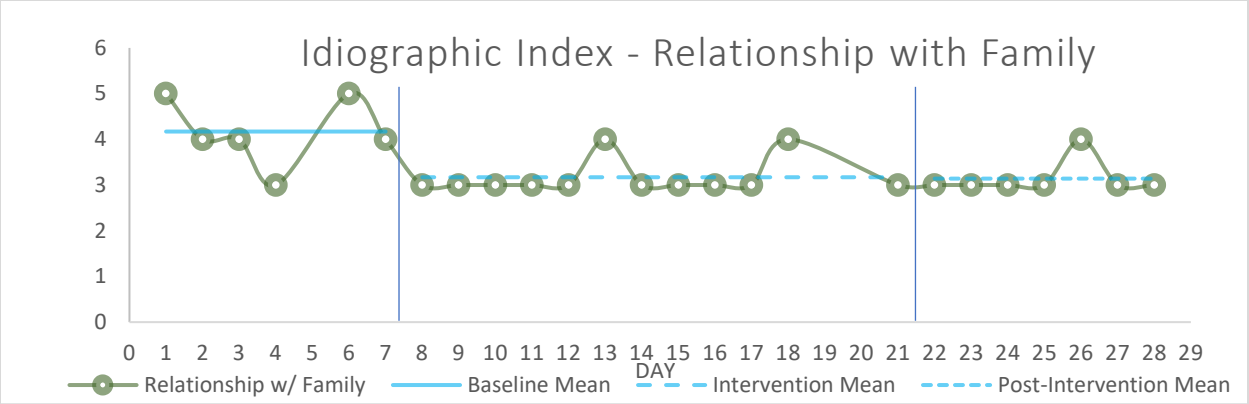


*Figure 32.* Rob Relationship with Family

**Anger.** Lastly, Visual inspection of the *anger* idiographic index (see Figure 33) also noted variability in the baseline period. The means of each phase suggest a gradual increase in the variable between the baseline and intervention phase and a minuscule decrease between the intervention and post-intervention phase (Pre-Intervention $M$=1.67, $SD$=0.75; Intervention $M$=2.42, $SD$=0.79; Post-Intervention $M$=2.29, $SD$=0.49) (see Table 12). Like with the previous variables, there is a spike in this variable around day 9. In examining trend throughout the data stream, there appears to be a gradual upward trend/slope. There does not appear to be any latency in changes observed,

Results of the SMA analysis of the *anger* idiographic index did not demonstrate a statistically significant change when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=.401, $p$=.109) (see Table 13).

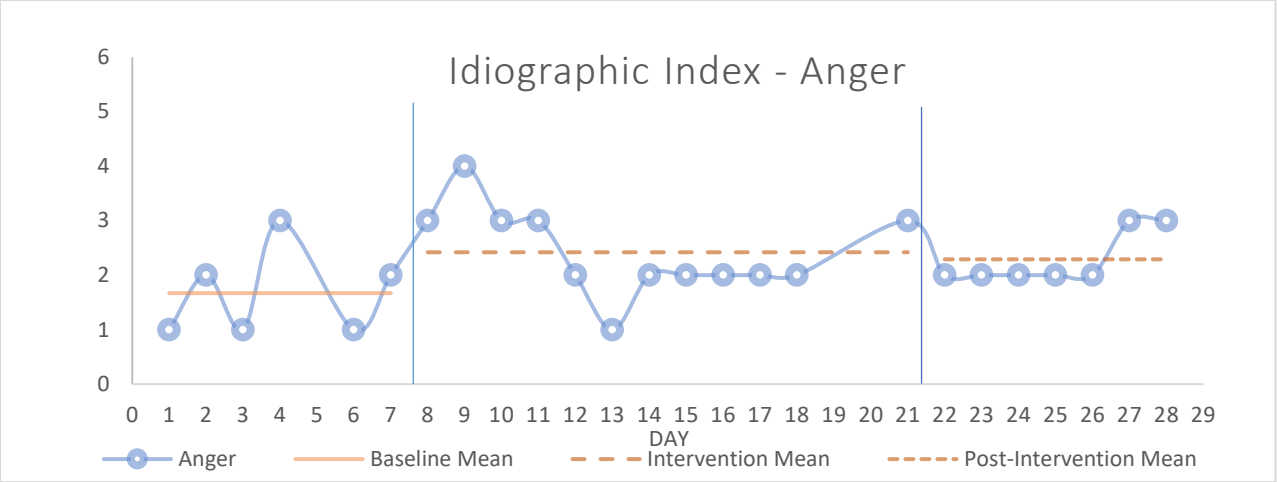


*Figure 33.* Rob Anger

**Hypothesis 2**

SMA analysis 1 did not support the presence of a statistically significant change in Rob's *distress, working alliance, session impact,* or *hope* results. However, there were unexpected findings in the SMA analyses of the idiographic indices *guilt* and *relationship with family.* Specifically, with the initiation of the C/TA, and compared to baseline, there was a statistically significant increase in *guilt* (r=.494, *p*=.012) and a statistically significant decrease in *relationship with family* (r=-.681, *p*<.01) (see Table 13).

**Hypothesis 3**

**Guilt.** In comparing the intervention phase and the post-intervention phase, there appears to be no statistically significant difference between the phases, according to SMA analysis (r=.209, *p*=.378). This finding suggests that the statistically significant increase in *guilt* observed in analysis 1 endured into the post-intervention phase (i.e., there was no change). When *guilt* was compared to an estimated vector of change where guilt was estimated to be high to at the beginning of the data stream, followed by a lowering over time (i.e., custom vector |15|15|15|15|15|15|14|13|12|11|10|9|8|7|6|5|4|1|0|0|0|0|0|0|0|), it was found to negatively correlate (see Table 13, analysis 3, r=-.494, *p*=.01). This suggests that Rob's *guilt* did not change

throughout the study in a manner that would be estimated (i.e., guilt increased over the study, instead of decreased).

**Relationship with Family.** SMA analysis comparing the intervention phase with the post-intervention phase of the *relationship with family* idiographic variable found no statistically significant change in level (r=-.031, *p*=0.878). This suggests that the statistically significant decrease in this variable observed in analysis 1 endured into the post-intervention phase. When this variable was compared to an estimated vector (i.e., custom vector |0|0|0|0|0|0|1|2|3|4|5|6|7|8|9|10|11|14|15|15|15|15|15|15|15|), it was not found to significantly correlate (see Table 13, analysis 3, r=-.441, *p*=.065). This finding suggests that, despite what might be estimated (i.e., an increase in his relationship with his family), Rob's relationship with his family appeared to decrease or decline.

Table 12 - *Descriptive Statistics: Rob's Self-Reported Process Variables*

| | Pre-Intervention | | Intervention | | Post-Intervention | |
|---|---|---|---|---|---|---|
| Daily Variable | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| Distress (SUDS) | 28.00 | 10.95 | 42.50 | 14.85 | 31.43 | 6.90 |
| Hope (SHS) | 41.10 | 3.51 | 37.25 | 3.70 | 40.43 | 0.53 |
| Idiographic 1 (AGITATION) | 2.00 | 0.89 | 2.42 | 0.79 | 2.00 | 0.00 |
| Idiographic 2 (NRG LEVEL) | 3.83 | 0.75 | 3.17 | 0.83 | 4 | 0.0 0 |
| Idiographic 3 (ANXIETY) | 2.00 | 0.89 | 2.33 | 0.49 | 2 | 0.00 |
| Idiographic 4 (SADNESS) | 2.33 | 0.82 | 2.58 | 0.90 | 2 | 0.00 |
| Idiographic 5 (GUILT) | 2.00 | 0.89 | 2.67 | 0.49 | 2.86 | 0.38 |
| Idiographic 6 (RELATIONSHIP W/ FAMILY) | 4.17 | 0.82 | 3.17 | 0.39 | 3.14 | 0.38 |
| Idiographic 7 (ANGER) | 1.67 | 0.75 | 2.42 | 0.79 | 2.29 | 0.49 |
| **Session-Based Measures** | | | | | | |
| Total WAI-SR | 6.58 | - | 6.33 | 0.31 | 6.83 | - |
| SEQ - Smooth | 7.00 | - | 6.65 | 0.70 | 7.00 | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| SEQ - Depth | 7.00 | - | 6.90 | 0.20 | 7.00 | - |

Table 13 – *Rob's Daily DV SMA Results*

| | **Analysis 1** | | | **Analysis 2** | | | **Analysis 3** | | |
|---|---|---|---|---|---|---|---|---|---|
| | Baseline vs Intervention + Post-Intervention | | | Intervention vs Post-Intervention | | | Custom Phase Vector | | |
| **Dependent Variable** | **r** | ***p*-Value** | ***pAR*** | **r** | ***p*-Value** | ***pAR*** | **r** | ***p*-Value** | ***pAR*** |
| Distress (SUDS) | .321 | .369 | .59 | - | - | - | - | - | - |
| Hope (SHS) | -.322 | .221 | .26 | - | - | - | - | - | - |
| Idiographic 1 (AGITATION) | .162 | .474 | .10 | - | - | - | - | - | - |
| Idiographic 2 (NRG LEVEL) | -.204 | .478 | .32 | - | - | - | - | - | - |
| Idiographic 3 (ANXIETY) | .166 | .377 | -.07 | - | - | - | - | - | - |
| Idiographic 4 (SADNESS) | -.020 | .93 | . 15 | - | - | - | - | - | - |
| Idiographic 5 (GUILT) | .494 | .012* | -.01 | .209 | .378 | -.03 | -.494 | .010* | -.01 |
| Idiographic 6 (RELATIONSHIP W/ FAMILY) | -.681 | <.001* | .17 | -.031 | .878 | -.20 | -.441 | .065 | .17 |
| Idiographic 7 (ANGER) | .401 | .109 | .22 | - | - | - | - | - | - |

*Note:* Custom Vector for Guilt: |15|15|15|15|15|15|14|13|12|11|10|9|8|7|6|5|4|1|0|0|0|0|0|0|0| & Custom Vector for Relationship w/ Family: |0|0|0|0|0|0|1|2|3|4|5|6|7|8|9|10|11|14|15|15|15|15|15|15|15|
*Level of significance $p \leq .05$

Table 14 – *Rob's Session-Based DV SMA Results*

| | **Analysis 1** | | |
|---|---|---|---|
| | Baseline vs Intervention + Post-Intervention Custom Phase Vector (011111) | | |
| **Dependent Variable** | **R** | ***p*-Value** | ***pAR*** |
| WAI - Total | -.178 | .730 | -.11 |
| SEQ - Smoothness | -.20 | .695 | -.28 |
| SEQ - Depth | -.20 | .666 | -.28 |

*Note:* Level of significance $p \leq .01$

### Hypothesis 4

As predicted, Rob was highly satisfied with the assessment, as measured by the AQ (see Table 15). His total satisfaction score fell slightly above average in comparison to the normative sample ($z$=0.61, T=56.10). In comparison to the normative sample, Rob indicated that the assessment brought him new self-awareness/understanding ($z$=0.46, T=54.62), positive accurate mirroring ($z$=0.39, T=53.89), and that he experienced a positive relationship with the examiner ($z$=0.20, T=52.04). Rob reported lower than average negative feelings about the assessment ($z$=-0.19, T=48.13).

Table 15 – *Rob's Satisfaction Results*

| | Assessment Questionnaire | | | | |
|---|---|---|---|---|---|
| | New Self-Awareness/ Understanding | Positive Accurate Mirroring | Positive Relationship with the Examiner | Negative Feelings about the Assessment | Total Satisfaction |
| Mean | 4.31 | 4.08 | 4.08 | 1.36 | 4.27 |
| T-Score | 54.62 | 53.89 | 52.04 | 48.13 | 56.10 |
| Z-Score | 0.46 | 0.39 | 0.20 | -0.19 | 0.61 |

## Participant 4: Elizabeth

### Brief History

Elizabeth was a 64-year-old white married woman. According to collateral information obtained from family members, Elizabeth had a long-standing history of Bipolar I Disorder and suicidality commencing in her 20's with over 15 inpatient psychiatric admissions throughout her life. Elizabeth was stabilized on medication on an intensive care psychiatric unit for approximately one week prior to being transferred to an acute psychiatric unit. Upon transfer, she was referred to psychology, and she agreed to participate in the current research. Additional history on Elizabeth can be found in Appendix G.

**Summary of Elizabeth's Study Progression**

Elizabeth's schedule for the study is depicted in figure 34 and included 6 sessions (4 intervention sessions) over 26 total days (baseline N = 7, intervention N = 12, post-intervention N = 7). Elizabeth and her clinician adhered fully to the study protocol, and a detailed description of her participation in the C/TA intervention is provided in Appendix G. Direct participant quotations were acquired from student clinician process notes.

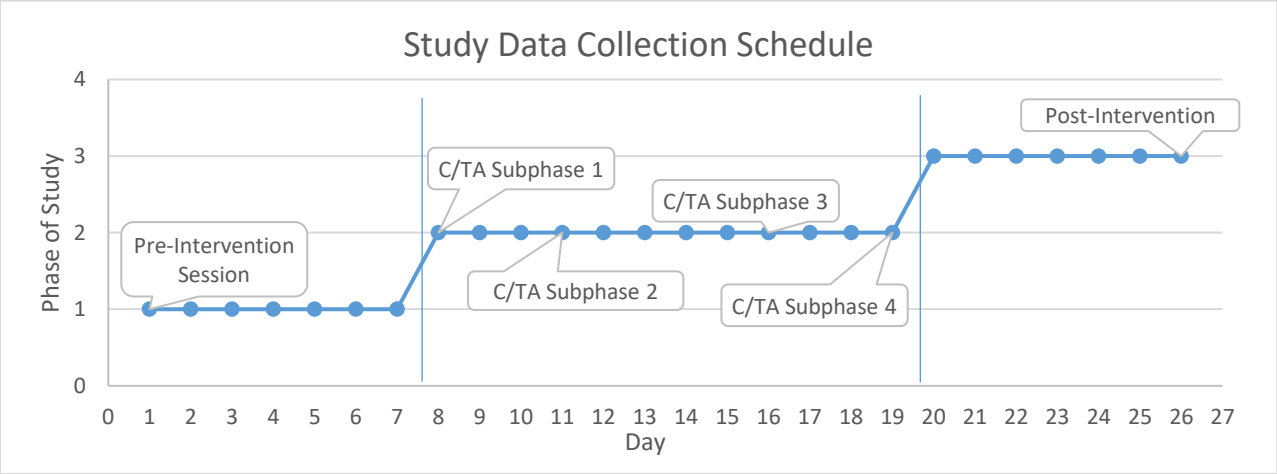


*Figure 34*. Elizabeth's Study Data Collection Schedule

## Results

### Hypothesis 1

**Distress.** Visual inspection of Elizabeth's *distress* DV (see Figure 35) highlights significant variation in the baseline period (i.e., lack of stable data during the first 7 days) (Standard deviation: Pre-Intervention *SD*=27.14) with a notable upward trend. There appears to be a spike in *distress* on day 7 of the study. Comparison of means across the data stream noted a small decline in distress when the baseline phase was compared to the intervention and post-intervention phases combined (Pre-Intervention *M*= 28.33, *SD*=27.14; Intervention *M*=20, *SD*=7.39; Post-Intervention *M*=18.57, *SD*=9.0) (see Table 16). There is a notable decrease in level between the baseline and intervention phases that is related to the accelerating slope in the

baseline phase. There does not appear to be latency in changes observed in the data stream. Due to the nature of the baseline period, statistical analysis is warranted.

Contrary study hypotheses, SMA analysis of daily distress (see Table 18) did not result in a statistically significant effect for distress when comparing the pre-intervention phase with the intervention phase plus post-intervention phase (r=-.264, *p*=.261).

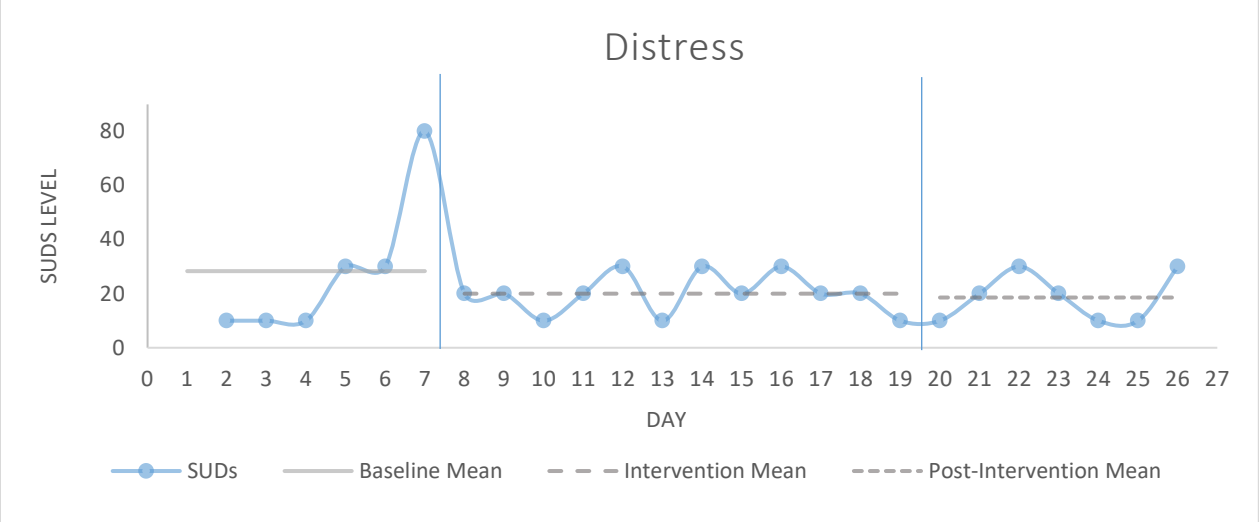


*Figure 35.* Elizabeth Distress

**Hope.** Visual inspection of Elizabeth's *hope* variable (see Figure 36) held significant variability during the pre-intervention phase, with a negative spike in hope levels on day 7 of the study as was seen previously with her distress data. There was an initial downward trend in the baseline phase. Comparison of means across the study phases noted a slight increase in hope means between the baseline and intervention phases, followed by a slight decrease in the post-intervention phase (Pre-Intervention *M*= 37, *SD*=13.43; Intervention *M*=40.08, *SD*=4.19; Post-Intervention *M*=39.14, *SD*=5.40) (see Table 16). There was a notable increase in the level of this variable between the baseline and intervention phases. Aside from the trend observed in the baseline phase, there appears to be no notable trend/slope across the intervention or post-intervention phases. There is no evidence of latency of change in the data stream. Overall,

Elizabeth's hope scores fell within the average to high range (i.e., SHS = 30-44; SHS>44); however, her scores on day 7 and 22 fell within the low range (i.e., SHS<30; Snyder et al., 1996).

SMA analysis of Elizabeth's daily *hope* did not demonstrate a statistically significant effect, unlike what was hypothesized. Comparisons of the pre-intervention phase with the intervention phase and the post-intervention phase combined were found to be non-significant (r=.162, *p*=.494) (see Table 17).

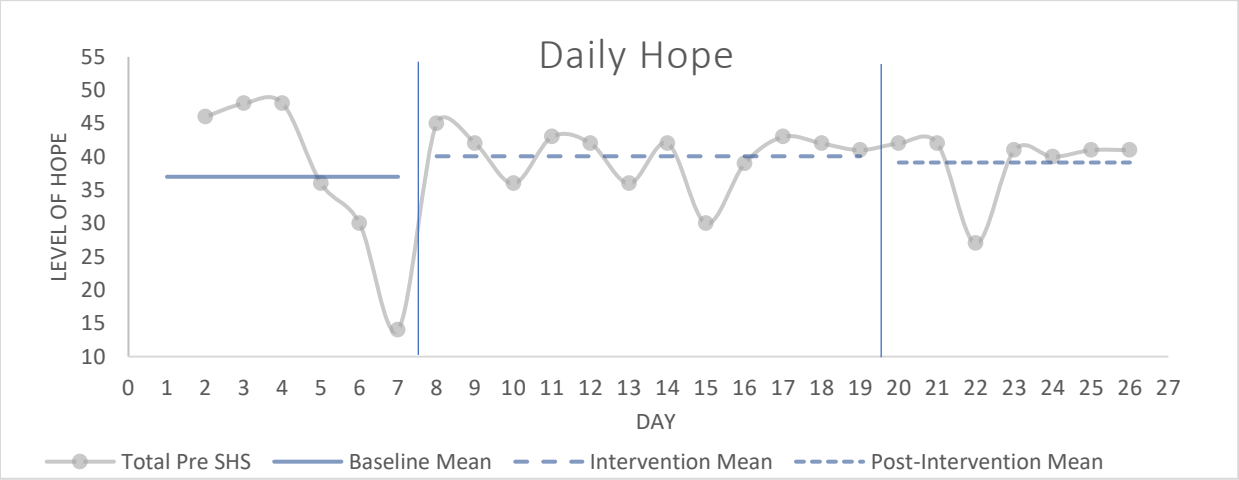


*Figure 36.* Elizabeth Hope

**Working Alliance.** Visual inspection of Elizabeth's *working alliance* data stream (see Figure 37) noted the presence of lower WAI-SR scores initially in the pre-intervention phase, followed by increasingly higher (i.e., ≥5) total scores within the intervention and post-intervention phases of the study (Pre-Intervention WAI-SR total score=4.33; Intervention WAI-SR total score *M*=6.69, *SD*=0.43; Post-Intervention WAI-SR total score=7) (see Table 16). There appears to be a notable increase in level between the initial pre-intervention session to the commencement of the C/TA assessment intervention/discussion session. Visual inspection noted a positive or accelerating trend/slope in working alliance scores from the baseline session to the third C/TA session. Despite this observation, statistical analysis is warranted to verify that this

increase occurred beyond chance due to the lack of data points in the baseline and post-intervention sessions.

Consistent with what was hypothesized, there was a statistically significant (i.e., $p \leq .01$) increase noted in the *working alliance* DV when the pre-intervention phase was compared to the intervention phase and the post-intervention phase combined (r=.943, $p$=.005) (see Table 18).

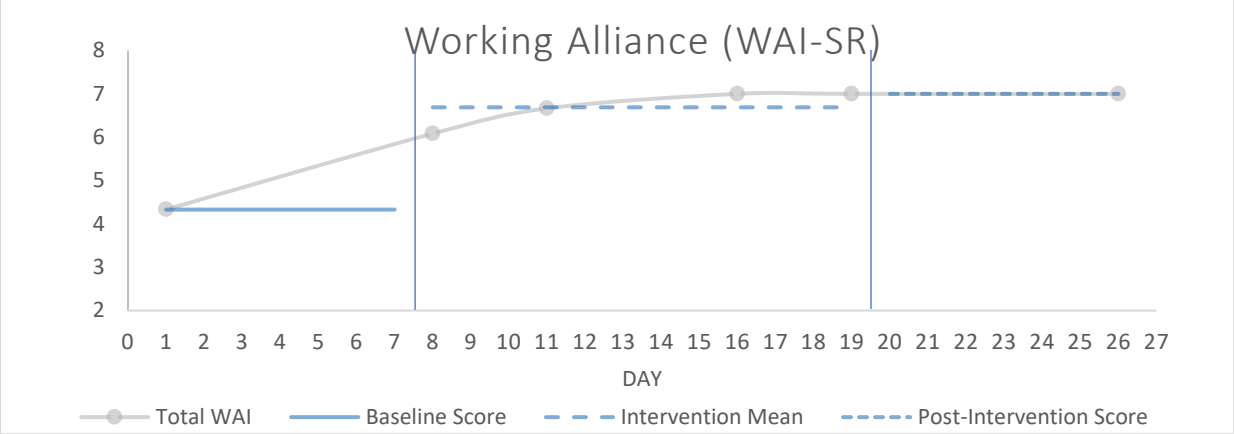


*Figure 37.* Elizabeth Working Alliance (WAI-SR)

**Session Impact.** Elizabeth's *session impact* scores (see Figure 38) were noted to vary somewhat throughout the data stream, as observed through visual inspection. Despite this, all sessions throughout the data stream were highly rated (i.e., ≥4) on both measures of smoothness and depth (see Table 16). Elizabeth reported smoothness scores of 6.5 for the pre-intervention phase, a mean of 5.9 for the intervention phase ($M$=5.90, $SD$=1.31), and 7 for the post-intervention phase. Scores of session depth included 7 for the pre-intervention phase, a mean of 6.05 for the intervention phase ($M$=6.05, $SD$=1.12), and 7 for the post-intervention phase. Measures of both session smoothness and depth suggested a decrease following the initial C/TA session and the third C/TA session (i.e., assessment intervention session). Overall, there does not appear to be a notable trend in the study phases except for a gradual increase in the intervention phase.

SMA analysis of Elizabeth's *session impact* scores did not find a statistically significant effect, unlike what was hypothesized. These results were determined through SMA analysis comparted the pre-intervention phase with the intervention phase and the post-intervention phase combined (Smoothness: -.139, *p*=.76; Depth: r=-.310, *p*=.46) (see Table 18).

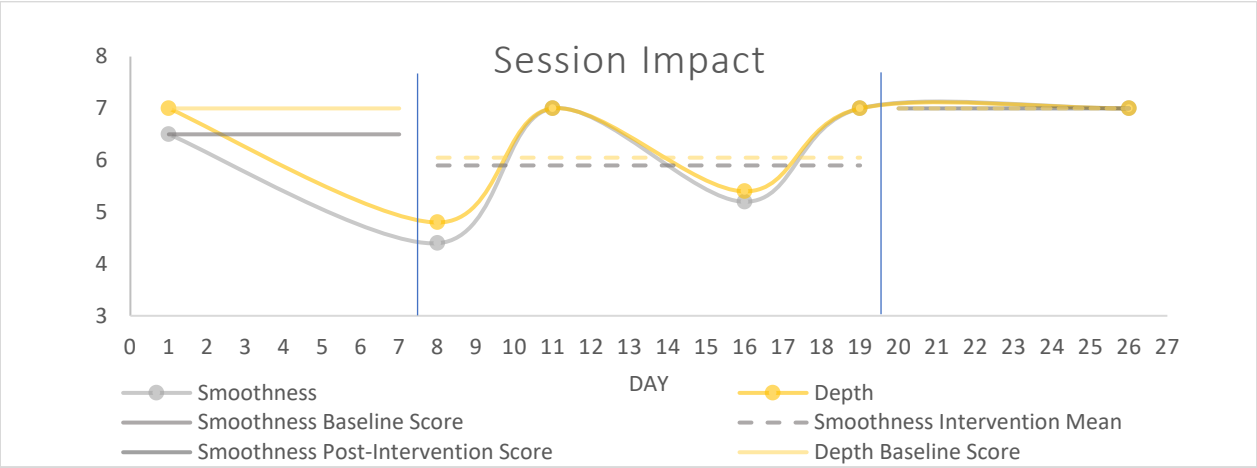


*Figure 38.* Elizabeth Session Impact (SEQ)

**Idiographic indices:**

Elizabeth's selected serenity, anger, frustration, joy, and silly as her daily idiographic indices. She reported that anger and frustration were distinct emotions, with anger being significantly more intense in comparison to frustration. Additionally, her inclusion of "silly" was intended as a positive factor that, for her, was an indicator of her sense of humour and ability to take herself lightly.

**Serenity.** Visual inspection of Elizabeth's idiographic index *serenity* (see Figure 39) suggested the presence of an unstable baseline period, with a negative spike on day 7, like with other variables measured. Additionally, there was a notable overlap of data across the phases. Examination of the means suggests a small increase in the *serenity* variable across phases, with the larges difference between the baseline phase and intervention/post-intervention phases (Pre-Intervention *M*=2.86, *SD*=1.07; Intervention *M*=3.67, *SD*=0.65; Post-Intervention *M*=3.71,

*SD*=0.49) (see Table 16). Again, like previous variables of Elizabeth's, there was a notable change in level of serenity between the baseline phase and the intervention phase. Aside from a relatively downward trend/slope in the baseline data stream, there appears to be relatively no trend in the intervention and post-intervention phases. There does not appear to be any evidence of latency of change in this data stream. Due to the unstable baseline, statistical analysis is required to verify any change in the DV that is beyond chance.

SMA analysis of Elizabeth's *serenity* idiographic index suggested that there was a statistically significant increase in the DV when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=.46, *p*=.011) (see Table 17).

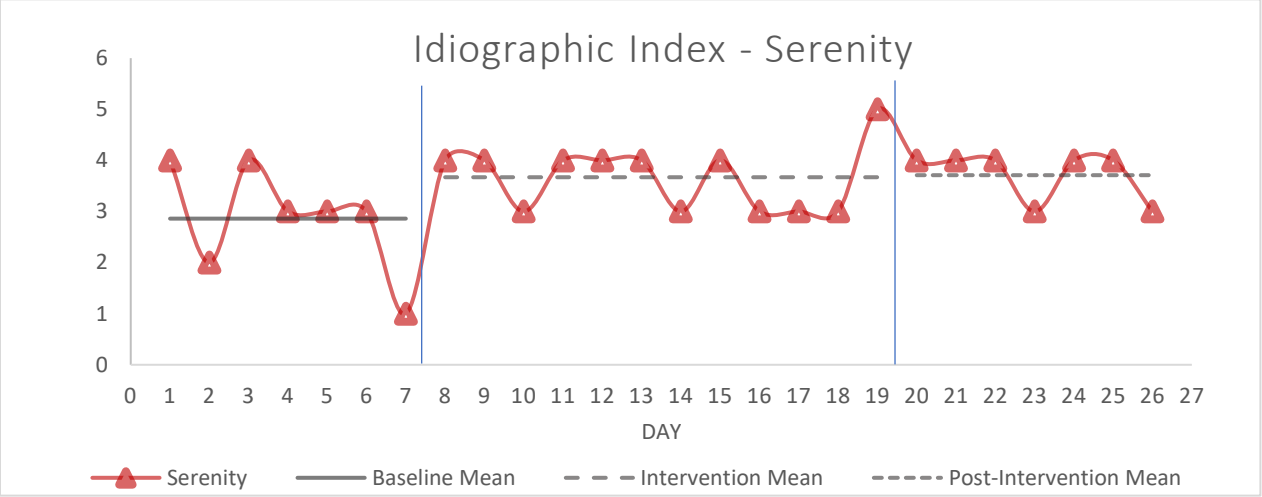


*Figure 39.* Elizabeth Serenity

**Anger.** Using Visual inspection to examine Elizabeth's idiographic index *anger* (see Figure 40), there appears to be variability in the data stream across the baseline and intervention phases that stabilize significantly in the post-intervention phase. There was a small increase in the reported levels of anger when the baseline mean was compared with the intervention mean. However, comparison of the intervention mean with the post-intervention mean revealed a decrease in the mean approaching the average that was found in the baseline phase (Pre-

Intervention *M*=1.86, *SD*=0.90; Intervention *M*=2.42, *SD*=1.08; Post-Intervention *M*=2, *SD*=0) (see Table 16). There does not appear to be a notable change in levels between the phases. There appears to be a slight upward trend/slope within the baseline phase, followed by no trend in the post-intervention phase. It is unclear if the stabilizing of the data in post-intervention mean is an indicator of latency of change in that it could be related to stabilization of mood experienced by Elizabeth.

With regards to Elizabeth's *anger* idiographic index, SMA analysis did not find a statistically significant change in the DV when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=.209, *p*=.42) (see Table 17).

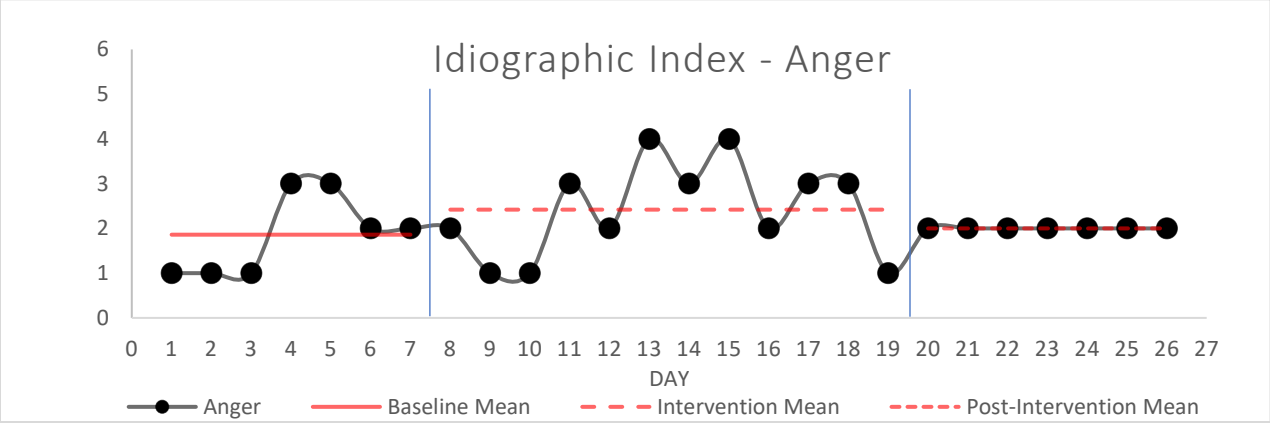


*Figure 40.* Elizabeth Anger

**Frustration.** Visual inspection of Elizabeth's *frustration* idiographic index (see Figure 41) noted significant variation across the baseline phase with an accelerating slope that peaked on day 7, like with Elizabeth's other variables. There does not appear to be significant differences present between the means calculated for each phase (Pre-Intervention *M*=2.57, *SD*=1.40; Intervention *M*=2.50, *SD*=1.09; Post-Intervention *M*=2.43, *SD*=0.79) (see Table 16). Following the spike on day 7, there was a level decrease between the baseline and intervention phase. Similarly, there was a notable increase in the frustration level between the end of the

intervention phase and the start of the post-intervention phase. There did not appear to be latency of change observed in the data stream.

SMA analysis of the *frustration* idiographic index found no presence of a statistically significant change when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=-.041, *p*=.86) (see Table 17).

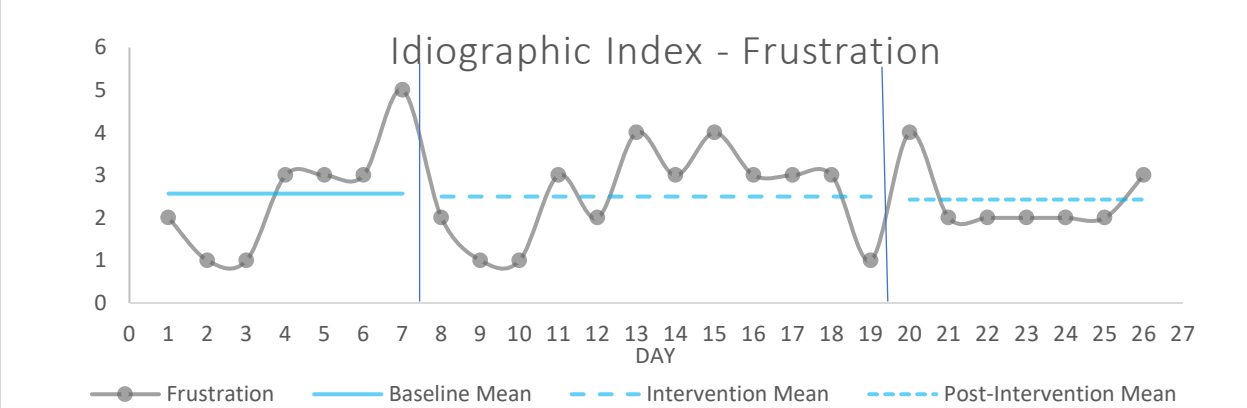


*Figure 41.* Elizabeth Frustration

**Joy.** Visual inspection of idiographic index *joy* (see Figure 42) found there to be a relatively stable baseline period with, again, a negative spike on day 7 of the data stream. There is a significant overlap of data across study phases. In reviewing the means calculated for each phase, there appears to be a small increase during the intervention phase with the same means found for both the baseline and post-intervention phases (Pre-Intervention *M*=2.86, *SD*=0.90; Intervention *M*=3.5, *SD*=0.90; Post-Intervention *M*=2.86, *SD=0.69*) (see Table 16). Like with Elizabeth's other data streams, there appears to be an increase in level between the baseline and intervention phases, followed by a smaller decrease in level between the intervention and post-intervention phases. Over the entire data stream, there does not appear to be a notable trend/slope present.

SMA analysis completed on Elizabeth's *joy* idiographic index did not detect the presence of a statistically significant change when the pre-intervention phase was compared to the intervention and post-intervention levels combined (r=.20, *p*=.37) (see Table 17).

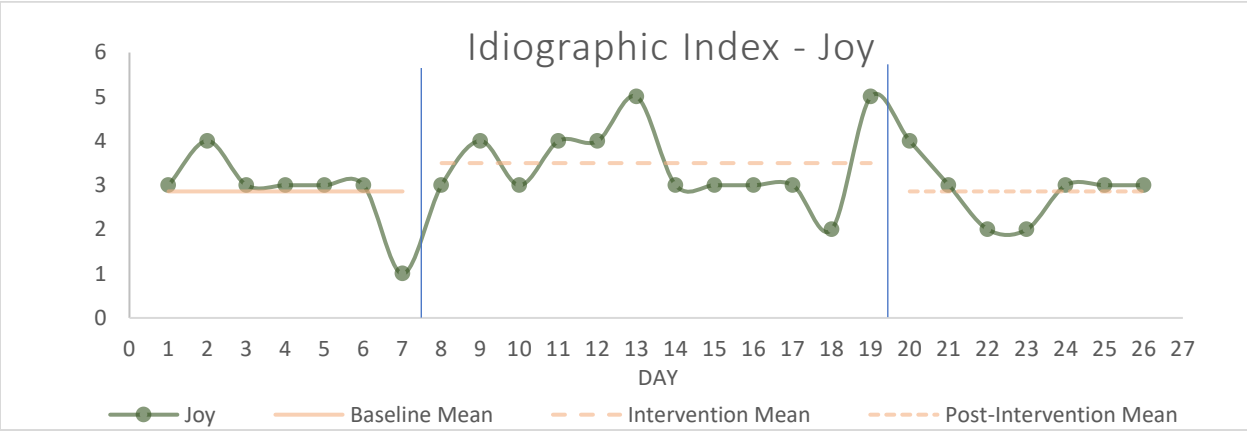


*Figure 42.* Elizabeth Joy

**Silly.** Lastly, visual inspection of Elizabeth's *silly* idiographic index (see Figure 43) noted a variability and overlapping of data across all phases of the study. Examination of the means across phases determined there to be an increase between the pre-intervention phase and intervention phase, followed by a slight decrease in the post-intervention phase (Pre-Intervention *M*=2, *SD*=0.82; Intervention *M*=3, *SD*=0.74; Post-Intervention *M*=2.29, *SD*=0.76) (see Table 16). Like with previous variables inspected, there appears to be an increase in level between the baseline and intervention phases, followed by a decrease in level between the intervention and post-intervention phases. There does not appear to be a notable slope/trend within phases or between them. It is difficult to ascertain the presence of any latency of change within this variable.

SMA analysis of Elizabeth's *silly* idiographic index determined there to be a statistically significant increase in this variable when comparing the pre-intervention phase (i.e., baseline) with the intervention and post-intervention levels combined (r=.38, *p*=.021) (see Table 17).

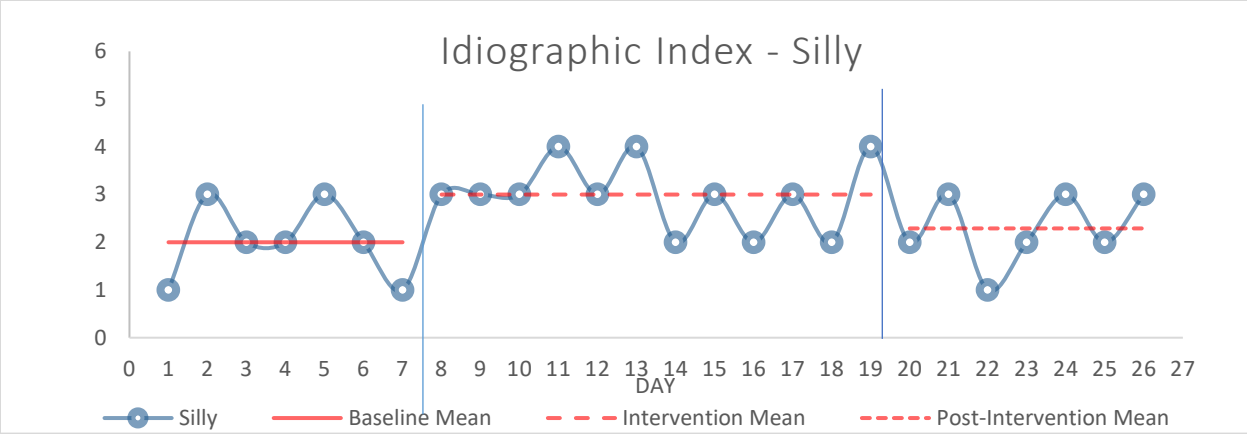


Figure 43. Elizabeth Silly

**Hypothesis 2**

Unlike what was hypothesised, SMA analysis 1 for Elizabeth did not demonstrate a statistically significant effect, with regards to *distress, session impact,* or *hope* results with the initiation of the C/TA. However, there was a statistically significant increase in *working alliance* with the initiation of the C/TA (r=.943, *p*=.005). SMA analyses of the idiographic indices *serenity* and *silly* also found a statistically significant change within the data streams with the initiation of the C/TA. Specifically, when compared to baseline, there was a statistically significant increase in the level of reported *serenity* (r=.46, *p*=.011) and *silly* (r=.38, *p*=.021) in the intervention and post-intervention periods combined (see Table 17, analysis 1).

**Hypothesis 3**

Despite there not being any changes present in the variables *distress, session impact, or hope* for Elizabeth, the statistically significant changes observed in the *working alliance* variable and the idiographic indices *serenity* and *silly* were analyzed for enduring change.

**Working Alliance.** SMA analysis comparing the intervention phase with the post-intervention phase of the *working alliance* variable determined that there was no statistically significant change (r=.35, *p*=.60). Like what was hypothesized, these findings indicate that the

initial increase in working alliance that was observed with the commencement of the C/TA was maintained into the post-intervention phase (see Analysis 2, Table 18). The *working alliance* data stream was also compared to an estimated phase vector that purported that the variable would increase over time (i.e., |0|1|2|3|4|5|). SMA analysis did not find a statistically significant correlation with the *working alliance* data stream (r=.83, *p*=.07).

**Serenity.** Comparison of the *serenity* intervention phase with the post-intervention phase found there to be no statistically significant change (r=.041, *p*=.858). This finding suggests that the changes observed with the initiation of the C/TA intervention were enduring across the data stream (i.e., the initial change observed continued and stabilized into the post-intervention phase). In analysis 3, serenity was compared to an estimated phase vector, which speculated that the trend of *serenity* would increase over time across the data stream (i.e., Serenity: |0|0|0|0|0|0|0|1|2|3|4|5|6|7|8|9|10|11|12|13|13|13|13|13|13|13|). SMA analysis of the custom vector found that there was not a statistically significant correlation with the *serenity* data stream with the custom vector (r=.336, *p*=.073).

**Silly.** SMA analysis comparing the *silly* variable intervention phase with the post-intervention phase found there to be a statistically significant decrease in the variable (r=-.439, *p*=.028). This finding suggests that the initial increase observed in this variable with the onset of the C/TA was not enduring into the post-intervention phase. As would be expected, given the results from analysis 2, comparison of the *silly* variable to an estimated custom vector that denoted an increase in silly across the data stream (i.e., Silly: |0|0|0|0|0|0|0|1|2|3|4|5|6|7|8|9|10|11|12|13|13|13|13|13|13|13|) was not statistically significant (r=.069, *p*=.687).

Table 16 –*Descriptive Statistics: Elizabeth's Self-Reported Process Variables*

| | Pre-Intervention | | Intervention | | Post-Intervention | |
|---|---|---|---|---|---|---|
| Daily Variable | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| Distress (SUDS) | 28.33 | 27.14 | 20.00 | 7.39 | 18.57 | 9.00 |
| Hope (SHS) | 37.00 | 13.43 | 40.08 | 4.19 | 39.14 | 5.40 |
| Idiographic 1 (SERENITY) | 2.86 | 1.07 | 3.67 | 0.65 | 3.71 | 0.49 |
| Idiographic 2 (ANGER) | 1.86 | 0.90 | 2.42 | 1.08 | 2.00 | 0.00 |
| Idiographic 3 (FRUSTRATION) | 2.57 | 1.40 | 2.50 | 1.09 | 2.43 | 0.79 |
| Idiographic 4 (JOY) | 2.86 | 0.90 | 3.50 | 0.90 | 2.86 | 0.69 |
| Idiographic 5 (SILLY) | 2.00 | 0.82 | 3.00 | 0.74 | 2.29 | 0.76 |
| **Session-Based Measures** | | | | | | |
| Total WAI-SR | 4.33 | - | 6.69 | 0.43 | 7.00 | - |
| SEQ - Smoothness | 6.50 | - | 5.90 | 1.31 | 7.00 | - |
| SEQ - Depth | 7.00 | - | 6.05 | 1.12 | 7.00 | - |

Table 17 – *Elizabeth's Daily SMA Results*

| | **Analysis 1** | | | **Analysis 2** | | | **Analysis 3** | | |
|---|---|---|---|---|---|---|---|---|---|
| | Baseline vs Intervention + Post-Intervention | | | Intervention vs Post-Intervention | | | Custom Phase Vector | | |
| **Dependent Variable** | **r** | ***p*-Value** | ***pAR*** | **r** | ***p*-Value** | ***pAR*** | **r** | ***p*-Value** | ***pAR*** |
| Distress (SUDS) | -.264 | .261 | .12 | - | - | - | - | - | - |
| Hope (SHS) | .162 | .494 | .13 | - | - | - | - | - | - |
| Idiographic 1 (SERENITY) | .46 | .011* | -.08 | .041 | .858 | -.11 | .336 | .073 | -.08 |
| Idiographic 2 (ANGER) | .209 | .42 | .27 | - | - | - | - | - | - |
| Idiographic 3 (FRUSTRATION) | -.041 | .86 | .13 | - | - | - | - | - | - |
| Idiographic 4 (JOY) | .20 | .37 | .18 | - | - | - | - | - | - |
| Idiographic 5 (SILLY) | .38 | .021* | -.15 | -.439 | .028* | -.21 | .069 | .687 | -.15 |

*Note*: Custom Vector for both Serenity and Silly: |0|0|0|0|0|0|0|1|2|3|4|5|6|7|8|9|10|11|12|13|13|13|13|13|13|13|

*Level of significance $p \leq .05$

Table 18 – *Elizabeth's Session-Based DV SMA Results*

| | **Analysis 1** | | | **Analysis 2** | | | **Analysis 3** | | |
|---|---|---|---|---|---|---|---|---|---|
| | Baseline vs Intervention + Post-Intervention Custom Phase Vector (011111) | | | Intervention vs Post-Intervention | | | Custom Phase Vector | | |
| **Dependent Variable** | **r** | ***p*-Value** | ***pAR*** | **r** | ***p*-Value** | ***pAR*** | **r** | ***p*-Value** | ***pAR*** |
| WAI – Total | .943 | .005* | .32 | .35 | .60 | .31 | .83 | .07 | .32 |
| SEQ - Smoothness | -.139 | .76 | -.56 | - | - | - | - | - | - |
| SEQ - Depth | -.310 | .46 | -.67 | - | - | - | - | - | - |

*Note:* Custom Phase Vector for Analysis 3: |0|1|2|3|4|5|
*Level of significance $p \leq .01$

**Hypothesis 4**

As predicted, Elizabeth was highly satisfied with the assessment, as measured by the AQ (see Table 19). Her total satisfaction score fell above average in comparison to the normative sample (z = 0.70, T = 57.0). In comparison to the normative sample, Elizabeth indicated that the assessment resulted in a high level of new self-awareness/understanding (z = 1.09, T = 60.9), positive accurate mirroring (z =0.33, T = 53.3), and that she experienced a strong positive relationship with the examiner (z = 1.22, T = 62.2). As with Mark, Elizabeth reported higher than average negative feelings about the assessment (z = 0.52, T = 55.2).

Table 19 – *Elizabeth's Satisfaction Results*

| **Assessment Questionnaire** | | | | | |
|---|---|---|---|---|---|
| | New Self-Awareness/ Understanding | Positive Accurate Mirroring | Positive Relationship with the Examiner | Negative Feelings about the Assessment | Total Satisfaction |
| Mean | 5.00 | 4.00 | 5.00 | 2.64 | 4.38 |
| T-Score | 60.9 | 53.3 | 62.2 | 55.2 | 57.0 |
| Z-Score | 1.09 | 0.33 | 1.22 | 0.52 | 0.70 |

# Chapter 5: Discussion

This study empirically investigated the effectiveness of Collaborative/Therapeutic Assessment (C/TA) with individuals diagnosed with bipolar disorder admitted to a psychiatric inpatient setting. Specifically, it examined a 4-session C/TA intervention (see Appendix A) with four adult inpatients with bipolar disorder. The C/TA occurred alongside typical treatments offered within the treatment setting and, as such, was considered an adjunct therapy. Based on past research, the study research questions and hypotheses are as followed:

## Research Questions

1. To what extent do individuals with bipolar disorder participating in a Collaborative/Therapeutic Assessment (C/TA) in a psychiatric inpatient setting experience change in subjective levels of distress, hope, working alliance, and session impact across study phases?
2. If change occurs, at what point in C/TA do participants begin to experience these changes?
3. What is the trajectory of change observed?
4. Are participants satisfied with C/TA?

## Hypotheses

1. Compared to baseline, participants will experience a decline in distress, increase in hope, increase in working alliance, and/or increase in session impact, as will be measured by Simulation Modeling Analysis (SMA; Borckardt, 2006).
2. Participants will start reporting lower distress, stronger working alliance, larger session impact, and/or greater hope following the initiation of the C/TA intervention (i.e., C/TA subphase 1).

3. When differences in the level of distress, working alliance, session impact, and/or hope are observed, such changes will continue through to the post-intervention session.
4. Overall, participants will report being satisfied with the C/TA, as will be measured on the Assessment Questionnaire (AQ; Bunner, 1993; Finn et al., 1995) and compared to the AQ normative sample.

A SCED time-series design was used. Data included self-report measures of *distress*, *hope*, *working alliance*, *session impact*, and participant-specific idiographic indices.

## Summary and Interpretation of Study Findings

This study's design enables the findings to be understood within the context of each unique participant, who served as their own control. Unlike in a group-based design, the SCED method allows for a contextualized interpretation and evaluation of the results. Despite all four participants holding a bipolar diagnosis, every individual varied significantly with regards to their demographics, personal history, and focus for the C/TA. All participants involved had significant issues with substance abuse within their lifespans, two of which were verified to be ongoing throughout the study. This discussion of study results is grouped by hypothesis. Lastly, a general discussion of the study implications, limitations, and future directions are provided.

### Hypothesis 1 & 2

The study findings, with regards to research questions 1 and 2, suggest that there was not a notable change in subjective levels of *distress, hope,* and *session impact* across study phases. However, when change was observed (i.e., *working alliance*) it appeared to start with the onset of the C/TA. Thus, hypothesis 1 and 2 were partially supported. Unlike what was hypothesized, when the participants' levels of *distress*, *hope*, and *session impact* were compared to baseline, there was not a statistically significant increase in *hope* or *session impact* nor was there a

decrease in *distress* observed. The results for hypothesis 1 also hold true for the results of hypothesis 2: participants did not start reporting lower *distress*, greater *hope,* or larger *session impact* following the initiation of the C/TA intervention. However, as predicted, SMA analysis 1 results found a statistically significant increase in *working alliance* for participant 4 (Elizabeth) when her *working alliance* scores were compared to baseline. Indeed, Elizabeth did report a stronger working alliance following the initiation of the C/TA intervention. The results of the variables *distress, hope, session impact, working alliance*, in addition to the inclusion of the exploratory analysis of the *idiographic indices*, are discussed below.

**Wellbeing-Related Variables (Distress and Hope)**

**Distress.** In contrast to this study's first hypothesis, none of the participants reported a statistically significant decrease in their reported levels of *distress* compared to baseline. This finding is inconsistent with previous evidence within the literature that found a C/TA contributed to a decrease in symptomatic distress (e.g., see Finn & Tonsager, 1992; Little, 2009; Newman & Greenway, 1997; Smith et al., 2015; Tarocchi et al., 2013, Wolf, 2010). Interestingly, in Wolf's (2010) study, only one of three of the participants reported a statistically significant reduction in symptomatic distress, which she attributed to, in part, to patient-related variables. For example, she states that patient tendencies toward emotional avoidance confronted through the assessment process likely contributed to increases in symptomatic distress during the intervention.

**Hope.** Unlike what was predicted, participants did not report a significant increase in their levels of *hope* when comparing the baseline phase with the intervention and post-intervention phases combined. This finding does not replicate previous evidence that suggests that C/TA processes contribute to increased levels of hope (Finn & Tonsager, 1992; Wolf, 2010). However, like with symptomatic distress, Wolf reported that only one of her participants

reported a significant increase in daily reported hopefulness, with the other two participants demonstrating a nonsignificant trend toward improvement into the follow-up phase of the study.

Overall, it is apparent that C/TA did not reduce *distress* nor increase *hope* for individuals with bipolar disorder during their inpatient admission. However, future research should consider measurement issues carefully. In the present study, for example, one participant reported low distress at baseline as well as high levels of hope (i.e., above 44) across all study phases, which may have masked hypothesized treatment effects. For other participants in the study, the high variability/noise (i.e., standard deviation) observed across the *distress* and *hope* data streams may have also implicated the conclusions that scould be drawn.

**Process Variables (Working Alliance and Session Impact)**

**Working Alliance.** Unlike what was predicted, three out of four participants in this study did not report significant improvement in working alliance with the initiation of the C/TA intervention. However, almost all the participants reported *working alliance* scores at or above the suggested cut-scores (i.e., WAI-SR ≥5) across all sessions in the study. This finding indicates the clinicians were skilled in establishing and maintaining a therapeutic bond and collaboratively developing an agreement on tasks and goals (i.e., the necessary ingredients for a therapeutic alliance; Bordin, 1979) throughout each session of the study, but that the development of a working alliance cannot be attributed to the onset of the C/TA intervention directly. Mark and Elizabeth's *working alliance* scores demonstrated an overall upward trend. Unlike Elizabeth's, however, the increase observed in *working alliance* for Mark was not statistically significant. For the fourth participant (Elizabeth), however, there was a statistically significant improvement in working alliance with the initiation of the C/TA.

In general, Elizabeth's results mirror the positive associations found in the literature between C/TA and the development of strong working alliances (e.g., Ackerman et al., 2000; Brown and Morey, 2016, De Saeger et al. 2014; Hilsenroth et al., 2004; Hinrich, 2016; Little, 2009; Smith et al. 2015; Tiegreen et al., 2012). Recall that Elizabeth had a traumatic history and a distrust of the clinician in the initial session. In many ways, Elizabeth's presentation and *working alliance* results are similar to the individual discussed in Tiegreen et al.'s (2012) study. Tiegreen and colleagues found that their participant was notably mistrustful in the initial interview and testing session, with working alliance scores in the low-to-moderate range. However, through the process of the C/TA, and at a three-month follow-up, the working alliance had increased considerably (Tiegreen et al., 2012).

In contrast to the findings in the present study, it appears that the participant in the study by Tiegreen and colleagues (2012) started reporting stronger working alliance scores in the feedback sessions of the C/TA. Similarly, Smith et al. (2015) also found a significant increase in working alliance later in the C/TA intervention following a joint feedback session. These findings point to the need for future research to examine the underlying mechanisms of change and the unique aspects of C/TA that contribute to the development of strong working alliances. Said differently, the field will benefit from studies that examine what specific aspects of C/TA are helpful, when to expect changes to occur, and why, theoretically, those changes occur.

From a theoretical standpoint, Kamphuis and Finn (2018) have already begun to examine the underlying mechanisms and specific ingredients of change of C/TA within the context of Fonagy and colleagues' theory of epistemic trust (ET; see Fonagy & Alison, 2014, Fonagy, Luyten, & Alison, 2015). In brief, Fonagy and colleagues suggest that (ET) is "an individual's willingness to consider new knowledge from another person as trustworthy, generalizable, and

relevant to the self" (Fonagy & Alison, 2014, p. 4). ET is helpful for individuals to learn from their social interactions and enhance self and other understanding. Epistemic vigilance (EV) is another concept discussed by Fonagy and colleagues (2014, 2015), which refers to critical thinking about the accuracy and the value/use of information interpersonally transmitted. When used flexibly, ET and EV can be adaptive; however, with childhood adversity, attachment ruptures, or traumas, individuals can learn to broadly mistrust their social environments and experience the less adaptive and inflexible position observed in epistemic hypervigilance (EH). Alternatively, epistemic hypovigilence can occur wherein individuals blindly accept social information without critically examining the information or source. Both forms of EH can contribute to significant difficulties in social interactions (Fonagy & Alison, 2014; Fonagy et al., 2015). According to Fonagy and colleagues, ET can be promoted through mentalization (i.e., the process by which one can notice and observe the mental states of themselves and others) and ostensive cueing (i.e., signals that assist individuals in adopting an attitude of ET and holding an openness for interpersonally oriented learning).

Kamphuis and Finn (2018) purport that C/TA holds distinctive features that foster the development of ET and lowers EH. These researchers suggest that "[C/]TA is optimally geared to promote an individual's willingness to (re)consider communication conveying new knowledge from someone else as trustworthy, generalizable, and relevant to the self; that is, to lower EH and promote the restoration of ET…[and that] this process of restoring ET and lowering EH might be the general metatheoretical ingredient that could help account for the remarkable efficacy of C/TA across settings and disorders" (Kamphuis & Finn, 2018, p. 4-5). Kamphuis and Finn suggest that, in a general sense, mentalization is optimized between the client and clinician through the values that embody C/TA (i.e., collaboration, humility, openness and curiosity,

compassion, and respect; Finn, 2009). These researchers also suggest that there are specific C/TA ingredients that are crucial for the restoration of ET, including the development of assessment questions, the use of assessment instruments to map internal structures, and the development of a collaborative and shared understanding of assessment results. Determining which aspects of C/TA contribute most to the development of critical process variables, such as working alliance, holds notable implications for fostering positive patient outcomes beyond the C/TA intervention. As Hilsenroth et al. (2004) found, strong therapeutic alliances developed in C/TA contribute significantly to subsequent alliance scores, patient engagement, and reduce premature termination in post-assessment psychotherapy.

**Session–Impact.** Contrary to what was hypothesized, there was no statistically significant increase in *session-impact* scores (i.e., smoothness and depth) for any participants involved. These findings align with Little's (2009) observation that there was no notable difference found in patient-reported session-impact when her C/TA and SP conditions were compared. As with *working alliance*, all participants reported *session-impact* scores at or above the suggested cut-scores for each of these measures (i.e., scores for SEQ ≥4). Observing both high *working alliance* and *session-impact* scores in the present study is expected, given previous research that demonstrates a strong positive correlation between working alliance and session-impact scores (i.e., smoothness and depth) (Ackerman et al., 2000).

In examining the specific outcomes of *session impact* in this study, Grace and Rob both reported high levels of smoothness and depth throughout all phases of the study with no statistically significant changes detected. However, visual inspection did note slightly lower scores for Grace during the post-intervention session. Also, Rob reported a small decline in smoothness and depth in the second C/TA session (i.e., test administration session). More

variability was observed in the *session-impact* data streams for Mark and Elizabeth. Specifically, visual inspection of Mark's session depth results suggested that there was an increase in the variable when the baseline session was compared with the intervention phase mean; however, SMA did not determine that this increase was statistically significant. Mark's highest depth score (depth = 7) was observed in the third C/TA session (i.e., assessment intervention/discussion session), which indicates that Mark found this session potent and highly valuable. Ackerman and colleagues (2000) suggest that higher depth ratings in the feedback session of a C/TA "may be related to patients' feeling that they have grown and learned about themselves through accurate mirroring" (p. 104).

Lastly, Elizabeth's self-report of *session-impact* was observed to hold the most variability of all the participants. The variation observed for both smoothness and depth followed a similar pattern. Interestingly, her lowest *session-impact* scores were reported in the initial C/TA session when she and the clinician developed the assessment questions. Her second-lowest scores were reported in the third C/TA session (i.e., assessment intervention/discussion session), which is unexpected and countered the high scores observed for the other participants on that session and her scores on *working alliance*. Despite the fluctuations observed in Elizabeth's *session-impact* data streams, SMA analysis did not detect a statistically significant difference.

**Idiographic Indices.** Exploratory analyses of participant idiographic indices found that of the 22 analyzed, 5 were found to have a statistically significant level of change when the baseline phase was compared to the intervention and post-intervention phase (i.e., change was noted upon the initiation of the C/TA). Although these highly individualized measures have drawbacks (e.g., implications for replicating findings), their inclusion is additive to the data streams. As Borckardt et al. (2008) and Smith, Eichler, Norman, and Smith (2015) argue,

individualized measures of symptomology enrich the clinical utility and validity of the change observed in the data. The results of this study found a statistically significant reduction in Mark's levels of *anxiety* when the baseline phase was compared with the intervention and post-intervention phases combined. Elizabeth's *serenity* and *silly* variables were found to have a statistically significant increase when the baseline phase was compared with the intervention and post-intervention phases combined. An additional surprising finding from the idiographic analysis was noted in Rob's *guilt* and *relationship with family* variables. For *guilt*, there was a statistically significant increase in *guilt* across the study phases. With regards to the variable *relationship with family*, SMA analysis found a statistically significant decrease.

In considering the inclusion of idiographic indices in SCED studies, future clinical research would benefit from examining variations in outcomes observed between idiographic indices and validated measures. It is interesting, for example, that Mark's findings on the *anxiety* idiographic index differ from his (non-significant) results on the, conceptually similar, *distress* variable, as measured by the SUDs. Similarly, for Elizabeth, when comparing the results of the *serenity* index with the *distress* variable, one might assume the presence of an inverse relationship where *distress* decreased significantly alongside the significant increase in *serenity*; however, there was no statistically significant decrease noted in Elizabeth's self-reported levels of *distress*.

In contemplating the discrepancies when comparing some of the idiographic data to the predetermined study measures, directions for future research focused on Kamphuis and Finns' (2018) ideas about mechanisms of change in C/TA from the lens of ET and EH may, again, be highly relevant. For example, building upon the theorizing by Finn and Kamphuis (2018), it might be hypothesized that the use of highly personalized study measures in research studies

fosters the development of epistemic trust (see Fonagy & Alison, 2014, Fonagy, Luyten, & Alison, 2015). As Kamphuis and Finn (2018) suggest, the continual focusing and refocusing on the assessment questions throughout a C/TA helps clients understand that the clinician is working with them on their personal goals. Since the assessment questions act as anchor points for the intervention and are continually referenced, the information conveyed in the assessment is transparently relevant to the client and, thus, there an increased likelihood that the information is seen as worthwhile for the client to attend to and internalize. The use of the patient-driven assessment questions in C/TA may serve as ostensive cues that foster trust and security for patients to the extent that they may begin to view the information conveyed in the C/TA as personally relevant and worthwhile to attend to and internalize (Kamphuis & Finn, 2018). Thus, it is possible that, like the collaboratively developed assessment questions, the daily use of patient-determined idiographic indices also served as ostensive cues that increased the transparency of the research, fostered trust, and ultimately resulted in highly reliable and valid responses. As such, future research questions may include, *Do participants respond differently to personally relevant, participant derived measures in contrast to researcher determined measures?* and *Does the inclusion of personally relevant, participant derived measures mirror the use of the collaboratively developed assessment questions in C/TA processes?* Much more research is needed in this area.

**Hypothesis 3**

To address the third research question, *What is the trajectory of change observed?,* the study findings suggest that the change observed with the onset of the C/TA intervention was largely maintained after the intervention ended. Thus, hypothesis 3 was partially supported. As predicted, the statistically significant increase observed in *working alliance* scores (for Elizabeth)

endured into the post-intervention phase. This finding mirrors that of the results from Hilsenroth et al. (2004) and Ackerman et al. (2000), that suggest gains in working alliance observed in the C/TA are maintained beyond the C/TA intervention. This has, as noted by Hilsenroth et al. (2004) and Tiegreen et al. (2012), positive implications for individuals deciding to continue having contact with mental health supports following the completion of the C/TA.

With regards to the statistically significant changes observed in the exploratory analyses of participant idiographic indices, changes observed were largely maintained. In particular, the significant decline detected in Mark's *anxiety* index was found to endure into the post-intervention phase. For Rob, the statistically significant increase in his *guilt* index was also found to endure into the post-intervention phase. When comparing the *guilt* variable to an estimated vector of change that purported that guilt would decrease over time, there was a negative correlation found. Additionally, the statistically significant decline measured in Rob's idiographic index *relationship with family* was found to endure into the post-intervention phase. This suggests that, unlike what might be expected, Rob's relationship with his family declined as he progressed through the study. Looking across Rob's other study variables, including *distress and hope*, it appears that these variables also worsened during the C/TA phase. This trajectory of change has also been observed in previous research in the field (e.g., Durosini et al., 2017; Tarocchi et al., 2013; Wolf, 2010). Specifically, akin to Rob's data, Wolf (2010) found that daily ratings of symptom severity for one of her participants increased during the intervention phase and returned to baseline levels in the follow-up period with no overall improvement observed. Durosini and colleagues (2017) also observed an initial aggravation of symptoms during their study's intervention phase. These researchers noted that the early increase in symptoms was

followed by a moderate to a small decrease in the follow-up phase (one and a half months in length).

Wolf (2010) and Durosini et al (2017) note how C/TA processes can expedite the accessing, acknowledging, and processing of previously avoided emotional states. Indeed, C/TA researchers such as Finn (2003), Tiegreen et al. (2012), and Hinrichs (2016) discuss the insight-provoking experiences offered through the C/TA interventions in their studies. Of course, this increase in self-knowledge can bring emotionally painful realizations that could contribute to the initial worsening of symptomology. Thus, the results for Rob's *guilt* index and the *relationship with family* index may point to an increase in insight and the trajectory of symptomatic change as he began to acknowledge and process avoided aspects of his internal and external world.

Lastly, the statistically significant increase in Elizabeth's idiographic index *serenity* was found to endure into the post-intervention phase. However, contrary to what would have been expected, the statistically significant increase observed in Elizabeth's *silly* index was not found to endure into the post-intervention phase. In fact, it was observed to decrease. More research is needed to foster our understanding of the trajectory of change expected within C/TA. Finn (2007) notes that the pattern of change in C/TA can vary substantially across individuals.

### Hypothesis 4

To address the fourth and final research question, *Are participants satisfied with C/TA?*, as hypothesized, participants reported they were satisfied with the C/TA intervention. Compared with the AQ normative sample, all participants' total satisfaction T-scores fell above 55, which is notably high. The high satisfaction findings of the present study mirror those found in C/TA research by Bunner (1993), Little (2009), De Saeger et al., (2014), and Wolf (2010). In understanding the mechanisms at work in the C/TA intervention that contributed to the high

satisfaction in the current study, Finn and Tonsager's (1997) application of Swann's theory of self-verification (Swann, 1997: Swann, Stein-Seroussi, & Giesler, 1992) might be relevant.

Both Mark and Elizabeth reported higher than average negative feelings about the assessment. It is possible that this finding speaks to the processes of C/TA that foster self-discovery and self-verification (i.e., level 1-3 information), that assists patients in integrating less congruent information about themselves. Mark's C/TA assessment intervention session was designed to assist him in acknowledging the avoidance/minimization of his inner experiences while also encouraging him to better connect with himself and his caregivers. Similarly, Elizabeth was confronted with the reality of the impact of her traumatic past on her current functioning. Thus, though a highly satisfying experience for both Mark and Elizabeth, the intervention likely brought up some negative emotions as they grappled to understand and integrate information about themselves (i.e., self-discovery) that was less congruent with their current self-perceptions.

Conversely, both Grace and Rob reported lower than average negative feelings about the assessment. For Grace, these findings may have been related to the strong working alliance and positive accurate mirroring she experienced throughout the C/TA. Recall that despite Grace's use of illicit psychoactive substances throughout the study, the clinician held a position of ongoing willingness to work with Grace. Perhaps this therapeutic stance provided Grace with a sense of acceptance, unconditional regard, and offered her a stable and secure base for attachment that she may not have previously experienced. This process of unconditional regard and acceptance maps onto Swann's concept of self-enhancement. Similarly, for Rob, the validation (i.e., self-verification) of his struggles with his family of origin offered through the C/TA may have significantly contributed to his reported level of satisfaction.

The findings from the AQ are notable in several ways. Given the participants' prior experiences with the mental health system and illness-related issues with insight and medication compliance, one might expect a certain degree of discontent and ambivalence about the services offered in a psychiatric inpatient setting. However, akin to Bunner's (1993) findings, it appears that, regardless of the degree of symptomology and presence external circumstances (i.e., active drug use, life stressors, time-limited nature of the intervention), the individuals participating still reported the C/TA to be a satisfying experience. As discussed by both Cone (2001) and Bunner (1993), *satisfaction* is crucial in outcome research due to the relationship between satisfaction and future access to services. For individuals with chronic illnesses, such as bipolar disorder, a willingness to continually access and engage in services is fundamental to ensuring proper management of the disorder and reducing the need for repeated hospitalizations. The high satisfaction found in the present study contributes significantly to the implications of using C/TA in a psychiatric inpatient setting with serious mental illness.

## General Discussion and Implications

The C/TA intervention in this study provided an alternative approach to patient care that was thoroughly examined. Contrary to the evidence supporting the use of C/TA interventions with depression and other psychiatric disorders with mood-related features (e.g., Ackerman et al., 2000; Brown & Morey, 2016; Brunner, 1993; Finn, 2003; Hilsenroth et al, 2004; Little, 2009; Tiegreen et al., 2012; Wolf, 2010), the outcomes related to distress and hope in the current study provide the first preliminary evidence that C/TA does not help reduce distress and increase levels of hope with individuals with bipolar disorder in an inpatient setting.

In understanding the findings of this research, it may be important to consider the interplay of severe psychopathology and the potential need for lengthier phases of treatment with

more complex patient populations, as is discussed in the dose-response literature (Howard, Kopta, Krause, Orlinsky, 1986). Indeed, when studying the use of C/TA with a heterogeneous personality disordered population, De Saeger et al. (2014) found no differences in patient-reported symptomology when comparing a control group with a C/TA group. These researchers noted that complex patient populations, such as in their sample, typically require lengthier periods of treatment to obtain substantial symptomatic improvement. Likewise, Fowler (2012) suggests that, in particular, using C/TA with individuals experiencing severe psychopathology can be a slow and uneven process where "the goals and aspirations of the consultation are necessarily tempered by the reality of the situation" (p. 114). Outside of considerations of dose-response, Ackerman and colleagues (2000) suggested that patients also valued assessments that were longer because it gave them time to learn, reflect upon and integrate information from the assessment. This sentiment was also echoed in the inpatient study by Hinrichs (2016) and was commented on by Elizabeth in the present study. In particular, she shared with the clinician that she wished that the C/TA was longer.

Indeed, the C/TA intervention of focus in this research was warmly received by the participants. Study findings of strong working alliance and high patient satisfaction are suggestive that the C/TA intervention was additive to the participant experiences. These findings have notable positive implications for participants' future willingness to trust mental health professionals and access additional mental health treatments/services, all of which mitigate the need for further hospitalization moving forward. Indeed, as Ackerman et al. (2000) and Hilsenroth et al. (2004) found, high working alliance scores observed during the C/TA feedback session were correlated with measures of alliance in subsequent formal psychotherapy. Furthermore, Ackerman and colleagues determined that individuals who participated in a C/TA

were more likely to follow up with the assessment recommendations and have lower termination rates, in comparison to individuals who partook in a traditional assessment. Tiegreen et al. (2012) found that participation in C/TA had notable impacts on psychiatrically ill individuals' willingness to adhere to treatment recommendations and engage in post-assessment rehabilitation processes. Similarly, in an adolescent study, Ougrin, Ng, and Low (2008) found that individuals presenting at an emergency department who received a C/TA had increased rates of connecting with and maintaining contact with community mental health supports in comparison to others who received assessment as usual. These gains were found to endure in a 2-year follow-up study by Ougrin, Boege, Stahl, Banarsee, and Taylor (2013).

With an adult population, the positive outcomes associated with increased treatment engagement and reduced need for psychiatric readmission are twofold: 1) increase in positive health outcomes with stabilized illness/reduced psychiatric relapse, and 2) reduction in monetary costs within our universal health care system. Given the fiscal environments present in Canada, the need for ongoing research in brief, effective, therapeutic interventions is paramount to maintaining the services we can offer in our health care system.

## Limitations

Despite being considered a quasi-experimental design, Smith and George (2012) argue that no single-case designs can be used to infer causality due to threats to internal validity. As such, it is worthwhile mentioning limitations related to internal and external validity of the study results, in addition to some shortcomings related to the SCED analyses and design.

Within this research, notable threats to internal validity include history and the use of student clinicians. History, as discussed by Kratochwill et al. (2010), refers to the extraneous factors occurring at the same time as the intervention under study that may cause or impact the

outcomes observed. As discussed in chapter 1, given that the C/TA was an adjunct therapy occurring alongside the regular treatments recommended for bipolar disorder (e.g., medication management, group psychotherapy, recreation therapy, etc.), the co-occurring treatments present an inevitable limitation. Given that it was ethically dubious to restrict participants' access to other forms of treatment (e.g., medications, group therapy and obtaining financial/housing assistance with the social worker), this is an unavoidable threat to internal validity. Also, factors related to patient experiences while admitted to the psychiatric unit are worthwhile to note as possible limitations. For example, sleep issues and heightened stress due to living in a chaotic, noisy environment were taken into account and ameliorated to the fullest extent possible. As such, study sessions were scheduled collaboratively with patients to ensure they were rested and possible and sessions occurred in quiet office space off of the inpatient unit to minimize issues with sound.

Another potential limitation of the present research is the use of doctoral-level student clinicians. This is a limitation for two reasons, 1) the clinicians' student status, and 2) the use of a small number of clinicians limits the ability to control for therapist effects. As was discussed previously, the clinicians were trained to criterion on the C/TA intervention. They also engaged in standardized administration of study measures, and they were under close clinical supervision by a doctoral-level psychologist. Despite these precautions, it is still possible that the clinicians' student status impacted the results of the present research.

Regarding therapist effects, Wampold and Imel (2015) argue that the delivery of treatment by therapists has significant implications for the outcomes observed. Specifically, these researchers posit that the actions of a therapist (e.g., therapist empathy, degree of understanding, therapeutic alliance-building skills, etc.), contribute to therapeutic success.

Having only four therapists in this current study limits the conclusions that can be made regarding the effectiveness of the C/TA intervention itself. Said differently, the inclusion of four therapist poses a risk for making a Type I error (i.e., finding an effect due to the intervention, when, in fact, there was no such effect; Field, 2013) and decreases the generalizability of the intervention. Studies with a low number of therapists, Wampold and Imel argue, poses difficulties for researchers to measure therapist effects due to a lack of statistical power. Despite this, these researchers argue that "therapists should still be explicitly included in statistical models even if statistical significance is not found, because the deleterious consequences are there nonetheless" (p. 161). Within the current design, it was not possible to differentiate whether outcomes observed are due to the C/TA intervention, or the therapist effects, or both. Thus, the conclusions drawn from data were viewed within the context of this design limitation.

Threats to external validity in the present research refer to the generalizability of the research. When considering generalizability, it is essential to query the applicability of the results across different settings and patient populations. It is unclear whether the findings of the present study would be applicable for clinicians and researchers in other psychiatric inpatient settings. AHE is a unique psychiatric institution in Canada. This setting is influenced by the political climate in Alberta, associated funding availability, clinical staffing arrangements, and treatment milieu on each unit. Replication of this study on other psychiatric units, in both general hospital settings and psychiatric hospitals, would provide further evidence of the generalizability of this study's results. Participant characteristics also present a threat to external validity and the generalizability of the findings. The inclusion of four participants situated within the same diagnostic area using this design does not provide direct evidence for the application of C/TA with bipolar disorder or with other diagnostic groupings. In addition, the findings may have been

impacted by participants' age, level of education, ethnicity, which was accounted for, but not controlled for within the present study.

This research is limited by the analytic techniques for SCED research available. As noted by Smith (2012), there is considerable debate and a lack of consensus in the SCED field regarding which methods of analysis are most appropriate and accurate for this type of research. Of course, the previously discussed threats to validity related to the analyses used impact the conclusions that can be drawn. As is recommended, this study employed both visual inspection and statistical analysis. However, both these methods hold notable limitations. With regards to visual inspection, the variability (i.e., statistical "noise" or standard deviation) observed within the data streams limited the conclusions that could be drawn when examining the data. In considering the instability observed in the data streams, however, the inclusion of statistical analysis (SMA) was appropriate and recommended (Smith, 2012).

A previously discussed limitation of SMA analysis include the session-based DVs and the presence of fewer than the recommended 5-10 observations per phase (Borckardt et al., 2008; Horner & Spaulding, 2010; Kratochwill et al., 2010). Since these DVs were session-based variables, it would not have been appropriate to obtain measurement when a session did not occur. As such, deviating from the standards outlined for single-case research was justified. To mitigate the underpowered SMA analysis, a more conservative $p<.01$ threshold was included.

Related to the design of the SCED method selected, this research was limited by including a relatively short baseline and follow-up period (i.e., 7 days each phase). As noted previously, the length of these phases was included due to the time constraints present in the study setting. A longer baseline in the present research may have allowed for the stabilization of the data streams and provided some additional control for remoralization. Regarding the length

of the follow-up period, it would have been ideal to include a post-C/TA follow-up period of at least one month or more akin to a number of previous C/TA studies (e.g., Durosini et al., 2017; Smith et al., 2015; Tiegreen et al., 2012). Indeed, as Kamphuis and Finn (2018) note, a number of C/TA studies that have found treatment effects within 2- 8 weeks following the intervention (e.g., Finn & Tonsager, 1992; Newman & Greenway, 1997; Smith, Handler, & Nash, 2010). Again, due to the time constraints of the psychiatric inpatient setting, one week was the most feasible amount of time available. Lastly, as highlighted previously, the use of a standardized assessment battery is relativvely uncommon in C/TA and is a limitation of this study. This design feature was included simply to provide a standarized assessment base across all participants from which clinicians could add additional measures as needed to answer participant AQs.

In acknowledging the limitations of this research, it is also necessary to note the significant strengths. Where this study was limited with internal validity, it held notable strengths in providing an example of the clinical application of C/TA in a manner that is highly relevant for front-line clinicians faced with diagnostic comorbidities and a multitude of confounding factors impacting the processes and outcomes in their daily clinical work. As such, the ecological validity of this study's findings are considered strong in comparison to studies that include more methodological control and, as a result, do not resemble most real-life clinical settings. Overall, it is necessary to have many forms of scientific investigation to build the most comprehensive understanding of an area of inquiry, such as C/TA research. Indeed, there is a multitude of areas of the C/TA literature that could be of future focus.

## Future Directions

In examining the findings of this present research, several areas for future research have come to light, including suggestions for improvements in study design and new areas of C/TA

research. Firstly, future studies examining C/TA with individuals with bipolar disorder would be strengthened by including diagnostic verification and bipolar related symptomatic measurement. This line of inquiry will assist with clarifying treatment implications that C/TA has on bipolar symptomology (e.g., levels of depression, mania). Instrumentation as the Structured Clinical Interview for DSM-5 (SCID-5; First, Williams, Karg, & Spitzer, 2015) to clarify diagnostics would be necessary. Future SCED studies may want to include a longer baseline period (e.g., 2 weeks or more) or the use of multiple baseline design to try and circumvent issues with instability in the early phases of the data streams. For example, Smith et al. (2015) opted to include a 2-week baseline, while Smith and George (2012) included a 28-day baseline period. SCED research that utilizes both patient-specific idiographic indices and validated measures would contribute significantly through examining variations in outcomes between these two categories of instrumentation. As discussed above, a possible future research question may include, *Do participants respond differently to personally relevant, participant derived measures in contrast to researcher determined measures?* and *Does the inclusion of personally relevant, participant derived measures mirror the use of the collaboratively developed assessment questions in the C/TA processes?*

Longitudinal research focused on understanding the trajectory of change and possible enduring contribution of C/TA to individuals with psychiatric illnesses is also an area of future focus. For example, it would be helpful to study the degree of patient engagement in community-based mental health services post-C/TA and discharge from inpatient settings. Guided by previous findings (e.g., Tiegreen et al., 2012; Ougrin et al., 2008; & Ougrin, et al., 2013) and the present study's findings for strong working alliance, session-impact, and high patient satisfaction, a possible hypothesis might include: *It is hypothesized that individuals who*

*participate in a C/TA during their psychiatric inpatient admission are more likely to attend their first community follow-up appointment in comparison to those patients who received TAU*.

It will also be beneficial to explore the relationship between the use of C/TA intervention and rates of readmission for individuals with serious mental illnesses. A possible hypothesis might include: *It is hypothesized that (a) in comparison to inpatients who receive TAU, inpatients who participate in a C/TA during their psychiatric admission will require fewer readmissions in a 2 – year follow-up period, and (b) will have higher rates of engagement with their community mental health team during that time.* An examination of long-term enduring symptomatic change for individuals with psychiatric illness following their participation in C/TA would also add to the current understanding of the long-term outcomes and process of change in the C/TA intervention. This recommendation takes into consideration the previous findings of a delayed therapeutic effect with C/TA. As Kamphuis and Finn (2018) note, many C/TA studies have found positive treatment effects when researchers measured study outcomes in the weeks following the intervention (e.g., 2-8 weeks post-intervention) (e.g., Finn & Tonsager, 1992; Newman & Greenway, 1997; Smith, Handler, & Nash, 2010). As such, it is also recommended that future C/TA studies consider including longer follow-up phases.

There continues to be a need to explore the application of these interventions within novel settings and clinical populations. For example, Chudzik (2016) has been extending the use of C/TA with violent offenders. Additional diagnostic groups that may benefit from C/TA include high healthcare service users such as those with somatically related disorders or addictions. Related research questions could ask, for example, *Do individuals with somatic symptom disorder have a decline in their emergency room visits following their participation in a C/TA?*

Building upon the evidence from other studies supporting C/TA processes, future research is needed to examine therapeutic mechanisms and unique aspects of C/TA that contribute to patient outcomes. Indeed, as Dozois (2013) asserts, "Numerous studies have shown that psychological interventions are effective for a host of conditions. What we do not understand well is *why*" (p. 6). The empirical study of the underlying mechanisms of change in C/TA processes, such as those proposed by Kamphuis and Finn (2018), would be additive in verifying why this intervention has demonstrated positive outcomes for some individuals/populations and which specific aspects of the intervention influence change. For example, a study exploring the question, *Does C/TA foster an increase in levels of epistemic trust for individuals?* would be additive to the literature base. Deconstructive designs may be of further assistance in clarifying the specific therapeutic ingredients of C/TA that contribute to patient outcomes, such as working alliance. As is already occurring within the literature base, SCED research designs can directly address research questions focused on "at what point does change occur" and illuminating the aspects of C/TA that directly contribute to observed outcomes.

Lastly, qualitative studies would be of benefit in providing a detailed and contextualized understanding of both participant and therapist experiences of C/TA. In fact, as an initial venture examining the underlying mechanisms of change in C/TA, researchers De Saeger, Bartak, Eder, and Kamphuis (2016) partook in a qualitative study of participant's perspectives of their experiences participating in a C/TA. Key themes arose out of this study that mirrored some of the theoretical propositions discussed previously (e.g., Swann's self-verification theory) including validation of the self, sense of empowerment, new insight into personal dynamics,

being treated as an equal, and being heard from a personal perspective. Much more research is needed in this area to understand the phenomenology of C/TA for all parties involved.

Researchers interested in employing a SCED design are encouraged to familiarize themselves with the many forms of single-case designs available in addition to the proposed design and analysis standards (please see Smith, 2012 for a succinct summary). Tate et al. (2008) developed the Single Case Experimental Design (SCED) Scale that may help determine the quality of SCED studies, which would be of use in future metanalytic research. Of course, the accumulation of empirically robust SCED studies justifies the pursuit of large-scale RCTs into the subject area, as De Saeger and colleagues (2014) have already done. In general, the C/TA literature base would benefit from more large-scale RCT studies.

## Conclusions

The present research examined the processes and outcomes of a 4-session C/TA adjunct intervention in a psychiatric inpatient setting with individuals diagnosed with bipolar disorder. Overall, the results of this research provide mixed preliminary evidence of the applicability of using C/TA with an inpatient population with bipolar disorder. Despite not replicating notable findings from past C/TA research of positive outcomes related to distress and hope, this study did mirror previous evidence that point to C/TA fostering the development of strong working alliances and high levels of participant satisfaction. Positive working alliances, impactful sessions, and notable participant satisfaction hold implications for increased patient engagement in mental health services, reduced readmission rates, and saving in health care dollars. Long-term outcome studies of C/TA are needed to examine the effect of this intervention on psychiatric readmissions and the cost-effectiveness of C/TA within the health care system. Future research is

also needed in such areas as examining the underlying mechanisms of change at play within C/TA intervention.

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## Appendix A: Four Session C/TA Model Summary

**Session One: Initial Session**

Given that motivation is a key issue observed in a psychiatric population, it is imperative that the C/TA begins collaboratively to foster patient engagement in the assessment process. The initial session of the C/TA should focus on the development of integrated assessment question(s) that are of direct relevance to the patient's life. For example, many psychiatric inpatients desire to live independently, return to work, and/or further their education. Framing assessment questions around areas of great concern for the patient will likely motivate them to participate in the assessment process. It is also important to discuss the reason the patient was referred for psychological services. Ideally, collaborative modification of any original assessment question(s), to personalize the assessment to the patient, would allow the clinician to balance any requests of the treatment team while maintaining the patient-focused nature of C/TA.

Within the initial C/TA session, is unnecessary to take a full clinical history because this information will have already been obtained in the pre-C/TA baseline phase. However, guided by the assessment questions, clarification of pertinent issues would be beneficial. The initial C/TA session is an opportunity to inquire about a patient's subjective experiences of the issues driving the assessment. It is also a prime opportunity to listen for a patient's beliefs about themselves that can later be used to guide the discussion of level one, two and three findings (Finn, 2007). Gorske and Smith (2009) recommended the use of open-ended questions to facilitate elaboration by the patient on problems they determine to be of most prominence. These researchers argued that the use of open-ended questions not only fosters clinician understanding of the patient, but also enhances rapport and patient engagement in the assessment process. It may be helpful for the clinician to inquire about the patient's levels of motivation to determine whether this may impact both the process and findings of the assessment. Pertinent to this research, it is important in the initial C/TA session that time be allotted at the end of the session for the patient to fill out the relevant self-report assessment measures that were discussed above. The initial session is recommended to be between approximately sixty to seventy-five minutes in length.

**Session Two: Standardized Testing Session(s)**

The focus of session two is on the standardized administration of assessment measures. Test selection will include the standard assessment battery outlined above, with the option to include additional measures necessary to answer the assessment questions. Additional measures can be included upon consultation with the clinician's supervisor. As suggested by Finn (2007), tests should be administered in an order which appears the most relevant and face valid to the participant in answering their assessment questions. Feedback can be sought following the completion of each measure; however, extended feedback is discussed further in the third session. Of consideration is the potential for test administration to occur over two back to back days, given the attentional abilities of psychiatric patients as well as competing appointments. Regardless, test findings are required to be accessible for the clinician to utilize during the third session.

**Session Three: Assessment Intervention and Summary/Discussion Session**

The focus in the third session is two-fold. Guided by Hinrichs' (2016) adaptations to Finn's (2007) model, this session should include an integration of the intervention session and summary/discussion sessions. Due to this integration, this session may be longer (i.e., falling anywhere between one to two hours). With the assessment results in hand, the clinician will start

by inquiring about patient experiences of the test administration on a test-by-test basis (Gorske & Smith, 2009). This entry strategy was used since this information will have been missed during the standardized administration session. In addition, it is thought that eliciting patient experiences in this manner could bring problem behaviors into the room. For example, a patient might comment (in a self-critical manner) that a test of memory was difficult for them, this may be an "access point" to discuss the presence and impact of memory difficulties in other areas of their life and/or their observed self-critical style. The feedback from the patient will also provide the clinician with a deeper understanding of the patient's self-schemas in relation to the assessment findings, which will assist the clinician in inferring whether the results would best fit at level one, two, or three of feedback (Finn, 2007).

Following the discussion of patient's testing experiences, the focus will shift to carefully "bring[ing] into the room those problems-in-living of the clients that are the focus of the assessment, where they may be observed, explored, and addressed with various therapeutic interventions" (Finn, 2007, p. 14). Clinicians utilize the results of the assessment to purposefully elicit an enactment of a patient's problem area (i.e. a particular behaviour, emotion, or thought pattern) for deeper discussion. Once the problem behaviour is in the room, it is helpful to encourage the patient to name the issue and link this to instances of the behaviour operating in their daily life. An exploration of the source and maintaining factors of the problem is also recommended (Finn, 2007). A collaborative discussion of the implications of the patient's problem behaviour is helpful in propelling the patient toward problem-solving and change strategies. The purpose of these sessions is to foster the patient's self-discovery and understanding of the problem area and to motivate him or her towards more adaptive functioning. Importantly, these sessions are also thought to offer the clinician a deeper understanding of the patient's issues.

The second half of the session should include a collaborative discussion of the assessment findings using Finn's (2007) three-level hierarchy. It is through this process that the clinician and patient will review the test results, holding an open and collaborative conversation for the patient to agree or disagree, as Finn suggested. Building upon the previous example, if the patient's scores on the memory test were within normal limits, this finding would likely be incongruent with the patient's view of self and considered a level three finding. In discussing assessment findings, it will be beneficial to collaboratively link the implications of the findings to the patient's real-life functioning and problem areas, making the results more meaningful and contextualized to the patient (Gorske & Smith, 2009). It is hoped that this might then lead to co-generated problem-solving and encourage the development of attainable next steps for rehabilitation and treatment. The collaborative nature of the problem-solving and planning is essential in this session. Patients will benefit from the active involvement of the clinician.

**Session Four: Written Feedback**

The final session is held for approximately sixty minutes. It will begin with the clinician providing the patient with a brief integrative consultation note summarizing the results of the TA. This note is a hybrid between a formal psychological assessment report and a therapeutic letter. Although Finn (2007) suggested providing the patient with a therapeutic letter, the inpatient setting requires more formal documentation for the referral provider and the patient's permanent medical record. Due to time constraints, it may not be feasible for the clinician to prepare both a therapeutic letter and a psychological report. Thus, a brief integrative consultation note is suggested. This document will include many of the key features of the C/TA assessment but be written in an easily accessible manner that is understandable for the patient (e.g., clear

wording, avoiding psychological jargon). It will be especially important to provide patients with a copy of the note. Akin to Finn's suggestion for co-authoring, the patient will be encouraged to provide any suggestions for edits. This process is thought to be helpful in further facilitating the development of a new self-narrative. In reviewing this note, it will be helpful to elicit feedback regarding the assessment, follow up on any material or questions from the third session, and continue to engage in assessment informed planning for the patient's next steps.

## Appendix B: Consent to Participate Form

**University of Alberta and Alberta Health Services at Alberta Hospital Edmonton**
**CONSENT TO BE A RESEARCH PARTICIPANT**

TITLE: Collaborative/Therapeutic Assessment with Psychiatric Inpatients Diagnosed with Bipolar Disorder

**INFORMATION SHEET**

Principal Investigator: Dr. William Hanson, PhD, Registered Provisional Psychologist
Department of Educational Psychology, University of Alberta Tel: 780-492-9007

Co-Investigator: Ms. Diana Armstrong, M.Ed., R. Psych. Tel: 780-342-5148
Department of Educational Psychology, University of Alberta
Department of Acute Psychiatry, Alberta Hospital Edmonton

Co-Investigator: Dr. Derek Truscott, PhD, R. Psych. Tel: 780-492-1161
Department of Educational Psychology, University of Alberta

Co-Investigator: Dr. Virginia Newton, PhD, R. Psych. Tel: 403-517-6216
Department of Psychiatry, University of Alberta

**Background:** We want to learn about the effects of a new psychological intervention called Collaborative/Therapeutic Assessment with individuals who have been living with bipolar disorder. This is important because we are trying to find new and better ways of helping people who are admitted to Alberta Hospital Edmonton (AHE). We are asking four patients between the ages of 18-64 to take part in this study during their admission to AHE.

**Purpose:** You have been asked to participate in this research study because you have been admitted to Alberta Hospital Edmonton to receive mental health treatment. This study is the doctoral research of Ms. Diana Armstrong, and this project is being supervised by Drs. William Hanson, Derek Truscott, and Virginia Newton. Dr. William Hanson is Ms. Armstrong's primary doctoral supervisor at the University of Alberta and is listed as the Primary Investigator of this study as per HREB regulations. All these individuals are interested in examining whether

Collaborative/Therapeutic Assessment (C/TA) is a helpful intervention for individuals admitted to Alberta Hospital Edmonton.

**Study Procedures:** Should you agree to participate in this study, you will be asked to partake in a Collaborative/Therapeutic Assessment (C/TA) with a doctoral level counselling psychology practicum student or psychology resident. Everyone who agrees to participate in this study will also continue to receive treatment from other healthcare practitioners at AHE (e.g., psychiatry, social work, recreation therapy, etc.). Your sessions with the student clinician may be audio or video recorded to verify that the student clinician is adhering properly to the study protocol. You may request that the recording device be turned off at any time.
*Collaborative/Therapeutic Assessment (C/TA):* You will be meeting with the student clinician around six times (four weeks total). The C/TA will include six steps that you will be guided through with the clinician. These are: 1) collaboratively developing assessment questions and participating in a clinical interview, 2) participating in standardized testing session(s), 3) engaging with the clinician in an assessment intervention session, 4) working with the clinician to discuss the findings of your assessment results, 5) receiving written feedback from the clinician, and 6) partaking in a follow-up session with the clinician.

Throughout the entire study, you will be asked to complete daily ratings on five factors that are of most importance to you. In addition, you will complete daily ratings of your level of distress and hope. The daily ratings will take approximately 5 to 10 minutes to complete each day. Additionally, you will be asked to complete questionnaires each time you meet with the student clinician. These questionnaires are helpful to better understanding your thoughts, feelings, and specific symptoms that may be bothersome to you. The total amount of your time that this study will require is approximately 15 hours.

**Potential Benefit of Participation:** There has been accumulating evidence within the research suggesting the individuals who participate in C/TA experience positive benefits. The procedures in this study may help you better understand yourself and your problems. Your participation also may help other patients in the future, as the focus of this research is trying to determine how to best help individuals who are struggling.

**Risk and Discomforts of Participation:** If you choose to participate in this study, you will be asked personal questions that may be slightly uncomfortable at times. You may also find yourself feeling frustrated, impatient, or even fatigued as a result of the testing at certain points within the study. This is common and the tests you will be completing are tests the psychologists regularly use at AHE. In the instance you are significantly bothered by a test you are working on, you have a right to discontinue the activity at any point, with no negative repercussions. Although unlikely, if you are injured in any way as a result of the study processes you will receive the appropriate medical attention.

**Alternatives to Participation:** If you choose to not participate in this study, you will continue to receive all the healthcare services available at AHE.

**Protection of Personal Information:** The investigator or their study staff may need to look at your personal health records or at those kept by other health care providers that you may have

seen in the past (i.e. your family doctor). Any personal health information that we get from these records will be only what is needed for the study. During research studies it is important that the data we get is accurate. For this reason your health data, including your name, may be looked at by people from: the University of Alberta including Drs. Hanson, Truscott, and Newton, HREB, and/or Health Canada. By signing this consent form you are saying it is okay for the study team to collect, use and disclose information about you from your personal health records as described above. After the study is done, we will still need to securely store your health data that was collected as part of the study. At the University of Alberta, we keep data stored for a minimum of 5 years after the end of the study.

**Participation in this Research is Voluntary:** It's your choice to be in this study. You may choose not to answer any question if it makes you uncomfortable, and you may withdraw from the study at any time. If you leave the study, we will not collect new information about you. If you choose to discontinue participation, you can request that your data be removed from the study and we will gladly remove your data up until your final session with the student clinician. We will need to keep the data that we have already collected for 5 years but we will not use it for any research.

**Additional Information:** If you need any additional information regarding this research project you are welcome to contact Ms. Diana Armstrong at (780) 342-5148 (diana.armstrong@ahs.ca).

The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615. This office has no affiliation with the study investigators.

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TITLE: Collaborative/Therapeutic Assessment with Psychiatric Inpatients Diagnosed with Bipolar Disorder

Principal Investigator: Dr. William Hanson, PhD, Registered Provisional Psychologist
Tel: 780-492-9007

Co-Investigator: Ms. Diana Armstrong, M.Ed., R. Psych. Tel: 780-342-5148

Co-Investigator: Dr. Derek Truscott, PhD, R. Psych. Tel: 780-492-1161

Co-Investigator: Dr. Virginia Newton, PhD, R. Psych. Tel: 403-517-6216

## CONSENT FORM

Do you understand that you have been asked to be in a research study? Yes No

Have you read and received a copy of the attached Information Sheet? Yes No

Do you understand the benefits and risks involved in taking part in this study? Yes No

Have you had an opportunity to ask questions and discuss this study? Yes No

Do you understand that you are free to refuse to participate or withdraw from the study at any time? You do not have to give a reason. Yes No

Has confidentiality been explained to you? Yes No

Do you understand who will have access to your records, including personally identifiable health information? Yes No

This study was explained to me by _____

**The above information has been read and explained to me. I have also had the opportunity to read this information and to ask any questions concerning my participation in this research project. By signing this form, I am indicating my interest and consent in participating in this study. My signature authorizes the use and disclosure of my health**

**care information collected through this study's procedures. A paper copy of this consent form has been provided to me. This consent form is valid for the duration of this study.**

_____
(Printed Name of Research Participant)

_____ _____
(Signature of Research Participant) DATE

_____ _____
(Printed Name of Person Obtaining Consent) DATE

_____ _____
(Signature of Person Obtaining Consent) DATE

I believe that the person signing this form understands what is involved in the study and voluntarily agrees to take part.

_____ _____
(Signature of Investigator) DATE

Further explanation of the procedures has been offered to the individual signed above has been provided by:

_____ _____
(Signature of Investigator) DATE

**Please provide the participant with a copy of the completed consent form for their records. Please place a signed copy of this consent form on the participant's medical chart at AHE in the Psychology section.**

## Appendix C: Semi-Structured Clinical Interview

During the pre-intervention session (pre-C/TA phase of the study), student clinicians will engage in a semi-structured clinical interview with each participant. This semi-structured clinical interview will include the following:

**Examiner:**
**Date of Interview:**
**Patient Name:**

**Nature of Problem/Reason for Admission** (When did it begin? How did it start? What makes it better/worst? Current coping?)

**Mental Health History** (History of depression, anxiety, fears, phobias, bipolar disorder, OCD? Ask about specific symptoms. Review previous diagnoses (bipolar disorder?) – what does the patient think of these diagnoses?)

**Mood** (How has your mood been? How's your energy/motivation? Assess for indications of mania and hypomania - e.g., periods of elation, lack of sleep, impulsivity, irritability, etc.)

**Psychosis** (Have you ever seen things that are not real? Heard voices when you are alone/no one is talking to you? Smelled strange smells? Felt someone touching you when you are alone? Etc.)

**Thought Processes** (Do you lose track of your thoughts? Does your thinking frequently become interrupted? Rumination? Obsessions?)

**Memory** (Long term, short term, immediate recall)

**Attention and Concentration** (Able to watch a movie/tv show or read without getting distracted?)

**Current Substance Use** (Alcohol, drugs, cigarettes, caffeine, frequency and amount per day/week)

**Past Substance Use** (Alcohol, drugs, cigarettes, caffeine, frequency and amount per day/week)

**Sleep** (Difficulty falling asleep? Frequent waking? Early morning wakening? Sleep is non-restorative?)

**Appetite** (Normal? Reduced? Increased? Healthy eating? Changes in eating?)

**History of Abuse** (Have you ever been physically, sexually, or emotionally abused? If so, when, and by whom? In what ways has the abuse affected you?)

**Key Life Events** (Is there anything that really stands out for you, either positive or negative, that has had an impact on who you are today?)

**Medical Systems Review** (Current or past medical issues such as hospitalizations, head injuries, surgeries, etc.)

**Place of Birth**

**Family History** (Tell me about your family. Parents? Siblings? Partner? Children?)

**Family Mental Health History** (Family members who struggled with mental health issues. If so, who?)

**Social History** (Social supports? Living arrangement? Social situation/interaction?)

**Educational Experience** (How far did you go in school? If currently in school, what is your experience? Current academic performance?)

**Work Experience/Career** (What is your current work experience, if any? How many hours/week?)

**Allergies** (medication and food)

**Self-Concept** (Describe who you are as a person. What are your values, attitudes or beliefs? What are your interests? What strengths would you say, or would others say, you have?)

**Other Agencies or Practitioners Involved** (current and past counselling, helpful and unhelpful)

**Behaviour/Appearance during interview** (relevant affect/behaviour)

## Appendix D: Mark's C/TA

### Additional History on Mark

At the time of admission, Mark was living with his aunt. He did not have a history of abuse and had a supportive family. Mark had a work history in plumbing. He experienced his first manic episode prior to starting an apprenticeship year and, as such, did not complete his training in the area. Mark had a history of declining both mental-health follow-up in the community and his prescribed medication. For example, following his most recent discharge from psychiatric hospital, Mark stopped taking Abilify due to the sedating effects of the medication. He had a history of alcohol abuse extending back to his teenage years, and ongoing cannabis use throughout his life.

Mark presented to the emergency department experiencing an episode of mania secondary to substance use. Upon initial interview by the admitting psychiatrist, Mark acknowledged that he had increased his intake of marijuana, cocaine, and alcohol in the preceding days. Within the previous week, Mark had been experiencing increased energy, decreased sleep, was engaging in risky and impulsive behavior (i.e., gambling). At the time of the admission, he was not taking any psychiatric medication. Observations of Mark during this initial presentation noted circumstantiality, grandiosity, and that he was agitated. He had an elated affect, pressured speech, a tangential thought process, and poor judgement. As such, Mark was admitted for psychiatric stabilization and treatment.

### Mark's C/TA

**Phase 1: Pre-Intervention Session.** The clinician (male clinician) met with Mark in the pre-intervention session to obtain consent, begin taking a clinical history, and develop the idiographic measures. Through this process, consent was provided by Mark to participate in the

study and C/TA intervention. In the initial meeting, Mark was observed to have an elated affect and a nonlinear thought process. He informed the clinician that he was feeling "manic." The clinician found it difficult to get history; however, the clinician and Mark were able to begin establishing rapport. Mark was able to convey his frustrations and worries about his ongoing struggles with mania and his use of illicit substances to cope. He also spoke with the clinician about his use of cannabis to calm himself in place of experiencing the many side effects of his mood-stabilizing medications. The study clinician and Mark acknowledged his significant concerns about his future and frustrations with his recurrent episodes of mania. He shared his enthusiasm for patriating in a C/TA intervention and agreed to the following schedule to complete C/TA processes and the study design aspects. Mark was agreeable to meet with the clinician at the same time/date in the following week.

**Phase 2: C/TA – Intervention Phase.**

***C/TA Subphase 1 – Initial Session*:** Upon initiation of the C/TA (C/TA Subphase 1), Mark and the study clinician collaboratively developed the following assessment questions to guide the assessment process:

1) What do I do to deal with mania in the future (i.e., how to develop a regular life regime)?
2) What are my cognitive abilities (e.g., memory?) How does this inform my career?

During this session, Mark was observed to be significantly more stable in his mental state. He voiced difficulties with trusting and working with his male psychiatrist. The clinician made note of these interpersonal difficulties and recalled that Mark had issues with medication noncompliance in the past as well. In light of the questions posed by Mark, the clinician engaged in some additional history taking and scheduled a day of testing with Mark toward the end of the week.

***C/TA Subphase 2 – Standardized Testing Session(s)*:** Mark met with the clinician and psychometrist to complete the standardized administration session. Mark completed all the measures for the study on one day. The measures that were administered to Mark included:

- House-Tree-Person (H-T-P)
- Minnesota Multiphasic Personality Inventory – Second Revision, Restructured Form
- (MMPI-2 RF)
- VIA Character Strengths Survey
- Wechsler Adult Intelligence Scale – Fourth Revision (WAIS-IV) *(Canadian norms)*

First, he completed the MMPI-2-RF with the clinician in the morning. The afternoon included the administration of the H-T-P, VIA Character Strengths Survey, and the WAIS-IV with the hospital psychometrist. Extended inquiry following the administration of the MMPI-2 RF revealed that Mark found it difficult to focus and that he was fatigued. He reported to the clinician that he was uncomfortable and experiencing pain while sitting in the chair. As such, Mark requested to stand up and pace. Collaboratively, Mark and the clinician agreed that he could have frequent breaks to stand-up and pace the hallways to help alleviate the physical pain he was experiencing.

The results of the assessment included the following information:

*MMPI-2 RF:* Mark produced an MMPI-2 RF profile the highlighted areas of significant distress and dysfunction. Mark responded to the MMPI-2 RF questions similarly to individuals who experience disordered thinking (THD – Thought Dysfunction T= 70) with elevations on the RC8 - Aberrant Experiences scale. He also responded in a manner that indicated the presence of behavioral/externalizing dysfunction (BXD – Behavioural Dysfunction = 68) with the elevations on the RC4 -Antisocial Behaviour, SUB - Substance Abuse, ACT - Activation, and AGG -

Aggression. Mark's responses indicated that he may be experiencing cognitive complaints (COG). With regards to his emotional functioning, there was elevations on the RC7 – Dysfunctional Negative Emotions, STW – Stress/Worry, ANP – Anger Proneness, and NEGE-r – Negative Emotionality/Neuroticism-revised scales. Interpersonally speaking, Mark reported elevations on the FML - Family Problems scale.

The clinician interpreted the findings of the MMPI-2 RF within the context of Mark's history. In considering the areas of elevation, the clinician wondered about the extent to which Mark was or had experienced unusual thoughts and perceptions, such as hearing strange things, feeling: as though he was losing control of his body, and hearing his thoughts out loud. The clinician pondered if these experiences occurred within the context of Mark's manic episodes. The clinician also contemplated the influence of Mark's substance use on his wellbeing and mental status.

In considering the results of the MMPI-2 RF, the clinician reflected on Mark's tendency toward argumentativeness, irritability, and anger. The clinician wondered how the anger Mark experienced contributed to the difficulties he was having in relationships, particularly with his family and caregivers (e.g., his mental health team/male psychiatrist). This might include a tendency for Mark to act aggressively or be defiant (e.g., stop taking his medications). The negative emotionality that was highlighted by Mark's MMPI-2 RF caused the clinician to consider the extent to which Mark was experiencing excessive worry, unhappiness, self-criticism, insecurity, and pessimism. The clinician wondered about the impact of his negative emotions on his ability to concentrate and remember. The clinician also considered the implications for Mark in working with his healthcare team and how his negative emotions might negatively impact his willingness to collaborate fully in his care and stay on his medication

regime. Lastly, the elevations in Mark's MMPI-2 RF profile on the activation scale seemed to fit, the clinician thought, with Mark's reports symptoms of mania. This included, for example, excess energy, a reduced need to sleep, and elevated mood that Mark discussed experiencing in the past.

*H-T-P:* Through the H-T-P the clinician was able to get a better view of Mark's inner world. Mark drew a relatively simplistic two-dimensional house (see Figure 43) with two doors on opposing sides of the house. There were bars on the windows, and the house was drawn floating in the upper middle portion of the page. Upon reflecting on the image, the clinician wondered about the significance of the double doors and the possibility that they signified two opposing sides to Mark. The clinician was curious if the doors illustrated a divide or a lack of integration into Mark's sense of self or emotional processes. This was an interesting interpretation, as Mark's self-report on the study's daily measures suggested he was much less distressed than his MMPI-2 RF results suggested (e.g., reporting SUDs of "0" on a significant number of days throughout the study). The clinician wondered to what extent was Mark minimizing symptoms to his treatment team. Alternatively, the clinician was curious how aware or how much insight Mark held of the problematic symptoms he was experiencing (i.e., insight into his mental state and ability to reflect on internal processes). With regards to the bars on the windows, the clinician was curious if this might signify an attempt to keep others "out" or at a distance.

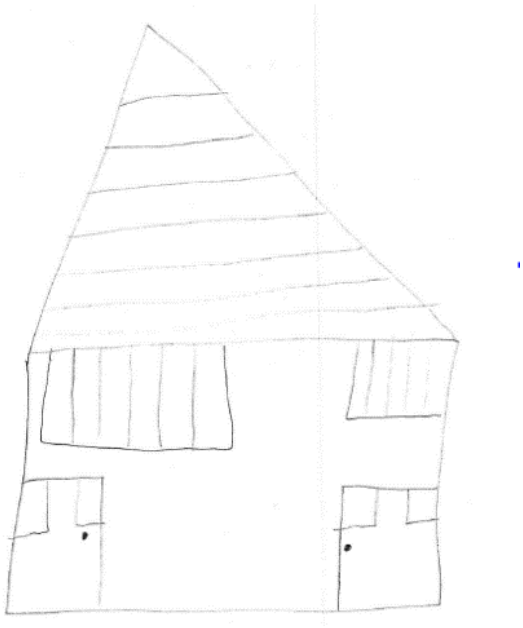

*Figure 43.* Mark's House

Mark drew a sturdy looking tree (see Figure 44) with a significant amount of detail and six stubby looking branches along the side of the tree. The crown of the tree held a psychedelic quality with the inclusion of jagged lines swirling inward toward the centre of the tree's crown. At first glance, Mark's tree appeared other-worldly and alien-like. Upon reflecting on Mark's tree, the clinician wondered what Mark would have done with the image if provided colouring instruments and whether this was an illustration of some of Mark's abnormalities with his thought process and perceptions, as measured on the MMPI- 2 RF. The clinician was curious about the significance of the small branches along the main trunk and whether they may be related to growth experiences that were interrupted. In examining the crown of the tree, the clinician was curious if it could be an illustration of his difficulties with bipolar disorder and substance use (i.e., a jagged course of illness and a sense of swirling in on oneself).

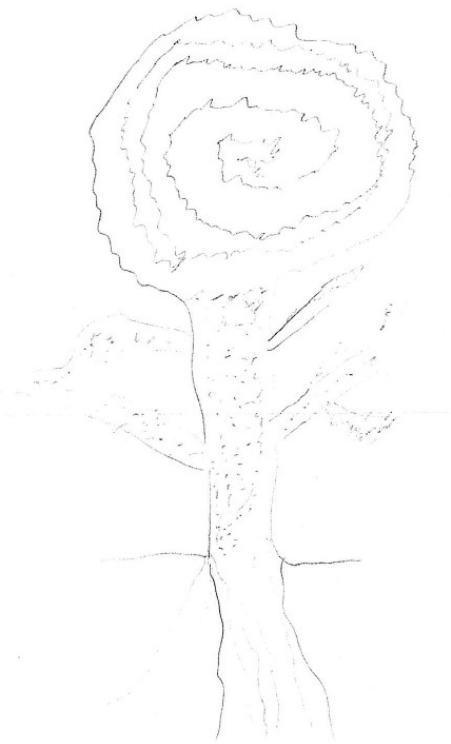

*Figure 44.* Mark's Tree

With regards to Mark's person (see Figure 45), he drew a tiny figure with stick arms, no hands, and thick legs. The torso of the person was small and significantly out of proportion to the rest of the body. He placed the image floating in the middle of the page. The clinician was struck by both the small size of the figure and the lack of hands. He wondered about Mark experiences of feeling small, insignificant, and inept/helpless. The clinician wondered if Mark's repeated hospitalizations had contributed to a sense of being helpless, feeling insufficient, and finding himself ungrounded/floating. The clinician wondered if the torso size signified Mark's lack of awareness of his emotional experiences (e.g., the somatic sensations of emotions that commonly are felt within the torso).

*Figure 45.* Mark's Person

*WAIS-IV:* On the day of testing Mark's cognitive abilities as measured on the WAIS-IV were found to be in the borderline range (FSIQ = 8th percentile). Mark demonstrated a relative strength in his verbal comprehension abilities, which fell within the average range (VCI = 25th percentile). Mark's perceptual reasoning abilities were found to fall within the low average range (PRI = 9th percentile). With regards to working memory, Mark's abilities were estimated to fall within the low average range (WMI = 12th percentile). Lastly, his processing speed abilities fell within borderline range (PRI = 8th percentile). The hospital psychometrist observed that during the *Block Design* subtest, Mark said, *"This is actually kind of fun."* He stood up during the administration of *Vocabulary* and *Arithmetic.*

*Values in Action (VIA):* The character strengths Mark indicated to be the most important to him included an Appreciation of Beauty and Excellence, Curiosity, Gratitude, Humor, and Kindness. The psychometrist noted that during the computer administration of the VIA, Mark said that his eyes burned when he was reading from the computer screen. He was observed to pull the computer screen towards his face and stated that he liked to have the screen close.

Given what the clinician had learned about Mark through interviewing and interpreting the assessment results, he began considering what level 1-3 information might consist of for Mark. Level 1 information, the clinician thought, might include Mark's reported character strengths and his experiences of mania and substance abuse. Level 2 information might have included the results of the cognitive testing. Mark's cognitive abilities were thought to be level 2 information given that Mark conveyed concerns about his cognitive abilities, while also holding curiosity about career areas that fit his cognitive inclinations. The clinician took Mark's comments and curiosities about his abilities to indicate some insightfulness into where he was at cognitively. Lastly, the clinician speculated that level 3 information consisted of Mark's tendency to minimize or deny his internal emotional experiences and the extent to which his lack of insight worked against him in engaging more fully in his treatment.

***C/TA Subphase 3 – Assessment Intervention and Summary/Discussion Session*:** Mark and the clinician met in the week following the administration session. The clinician followed-up with extended inquiry regarding Mark's experiences completing the H-T-P, WAIS-IV, and VIA with the psychometrist. Mark reiterated that he was fatigued throughout the testing process and did not offer any other reflections on the testing process.

In light of Mark's presentation, history, assessment results, and the level 1-3 organization of information, the clinician devised an assessment intervention focused on level 3 information and his question: What do I do to deal with mania in the future (i.e., how to develop a regular life regime)? In part, the focus of this intervention was developed in response to the clinician's observations that Mark seemed to downplay ongoing problems and distress (as observed by his discussions with various healthcare professionals involved in his care, as well as his report on daily indices). However, his responses on the MMPI-2 RF suggested that he was experiencing

notable issues. This was especially concerning, as this tendency of impacted the care he could receive from his treatment team. Finn (2015) discussed the intricacies of using assessment interventions for clients who were conceptualized as "overdefended" (p. 7). By overdefended, Finn was referring to individuals who "have problems-in-living as a result of "overly active" coping mechanisms that have become very costly and/or have led to the client having little access to emotions" (p.7). Thus, the clinician and supervisor thought it might be helpful to begin to bring to light Mark's observed tendency to deny or minimize life problems and/or strong emotions and highlight with Mark the cost of his denial (e.g., that it may be impacting his ability/willingness to engage in treatment with this team and better cope with problematic symptoms, such as mania). As a result, TAT cards were pulled (i.e., cards 7 BM, 12M, 8 BM, and 16), that illustrated interactions between men, with some of the images denoting authority figures. The clinician speculated that these cards might be ideal for evoking feelings of mistrust, frustration, and possibly anger for Mark related to interactions with his male psychiatrist and in vivo with the clinician. Mark's responses were highly intellectualized, brief, and lacking in emotional content. In many of the stories, there was a theme of an external locus of control or a lack of control experienced by one of the figures. There were also themes of life and death. Interestingly, despite the prominence of male figures in the cards, Mark repeatedly reported seeing women figures. The clinician wondered if this was, perhaps, tied to lingering perceptual disturbance.

As the clinician and Mark worked through his responses to the cards, the clinician inquired into any emotional reactions Mark was experiencing. Initially, Mark was observed to be defensive, denying experiencing any emotions or reactions. Relying on the therapeutic relationship they had already cultivated, the clinician slowly explored with Mark the process of

his responding to the TAT cards and his emotions arising with the clinician at that moment (i.e., his defensiveness and frustration arising in the transference with the clinician). Through this in vivo process, Mark first was able to see how he quickly (and angrily) rejected an alternative viewpoint from a concerned other. Mark was able to begin to see and acknowledge that he had an automatic (and protective) tendency to minimize/deny his reactions and push away caring individuals in his life. Together, he and the clinician understood that this knee jerk response of Mark's came from prior experiences of feeling disempowered and lacking in personal control in accessing services within the mental health care system. They collaboratively discussed how Mark's defensive processes ultimately hindered his accessing and receiving the maximal benefit from the healthcare available. This discussion between Mark and the clinician led to an additional assessment question:

3) What is my personality/soul?

It seemed that through the assessment intervention, Mark started to become increasingly curious about himself and was able to express to the clinician his desire to learn more. The clinician wondered if this was a qualitative indicator of Mark feeling more empowered and willing to engage with the care he was receiving.

Toward the end of this session, the clinician brought in some of the assessment results to further highlight the learnings Mark had been experiencing in the session. The clinician discussed the results of the MMPI-2 RF (i.e., presence of negative emotions and defiance) and they also examined Mark's tiny drawing of a person (i.e., possibly related to Mark's experiences of feeling small, insignificant, and disempowered). By the end of the session, Mark voiced his new insight into his emotional avoidance and denial, and he and the clinician started exploring how he could begin attending to his internal experiences and build more trust and collaboration

with his treatment team. They discussed how doing so would enable Mark to better manage the problematic symptoms of his illness through self-reflection and foster more timely engagement with mental health intervention (e.g., medication adjustments), possibly avoiding future manic episodes.

***C/TA Subphase 4 – Written Feedback*:** The clinician and Mark met for the written feedback session to collaboratively review the therapeutic letter and to continue to discuss the findings of the assessment. The clinician was careful to verbally review the information in the therapeutic letter, keeping in mind level 1-3 information. The clinician was mindful to validate Mark's difficulties and experiences with bipolar disorder and substance use over the years, including the presence of unusual thinking and perceptions. They discussed Mark's cognitive strengths and weaknesses and career areas that might be a good fit. Lastly, they reviewed the learnings from the assessment intervention session and explored ways in which Mark could begin to better work with his healthcare providers and notice and cope with his emotions. Mark and the clinician took time in this session to speak about his next steps. This included a plan for Mark to start collaborating with his treatment team and share his thoughts about his medications. The clinician also provided Mark with resources for counselling in the community.

**Phase 3: Post-Intervention Session.** The clinician met with Mark for a final time one week following the provision of the therapeutic letter. The clinician observed that Mark was euthymic and voicing readiness for discharge. The clinician inquired into Mark's experiences throughout the C/TA. Mark reported learning about himself and that he planned to put into place some of the strategies they discussed. Mark expressed gratitude for the clinician's efforts and time.

## Appendix E: Grace's C/TA

### Additional History on Grace

At the time of her presentation, Grace was living with a friend. She had two children, both of whom were adopted at the time of birth due to Grace's ongoing use of cocaine and difficulty in providing adequate care for them. According to available medical records, Grace sustained the traumatic brain injury approximately 20 years ago (in 1999). Reports indicated that she was intoxicated on alcohol at the time of injury and there appeared to be no recorded post-injury rehabilitation provided. Prior to experiencing this brain injury, Grace had attended college and worked successfully in the hospitality industry at a well-known hotel in the area. She also enjoyed practicing magic tricks and reported that performing arts were a notable hobby. Within Grace's history, it was unclear if bipolar symptoms (i.e., mania) were brought on by the TBI, or if symptoms were merely exacerbated by the injury. Alongside the bipolar diagnosis, Grace had been diagnosed with alcohol use disorder, cannabis use disorder, and cocaine use disorder. She had 10 previous psychiatric inpatient admissions, a documented history of medication noncompliance, and chronic polysubstance abuse.

Grace's current admission occurred within the context of binging on alcohol and cocaine following a missed opportunity to visit with her daughters. At the time of presentation to the emergency department, Grace was notably bizarre, grandiose, elated and irritable in her affect, and had pressured speech. She reported a lack of sleep for approximately 5 days, impulsive behavior (i.e., running in an out of people's unlocked houses in her neighbourhood), difficulty concentrating, and racing thoughts. Additionally, Grace reported several negative, ruminative thoughts about herself and her financial situation, as she held significant debts for property that she had damaged while intoxicated in her previous living situation. She denied experiencing

hallucinations but did endorse some paranoid delusions regarding a gang monitoring her and her home. She demonstrated superficial insight into her diagnoses and had impaired judgement. She was not taking any prescribed medication at the time of her presentation. Given Grace's manic state at the time of presentation, she was admitted for psychiatric stabilization.

## Grace's C/TA

**Phase 1: Pre-Intervention Session.** Upon meeting with the study clinician (female clinician), Grace was observed to be cooperative, somewhat elated, and she expressed excitement about participating in the daily data collection and the C/TA intervention. The clinician reported that she observed Grace's thought process to be somewhat circumstantial with voiced paranoid beliefs about politics and global warming. When developing her idiographic indices, Grace reported to the clinician that she wanted to start her day by considering her tasks (i.e., monitoring her schedule). She stated that she felt it would help with the mental cloudiness that she was experiencing in the mornings.

**Phase 2: C/TA – Intervention Phase.**

***C/TA Subphase 1 – Initial Session*:** Upon initiation of the C/TA (C/TA Subphase 1), Grace and the study clinician met and began to start collaboratively developing assessment questions to guide the assessment process. The clinician reported that Grace had settled significantly since their first meeting. She noted that Grace was increaslingly linear, was able to work with the clinician in a structured manner, and was mindful of the time restraints of their meeting. However, the clinician observed that Grace was still elated to a certain degree with rapid, tangential speech, a somewhat tangential thought process. For example, Grace's initial responses to the opportunity to develop assessment questions included an outpouring of question upon question with several linked stories about her life. Grace was observed to be responsive to

the clinician's redirection to the task at hand and, together, Grace and the clinician narrowed and grouped her questions into the following two areas:

1. Can I ever be a person that can be taken seriously? Be an authoritative figure, be asssertive, and be someone people can respect?
2. Can I ever be positive and complete tasks on my own without people pushing me to do it? Can I live a stable life and love myself again? Can I be a healthy person? Can I have a schedule and stay motivated? Can I have a clear vision of what I need to do and stay focused?

When needed, the clinician took additional clinical history surrounding the questions developed with Grace. It was notable in this session that Grace felt more comfortable to share some of her deeper thoughts and feelings with the clinician. For example, she shared that, "*I don't love me on the inside anymore*." Grace discussed her experiences of adjustment since her accident over the past two decades. Grace reported that she also continually experiences sadness in response to the loss of custody of her children, her frustrations with the inability to work in the same capacity as she previously was able, and difficulties in relationships she has experienced. Through the collaborative development of assessment questions, Grace appeared to notice emotions, memories, and thoughts that were perhaps more out of her awareness prior to the session.

***C/TA Subphase 2 – Standardized Testing Session(s):*** On the day of testing, Grace was agreeable to meet with the clinician and a psychometrist to complete the standard assessment battery. The measures that were administered to Grace in the C/TA included:

- Minnesota Multiphasic Personality Inventory – Second Revision, Restructured Form (MMPI-2 RF)

- Wechsler Adult Intelligence Scale – Fourth Revision (WAIS-IV) (Canadian norms)
- House-Tree-Person (H-T-P)

Testing occurred in the morning and afternoon, with the student clinician first administering the MMPI-2 RF and H-T-P with Grace in the morning. Following the MMPI-2 RF and the H-T-P the clinician and Grace partook in some limited extended inquiry. The afternoon administration included the WAIS-IV with the hospital psychometrist. Grace was agreeable to complete the WAIS-IV; however, she did voice some displeasure at having to spend the afternoon in testing. She reported that she found the testing tiring after her morning testing with the student clinician.

In brief, the findings of the assessment were as follows.

*MMPI-2-RF***.** Grace produced a MMPI-2 RF profile that highlighted that she was experiencing significant psychological difficulties in many domains. Grace responded to the MMPI-2 RF questions similarly to individuals who experience disordered thinking (THD – Thought Dysfunction T= 70) with elevations on the RC6 - Ideas of Persecution, RC8 - Aberrant Experiences, and PSYC-r – Psychoticism – Revised scales. She also responded in a manner that indicated she has been experiencing behavioral/externalizing dysfunction (BXD – Behavioural Dysfunction = 76) with the highest elevations on the RC4 -Antisocial Behaviour, JCP - Juvenile Conduct Problems, SUB - Substance Abuse, ACT - Activation, and DISC-r - Disconstraint-Revised scales. Grace reported significant somatic concerns, with the NUC – Neurological Complaints, COG – Cognitive Complaints, and GIC – Gastrointestinal Complaints being the highest elevations. Interpersonally, Grace reported having negative experiences with family. With regards to emotional problems, Grace responded on the MMPI-2-RF in a manner similar to individual who have difficulty with feelings of demoralization (RCd), suicidal/death ideation

(SUI), Anxiety (AXY), and behaviour restricting fears (BRF). Interestingly, Grace's score on the Introversion/Low Positive Emotions was low, which pointed to her extroverted nature.

The clinician interpreted these findings within the context of Grace's history. In brief, the clinician noted that Grace was experiencing many psychological difficulties and that she likely perceived herself in a negative light. Given the degree of persecutory thinking present for Grace at the time of administration, the clinician was curious how this aspect of Grace's experience contributed to her difficulties interpersonally. This was further illustrated by Grace approaching the clinician on one occasion in an accusatory manner, questioning whether she could trust the clinician. The clinician wondered how Grace's mistrust of others contributed to feelings of isolation and, to a certain degree, to the family discord reported by Grace. The clinician was curious if Grace found it difficult to trust herself to cope adequately with life problems, given Grace's levels of anxiety and hopelessness. The clinician wondered if Grace felt overwhelmed by her anxiety and hopelessness to the point where she experienced suicidal thinking. It was necessary, the clinician thought, to also consider the functional impairment of emotions like anxiety and hopelessness for Grace as she attempted to accomplish tasks, achieve her goals each day, and work toward the future she envisioned.

Regarding the somatically oriented elevations on Grace's MMPI-2 RF, the clinician acknowledged that Grace experienced a significant head injury and likely was experiencing ongoing cognitive and neurological issues as a result of this injury. However, the clinician also recognized the interplay between psychological distress and physical symptoms. The clinician was careful to consider how physical symptoms can arise in response to stress, fatigue, and feelings of depression. Negative emotion states can also negatively impact cognitive challenges with memory, concentration, and confusion like Grace experienced. Lastly, the clinician was

curious about Grace's use of substances and whether these substances were helpful for Grace to numb or avoid her feelings. On a positive note, the Clinician was interested in Grace's extroverted nature and the link between her extraversion and her hobby in the performing arts.

*WAIS-IV.* Cognitively, on the day of testing Grace's abilities were found to be in the low average range (FSIQ = 16$^{th}$ percentile) with the verbal comprehension index in the average range (39$^{th}$ percentile). This seemed to fit the clinician's observations of Grace, as she was a highly verbose individual. Additionally, her score in the average range on the vocabulary test was also fitting to Grace's accounts of her premorbid level of functioning before her accident and psychiatric illness. Grace's perceptual reasoning, working memory, and processing speed abilities were found to fall within the low average range (16$^{th}$, 12$^{th}$, and 21$^{st}$ percentile respectively) on the day of testing.

*H-T-P.* Through the H-T-P the clinician was able to get a better view of Grace's internal world. First, she drew a two-dimensional house with a door, a roof, and windows (see Figure 46). After drawing the basic structure, Grace spontaneously shared with the clinician a rich verbal description of what her house contained (i.e., a husband, animals, fun activities for children in the yard, room for entertaining guests, and also a private room for her to have personal space to reflect and have alone time). Following this description, Grace drew haphazard horizontal lines through the house. In response, the clinician acknowledged how "full of life and love your conception of home is" and that she noticed the lines Grace added. The clinician wondered to Grace about the significance of these lines and whether they represented life barriers she had been experiencing. Grace voiced the frustrations she has experienced in her life. She stated that she placed the private room in her house to be a place to reflect on herself and her life. Grace and the clinician discussed Grace's desire to learn and understand herself better and

the many benefits she will experience as a result (e.g., have healthier relationships with self and others, better management of bipolar disorder).

*Figure 46.* Grace's House

Grace then drew a tree with little detail that was arrow-like in appearance (see Figure 47). Grace had started to draw a detailed tree to the right of the tree, but the clinician observed her to become frustrated and cross out the tree. Upon observing this, the clinician recalled Grace's tendency not to take time with activities. The clinician wondered if, perhaps, this was why Grace's tree had very little detail. The clinician also went out on a limb and wondered if the arrow-like appearance of the tree was illustrative of Grace's somewhat elevated mental status. They explored how Grace's symptoms of mania have impacted her ability to attend to details in herself and her life.

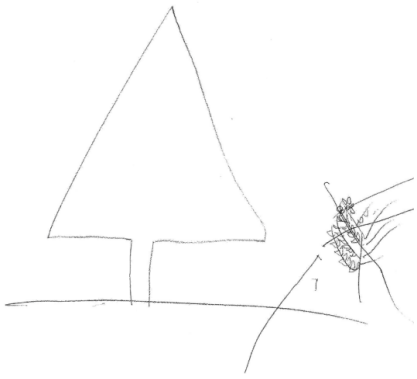

*Figure 47.* Grace's Tree

With regards to Grace's person (see Figure 48), Grace drew a friendly-looking woman with large hair. The clinician and Grace wondered about the possible relationship between hair size and Grace's history with head injury. The clinician was curious whether the person's hair was representative of Grace's concerns with the health and functioning of her brain, which was an area of worry for her. The friendly and open stance of the person was thought to possibly be illustrative of Grace's willingness and desire to connect with others.

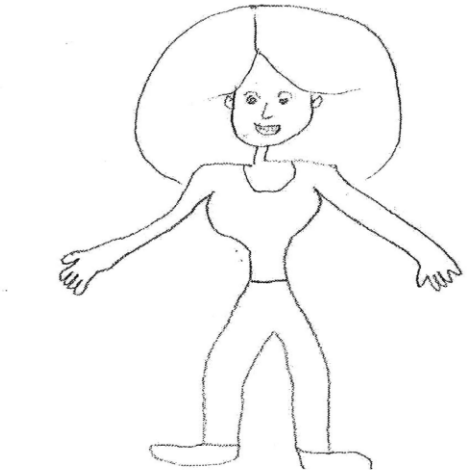

*Figure 48.* Grace's Person

Given what the clinician knew about Grace from interviewing and the assessment results, she determined level 1 information consist of Grace's extroverted tendencies and how this aspect of herself assisted her with her performing arts. Also, Grace's use of substances to cope was thought to be level 1, as she had discussed this with the clinician previously. Level 2 information was speculated to consist of Grace's strengths on the cognitive measure within the context of her head injury and her voicing concern about her performance. Level 3 information was thought to consist of the extent and impact of Grace's self-criticism and self-doubt that she expressed

throughout the assessment. The clinician wondered how aware Grace was of her automatic tendency to be self-critical and how this might be impacting her levels of hope for the future, substance use, and whether it contributed to her suicidality that showed up on the MMPI-2 RF.

***C/TA Subphase 3 – Assessment Intervention and Summary/Discussion Session*:** As mentioned previously, subphase 3 occurred following Grace's use of substances and the resulting brief transfer to the intensive care psychiatric unit over the weekend. Upon returning to the acute psychiatric unit, the clinician met with Grace and noted a significant improvement in her mental status. They initially spent time processing the events leading up to her transfer and her experiences on the other unit. The clinician found Grace much more focused and calmer. Grace reported that something had "clicked" for her and that she was feeling significantly more settled. She shared feeling regret and embarrassment about the incident. Grace stated that she believed her psychiatric medications help her improve her "competency", reduce her experiences of being "scatterbrained", and that she felt more in control over her body.

The clinician followed-up on the extended inquiry her and Grace had started on the test administration day. Grace reported that she found some of the assessment measures harder than others. She said that, in general, she was asked too many questions at once and that she found her "brain got panicky" while she was being tested. She said this led her to want to be somewhere else to deal with her many life issues (e.g., housing, finances, physical health). Grace reported that she wasn't present in testing and that she felt she could have performed better. With regards to each test, Grace reported that she found the MMPI-2 RF had too many questions and that she had difficulty deciding between "true" and "false." She found the cognitive measure to be "too specific" and that as the items increased in difficulty, it led to feelings of frustration and self-criticalness for Grace. She said that she found the puzzles and math components of the measure

to be easy, but that she felt distracted by the clock ticking in the room. Grace reported that "cognitive decision making is not my forte". Alternatively, she reported that the H-T-P allowed her to use her imagination and creativity. Grace stated that the H-T-P helped to remind her of what she wanted in life.

Building upon Grace's experiences drawing during the H-T-P, the assessment intervention session was designed to target level 3 information regarding the extent and impact of Grace's self-criticism and self-doubt that was expressed throughout the assessment and within her assessment questions. The clinician thought that by focusing the assessment intervention on Grace's overarching tendency toward self-doubt and self-depreciation would address many of her assessment questions (e.g., Can I ever be a person that can be taken seriously? Can I ever be positive and complete tasks on my own without people pushing me to do it? Can I live a stable life and love myself again? Can I be a healthy person? Can I have a schedule and stay motivated? Can I have a clear vision of what I need to do and stay focused?).

As such, as a drawing exercise was devised to foster self-reflection, highlight her automatic tendency toward self-criticism, and enhance Grace's motivation to recognize and use her strengths moving forward in her life. Specifically, Grace was invited to first reflect and draw/write/speak about her past accomplishments. Her and the clinician then took an inventory of her achievements and abilities/strengths. She and the clinician explored how she could use these abilities to help her achieve her goals moving into the future. It was thought that by bringing Grace's strengths and resiliencies to the forefront of her mind, she may be reminded of her past sense of self-efficacy, motivation, and exit the hospital with a renewed sense of direction and ability. It was also thought that through this process, Grace would be able to recognize how self-critical she had become and the cost of this automatic way of treating herself.

Within the assessment intervention session, Grace drew four drawings. She drew a picture of herself surrounded by her pets, her performing magic tricks in front of an adoring audience, her at a business meeting at the head of the conference table, and her cross-country skiing. Grace shared with the clinician the major aspects of herself that she was highlighting in these drawings. First, Grace discussed the degree of care and empathy she carries for animals. She shared with the clinician that she finds significant satisfaction and happiness within her life when she is caring for animals. Alongside animals, Grace discussed her enjoyment of bringing people together in a room and making them happy. She reflected that she uses her creativity through performing arts to bring joy into the lives of others. Grace then discussed her past accomplishments in her employment. She reflected on how successful she was prior to her head injury and how much she loved her work. Grace shared how she loved being a leader and that she had strengths in management. Lastly, Grace discussed her past athletic accomplishments and how her athleticism has brought her a sense of strength emotionally and physically throughout her life.

Through this process of highlighting Grace's strengths, feelings of grief emerged as she faced the realization of the losses in her life due to her injury, substance abuse, and her self-treatment. Specifically, she discussed with the clinician that she better understood her tendency for self-criticalness in addition to her self-sabotage through doubting her abilities. Grace also pondered about her previously firmly held belief that other people's opinions of her were significant. She stated to the clinician, "*I don't need approval*." Grace acknowledged that her alcohol use destroyed her career and her health in many ways. Grace shared that she was feeling empowered to stop shaming herself and self-medicating through drugs and alcohol. Her and the clinician reflected on her tendency to doubt and minimize her strengths. It was at this point that

the clinician brought in Grace's testing and started discussing the results of the assessment guided by level 1 – 3 information as discussed previously.

They were unable to review all the results of the assessment due time constraints; however, they agreed to continue the review in their next session. Grace was pleased with the findings discussed. At the end of the session, Grace reported to the clinician, "*It seems as though I have some talents, but I haven't been using them.*" Grace stated about the present circumstances as she engaged in the C/TA process with the clinician that, "*this is my healing time*."

***C/TA Subphase 4 – Written Feedback.*** Following up on the assessment discussion, Grace and the clinician continued to discuss level 1, 2, and 3 assessment findings. The clinician also brought in the therapeutic letter for her and Grace to review collaboratively. Importantly, Grace and the clinician discussed the finding of suicidality from the MMPI-2 RF. Grace informed the clinician that this finding was not accurate. She verified that she sometimes feels hopeless to the extent that she experiences passive thoughts of hurting herself (e.g., getting in a car accident). As such, she asked the clinician to adjust the therapeutic letter to more accurately reflect her experiences with hopelessness and passive thoughts of self-harm. At the end of the session, Grace reported feeling very positive and looked forward to using her talents as she continued to recover and move forward in her life.

**Phase 3: Post-Intervention Session.** The clinician and Grace met for a final time in the post-intervention session. Grace reported to the clinician that she was pleased with what she had learned about herself through the C/TA and that she had a summary of her learnings within the therapeutic letter. She said that through the C/TA that she felt accomplished and the letter was like a "certificate" of her accomplishment. Grace reported that she planned to share the therapeutic letter with "everyone" including her treatment team.

## Appendix F: Rob's C/TA

### Additional History on Rob

At the time of his admission Rob was living with family. He had a reported history of physical and emotional abuse and came from a family system with significant discord. He also has been diagnosed with alcohol use disorder, cannabis use disorder, and to have traits of narcissistic and antisocial personality. He had a legal history of assault in addition to past charges of mischief, failure to comply and appear in court. Rob's medical history held conflictual reports of the presence of past self-harm and Rob denied a history of suicide attempts. With regards to Rob's education and work background, he had a diploma in business administration, and he had a history of a series of odd service jobs (e.g., bartender, delivery worker, and janitor). Rob reported that he was fired from several jobs over the years due to tardiness and missed shifts. At the time of presentation, he was unemployed.

At the time of current admission, Rob was brought into the emergency department by his family members due to a recurrent manic episode. They reported that Rob was increasingly irritable, grandiose, and threatening violence toward family members. He had not acted on his threats of aggression in the weeks preceding his presentation. Rob was reported to be noncompliant with his medication and to be using cannabis and alcohol daily to regulate his levels of anxiety. Rob informed the emergency clinician that within the past month he had experienced a decreased need for sleep and racing thoughts. He verbalized an extensive number of plans for his future education and employment, and his thought process was observed to be tangential with a flight of ideas. Rob agreed with the admitting clinician that he was, in fact, experiencing a manic episode. Rob was admitted for psychiatric stabilization and treatment.

### Rob's C/TA

**Phase 1: Pre-Intervention Session.** Upon meeting with the study clinician (female clinician), Rob agreed to participant in the study processes. He was observed to be enthusiastic about the assessment intervention offered. The clinician noted that Rob was somewhat elevated in his mood and had a tangential thought process, despite his lengthy period of psychiatric stabilization. The clinician began by taking a clinical history. Rob discussed the conflict he had been experiencing with his family over the years. He reported that his family originated in India and, as a result of this, his parents held negative beliefs about individuals with mental illness. Rob stated that his parents believed that individuals with mental health issues were "cursed." He also reported feeling emotionally abused by his mother on a regular basis and stigmatized within his family for his mental health issues. Rob agreed to meet with the clinician to begin the C/TA in the following week.

**Phase 2: C/TA – Intervention Phase.**

***C/TA Subphase 1 – Initial Session*:** Upon initiation of the C/TA (C/TA Subphase 1), Rob and the study clinician collaboratively developed the following assessment questions to guide the assessment process:

1. Why does my family blacklist me?
2. Why do I feel lonely, isolated, not accepted, and out of place?
3. When am I going to be accepted as an adult [by my family]?
4. Why am I more triggered by family and not anyone else?

Throughout the process of developing these questions, the clinician engaged in additional history taking. In beginning to explore the assessment questions, Rob demonstrated a certain amount of self-awareness that the clinician hoped to continue to build upon. For example, he shared that he felt he could never go to his mother for support. He stated that he frequently felt triggered by his

mother as soon as she "*pulls rank on me*" and, as a result, he often felt patronized by his parents. Rob reiterated that he often felt like a child in his home environment. Rob and the clinician explored the stigma he was experiencing in his family of origin. He highlighted his identification with mainstream Canadian culture and how his world view clashes with his parent's traditional beliefs from their upbringing in India. Rob acknowledged feeling isolated as a result of this cultural difference at home. With regards to his memory functioning, Rob reported that he had a "photographic memory" since his childhood and that his attention and concentration were "good" especially when placed under pressure to complete something. He informed the clinician that he was a "fast learner." Lastly, Rob reported that he had issues with alcohol use in the past and currently had two drinks per day. He reported ongoing marijuana use.

At the end of the session, Rob shared that he felt like the clinician was listening to him and that he appreciated their conversation. He said that he was recovering from a cold and, as a result, his idiographic indices were lower on that day of the study. Rob reported that he felt a notable increase in his mood and a decrease in his agitation by the end of the session.

***C/TA Subphase 2 – Standardized Testing Session(s)*:** Testing with Rob occurred over 2 days (Friday and Monday) due to him feeling ill on the first day of testing. Interestingly, the treatment team felt that Rob may have been exaggerating physical symptoms due to his desire to leave hospital on a day pass with his father that afternoon. When the clinician met with Rob, he reported feeling dizzy. He also shared with the clinician that he was concerned about his physical health issues impacting the results of his assessment. The clinician provided space for Rob to decline to participate in the MMPI-2 RF if he did not wish to participate. He agreed to complete the MMPI-2 RF and the H-T-P with the clinician, with the remainder of the assessment being completed with the hospital psychometrist the next available weekday. On the first day of

testing, the clinician observed Rob to be pleasant, but not as excitable as in their previous sessions. The measures that were administered to Rob in the C/TA included:

- Minnesota Multiphasic Personality Inventory – Second Revision, Restructured Form
- (MMPI-2-RF)
- Rokeach Values Survey (RVS)
- House-Tree-Person (H-T-P)
- Multigroup Ethnic Identity Measure-Revised (MEIM-R)
- Wechsler Adult Intelligence Scale – Fourth Revision (WAIS-IV) *(Canadian norms)*

In brief, the findings of the assessment were as follows.

*MMPI-2-RF.* Rob produced an invalid MMPI-2 RF profile. His profile demonstrated evidence of a fixed style of responding (TRIN-r= 73T) and overreporting of symptoms (all over-reporting indices were elevated). Given these elevations on the validity indices, the clinician developed only tentative interpretations of Rob's MMPI-2 RF profile and took time to consider the underlying reasons influencing Rob's style of responding. Rob produced an elevated profile to the extent that there were only a handful of scales fell under the clinically significant cut-off (i.e., T = 65). The clinician recalled that Rob was not feeling well on the day of the MMPI-2 RF administration and she wondered if Rob's fixed response style was influenced by how he was feeling on the day of testing (i.e., did he answer "true" to many of the items to get the testing completed more quickly?). The clinician also considered how his acquiescent response-style (i.e., fixed 'true' responding) might be related to the invalidating experiences Rob had over the years with his family of origin. She questioned if he learned to exaggerate his symptoms in order to be taken seriously by his family.

The clinician tentatively interpreted the results of Rob's MMPI-2 RF within the context of his history and factors present on the days of testing. At first glance, it was clear that Rob was reporting significant distress and difficulties in all domains. Rob responded to the MMPI-2 RF questions similarly to individuals who experience emotional dysfunction (EID = 69), disordered thinking (THD = 88), and behavioral/externalizing dysfunction (BXD = 76). Notably, Rob's suicide index was highly elevated (T = 100). The clinician speculated that Rob was experiencing a variety of negative emotions (e.g., possibly feeling highly anxious, sad, unhappy, isolated, and dissatisfied with his present circumstances). With regards to the anxiety, the clinician wondered about the degree of worry and discouragement experienced by Rob. She was also curious about the extent to which self-criticism was problematic for Rob.

Given his responses, it was possible that Rob was experiencing many physical symptoms and was preoccupied with his health (e.g., experiences of fatigue, weakness, and chronic pain). It is also possible that Rob was experiencing several gastrointestinal symptoms such as vomiting and upset stomach, as well as several neurological symptoms such as dizzy spells and difficulty with balance. With regards to Rob's responses in the thought dysfunction domain, it was possible that Rob was or had experienced hallucinations, unusual experiences, and paranoid beliefs. The clinician wondered about the impact the reported paranoia and how this may or may not have contributed to difficulties he has experienced when trying to form trusting relationships and connect with his family. She also was curious about how Rob's potential approach to relationships may contribute to feeling isolated. The clinician was aware that Rob might be experiencing an internal conflict: he wanted to connect with others; however, he had difficulty knowing whom he could trust and safely connect.

With regards to behavioral symptoms, the clinician pondered the extent to which Rob tended to act out and externalize his problems. She recalled his history of assault. Rob's responses on the MMPI-2 RF also highlighted his issues with substance use, including drinking alcohol excessively and smoking marijuana regularly. Lastly, given the results available on the MMPI-2 RF, he might have been experiencing hypomanic or manic symptoms. The clinician wondered to what extent Rob was a risk-takers, sensation-seeker, and experienced difficulties with impulse control.

The clinician engaged in some extended inquiry of the MMPI-2 RF with Rob during and after he completed the measure. Rob was noted to take an extended period of time to complete the MMPI-2 RF (i.e., 2.5 hours). He periodically asked about the interpretation and wording of questions. At around question number 70, Rob reported feeling tired and he, again, raised concerns about his performance on the measure. He took a brief break during the administration to have a "power nap", which he reported helped him feel refreshed enough to complete the measure. Throughout the testing at different points, Rob shared his opinion that the measure was "*important for my bipolar disorder*" and that he could "*tell that the questions are important*." Rob reported to the clinician, "*I really like this test – I can tell it is relevant*." Despite the protracted length of time for Rob to complete the measure, the clinician noted that he mainly appeared focused and seemed to take the test seriously.

*H-T-P.* Through the H-T-P the clinician was able to get a better view of Rob's internal world. Behaviourally, the clinician observed Rob draw each picture quickly without much contemplation. In general, the clinician noted that all of Rob's drawings were simplistic and lacking in detail. She wondered about Rob drawing only one side of each figure (i.e., 2 – dimensional drawings) and how this might be related to Rob allowing only one aspect/side of

himself to be seen. She wondered if his drawings might illustrate Rob's tendency to be cautious of how he represents himself.

First, Rob drew a house that liked like "typical house" with very little detail (see Figure 49). The clinician reflected on the lack of detail and that the house looked empty and, perhaps, cold. The clinician wondered about the representativeness of this drawing of Rob's experiences in his family environment (i.e., from the outside looks like a typical family but, on the inside, Rob feels alone, cold, and empty).

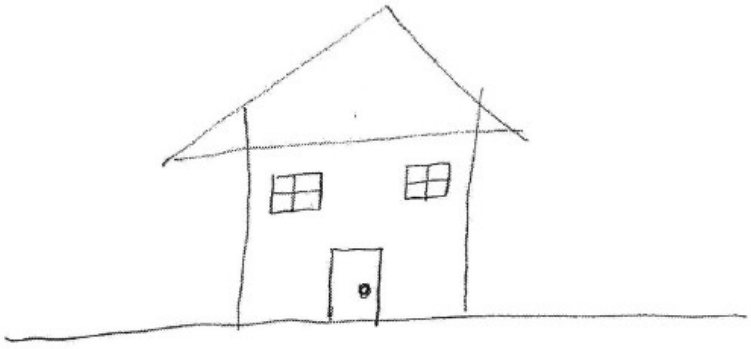

*Figure 49.* Rob's House

The tree (see Figure 50) drawn by Rob was simplistic and bare. In looking at the bare branches, the clinician was curious about the degree of vulnerability (i.e., feeling bare) Rob was feeling in the hospital. She acknowledged that he did not have a great deal of privacy while admitted.

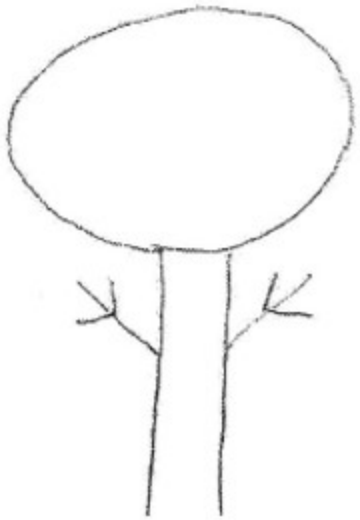

*Figure 50.* Rob's Tree

The person drawn by Rob (see Figure 51), again, was lacking in detail. Of significance, Rob did not include any facial features, and the figure was placed at the very bottom of the page. Given the lack of facial features, the clinician wondered about Rob's sense of identity and individuality within the context of his experiences with stigma and mental illness. The clinician was curious if, through negative experiences, Rob had lost a sense of his humanity and identity. Rob's placement of the person at the bottom of the page left the clinician wondering if he felt placed on the "bottom" because of his diagnosis and treatment by others in his life. The clinician reflected the person drawn by Rob also looked strong, imposing, and with sharp-looking hands. As such, she was curious about the part of Rob that feels strong and capable and is somewhat self-defensive and self-protective.

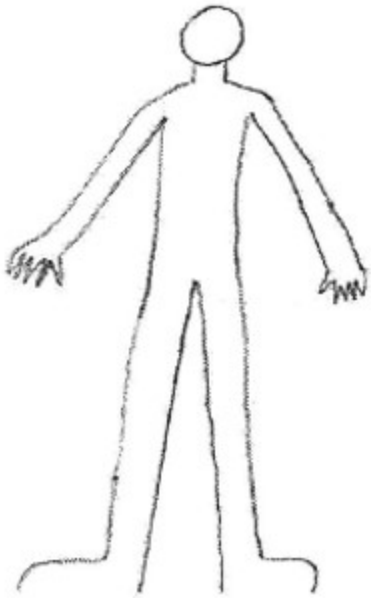

*Figure 51.* Rob's Person

*Rokeach Value Survey.* Through the Rokeach Value Survey, Rob was asked to organize and rank both terminal and instrumental values. Terminal values are goals that a person aims to achieve in their lifetime. Instrumental values are preferred modes of behaving that assist individuals in achieving their terminal values. Rob's top three terminal values were health, wisdom, and inner harmony. Rob's top three instrumental values included being honest, capable, and intellectual. Rob told the clinician that he believed that honesty was a matter of character and that being capable and intellectual are important for life.

*Multigroup Ethnic Identity Measure-Revised (MEIM-R).* The MEIM-R provided a measure of Rob's commitment to and exploration of his ethnic identity. Exploration of Rob's ethnic identity involved the degree to which he had sought information and cultural experiences within his life. Rob's score on this measured suggested that he had explored his ethnic identity to a significant degree. The clinician reflected that his finding made sense within the context of the

conversations she had had with Rob about his cultural background. For example, she recalled that he told her about being raised by his grandmother and aunt while his parents worked. Rob noted that, as a result of this, he learned the language of his cultural group better than some of his relatives. Rob highlighted to the clinician that he was very familiar with his culture.

Commitment to ethnic identity involves a sense of belonging, a strong attachment to and personal investment to one's cultural group. Rob's commitment score was not as high as his exploration score; however, it still suggested that Rob had a relatively strong sense of belonging to his ethnic group. In reflecting upon this finding, the clinician wondered how Rob's experiences with stigma within his family of origin had contributed to his commitment to his cultural background and his experiences of feeling isolated.

*WAIS-IV.* Rob's cognitive abilities were best summarized in a General Ability Intelligence (GAI) score, which fell within the average range of intellectual functioning (GAI = 34$^{th}$ percentile). His verbal comprehension abilities fell within the average range (25$^{th}$ percentile). Rob demonstrated a clinically significant strength in his perceptual reasoning abilities, which measured his ability to reason without words and solve non-verbal problems (average range, 50$^{th}$ percentile). It appeared that Rob had more difficulty with working memory (borderline range, 8$^{th}$ percentile), and processing speed (borderline range, 3$^{rd}$ percentile). The clinician reflected that Rob's abilities with working memory and processing speed were surprising, as he mentioned in their initial interview that he had no difficulty with recalling, focusing, and concentrating when he finds himself under time pressure.

At the time of the WAIS-IV administration, the psychometrist observed that Rob was friendly, polite, and cooperative. He was oriented to person, place, time and situation. His conversation was lucid and appeared to be relevant to the task. During *Block Design* he informed

the psychometrist, *"This is an interesting test, it's kind of fun."* He became drowsy during *Arithmetic* and stated that he was not a morning person and that he believed the medication was contributing to his tiredness.

Given what the clinician knew about Rob from interviewing and the assessment results, she determined level 1 information to consist of his experiences in relationship with his family. The clinician thought that level 2 information included the level of distress he was in and the degree of insight he held into his illness. Level 3 information for Rob, the clinician thought, consisted of possible issues with identity and identity development as well as the working memory and processing speed results from the WAIS-IV.

***C/TA Subphase 3 – Assessment Intervention and Summary/Discussion Session*:** Upon meeting with Rob for the third C/TA session, the clinician started by following-up on the extended inquiry she and Rob had started on the first test administration day. Rob reported that he found the WAIS-IV digit span backwards subtest to be especially challenging. He shared his observation of his need to write down information for accurate recall. The clinician noted that this fit with the assessment results that his perceptual skills were an area of strength. With regards to his experiences on the MMPI-2 RF, Rob reiterated that he did his best but that he was not feeling well on the day of testing. With regards to the Rokeach measure, Rob reported that he had trouble deciding the order because he felt that all the vales were important. However, he reiterated his placement of health at the top due to his belief that without one's health, an individual does not have a voice. The clinician noted this and thought of his image of the faceless person in the H-T-P. In discussing his experiences with the H-T-P, Rob discussed feeling as though he had "different personas" in different groups and situations. For example, Rob shared that when he was at home with his family he showed one part of himself and then he put on a

suit and tie and went to work and acted out another part of who he was. The clinician asked him where he felt the most like the real him, and he replied, "*that's a very good question*." Rob and the clinician noted that this might be an essential area to start exploring more.

The assessment intervention session was geared toward helping Rob to acknowledge and validate his experiences in relation to his family of origin, while also fostering Rob's identity development. Rob agreed to participate in two exercises for the assessment intervention. First, given his central focus on the dynamics with his family of origin and related assessment questions (e.g., When am I going to be accepted as an adult [by my family]? Why am I more triggered by family and not anyone else? When am I going to be accepted as an adult [by my family]?) the clinician administered the TAT card (i.e., 6BM). The clinician hoped that through this exercise, Rob could first experience insight and validation into his feelings and thoughts toward his family. She also hoped that this process could assist Rob in gaining a deeper understanding of his experiences in his family.

The following is a summary of Rob's response:

> P: *The gentleman did something…I feel like that's his mom. He might have done something she disapproved of. He doesn't know what to feel about it. She's turning her back to him. He's affected by it*.
>
> C: *What led up to that?*
>
> P: *Could be anything. Could have… I don't know maybe he did something he shouldn't have done that she found out about. She is disappointed in him – this isn't the first time he has done something to disappoint her. The ending is that their relationship is affected by what he did – they are not close. You can see concern on his face. Maybe feeling*

*regret and shame. He wishes it was different between them and that she could accept him, despite his flaws and mistakes.*

C: *Anything else?*

P: *Kinds of reminds me of my relationship with my mom. Many times I'll go try and tell her something and she doesn't have any attention for what I'm saying. She's just looking away. We have miscommunication.*

Rob went on to tell the clinician that he felt lonely, isolated, and like he does not belong within his family. Rob stated that he had a growing awareness of his desire to be recognized by his family. Rob shared with the clinician that his mother started being emotionally abusive when he was in Jr. high school. He said that, when he was younger, he did not get enough guidance from his parents and that his mother had a preference (i.e., favoured) his brother. Rob reflected that he had supportive friends; however, he craved this support and attention from his family and mother. Rob stated to the clinician that his family does not see who he is because of his mental health issues. He shared the sadness this brings to his life. The clinician listened attentively to Rob and validated his thoughts, emotions, and insights. It appeared that through this exercise, Rob was able to get in touch with and express his thoughts and emotions with regards to his family situation. This led to the next assessment intervention exercise.

The second assessment intervention exercise was developed to assist Rob in exploring who he is (i.e., identity) and to help build upon his previous insights into the assessment question: Why do I feel lonely, isolated, not accepted, and out of place? The clinician invited Rob to reflect upon himself and his strengths in the past, present, and who he would like to be in the future. Rob had access to a variety of art supplies to facilitate his representations. Rob chose to write three lists of his attributes. In reflecting upon himself in the past, Rob stated that he was

"smart, fun, teachers' pet, popular, well mannered, lots of potential, and the first Canadian in our family." For his present attributes Rob wrote that he is "smart, fun, capable, self-reliable, self-taught, jack of all trades type, honest, sincere, a good friend, and a great family person." For the future, Rob reported that he aims to be "smart, fun, successful, have my own family, be married, have kids, be responsible, and be a kid at heart." In completing this exercise, Rob reported that he saw himself in a more positive light and would like a similar recognition from his family. Rob reported that he more fully realized the degree to which his family of origin did not accept him. He and the clinician also discussed the impact of the breakdown of his marriage on his mental health. Rob acknowledged how all these factors could have interfered with him getting what he wanted in his life (i.e., the future). Rob reported that the exercise was helpful in his remembering who he was and what he wanted out of life moving forward.

Toward the end of the session, the clinician brought in some of the results of the assessment. She started with the results of the Rokeach values survey to solidify Rob's learning about his identity. They then collaboratively discussed level 1 through 3 information. Lastly, the clinician followed up with Rob with regards to the suicidality noted on the MMPI-2 RF. Rob informed the clinician that he, at times, experienced passive thoughts of suicide when his mood was low. Rob stated that he experienced these passive thoughts of suicide when he felt tired of living in pain. He also expressed his understanding and empathy about why others might commit suicide. However, he stated that he had no intention or plan to end his life. Rob shared that he "*could never do that to [his] father or close cousin*." Rob discussed with the clinician his ability and ongoing intention to look at the "*blessings in situations*." He and the clinician highlighted his ability to look for blessings combined with his love for his family members appeared to keep him safe from self-harm.

***C/TA Subphase 4 – Written Feedback*:** The clinician provided Rob with a draft of the therapeutic letter that summarized her and Rob's work together. They continued to discuss the results of the assessment, with the clinician keeping in mind level 1- 3 information. With regards to Rob's cognitive abilities, he demonstrated significant gains in insight about his deficits (i.e., processing speed) and he voiced the need for clear instructions when he is completing tasks. Overall, Rob was happy with the therapeutic letter. He shared with the clinician that he found the C/TA to be a helpful experience and that he "*got a lot out of it*."

**Phase 3: Post-Intervention Session.** Rob and the clinician met for a final time in the post-intervention session. He arrived at the post-intervention session smelling strongly of cannabis. He and the clinician discussed his experiences throughout the C/TA. He expressed gratitude for the C/TA and reported that he learned a lot about himself through the process.

## Appendix G: Elizabeth's C/TA

### Additional History on Elizabeth

Elizabeth had four adult children. She had recently moved from Ontario to escape an unhealthy long-term relationship. She was a retired scientist and previously had a successful career in research. Since leaving her relationship, Elizabeth was unable to find suitable housing and had exhausted all options to live with family members due to interpersonal conflicts. Elizabeth's medical history reported 18 distant suicide attempts by overdose with the last attempt approximately 20 years ago. Medication non-compliance has been an issue for Elizabeth, and family members reported that when stabilized on medications, she was a pleasant and kind woman. However, when off her medication, she was notably labile in mood, endorsed grandiose delusions, and had questionable decision-making abilities. According to her family, Elizabeth was a regular consumer of cannabis (i.e., morning and night), had a distant history of prescription opioid abuse, and had been experimenting with LSD and mushrooms within the previous year.

Elizabeth was brought to the emergency department by the police after sending a suicide note to a local business. Upon presentation to the emergency department, Elizabeth's chief complaint was "*fuckery*." She reported no issues with her mental state, denied suicidal ideation or plans, and reported that the suicide note was merely to get attention. She reported that she had not been eating food for the previous two days due to a loss of appetite but stated that she was sleeping 7 hours each night. During presentation, the attending physicians observed her to be grandiose, paranoid, disorganized in her behavior, and to have a tangential thought process. Family members reported that she has been squandering money and taking unnecessary trips out of the city. When hospital staff stopped her from leaving the emergency department, Elizabeth

observed to become increasingly irritable, hostile, and began threatening to go on a hunger strike (e.g., stating, "*I'd rather die in here than drink your water*"). She also verbalized intentions to strangle herself with her scarf. Due to her escalating behavior and suicidal gestures, Elizabeth required both chemical and physical restraint in the emergency department, and she was then admitted for inpatient psychiatric stabilization.

## Elizabeth's C/TA

**Phase 1: Pre-Intervention Session.** Upon meeting with the study clinician (male clinician), Elizabeth was observed to have a labile affect and to be somewhat intimidating and dismissive towards the clinician. She was also noted to fidget frequently throughout the meeting. The degree of hostility she conveyed during the initial meeting caused the clinician to consider how he might establish rapport. Elizabeth agreed to participate in the study, and she collaboratively developed the idiographic indices with the clinician.

**Phase 2: C/TA – Intervention Phase.**

***C/TA Subphase 1 – Initial Session*:** Upon initiation of the C/TA (C/TA Subphase 1), Grace and the study clinician collaboratively developed the following initial assessment questions to guide the assessment process:

1. Why do people misunderstand me?
2. How have past events (i.e., trauma and family conflict) affected me?
3. Why do people not want me to change?
4. Why has "ramping up" become a habit for me? How can I get through it?

Throughout the development of these assessment questions, the clinician engaged in additional history taking to enhance his understanding of Elizabeth's background. The clinician learned that Elizabeth had experienced significant family discord and that she was in the midst of a

separation from her husband of many years. Elizabeth also shared that she had a history of incest that included her brother as the perpetrator. She shared that she had difficult memories of her family of origin telling her to "get over it" when she disclosed the ongoing sexual abuse. Elizabeth acknowledged that invalidating moments have contributed to her "ramping up" in order to be heard. Elizabeth shared with the clinician that her mania tended to be triggered when she felt as though she was not being heard. She reported that she was deeply unhappy to be in the hospital and that being admitted was yet another example of being misunderstood and invalidated.

Within this session, the clinician observed Elizabeth more settled in her mental status in comparison to her presentation initially. He also noted that they seemed to be establishing some therapeutic rapport. Through the process of developing assessment questions and the additional history taking, it was apparent to the clinician that Elizabeth had many experiences of feeling misunderstood and unheard. He speculated how these past experiences may have contributed to her hostility in the initial meeting and how this way of being might serve to protect her from future experiences of invalidation and rejection. The clinician also wondered how this approach to relationship ultimately thwarted a possible interpersonal wish of Elizabeth's to be heard and validated about her present and past experiences.

***C/TA Subphase 2 – Standardized Testing Session(s):***

On the day of testing, Elizabeth met with the clinician and the hospital psychometrist to complete the standard assessment battery, plus three additional measures. The clinician noted that Elizabeth's affect was euthymic and that she had continued to settle in her mental status. The measures that were administered to Elizabeth in the C/TA included:

- Adverse Childhood Experiences (ACE)

- Detailed Assessment of Posttraumatic Stress (DAPS)
- House-Tree-Person (H-T-P)
- Minnesota Multiphasic Personality Inventory – Second Revision, Restructured Form
- (MMPI-2 RF)
- Resiliency Questionnaire (RQ)
- Wechsler Adult Intelligence Scale – Fourth Revision (WAIS-IV) (Canadian norms)

Testing occurred in the morning and afternoon, with the student clinician administering the DAPS and MMPI-2 RF with Elizabeth in the morning. Following the administration of the two initial measures, the clinician and Elizabeth participated in extended inquiry. Elizabeth reported feeling validated while completing the DAPS. As she completed it, significant discussion occurred between her and the clinician. She shared many personal insights and reported that she learned about different symptoms of traumatic experience that she was previously unaware were relevant (e.g., hypervigilance). Elizabeth acknowledged that she was activated emotionally throughout the DAPS as she reflected on her abuse history. She informed the clinician that she endured abuse over ten years and, as such, felt overwhelmed as she attempted to answer the items on the DAPS. Elizabeth also informed the clinician that she experienced multiple traumatic experiences with men. Throughout this discussion, Elizabeth voiced her realization that she has had significant difficulty establishing healthy boundaries with others; however, she was not clear on exactly why this was the case for her and how she could start building better boundaries. As such, she and the clinician added a fifth assessment question:

5. Why do I struggle setting boundaries and how can I set them?

The afternoon administration included the Resiliency Questionnaire, H-T-P, and the WAIS-IV with the hospital psychometrist. In brief, the findings of the assessment were as follows.

*MMPI-2-RF***.** Elizabeth produced a MMPI-2 RF profile with evidence that she may have been underreporting symptoms (L-r subscale T = 66). Keeping this in mind, Elizabeth responded to the MMPI-2 RF questions similarly to individuals who report somatic concerns with elevations on RC1 – Somatic Complaints, HPC – Head Pain Complaints, NUC – Neurological Complaints, and GIC – Gastrointestinal Complaints. With regards to emotional problems, Elizabeth responded on the MMPI-2-RF similarly to individuals who experience suicidal/death ideation (SUI). She also responded in a manner that indicated she had been experiencing some behaviorally oriented dysfunction elevations on the RC4 -Antisocial Behaviour and ACT – Activation. Interpersonally, Elizabeth reported having negative experiences with family, and she also had an elevation on SAV – Social Avoidance scale.

The clinician interpreted the results of Elizabeth's MMPI-2 RF within the context of her history. Elizabeth had expressed a concern to the clinician that she might be labelled or "put in a box" by mental health professionals. She shared about her experiences within her family environment feeling excluded due to her struggles with mental illness. Given Elizabeth's concerns, the clinician understood that she might find it challenging to know whom she could trust and, thus, responded to the measure in a manner where she minimized problem areas.

With regards to the somatically oriented elevations, Elizabeth had reported to the clinician about her struggles with frequent migraines, tingling sensations in her arms, as well as weakness or difficulty walking or moving her legs at times. He noted that Elizabeth stated that some of these symptoms worsen in times of high stress. The clinician wondered about

Elizabeth's tendency to experience emotions somatically, which may have made it difficult for Elizabeth to understand her emotions fully. The clinician wondered how Elizabeth's upbringing could have contributed to her tendency to experience and express emotions physically. Elizabeth informed the clinician that she experienced significant conflict in her family of origin and that she had difficulties discussing her feelings with her primary attachment figures.

Given Elizabeth's early experiences and trauma history, the clinician wondered about the difficulties Elizabeth may have with trust and engaging in a relationship with people. He wondered about the deep feelings of anger she may have towards attachment figures in her life. Elizabeth mentioned to the clinician that she felt angry at how people have treated her in the past. The clinician wondered the extent to which Elizabeth may feel the need to act out and "ramp up" when she felt mistreated, distressed or unheard. The clinician wondered how Elizabeth's experiences in her family of origin and in relationship have contributed to her avoidance of social situations or building close relationships.

*H-T-P.* Through the H-T-P the clinician was able to get a better view of Elizabeth's inner world. The house drawn by Elizabeth (see Figure 52), included many windows with cross-hatching as well as curtains in the top window. The clinician wondered if these aspects of the house reflected Elizabeth's interpersonal wish to be open with people, but that due to past experiences, she included features (i.e., bars and curtains on the windows) that serve to protect herself and keep others at a distance. The roof of her house included much detail, which the clinician thought could be connected to her having an active and imaginative mind. The walls of Elizabeth's house were very lightly drawn. The clinician wondered if this aspect of the house was connected to her difficulties with boundaries in her life.

*Figure 52.* Elizabeth's House

Elizabeth's drawing of a tree (see Figure 53) appeared to include some rooting, which the clinician thought may signify Elizabeth feeling "grounded", assured, and secure at times in her life. Notably, the trunk of Elizabeth's tree had many details, which the clinician wondered might indicate the presence of a complex sense of self; however, the outline of the trunk seemed to be drawn lightly, which could again confirm Elizabeth's struggles to set boundaries. Lastly, the branches drawn by Elizabeth were thin and sometimes detached from the tree with many leaves. Thin, detached branches could be interpreted to signify Elizabeth's difficulties reaching out to others. However, the clinician thought that the leaves might represent the idea that attempts to reach out and gain support from others, in Elizabeth's view, has the potential to be successful.

*Figure 53.* Elizabeth's Tree

Elizabeth's drawing of a person (see Figure 54) included a high level of detail and at first glance, appeared solemn. The mouth was drawn as a tiny slash. The clinician wondered if this might have illustrated Elizabeth's difficulties with communicating her emotional needs to others. The clinician recalled their discussions about how others in her life have misunderstood her and the impact of these experiences on her approach to relationships. Elizabeth drew the arms of the person in a closed position across the lower abdomen. The clinician wondered if this placement of the arms was an illustration of Elizabeth's stance of being "closed off" or needing to protect herself from others. The neck of the figure seemed rather long, the clinician thought, which might be indicative of a distance between the mind and body. This interpretation seemed to be consistent with Elizabeth saying that she had processed certain events in her life in her mind but continues to struggle to process them "*in my body*".

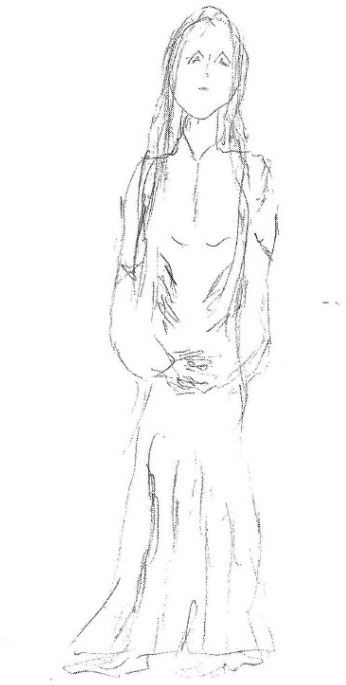

*Figure 54.* Elizabeth's Person

*DAPS.* In completing the DAPS, Elizabeth endorsed a very high number of statistically unusual phenomenon to the degree that the results of the measure were likely inflated. In reflecting upon this validity issue, the clinician recalled Elizabeth's experiences with invalidation in the past. He wondered if Elizabeth's over endorsement on the DAPS was a product of her previous invalidating experiences, or due to some residual manic symptomology. Given this validity issue, he opted to interpret Elizabeth's DAPs with caution, while also considering the notable behavioural observations he made while she was completing the measure. Specifically, while Elizabeth was completing the measure, the clinician observed her begin to share with him about her experiencing ongoing sexual abuse by her brother growing up (from approximately 6 – 16 years old). In reflecting on Elizabeth's verbalizations during the DAPS, the clinician thought that the measure may have been helpful in validating some of the reactions and symptoms she had been experiencing over the years that were related to her trauma history. For example,

through completing the DAPS Elizabeth acknowledged an increased understanding that people who have gone through experiences like hers may struggle with distressing feelings, memories, images, or thoughts for some time afterwards. They discussed how her experiences with symptoms of trauma have likely contributed to difficulties in setting boundaries with people in her life.

The clinician thought it particularly important to highlight the extent to which Elizabeth appeared to be experiencing dissociation, as was noted on the DAPS. He discussed with her that dissociation is frequently experienced by individuals' mind going blank, feeling "spaced out" or in a daze, or feeling as if things are "unreal". The clinician reflected that individuals with a similar DAPS profiles to her might also experience time as speeding up or slowing down and/or not feel aware of what is going on around them or in their bodies. The clinician thought it important to highlight to Elizabeth that her reports of processing the trauma ("*in your mind but not in your body*"), were like the experiences of other individuals who have undergone trauma (i.e., he normalized her experiences).

*ACE.* On a measure examining adverse childhood events (ACE), Elizabeth reported that she experienced several extremely distressing events before the age of 18. For example, Elizabeth reported having adults in her household act in a way that made her feel afraid that she might be physically hurt. Elizabeth also indicated that prior to the age of 18 she experienced a parent or adult in the house hitting her hard enough to injure and leave marks on her. Elizabeth reported that someone in her house tried to or did have sex with her, which she discussed at length with the clinician. Lastly, Elizabeth stated that she often felt that her family did not look out for each other, feel close to each other, or support one other.

*Resilience Questionnaire*. In contrast to the ACE, the Resilience Questionnaire assisted Elizabeth and the clinician in understanding some of the positive, growth-promoting experiences she had experienced in her life. For example, Elizabeth reported that, in general, she felt loved by her parents when she was little. She also noted that she had rules in her house that were expected to be followed and that she felt capable and independent. The clinician thought that these and other aspects of Elizabeth's childhood might have contributed to the resilience and strength she carried with her in the present day. Notably, Elizabeth disagreed with several statements including: "there were relatives in my family who made me feel better if I was sad or worried" and "when I felt really bad, I could almost always find someone I trusted to talk to".

*WAIS-IV***.** Cognitively, on the day of testing, Elizabeth's abilities were found to be in the average range of intellectual functioning (FSIQ = 53$^{rd}$ percentile). Her verbal comprehension index score was in the Average range (VCI = 58$^{th}$ percentile). She also scored in the average range in perceptual reasoning (PRI = 61$^{st}$ percentile). Elizabeth's working memory was an area of relative weakness in the low average range (WMI = 21$^{st}$ percentile); however, her processing speed abilities were found to fall within the average range (PSI = 66$^{th}$ percentile).

The psychometrist noted some of Elizabeth's reactions to the testing materials. For example, during *Block Design* Elizabeth said, *"I hate these jobs, I hope there is something cognitive soon."* During *Matrix Reasoning* she said, *"Man, I hate this job. You can't give up, eh?"* As soon as *Arithmetic* began she said *"Oh fuck me, I can't do any of these"* and then went on to answer the question correctly before the examiner finished reading it. On question #14 of *Visual Puzzles* she said, *"This is really mind blowing to me. I'm getting kind of sick of this."* It was apparent that even though Elizabeth did not enjoy the testing process (stating to the psychometrist that she *"hated it"*), she appeared to be working to the best of her abilities. The

clinician noted that despite the difficulties in Elizabeth's life, she had shown significant resilience, dedication, and perseverance to complete her high level of education and career success.

In reviewing the results of the assessment, the clinician began to organize the information into level 1 – 3 categories. The clinician thought that Elizabeth's abilities a measured by the cognitive measure might be level 1 information, given her advanced degrees and career success. Indeed, Elizabeth informed the clinician "*I have brains*". Additional level 1 information, the clinician speculated, included the presence and impact of Elizabeth's significant trauma history. Level 2 information was thought to include some of the information on Elizabeth's resiliencies. Level 3 information was thought to include specific symptoms (i.e., dissociation and hypervigilance) experienced by Elizabeth as related to traumatic experiences. Also, level 3 information was thought to include information on the extent to which Elizabeth was avoiding her emotions and the cost of this avoidance on her present way of being.

***C/TA Subphase 3 – Assessment Intervention and Summary/Discussion Session*:** The clinician followed-up with Elizabeth on her experiences of the tests on the administration day (i.e., extended inquiry). Elizabeth discussed her experiences with the WAIS-IV and mentioned to the clinician that she felt like giving up on a lot of the tests. The clinician reflected that despite her feelings of giving up, she was able to complete the entire testing sequence. She also reiterated her experiences of feeling validated and learning about the impact of trauma from the DAPS and ACE measures. For example, she discussed her learnings about symptoms of dissociation and her difficulties with boundaries. She also noted that despite it being a validating experience, she noted feeling overwhelmed and uncomfortable at times. Elizabeth reported her

experience of cognitively understanding her trauma history, but that she was less sure about her emotions concerning her past and present difficulties.

To highlight and possibly begin to integrate Elizabeth's cognitive understanding and her emotional experience (i.e., level 3 information) of her trauma, the clinician selected a few cards from the Thematic Apperception Test (TAT) for the assessment intervention session. Through this assessment intervention, the clinician aimed to try and address Elizabeth's question: How have past events (i.e., trauma and family conflict) affected me?, as well as her question: Why do people misunderstand me?

Through the process of responding to the TAT cards, the clinician noticed that Elizabeth focused on making the stories artful and full of description. Despite this level of content within the stories, the clinician observed that there was minimal mention of emotion. For example, on the 3 GF card, Elizabeth stated that the woman was experiencing an emotion; however, that her emotions were then quickly lost in her body. Elizabeth was observed to then changed the topic to retell the clinician of how she was admitted to the hospital. As the clinician and Elizabeth reviewed each story, he inquired into her own emotional experiences occurring in the moment. Throughout this process, Elizabeth began to realize that she was "*feeling a lot of things*" but that she was not initially aware of these emotions. As Elizabeth reflected on her inner process, the clinician invited her to notice and try and sit with the emotions that she was experiencing. They collaboratively observed the difficulty Elizabeth had noticing and being present with her emotional experiences. Elizabeth acknowledged that she found it much easier to think than to feel, and she shared her realization that by not attending to her emotional experiences may impact the extent to which others could understand her.

Together, the clinician and Elizabeth explored her tendency to avoid listening to her own emotions may have been a protective way for her to be in the world, given her past experiences. She reported that she found it easier to try and please people in her life, rather than voice her needs or wants, even if it was at the risk of her safety. Elizabeth shared with the clinician that she was seeing that she frequently put the needs of others ahead of her own needs. As such, they explored how Elizabeth's learned way of avoiding or downplaying her needs and emotions could have been contributing to her present difficulties (i.e., ramping up, boundary issues, and interpersonal distancing) and ultimately how these processes get in the way of her connecting emotionally with herself and important others in her life.

Toward the end of the session, the clinician began tying in level 1-3 information from the assessment results to foster her further learning in the session. They were unable to review all the results of the assessment due to time constraints; however, and they agreed to continue discussing the findings in their next session.

***C/TA Subphase 4 – Written Feedback*:** In the next session, the clinician and Elizabeth resumed their collaborative discussion of the assessment results and answers to her assessment questions. Elizabeth was provided with a draft of a therapeutic letter the clinician had prepared. Elizabeth was noted to be highly receptive to the discussion of the C/TA assessment results and did not have any revisions for the letter. The clinician observed Elizabeth to be more emotionally expressive within the session than in their previous work together. The clinician wondered if Elizabeth had been reflecting on her emotions since their last session. Elizabeth reported feeling concerned about the assessment process coming to an end. It was clear that she and the clinician had built significant rapport. The clinician shared this observation with Elizabeth to highlight her courage and willingness to build trust with a man. The clinician was curious about the extent to

which the process of the C/TA might have provided Elizabeth with a corrective emotional experience.

**Phase 3: Post-Intervention Session.** Upon the clinician and Elizabeth meeting for the final time in the post-intervention session, it was apparent that Elizabeth was still reflecting on the C/TA process. Elizabeth discussed her experiences of miscommunication with her family and how she better understood that her ramping up behaviors may hinder her relationships with family members. Her and the clinician discussed alternative strategies for her to communicate her needs and wants with her family. Elizabeth also shared her anxiety about transitioning out of the hospital and her next steps. For example, she inquired into how she might continue to work through her history of trauma. She and the clinician discussed psychotherapy options in the community that might be particularly helpful, which the clinician added to her therapeutic letter.

Elizabeth and the clinician discussed the termination of their work together. They took time to process some of the sadness that arose between them. Elizabeth shared feelings of gratitude towards the clinician and their collaborative work. The clinician reiterated Elizabeth's resiliencies and asked her about her hopes for her future. Elizabeth stated that she had hopes to listen to people and her body/emotional experiences. Elizabeth reported that through their work together that she had begun to listen to her body and had been developing her ability to better recognize the physical sensations that she was experiencing with her emotions (e.g., stomach-turning when feeling angry). Elizabeth stated that she also wanted to listen better to her family and the people in her life. With regards to her admission, Elizabeth stated, "*you can't listen your way into trouble*."

Both Elizabeth and the clinician discussed the need for more time in the C/TA and how they felt she could have benefitted from additional time to integrate and use the learnings from

the C/TA to move forward in her life. Within this final session, the clinician observed Elizabeth to be stable and calm. As a final request, Elizabeth asked the clinician for a large envelope or folder for her to safely store her therapeutic letter. Like a prized possession, Elizabeth reported that she did not want her letter to be damaged in any way.