Therapeutic Use of Self in Occupational Therapy:
Applying the Intentional Relationship Model

BY

SU REN WONG

B. OccThy, University of Queensland, 2004

THESIS
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Defense Committee:

Renee Taylor, PhD, Chair and Advisor
Yolanda Suarez-Balcazar, PhD, Department of Occupational Therapy
Daniel Cervone, PhD, Department of Psychology
Colleen Corte, PhD, RN, Department of Nursing
Linda Olson, PhD, Department of Occupational Therapy, Rush University

DEDICATION

All glory to my Lord Jesus Christ, with whom all things are possible.

To my husband, Samuel Tan, for your unconditional love and support through it all.

To my daughter, Elisabeth: May you never lose your joy.

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TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

LIST OF TABLES

TABLE PAGE

LIST OF TABLES (continued)

LIST OF FIGURES

LIST OF FIGURES (continued)

LIST OF FIGURES (continued)

SUMMARY

The overall purpose of this study is to quantitatively describe therapist and client perceptions of therapeutic communication, the therapeutic relationship and participation during occupational therapy. The Intentional Relationship Model was applied to three sub-studies, using secondary analyses. Secondary data was collected from occupational therapist and their client's regarding their perspectives of therapeutic modes (Clinical Assessment of Modes, CAM), therapeutic relationship (Working Alliance Inventory, WAI) and client participation (Pittsburgh Rehabilitation Participation Scale, PRPS).

Study 1

Methods. Descriptive analyses of the therapist perspectives of their mode use and therapeutic relationship (i.e. CAM-T and WAI-T, n=16) were examined. Descriptive, autocorrelational and correlational analyses of the CAM-T, WAI-T and PRPS were conducted to examine the associations between therapeutic mode use, therapeutic relationships and client participation with a single therapist case study.

Results and Discussion. The therapeutic modes reportedly used, from most to least, were the instructing mode, collaborating mode, empathizing mode, encouraging modes, and problem solving mode. Therapists perceived the bond, task and goal aspects of the therapeutic relationship similarly. However, as significance was not tested, no definitive conclusions could be drawn.

Study 2

Methods. Descriptive analyses of the clients' preference of modes (CAM-P, n=22) and clients' perspective of actual mode use and therapeutic relationship within therapy (CAM-E and WAI-T, n=22) were examined.

Results and Discussion. The instructing mode was most preferred and experienced by clients while the advocating mode was least preferred and experienced by clients The three aspect of the therapeutic relationship subscales, from most to least, were Bond, Goal and Task subscales. However, as significance was not tested, no definitive conclusions could be drawn.

Study 3

Methods. Using matching therapist-client data (n=14 dyads), correlational analyses of the CAM, WAI and PRPS were conducted to examine associations between therapist and client perceptions of therapeutic mode use, therapeutic relationships and client participation.

Results and Discussion. There were no associations between therapists' and clients' perceptions of both the therapeutic mode use and the therapeutic relationship. There was a moderate association between therapists' perceptions of their empathizing mode use and the affective bond aspect of the therapeutic relationship. When examining clients' perception, moderate to strong positive associations were found 1) between all modes and the task aspects of the therapeutic relationship, and 2) between three modes and the bond aspect of the therapeutic relationship. Moderate to strong positive associations were found between two aspects of the therapeutic relationship (goal and task) and client's participation during therapy.

Conclusion

The results support the professional belief that therapeutic use of self and the therapeutic relationship are important in facilitating the client towards the ultimate goal

of occupational engagement. However, gaps between therapists' and clients' perceptions of mode use and the therapeutic relationship may indicate the need for therapists to develop more self-awareness and self-discipline in their interpersonal approach. Further research is recommended with a larger sample size for greater generalizability of results and to further examine reliability and validity of the CAM questionnaires in an Asian context.

1. INTRODUCTION

1.1. Therapeutic Use of Self

Occupational therapists are professionals that focus on facilitating a client's engagement in occupation as both the means and the outcome of therapy (American Occupational Therapy Association, 2014). In the facilitative process, both the science as well as the art of practice is equally important. However, occupational therapy research has been dedicated to the science (i.e. the interventional techniques and strategies) of occupational therapy while there remains paucity in research regarding the art of practice. The art of practice has been described as the therapist's ability to create a therapeutic milieu to maximize the client's occupational engagement (Devereaux, 1984; Peloquin, 1989). In other words, an artful therapist has effective *therapeutic use of self*, which is "a product of the extent to which one possesses the knowledge base and interpersonal skills that can be applied thoughtfully to common interpersonal events in practice" (Taylor, 2008, p. 45).

Although various definitions of therapeutic use of self that have been coined, there are certain elements of commonality. First, it has been emphasized as being "conscious" (Mosey, 1986; Holmqvist, Holmefur & Ivarsson, 2013), "planned" (Punwar & Peloquin, 2000), and "intentional" (Taylor, 2008). Thus, it is differentiated from fspontaneous reactions to situational changes and implies a level of self-awareness and self-discipline (Taylor, 2008). Second, it is therapeutic in nature because the therapist develops a therapeutic relationship with the client in order to bring change by providing a *corrective emotional experience* (Cara & MacRae, 1998; Devereaux, 1984; Frank, 1958). That means that the supportive and empathic reactions from the therapist can be

conducive for the client to develop adaptive responses to situations of conflict (Bridges, 2006; Frank, 1958). Therapeutic use of self has been described as both a skill and an art as it requires certain intrapersonal and interpersonal skills in intentionality and selectivity, while being authentic in therapist characteristics (such as personality, intuition and personal experience) in order to create a therapeutic relationship (Mosey, 1986; Peloquin, 1989; Taylor, 2008).

There has been fluctuating interest in therapeutic use of self after its initial introduction into the field by psychiatrist, Jerome Frank (1958). In the recent years, therapeutic use of self has been said to be critical regarding its role in facilitating occupation (AOTA, 2014; Taylor, 2008; Taylor, et al., 2009). During this contemporary era, key elements of therapeutic use of self have been described through literature, such as the importance of client-centered practice and collaboration (Corring & Cook, 1999; Sumsion, 1993; Sumsion & Law, 2006; Townsend & Polatajko, 2007), care and empathy (Gilfoyle, 1980; Peloquin, 1989, 1990, 1993, 1995; Yerxa, 1980), cultural competency (Kondo, 2004; Suarez-Balcazar et al., 2009; Watson, 2006), and clinical reasoning (Auzmendia, de las Heras, Kielhofner & Miranda, 2008; Fleming, 1991; Mattingly, 1991).

Despite the discussion on various components, there have been a limited number of empirical studies conducted on therapeutic use of self as a construct. In a nationwide survey, although 88% of therapists surveyed reported that therapeutic use of self was the most important skill in occupational therapy, only about half of the therapists reported being adequately trained in the skill and only one-third of the therapists agreed that there was sufficient knowledge within the profession (Taylor, et al., 2009). In a mixed

methods descriptive study of the education of therapeutic use of self in occupational therapy entry level programs, Davidson (2006, 2011) described that although occupational therapy educators were "unanimously ardent" (p.96) about the importance of therapeutic use of self, they also described a lack of explicit methods in teaching therapeutic use of self in most programs. In a qualitative study, expert therapists describe the similarities and differences of therapeutic use of self between the military and civilian context (Gill, 2010). In another qualitative study, Swedish occupational therapists described the importance of use of self in facilitating realistic goals and increasing self-awareness for clients with cognitive impairment (Holmqvist, et al., 2013). In summary, studies highlight the importance of therapeutic use of self but also the limitations in professional training and systematic research dedicated to understanding how it relates to occupational engagement.

1.2. The Intentional Relationship Model (IRM)

Taylor (2008) developed the Intentional Relationship Model (IRM), which is a model unique to occupational therapy that details how therapeutic use of self relates to occupational engagement. This conceptual practice model was created in response to a need in the occupational therapy profession for an integrated and explicit approach to understanding therapeutic use of self (Taylor, 2008). As a relatively new model, it is still in development in terms of grounding the theory and assessment tools in research. Apart from this model, there had been limited effort in introducing models and tools from other fields of practice such as psychotherapy (e.g. Lloyd & Maas, 1992, 1993; Vegni, Mauri, D'Apice, & Moja, 2010), but these models and tools do not clearly relate to occupation engagement.

IRM is derived from both quantitative and qualitative research with practicing occupational therapists (Fan, 2014; Fan & Taylor, submitted, provisionally accepted; Taylor, 2008; Taylor, Lee & Kielhofner, 2011). IRM has four main attributes: 1) the client, 2) the therapist, 3) interpersonal events that occur during therapy and 4) occupation (Taylor, 2008).

Underlying principles.

Taylor (2008) describes 10 foundational principles of the IRM that should inform every occupational therapist's use of self. They are stated in the following:

- Critical self-awareness is key to the intentional use of self.
- Interpersonal self-discipline is fundamental to effective use of self.
- It is necessary to keep head before heart.
- Mindful empathy is required to know your client.
- Therapists are responsible for expanding their interpersonal knowledge base.
- Provided that they are purely and flexibly applied, a wide range of therapeutic modes[1] can work and be utilized interchangeably in occupational therapy.
- The client defines a successful relationship.
- Activity focusing must be balanced with interpersonal focusing.
- Application of the model must be informed by core values and ethics.
- Application of the model requires cultural competence (Table 3.2, p. 57).

[1] Therapeutic modes are defined in IRM as interpersonal communication styles. Taylor (2008) describes six therapeutic modes: advocating, collaborating, encouraging, empathizing, instructing and problem solving. Please to section 2.4.2 for more details on these modes.

First, it is important for the therapist to be highly self-aware of one's own interpersonal patterns of behavior and verbal communication. Without accurate and critical self-awareness, the therapist will not be able to know one's strengths and weaknesses and know what aspects of interpersonal skills require development. Second, interpersonal self-discipline is critical to therapeutic use of self. It is the ability to empathically provide what is most therapeutic to a client by being emotionally vigilant and responding in a self-disciplined manner. This is especially important when the way a client behaves or interacts in a challenging or demanding way that triggers negative or unexpected reactions within the therapist. For example, when a therapist upgrades an activity and a client reacts by accuses the therapist of being too demanding, the therapist could respond in a disciplined manner (such as acknowledging the doubts or fatigue that the client is experiencing and empathizing with the client's feelings) rather than responding in an undisciplined manner (such as avoiding presenting future challenges). The third principle of putting one's "head before heart" (Taylor, 2008, p. 60) emphasizes that one should not react by default or automatically to interpersonal situations. This principle reinforces that even though a therapist may have positive intentions and feelings towards the client, it may not always result in relating in a therapeutic manner. Instead, Taylor introduces the *interpersonal reasoning process*[2] that provides a systematic way of navigating the client-therapist relationship that is just as important as other occupational therapy clinical reasoning skills. Next, mindful empathy describes the ability to locate the source of one's interpersonal reasoning with the client so that one is making a continual effort to understand the client's ever-changing experience from the ever-

[2] Refer to section 2.4.4 for more details about the interpersonal reasoning process.

changing perspective of the client. The sixth principle emphasizes the need to communicate in flexible and pure manner. Communicating flexibly means being able to changing therapeutic modes as necessary. Therefore, a therapist needs to continually strive to have a deeper and wider understanding of each of the therapeutic modes. Pure use of modes can be achieved best if a therapist remains in a therapeutic mode as long as required instead of mixing modes so that the intended message is not confusing. For example, if a therapist wants to address a client's behavior by provide a boundary or limit on a client's behavior (i.e. intending to use the instructing mode) but does so in a humorous way, the therapist is blending the encouraging mode with the instructing mode. This may send a confusing message to the client who may not take the limitation on his/her behavior as a directive but respond in continuing in the undesired behavior. The seventh principle emphasizes that as the client defines the effectiveness of the relationship, it is not only important for the therapist to communicate in a flexible and pure manner but also important that the client perceives it as such. Next, the therapist not only needs to select appropriate modes but also to select ways of delivering the modes that are most suitable for the needs of the client. Taylor (2008) defines strategies to be either *activity focusing,* when the strategy involves "doing" (p. 311) something for/with the client, or *interpersonal focusing,* when the items emphasize "feeling and relating" (p. 312) with the client. For example, within the instructing mode, an interpersonal focusing strategy is verbally giving step-by-step instruction on how to make a cup of tea and toast while an activity focusing strategy is physically modeling for a client how to perform the same activity. Taylor (2008) emphasizes the importance of constantly reassessing and balancing the use of activity and interpersonal focusing strategies for each client as the

need for verbal interaction and emotional intensity varies not only between clients but also across therapy situations. Finally, the last two principles emphasize the importance of ethical and professional boundaries as well as increasing in cultural competence.

Attributes of the model.

The client. The client is the focus in this model, reflecting the importance of client-centered practice. There are 12 interpersonal characteristics that deserve attention according to IRM. These may be described in terms of *situational* or *enduring* patterns of "emotions, behaviors and reactions" (Taylor, 2008, p. 100), depending on the context, manner, and frequency with which they are expressed. Situational characteristics are characteristics that are unique to the certain contexts. Within the context of occupational therapy, a client may demonstrate certain situational behaviors (e.g. withdrawal) or express emotions (e.g. feelings of anger or helplessness) in reaction to situations (e.g. a medical emergency or receiving unwelcomed news about one's progress in therapy). Enduring characteristics are defined as characteristics that are more consistent across situations and are more related to one's underlying personality. In highlighting both situational and enduring characteristics, Taylor (2008) emphasizes that it is important to understand that there is both variability and consistency in the way clients behave and react during therapy. Therefore, a therapist who is highly skilled in use of self will respond to a client not only consideration of these interpersonal characteristics but also with the use of mindful empathy to ensure that the client's characteristics are verified and understood in the light of the therapy context. Taylor (2008) described 12 interpersonal characteristics as follows:

- Communication style

This is the client's preferred style of using spoken or signed language. It may be affected by various situational or personal factors (e.g. culture, cognitive or psychiatric impairment and subjective feelings about therapy). It is important to keep a client's communication style in mind when communicating within each of the six modes so that one enters into a give-and-take exchange that is perceived by the client as comfortable. For example, if a talkative therapist is paired with a client who tends to be on the quiet side, the therapist will need to adjust the extent to which she or he talks so as not to dominate the communication.

- Capacity for trust

Different clients may have different levels of ease in developing trust within the therapeutic relationship; some clients are more hesitant while others will be more open and embracing of the various events and recommendations during therapy. A trusting client would typically follow the planned program of therapy whereas someone who is mistrustful might question, doubt, or challenge the therapist each time something new is introduced.

- Need for control

Different clients may display different levels of control ranging from those that would prefer to relinquish control to the therapist to those who tend to display excessively controlling behaviors. For example, a client who may exert a high level of control may refuse certain activities or requests made by the therapist, pointing out contradictions in the therapist's past behaviors as reasons for the refusal, for example. A client who

relinquishes control may cease participating or participate half-heartedly and display a sense of apathy.

- Capacity to assert needs

Some clients readily express their need for assistance while others may express it in an indirect, non-verbal manner or even excessively assert their needs. It is important for the therapist to be sensitive and respond to clients' verbal and non-verbal cues to expressing their needs. An example of a client with difficulty asserting needs is one who has the cognitive ability to do so, but does not recruit help when necessary; instead, the client performs an occupation in an unsafe or risky way.

- Response to change and challenge

Clients may react very differently to significant life transitions as well as day-to-day changes in therapeutic tasks or environment. Some clients will respond to challenges through perseverance, showing a level of resilience. Others may respond in less adaptive ways, but giving up, refusing, becoming apprehensive, getting angry, or by trying to control or manipulate the therapist in order to make the activity or task more manageable.

- Affect

The client's affect refers to the client's expression of emotion. Affect could provide the therapist insight into the client's feelings, thoughts and ability to regulate emotions. However, therapists should also be aware that sometimes clients might also display a lack of affect due to cultural or personal reasons. Difficulty regulating affect may be characterized by a range of emotional behavior, from intense and quick fluctuations in affect to blunted affect.

- Predisposition to giving feedback

Clients may have differing levels of ease in providing solicited and unsolicited feedback due to various reasons, such as cultural background, fear of offending the therapist or lack of trust in the relationship.

- Capacity to receive feedback

During therapy, clients also need to be able to receive feedback as a natural part of their therapy process. Some clients are able to receive positive and negative feedback and use it to guide their subsequent actions and activities in therapy. Others may respond with feelings of self-consciousness, hurt, or anger.

- Response to human diversity

Therapists and clients would naturally differ in various aspects, such as cultural and social background, age, gender and disability status. Some clients may be concerned about working with therapists with certain characteristics due to various reasons (such as past experiences, preconceived ideas or cultural factors). For example, a client who is uncomfortable with a female therapist of small stature helping him transfer out of bed due to a fear she will not be strong enough to hold him may refuse her assistance with the transfer, despite her actual strength and his level of ability to complete the transfer.

- Orientation toward relating

Some clients may prefer a close and disclosing relationship with their therapist while others may prefer a more guarded or businesslike relationship with low levels of self-disclosure. For example, a client who prefers a closer relationship may reveal personal thoughts or feelings during therapy, talk about her family or loved ones, and look to the therapist's reactions to such.

- Preference for touch

Some clients will accept touch in therapy if it is necessary for treatment. Others will display body language that indicates comfort with caring touch, or may try to touch the therapist in some way. Others might display aversion towards touch. For example, a client with an aversion to touch may yell out each time a therapist lays a hand on her to apply a brace or other device.

- Capacity for reciprocity

A client's capacity for reciprocity is reflected in his or her tendency to reflect his or her own point of view as well as the extent to which he or she is considerate of the therapist's views and feelings. Therapists also need to be aware of their own preferences and levels of gratification in relating to different clients. It is important for therapists to intentionally treat all clients equally even though some may have a higher capacity for reciprocity.

The therapist. Within the therapeutic relationship, the therapist bears the responsibility for ensuring that it is characterized by transparency, trust, and respect. Taylor (2008) identifies three main areas of knowledge and skills applicable to therapeutic use of self: 1) interpersonal skill base, 2) therapeutic modes, and 3) capacity for interpersonal reasoning.

The *interpersonal skill base* is a complex collection of skills that are selectively applied to different relational situations with clients as well as with the multidisciplinary team caring for the client. Taylor (2008) describes nine skill areas that should be constantly refined for effective interpersonal interactions. Skills such as effective therapeutic communication, interviewing and strategic questioning are described as

important to ensure a therapist is able to provide and solicit feedback as well as facilitate the client towards therapeutic change. The therapist also needs to develop skills in self-awareness, self-discipline and flexibility in adapting therapeutic modes when managing challenging behavior, empathic breaks or interpersonal conflict. Finally, the therapist skill base should not only include skills in establishing and maintaining relationship with clients but also with their various social systems and other professionals involved in the client's care. This includes skills in negotiating group dynamics, building rapport, trust and collaboration.

Therapeutic modes, a focus of this study, are interpersonal communication styles, which include verbal and non-verbal ways of relating to a client. Taylor (2008) emphasizes the need to be emotionally congruent while communicating within a mode. A therapist may default to his/her own personality as the first determinants of mode use. However, IRM encourages the therapist to exercise self-awareness and self-discipline when using modes that come more intuitively to the therapist. Instead, it is important to select a mode that best fits how the client prefers to be treated during therapy. IRM acknowledges that a client's preference for the therapist to communicate within a given mode may change, sometimes rapidly, during therapy. In return, IRM expects that the therapist is able to be nimble and flexible in terms of reading and adjusting to the client's changing needs. Therefore, an emphasis in IRM is that it is necessary to use self-discipline in responding to clients with modes that are most therapeutic, rather than what is most comfortable according to one's personality. There are six therapeutic modes as described by Taylor (2008):

- Advocating mode

Therapists using this mode interact as an advocate for client needs. Therapists act in this capacity to facilitate access and opportunities for the client, negotiate environmental barriers and reinforce a positive social identity for the client. For example, if the client needs to be discharged from hospital, the therapist may act as a facilitator by introducing the client and the family to resources available in the community (e.g. support groups, meal services, home care services). At times, a therapist may be invited by a client to advocate on behalf of the client for disability rights or in legal proceedings.

- Collaborating mode

The collaborating mode emphasizes the therapeutic relationship as a partnership between the client and therapist within which the client takes the lead in that partnership by defining his or her own therapeutic goals and by directing the therapist's behavior by expressing preferences and giving feedback. This mode is effective when the client is believed to have the capacity and desire to be actively involved in the decision making process.

- Empathizing mode

Therapists using this mode strive to focus on understanding and listening to the client. The therapist is sensitive to the client's emotional needs and responds to the client's expressions of emotions and problems in a way that is non-judgmental and validating. Other behaviors consistent with this mode include summarizing poignant aspects of a client's story or self-reported difficulty, making validating statements about the client's experiences or perceptions, and asking questions in a way that facilitates deeper understanding of the client's experience, without feeling intrusive, evaluative, or agenda-driven.

- Encouraging mode

When using this mode, the therapist seeks to instill hope in the client and to provide positive reinforcement or praise for the client's accomplishments in therapy. The therapist may also use humor and a playful attitude, when appropriate.

- Instructing mode

The therapist functions as an educator when using this mode. The therapist provides clients with relevant information, structure and strategies to achieve therapy goals. The therapist may set limits, point out errors, or make other corrective statements or gestures. For example, the instructing mode may be useful when a client needs to learn new skills to adapt to their disability (e.g. a client with hemiplegia may need to learn one-handed techniques for activities of daily living).

- Problem solving

Therapists using this mode focus heavily on reasoning and logical approaches to therapy. For example, a therapist may facilitate a client's decision-making by assisting the client to list the pros and cons of one decision versus another. Another approach within this mode involves strategic questioning in which the therapist asks the client questions that cause the client to consider alternative perspectives or solutions to a problem.

In summary, the six therapeutic modes can be highly therapeutic when used appropriately, or they can be non-therapeutic if they are overused, or untimely. All therapists have a unique combination of therapeutic modes that they believe are most effective for their clients. A therapist is encouraged to not only strengthen one's preferred modes but also to consciously develop less utilized modes in order to become increasingly flexible with different clientele.

Inevitable interpersonal events. Interpersonal events are "naturally occurring" and "emotionally charged" events within therapy that have the potential to derail or strengthen the therapeutic relationship (Taylor, 2008, p. 117). Interpersonal events occur as inevitable byproducts of the intimacy and tension that are exchanged within the therapeutic relationship. One therapy session may have one or many of these interpersonal events. Even the most experienced therapists will encounter these events no matter how prepared they are; how a therapist responds to them is crucial. As a therapist responds, he/she needs to consider the interpersonal characteristics of the client, in order to determine what mode or interpersonal skill they need to draw upon. If successful, interpersonal events can be points of strengthening in the relationship.

The 11 categories of interpersonal events discussed in the model are some of the most common ones that apply to therapeutic encounters (Taylor, 2008, p. 117-118). For example, interpersonal events include a client's direct or indirect communication of significant information (known as *expression of strong emotion, intimate self-disclosures* and *nonverbal cues*). It may also be directed at challenging the nature and limitations of the therapeutic relationship (such as *power dilemmas*, and *boundary testing*). It also includes a client's *resistance and reluctance* to participate in therapy due to the negative perceptions of the therapeutic relationship or other issues (e.g., fatigue). Interpersonal events also include *empathic breaks,* which refer to a client's reactions that stem from perceptions a therapist as failing to respond or inappropriately responding, resulting in the client feeling hurt or offended. Interpersonal events may also include any stressful situations (known as *crisis points*) or *emotionally charged therapy tasks and situations* (e.g., learning a new skill). Finally, every therapeutic relationship has its *limitations of*

therapy and *contextual inconsistencies* (such as limitations on available time and resources, or changes in appointment schedules or rooms), which may lead to feelings of frustration or guilt.

Interpersonal reasoning process. Taylor (2008) emphasizes that it is the responsibility of the therapist to ensure an effective therapeutic relationship, conducive for eliciting occupational engagement. The therapist needs to be vigilant, observing nuances and responding effectively. Reasoning and responding effectively includes flexibility in shifting between modes; however, shifting does not mean blending modes or becoming someone else. *Interpersonal reasoning* is the therapist's internal systematic thought process when deciding what might be appropriate and effective modes when encountering inevitable interpersonal events during therapy (Taylor, 2008). It has six steps including 1) anticipating that interpersonal problems will occur, 2) identifying what kind of interpersonal event has occurred and coping with one's automatic reactions, 3) determining if a mode shift is required, 4) choosing to shift to a mode or series of modes, 5) drawing upon relevant interpersonal skills, and 6) gathering feedback from the client about the mode shift. If a therapist uses interpersonal reasoning effectively and chooses therapeutic modes that are authentic and accurate, a positive therapeutic relationship is formed.

Occupation. The uniqueness of this model compared to that of other professional fields is the focus on occupation. Occupation in this model refers to the desired meaningful task or activity that is chosen for therapy. Therapeutic use of self is essential for the development of the therapeutic relationship. In turn, an effective therapeutic relationship should lead to a client's occupational engagement and participation in the

desired occupation. However, the use of self should not be viewed as a means to an occupational end. Occupational engagement and participation is an indirect result of effective use of self, borne out through a relationship characterized by open and reciprocal communication and trust.

The IRM as a conceptual practice model for the study.

Based on my literature review within occupational therapy as well as related disciplines, the IRM stands out as the only comprehensive model that focuses solely and strictly on therapeutic use of self and the therapeutic relationship in the occupational therapy profession. For the purposes of this study, I will focus on these theoretical concepts as presented in IRM: 1) the client's occupational engagement, as reflected by his or her participation during therapy, 2) the therapeutic relationship, 3) therapeutic mode use and 4) therapist's interpersonal behavior. The following sections summarize the literature relating to these theoretical concepts.

1.3. Occupational Engagement and Participation During Therapy

Occupational therapists are rehabilitation professionals that focus therapeutic outcomes on occupational engagement (the ability to engage in desired occupations such as work, leisure and self-care) at home and in the community (AOTA, 2014). In order to achieve occupational engagement in daily life, occupational therapists believe that occupational engagement and participation *during* therapy is a foundational means of therapeutic change (Kielhofner, 2008). Other interventions during therapy include therapeutic use of activities, preparatory methods (e.g. home modifications, splinting, assistive technology), education, advocacy and group therapy (AOTA, 2014). Due to the wide range of interventional strategies, *participation during therapy* is defined henceforth

as participating in therapeutic activities or programs as well as completing and adhering to therapeutic recommendations (e.g., home practice, use of splint or assistive devices, following through with discharge plans).

Participation during therapy has been found to be positively associated with improved therapeutic outcomes (Kwakkel et al., 2004; Lenze et al., 2004a, 2004b; Talkowski, Lenze, Munin, Harrison & Brach, 2009). For example, Lenze and colleagues (2004a; 2004b) reported that clients who participated poorly in less than 25% of therapy sessions scored significantly higher (25%) on the Functional Independence Measure compared to clients who participated poorly in more than 25% of the therapist sessions. In a longitudinal study of clients in hip fracture rehabilitation, participants with higher levels of activity during therapy (as measured with an accelerometer) scored better on the Hip Fracture Functional Recovery Scale at 3-month and 6-month time points (Talkowski, et al., 2009). In stroke rehabilitation, a systematic review of 20 randomized control trials show evidence that increased intensity in using the affected limb during therapy improves functional outcomes (Kwakkel et al., 2004).

Despite the efficacy of interventions, therapists report challenges in facilitating participation in therapy, adherence with therapist recommendations and therapy attendance. Lequerica, Donnell and Tate (2009) reported in a survey of occupational and physical therapists (n=199), a majority of therapists (68%) reported that they frequently or often treated patients who were resistant to participating in therapy. In another study, Lenze and colleagues (2004a) reported about 43% of inpatient clients had occasional to poor participation in occupational and physical therapy sessions. About half of these clients reportedly displayed either 1) a lack of effort and not completing therapy

activities, 2) refusal to participate in at least half of the therapy session or 3) refusal to participate at all in more than 25% of the therapy sessions. In a survey about constraint-induced movement therapy (CIT), 68% of stroke patients (n=208) reported that they would not participate in CIT and 32.9% of occupational and physical therapists (n=82) survey felt that clients would not adhere to such a program (Page, Levine, Sisto, Bond & Johnston, 2002). Mitchell and Kemp (2000) reported that in a multidisciplinary clinic serving the geriatric population with multiple disabilities, 40% of clients did not adhere to occupational therapy recommendations as self-reported during their 4-month follow up interview. In an outpatient rehabilitation center, an average of 20% of appointments were cancelled or not attended (Heslop, 2010). In another occupational therapy outpatient service, 13% appointments were reportedly not attended (Gleeson, Chant, Cusick, Dickson & Hodgers, 1991). In a hospital for clients with chronic psychiatric conditions, attendance of occupational therapy services in inpatient psychiatric units was found to be low (Kruger & van der Westhuizen, 2011). Despite a variety of occupational therapy groups sessions open to clients 1 to 3 times per day, the average attendance per client was once in three days. It is therefore important to identify and address barriers to participation in order to maximize functional outcomes.

Barriers to participation.

Barriers to participation during therapy include client variables, such as emotional difficulties (e.g. anxiety, apathy, depression) poor self-efficacy, client's beliefs, personality, mood and cognitive impairment, as reflected in the following studies. In a survey, occupational and physical therapists identified barriers to client participating in therapy such as fears (i.e. fear of pain, fear of falling), anxiety, depressed mood, cognitive

difficulties (e.g. difficulty learning, poor memory, and confusion) and rigid personality (Lequerica et al., 2009). In a systematic review of 24 studies that addressed factors for adherence to fall prevention programs, Bunn, Dickinson, Barnett-Page, McInnes and Horton (2008) identified client factors such as poor self-efficacy, fatalistic beliefs that they had no control over the falls, and beliefs about their own personality (e.g., a "lazy" person) as barriers to participation in fall-prevention programs (p. 464). Edelstein (2005) described three case studies of geriatric clients with recent amputations who had poor self-efficacy that led to poor motivation to participate in physical and occupational therapy. From semi-structured interviews of 77 geriatric patients in a rehabilitation program, participants believed that their underlying personalities affected their willingness to participate in the program (Resnick, 2002). In a study of apathy in a geriatric rehabilitation population (n=102), Resnick, Zimmerman, Magaziner, & Adelman (1998) found that as depressive symptoms and cognitive impairment increased, there was a significant increase in apathy. Apathy was also moderately correlated with participation in therapy sessions and found to be a significant predictor of functional outcomes at discharge.

Apart from client variables, therapist variables have also been discussed. Kjellberg, Kåhlin, Haglund & Taylor (2012) reported that in a survey, 39% of therapists perceived that clients did not have the ability to participate during therapy due to their cognitive impairment and 7% felt they differed with their clients on the goals of therapy. Authors pointed out that it is precisely the responsibility of occupational therapists to facilitate participation regardless of the individuals' cognitive level (Kjellberg et al., 2012). In a systematic review, Bunn et al. (2008) similarly identified mismatch in

therapist and client perspectives (i.e. about goals or importance of intervention) as one of the barriers to participation. In a study of adherence to equipment prescription upon discharge from hospital, 72.4% of clients reported that they did not use equipment because they felt it was never needed (Hoffman & McKenna, 2004). In the same study, about half of the clients reported that their therapist did not demonstrate how to use the equipment. The authors highlighted that the therapist may have assumed the client's need for the equipment or overestimated client's understanding of how to use equipment, even if it appears obvious (Hoffman & McKenna, 2004). In summary, barriers to participation include therapists' personal beliefs about their client's abilities to participate as well as a lack of understanding between the therapist and client. It is the therapist's responsibility to encourage participation, taking into account the client's needs, views and goals (Bunn et al., 2008; Kjellberg et al, 2012, Taylor, 2008). To address these barriers, various authors have encouraged therapists to employ elements of therapeutic use of self such as using a client-centered approach, which reflect rapport (Lequerica et al., 2009), empathic understanding (Bunn et al., 2008; Kjellberg et al., 2012), and collaboration (Hoffman & McKenna, 2004, p. 79).

1.4. Therapeutic Relationship

Literature in occupational therapy.

The client-therapist relationship has been one of the focal points of occupational therapy literature on therapeutic use of self. An effective therapeutic relationship is characterized with trust, rapport, collaboration, communication, respect, positive regard for the client and mutual understanding (Cole & McLean, 2003; Crepeau & Garren, 2011; Devereaux, 1984; Holmqvist, et al., 2013; Kayes & McPherson, 2012; Morrison, 2012;

Palmadottir, 2006; Taylor, 2008; Taylor, Lee, Kielhofner & Ketkar, 2009; Taylor et al., 2011). In a literature review of 50 articles between 1966 and 1998, Maclean and Pound (2000) summarized studies that describe therapists' behavior and communication as part of the client's social factors that affected patient participation and outcomes in physical rehabilitation.

The therapeutic relationship has mainly been examined from the therapist perspective. In a statewide survey, 96.5% of the occupational therapists perceived that the therapeutic relationship was critical to functional outcomes (Cole & McLean, 2003). Specifically, therapists identified rapport (100%), open communication (98%) and empathy (99%) as components of the therapeutic relationship that positively affected outcomes. Similarly, Taylor and colleagues (2009) reported that 82.3% of occupational therapists surveyed agreed that the therapeutic relationship key determinant of outcomes and 95.9% agreed that the relationship affects engagement in therapeutic activities. Other qualitative studies have described the importance of the therapeutic relationship in various client populations, such as clients with brain and spinal cord injury (Guidetti & Tham, 2002; Holmqvist et al., 2013; Holmqvist, Kamwendo & Ivarsson, 2009), in the military and civilian settings (Gill, 2010), and in home-based therapy (Morrison, 2012).

In the first descriptive study on therapeutic mode use as conceptualized in the IRM, therapists reportedly used the encouraging, collaborating, problem-solving modes more than the instructing and empathizing modes (Taylor et al., 2011). The number of modes used was positively correlated with both the number of difficult client behaviors, as well as with levels of clients' depression and anxiety. Further research should be done to examine the advocating mode, as it was developed later after the study.

The therapeutic relationship has also been examined from a client perspective. In a phenomenological study to investigate the effectiveness of therapy, clients with acquired brain injury were less concerned about therapeutic expertise but were more concerned about the therapeutic relationship with their occupational therapists (Darragh, Sample & Krieger, 2001). Clients in home-based services described the therapeutic relationship positively and reflecting elements of professionalism and friendship (Boutin-Lester & Gibson, 2002). Geriatric patients described a therapeutic relationship as a relationship characterized by client empowerment, trust and positive affect for the therapist (Resnick, 1994, 1996). In a mixed methods study with fours case studies, clients in home-based therapy perceived the therapeutic relationship as positively affecting their engagement in therapeutic activities (Morrison, 2012). The clients also rated the working alliance (as measured by the Working Alliance Inventory) consistently higher than the therapists' ratings of the alliance.

Limitations of the occupational therapy literature.

The occupational therapy literature provides limited support that the therapeutic relationship positively affects therapeutic outcomes in occupational therapy. Although there is a substantial discussion in the literature regarding the importance of the relationship and the various elements that characterize the relationship, there is a paucity of empirical evidence. In addition, most occupational therapy literature often uses the concept of "therapeutic use of self" interchangeably with "therapeutic relationship" as it remains unclear whether these concepts are distinct or overlap conceptually. The literature is also limited in that most of the studies examine the therapeutic relationship from the therapist's perspective while a few examine the relationship from the client's

perspective. Only one multiple case study analysis was found to examine both the therapist and clients' perspective simultaneously (Morrison, 2012).

Literature in related disciplines.

Therapeutic relationships have been researched more extensively in related fields such as psychotherapy. In psychotherapy, this is often also referred to as the therapeutic alliance, therapeutic bond, and helping alliance. The research has shown that the impact of a therapeutic relationship contributes to therapeutic outcomes up to twice as much as specialized therapeutic approaches (Horvath, 2001; Lambert & Barley, 2001). Horvath and Symonds (1994) conducted a meta-analysis of 24 studies and found a moderate effect size of the therapeutic relationship on psychotherapy outcomes as rated by the client, therapist or observer (r=0.26). Martin, Garske and Davis (2000) repeated the meta-analysis by Horvath and Symonds (1994) on 79 studies and found a similarly moderate effect size (r=0.22). In an updated meta-analysis of 201 studies between 1973 and 2009, Horvath, Del Re, Fluckiger & Symonds (2011), authors found a similar effect size (r=0.28). In addition, when examining the halo effect, they found that the effect size was not significantly different for studies that had alliance and outcomes data from the same rater compared to studies that had alliance and outcome data from different raters. Further analysis of possible moderators (e.g. alliance measure, alliance rater, outcome measure, type of treatment and source of publication) showed that the correlations were still statistically significant ($p < .001$) in each of the moderator categories. Another multilevel longitudinal analysis of possible moderators of the alliance-outcome relationship reported that research design, treatment type, type of outcome did not moderate the relationship (Fluckiger, Del Re, Wampold, Symonds & Horvath, 2012). Baldwin, Wampold & Imel

(2007) found that in multilevel models of patient-rated alliance and outcome measures, therapist variability significantly predicted patient outcomes. That is to say that the therapist who forms a stronger alliance shows significantly better patient outcomes for the therapist who forms a weaker alliance. Overall, there is evidence of a moderate and robust correlation between the therapeutic relationship and psychotherapy outcomes. When examining the importance of the client's perspective, research supports that the client's perspective of the therapeutic relationship is more correlated with client outcomes compared to the therapist's perspective. For example, Horvath and Symonds (1994) found that the client ratings of the therapeutic relationship were more correlated with both client and psychotherapist ratings of therapeutic outcomes compared to the psychotherapist ratings of the therapeutic relationship. Horvath et al. (2011) similarly reported that in their respective meta-analyses that the client and observer ratings of the therapeutic alliance were similarly correlated to therapeutic outcomes (r=0.28) while therapist ratings were less correlated to therapeutic outcomes (r=0.20). This has been supported in other psychotherapy literature as the client's perception of the therapeutic relationship is more consistently related to therapeutic outcomes as compared to therapist perception (Horvath, 2001; Horvath & Greenberg, 1994; Horvath & Luborsky, 1993; Horvath & Symonds, 1994; Lambert & Barley, 2001).

One of the most relevant conceptualizations of the therapeutic relationship has been described as the working alliance (Bordin, 1979). The working alliance includes 1) the *bond* between the client and therapist, 2) working towards the same *goals,* and 3) working together on *tasks.* Bordin conceptualized the working alliance in terms of the agreement and evident partnership between the therapist and client rather than separate

therapist or client factors (Gehrs & Goering, 1994). Bordin also focused on the conscious perceptions of the relationship as opposed to the unconscious transference and countertransference that affects the relationship.

Research on the concept of the working alliance has been conducted not only in psychotherapy but applied to other health care disciplines. For example, the working alliance has been found to be associated with psychiatric rehabilitation outcomes such as goal attainment and reduced symptoms and problem behaviors (Gehrs & Goering, 1994; Solomon, Draine & Delaney, 1995). Cognitive impairment in patients undergoing acute brain injury rehabilitation was weakly correlated with the working alliance, suggesting that a good working alliance may be achieved despite severe cognitive impairment (Schonberger, Humle, & Teasdale, 2006a). As Kjellberg et al. (2012) suggested above, cognitive impairment need not been seen as barrier to participation, and therapists are encouraged to use themselves therapeutically, which is reportedly possible in the study by Schonberger et al. (2006a). In a systematic review of 13 articles from multiple disciplines in physical rehabilitation (including physical therapists, occupational therapists, psychologists, chiropractors, speech pathologists, and recreation therapists), the therapeutic relationship was found to be positively correlated with outcomes measures (such as functional outcomes, treatment adherence and satisfaction) for cardiovascular, geriatric or chronic pain populations but was unclear for clients with brain injury (Hall, Ferreira, Maher, Latimer, & Ferreira, 2010). Hall and colleagues (2010) cautioned that the most commonly used measure of the therapeutic relationship was the Working Alliance Inventory (Horvath & Greenberg, 1986), which was designed for use in psychotherapy research, and recommended that a tool is needed for the rehabilitation

context. Hall and colleagues (2010) as well as Kayes and McPherson (2012) highlighted the limitations of knowledge due to various reasons: 1) a lack of conceptual understanding of what constitutes the therapeutic relationship, 2) methodological differences between studies which limit the ability to conduct meta-analyses. Similar to the occupational therapy literature, 11 of the 13 studies reviewed were limited in terms of their singular perspective (Ambady et al., 2002; Beattie et al., 2005; Burns & Evon, 2007; Ferreira et al., 2009; Higdon, 1997; Schonberger et al., 2006b; Sluijs et al., 1993; Walker, 1990; Zaproudina et al., 2007, 2009); only two studies included the client and therapist perspective simultaneously (Schonberger et al., 2006a; Sherer et al., 2007). Overall, although the evidence in rehabilitation sciences suggests a positive correlation between therapeutic relationship and outcomes in rehabilitation, further systematic research is recommended due to the conceptual and methodological limitations.

The therapeutic relationship in IRM.

In IRM, it is the responsibility of the therapist to facilitate the positive therapeutic relationship. That implies unequal responsibility between the therapist and client in terms of upholding and maintaining the relationship. This also reinforces that the therapeutic relationship is also conceptually distinct from therapeutic use of self. IRM describes the therapeutic relationship as being both socially defined and personally perceived by both therapist and client (Taylor, 2008). Therefore, although the therapeutic relationship is socially understood as a professional relationship in which the therapist is the service provider and the client is receiving the service, the therapeutic relationship is uniquely personal to both therapist and client (Taylor, 2008). On the other hand, therapeutic use of self is the therapist applying oneself responsibly in facilitating the therapeutic

relationship. This conceptual difference has implications for research: 1) It is important to clarify therapeutic use of self and the therapeutic relationship as separate constructs, and 2) it is important to examine both the therapist's and client's perspective of the therapeutic relationship to gain a complete understanding of this construct.

Importance of examining client and therapist perspectives.

Theoretically, examining association between therapist's and client's perceptions of therapeutic relationship would be logical as therapeutic use of self is only effective if 1) the therapist accurately understands the client's needs and 2) provides what the client needs. However, there remains a gap in the occupational therapy literature in regards to therapeutic use of self as studies have only examined subjective client and therapists' perceptions in isolation rather than in association with each other.

The occupational therapy profession's emphasis on a client-centered approach implies a belief that the client's needs and perceptions are most important. Drawing from psychotherapy literature, client perceptions of the therapeutic relationship are more critical in outcomes. However, in occupational therapy, the client's perspective of the therapeutic relationship has not yet been rigorously examined. Overall, exploring both perspectives simultaneously would give a clearly picture about whether therapists are consistently understanding and fulfilling their client's needs. This is an infrequent approach to the study of therapeutic use of self and therapeutic relationships in occupational therapy.

1.6. Study Rationale and Objectives

Overall, the current evidence for therapeutic use of self is limited. Although studies reflect the importance of therapeutic use of self and therapeutic relationship to

outcomes, the association between the therapeutic relationship and therapeutic outcomes has not yet been studied rigorously or systematically. This is mostly due to a lack of empirical studies that use an integrated approach, resulting in a loosely defined theoretical concept of therapeutic use of self and the therapeutic relationship across the profession (Taylor, 2008; Taylor et al., 2009; Taylor, et al., 2011). The field of occupational therapy needs a coherent explanation as well as measurement tools regarding therapeutic use of self and how it relates to our core outcome, occupational engagement.

Although the therapeutic relationship is believed to be critical to enhancing participation during therapy and therapeutic outcomes in occupational therapy, no study to date has been conducted to examine this hypothesis (Allison & Strong, 1994; Cole & McLean, 2003; Taylor, et al., 2009). Such a study would be necessary, because if the effect of the therapeutic relationship on therapeutic outcomes is significantly similar to that of psychotherapy as discussed above, then the study would suggest that the relationship is pivotal in improving patient outcomes in occupational therapy. To begin addressing this gap in research, it would be important to study therapeutic mode use and the therapeutic relationship from both client and therapist perspectives simultaneously. Finally, it would be important to conduct a preliminary exploration of the association between the therapist's and client's perceptions of therapeutic mode use and the therapeutic relationship, and the client's participation during therapy.

The overall purpose of this study is to quantitatively describe therapist and client perceptions of therapeutic mode use, the therapeutic relationship and participation during occupational therapy. In this study, I propose to conduct a quantitative descriptive and

associational study of the following data sets collected in collaboration with a research team at the National University Hospital, Singapore from August to December 2012. The therapist dataset includes occupational therapists from the Department of Rehabilitation, who worked for at least six months in their specialty areas. The therapist datasets include Cohort A and Case Study B. Cohort A includes 16 therapists who completed at least 1 Clinical Assessment of Modes- Therapist version (CAM-T) questionnaire. Case study B is a case study of one therapist who completed the CAM-T with 12 unique clients. The client datasets include clients who were referred for occupational therapy and completed 1) the pre-therapy questionnaire: Clinical Assessment of Modes- Preference questionnaire (CAM-P) and/or 2) the post-therapy questionnaires which include the Clinical Assessment of Modes- Actual Experience (CAM-E) and the Working Alliance Inventory, Short Form- Client Version (WAI-C). The client datasets include:

- Sample 1: 11 clients who had completed the pre-therapy questionnaire only
- Sample 2: 11 clients who completed both pre and post-therapy questionnaires
- Sample 3: 11 clients who completed the post-therapy questionnaires only

The main objectives of this dissertation are to:

1) Describe the therapist samples in terms of self-reported therapeutic mode use, self-reported interpersonal characteristics and their perspective of the strength of the therapeutic relationship
2) Describe the client samples in terms of their preferred and actual experience of the therapist's mode use and their perspective of the strength of the therapeutic relationship

3) Examine the relationship between therapist's and client's perspectives of therapeutic mode use, the therapeutic relationship, and client participation during therapy

2. METHODS

2.1. Study Design

I will conduct secondary analyses of the data collected from occupational therapists and their clients, who were administered with either pre and/or post-therapy self-report questionnaires before or after at least three usual therapy sessions. For each of the objectives stated above, a sub-study will be conducted as follows: For Study 1, I will conduct a quantitative descriptive study of a therapist dataset (Cohort A) and a case study (Case study B). For Study 2, I will conduct a quantitative descriptive study of client datasets (i.e. Sample 1, Sample 2 and Sample 3). For Study 3, I will conduct preliminary correlational analyses, using therapist-client dyad data corresponding to Cohort A.

2.2. Procedure

This data was collected as part of a pilot study in collaboration between the National University Hospital (Singapore), Nanyang Polytechnic (Singapore) and University of Illinois at Chicago. The study was approved by the Institutional Review Board in the University of Illinois at Chicago (IRB #2012-0411) and the National Health Group Domain Specific Review Board in Singapore (NHG DSRB #2012/00379). See Figure 1 for a visual summary of the procedures.

Occupational therapists were recruited from the Department of Rehabilitation at the National University Hospital. Therapists were recruited from three main specialty areas: 1) acute to sub-acute inpatient rehabilitation, 2) outpatient hand therapy, 3) outpatient therapy for chronic conditions (i.e. chronic pain and lymphedema). Therapists in acute inpatient rehabilitation generally followed up their clients for short periods of

time (i.e. an average of 1 day to 2 weeks) while therapists seeing clients in chronic care generally see their clients for longer periods of care (i.e. 3 months or more). On the other hand, therapists in hand therapy generally provide therapy for their client from acute to chronic stages of care (i.e. an average of 1 to 3 months). An information session about the details of the study was provided at an occupational therapist staff meeting. Informed consent was obtained from 32 occupational therapists during a time that was convenient for those who were interested in the study. The recruited occupational therapists were asked to assist in identifying potential clients for the study. Research personnel then screened clients according to the inclusion criteria. Informed consent was obtained from 33 English-speaking clients when they agreed to participate.

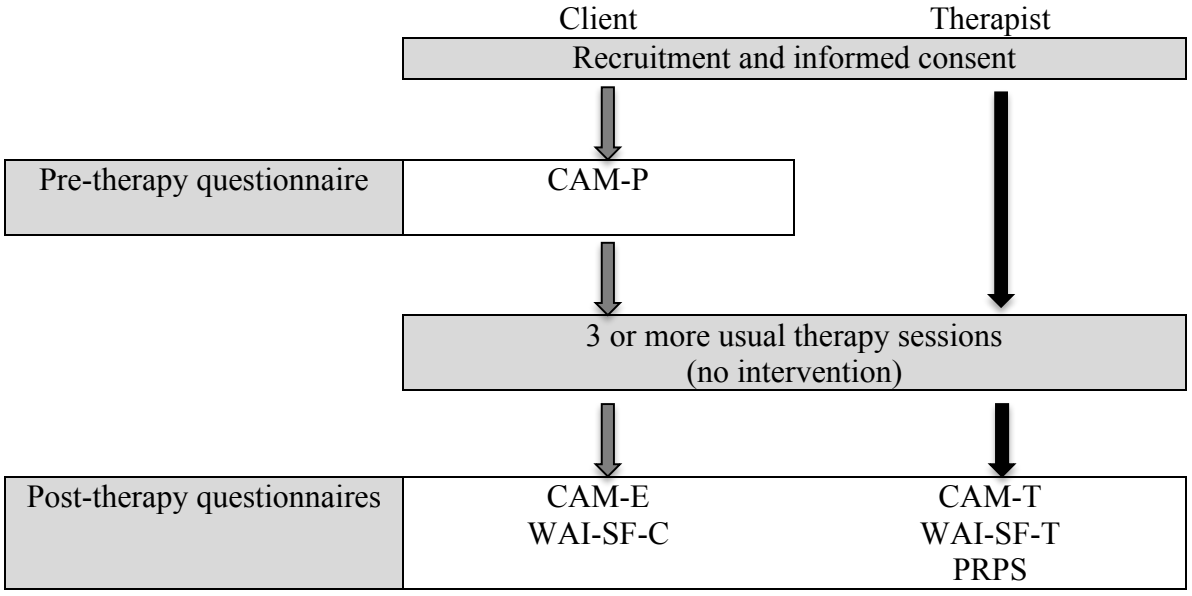


Figure 1. Procedure for data collection.

When possible, the pre-therapy questionnaire (i.e. CAM-P) was self-administered to clients before or at the first session of therapy. If the client had already started the course of therapy, the post-therapy questionnaires (i.e. CAM-E and WAI-SF-C) were self-administered to the client after they completed at least three sessions of therapy. Refer to Table 1 for the number of sessions completed by clients at the time of administering the post-therapy questionnaires.

Table 1. Therapy sessions completed when administered with post-therapy questionnaires

	Sample 2		Sample 3	
Number of sessions	F	%	F	%
3 to 4 sessions	9	90.0	4	36.4
5 to 10 sessions	1	10.0	4	36.4
11 to 20 sessions	-	-	1	9.1
More than 20 sessions	-	-	2	18.1

Note. Percentages are valid percentages, which take into account any missing data.

At the same time, their occupational therapist was also self-administered with the post-therapy questionnaires (i.e. CAM-T, the WAI-SF-T and the PRPS). If clients had difficulty with literacy or understanding the items, research assistants were available to assist in reading to the clients or explaining the items. Similarly, the research assistant was available to the occupational therapists if they needed clarification. The questionnaires were self-administered by the client and therapist separately and returned to the research assistant directly to ensure confidentiality regarding their responses.

Socio-demographic data were also collected together with the self-administered Clinical Assessment of Modes (CAM) questionnaires.

2.3. Participants and Datasets

Occupational therapists were recruited if they were working in National University Hospital for at least 6 months in their specialty area, regardless of whether they work in an inpatient or outpatient setting. Clients were recruited if they were medically stable for rehabilitation, referred for therapy services, above 21 years old, and English speaking. One therapist may be paired with multiple clients. However, if the client was being treated by more than one occupational therapist, one therapist was randomly selected to be included in the study pair. Therapists were aware that their clients were involved in the study and vice versa.

Therapist dataset.

A total of 32 therapists were recruited but some therapists did not have any suitable clients to recruit while others had multiple clients recruited. See Table 2 for the therapists' demographics and different questionnaires that were completed by recruited therapists. The Cohort A dataset analyzed in this study, included therapists who completed at least one CAM-T questionnaire (n =16, Mdn= 1, range of clients/therapist: 1-12). See Tables 3 to see details of therapists in Cohort A. For details of therapist in Case Study B, refer to Therapist ID 11 in Table 2.

Table 2. Description of Therapist Dataset (N=32)

Therapist ID	Age	Gender	Degree Type	Years of Practice[a]	Number of questionnaires completed		
					CAM-T	WAI-SF-T	PRPS
1	32	Female	-	-	-	-	-
2	.	Female	-	-	-	-	-
3	26	Female	-	-	-	-	-
4	.	Female	-	-	-	-	-
5	35	Female	Bachelor	3	1	1	1
6	27	Female	Bachelor	2	2	1	2
7	27	Female	Bachelor	-	1	1	-
8	28	Female	-	-	-	-	-
9	26	Female	Bachelor	2	2	2	2
10	27	Male	Bachelor	2	1	1	1
11	25	Female	Diploma	2	12	12	12
12	45	Female	-	-	-	-	-
13	25	Female	Bachelor	2	1	-	1
14	35	Male	-	-	-	-	-
15	54	Female	-	-	-	-	-
16	27	Female	-	-	-	-	-
17	.	Female	-	-	-	-	-
18	31	Female	Bachelor	3	2	2	2
19	25	Female	Bachelor	2	3	3	3
20	26	Female	-	-	-	-	-
21	23	Female	Bachelor	1	1	1	1
22	33	Female	-	-	-	-	-
23	23	Female	-	-	-	-	-
24	29	Female	-	-	-	-	-
25	24	Female	Bachelor	2	2	2	2
26	26	Female	Bachelor	2	1	1	1
27	37	Female	-	-	-	-	-
28	25	Female	Bachelor	2	1	1	1
29	23	Female	Bachelor	2	1	1	1
30	26	Female	Bachelor	2	1	1	-
31	25	Female	-	-	-	-	-
32	24	Female	Bachelor	-	1	1	1

Table 3. Demographic Characteristics of Cohort A Therapists (n=16)

Characteristic	Mean	SD
Age	26.1	3.0
Gender	F	%
Male	1	6.2
Female	15	93.8
Degree Type		
Diploma	1	6.2
Bachelor	15	93.8
Highest Degree in Any Field		
Diploma	1	7.1
Bachelor	13	92.9
Years of Practice		
Less than 1 year	1	7.1
1 to 5 years	11	78.6
6 to 10 years	2	14.3
Ethnicity		
Chinese	16	100.0

Client datasets.

The total client dataset (N=33) included clients who completed 1) the pre-therapy questionnaire (CAM-P) and/or 2) the post-therapy questionnaires (CAM-E and WAI-SF-C). The resulting dataset included three subsamples: Sample 1 (11 clients who had completed the pre-therapy questionnaire only), Sample 2 (11 clients who completed both pre and post-therapy questionnaires), and Sample 3 (11 clients who only completed the post-therapy questionnaires). See Table 4 for a summary of the total sample and different questionnaires that were completed by each of the recruited clients. See Table 5, 6, and 7

for the demographic characteristics of the clients in the Sample 1, 2 and 3 datasets respectively. See Table 8 for a combined sample of Sample 1 and 2, which includes all the clients who completed the pre-therapy questionnaire (n=22).

Table 4. Description of Clients Dataset (N=33)

					Questionnaires completed		
Client ID	Age	Gender	Education[a]	Occupation	CAM-P	CAM-E	WAI-SF-C
1	54	Female	1	Other	X		
2	23	Male	2	Full time	X		
3	47	Female	3	Full time	X		
4	47	Female	2	Other	X		
5	32	Male	3	Full time	X		
6	50	Male	3	Full time	X		
7	70	Male	1	Retired	X		
8	27	Female	1	Student	X		
9	44	Female	1	Full time	X		
10	68	Male	1	Retired	X		
11	58	Female	2	Part time	X		
12	22	Male	2	Full time	X	X	X
13	31	Male	3	Full time	X	X	X
14	29	Male	2	Full time	X	X	X
15	59	Male	1	Full time	X	X	X
16	75	Female	1	Retired	X	X	X
17	35	Male	3	Full time	X	X	X
18	61	Male	2	Full time	X	X	X
19	37	Male	1	Full time	X	X	X
20	26	Male	4	Student	X	X	X
21	77	Male	1	Retired	X	X	X
22	29	Female	3	Full time	X	X	X
23	63	Male	1	Retired		X	X
24	53	Male	2	Full time		X	X
25	29	Male	1	Full time		X	X
26	57	Male	2	Full time		X	X
27	56	Male	3	Full time		X	X
28	53	Female	2	Full time		X	X
29	36	Male	2	Full time		X	X
30	64	Female	1	Retired		X	X
31	47	Female	2	Full time		X	X
32	59	Female	2	Retired		X	X
33	77	Female	3	Retired		X	X

[a] Categories for Educational Level: “1” = Less than high school, “2”= High school, “3” = Degree, “4” = Post-Graduate Degree

Table 5. Sample 1: Demographic characteristics of clients who completed CAM-P only (n =11)

Characteristic	Mean	SD
Age	47.3	15.4
Gender	F	%
Male	6	54.5
Female	5	45.5
Highest Educational Level		
Less than High School	5	45.4
High School	3	27.3
Bachelor Degree	3	27.3
Occupational Role		
Employed Full-time	5	45.4
Employed Part-time	1	9.1
Retired	2	18.2
Student	1	9.1
Other	2	18.2
Marital Status		
Single, Never Married	5	45.5
Married	6	54.5
Living Situation		
Living alone	1	10.0
Living with spouse/partner	4	40.0
Living with other family member	5	50.0
Ethnicity		
Chinese	6	60.0
Malay	3	30.0
Other	1	10.0
Client diagnosis		
Acute conditions		
Contusion	1	10.0
Stroke	1	10.0
Multiple injury	1	10.0

Characteristic	F	%
Client diagnosis		
Hand conditions		
Finger Injury	3	30.0
Wrist injury	4	40.0

Note. Percentages are valid percentages, which take into account any missing data.

Table 6. Sample 2: Demographic characteristics of clients who completed both CAM-P and CAM-E (n =11)

Characteristic	Mean	SD
Age	43.7	20.3
Gender	F	%
Male	2	18.2
Female	9	81.8
Highest Educational Level		
Less than High School	4	36.3
High School	3	27.3
Bachelor Degree	3	27.3
Post-Graduate Degree	1	9.1
Occupational Role		
Employed Full-time	8	72.7
Retired	2	18.2
Student	1	9.1
Marital Status		
Single, Never Married	6	54.5
Married	5	45.5
Living Situation		
Living alone	3	27.2
Living with spouse/partner	4	36.4
Living with other family member	4	36.4
Ethnicity		
Chinese	8	72.7
Malay	1	9.1
Other	2	18.2
Client diagnosis		
Acute conditions		
Dizziness	1	9.1
Gangrene	1	9.1
Pneumonia	1	9.1

Characteristic	F	%
Client diagnosis		
Subacute/Chronic conditions		
Multiple Fractures	2	18.2
Pain	1	9.1
Spinal cord injury/syndrome	2	18.2
Hand conditions		
Finger Fracture	2	18.2
Wrist Fracture	1	9.1

Table 7. Sample 3: Demographic characteristics of clients who completed CAM-E only (n =11)

Characteristic	Mean	SD
Age	54.0	13.2
Gender	F	%
Male	6	54.5
Female	5	45.5
Highest Educational Level		
Less than High School	3	27.3
High School	6	54.5
Bachelor Degree	2	18.2
Occupational Role		
Employed Full-time	7	63.6
Retired	4	36.4
Marital Status		
Single, Never Married	2	18.2
Married	7	63.6
Divorced	1	9.1
Widowed	1	9.1
Living Situation		
Living alone	1	10.0
Living with spouse/partner	6	60.0
Living with other family member	2	20.0
Other	1	10.0
Ethnicity		
Chinese	6	54.5
Malay	2	18.2
Other	3	27.3
Client diagnosis		
Acute conditions		
Myelitis	1	10.0
Gangrene	1	10.0

Characteristic	F	%
Client diagnosis		
Subacute/Chronic conditions		
Lymphedema	2	20.0
Pain	1	10.0
Cervical stenosis/myelopathy	2	20.0
Hand conditions		
Finger Injury	1	10.0
Wrist Injury	1	10.0
Hand crush injury	1	10.0

Note. Percentages are valid percentages, which take into account any missing data.

Table 8. Demographic characteristics of combined Samples 1 & 2 who completed CAM-P (n =22)

Characteristic	Mean	SD
Age	45.5	17.7
Gender	F	%
Male	8	36.4
Female	14	63.6
Highest Educational Level		
Less than High School	9	40.9
High School	6	27.3
Bachelor Degree	6	27.3
Post-Graduate Degree	1	4.5
Occupational Role		
Employed Full-time	13	59.1
Employed Part-time	1	4.5
Retired	4	18.2
Student	2	9.1
Other	2	9.1
Marital Status		
Single, Never Married	11	50.0
Married	11	50.0
Living Situation		
Living alone	4	23.5
Living with spouse/partner	7	41.2
Living with other family member	5	31.3
Ethnicity		
Chinese	14	66.7
Malay	4	19.0
Other	3	14.3
Client diagnosis		
Acute conditions		
Basal Ganglia Bleed	1	4.8

Characteristic	F	%
Client diagnosis		
Acute conditions	1	4.8
Chest and Right Cervical Mass	1	4.8
Contusion	1	4.8
Dizziness	1	4.8
Pneumonia	1	4.8
Renal failure/Gangrene		
Subacute/Chronic conditions	1	4.8
Cervical pain	1	4.8
Quadraparesis	1	4.8
Central cord syndrome	2	9.4
Multiple fractures		
Hand injuries	5	23.7
Finger injury	5	23.7
Wrist fractures/pain		

2.4. Instruments

Clinical Assessment of Modes.

Development and description of the questionnaires. The Clinical Assessment of Modes questionnaires (CAM) were developed based on the IRM to assess therapeutic mode use from different perspectives. The four versions include 1) a client version that measures the client's preference of therapeutic modes (CAM-P, Taylor, Wong, Fan, Kjellberg, Alfredsson-Agren, Andersson, & Zubel, 2013a), 2) a client version that measures the client's perceived experience of the therapeutic mode that the therapist used (CAM-E, Taylor, Wong, Fan, Kjellberg, Alfredsson-Agren, Andersson, & Zubel, 2013b), 3) a therapist version (CAM-T, Taylor, Wong, Fan, Kjellberg, Alfredsson-Agren, Andersson, & Zubel, 2013c), and 4) an observer version that measures a third-party perspective of the therapeutic mode use during a therapy session (CAM-O, Fan, Taylor, Wong, Kjellberg, Alfredsson-Agren, Andersson, & Zubel, 2013).

Each questionnaire had 30 items with a 5-point ordinal scale ranging from 1=Not at all important/Never to 5= Extremely important/Very frequently. The first versions of the client (CAM-P and CAM-E) and therapist (CAM-T) questionnaires were used in this study. Since then, the questionnaires have since undergone further revisions. Table 9, 10 and 11 show the six subscales and items of the CAM-P, CAM-E and CAM-T used in this study. The six subscales correspond to the six therapeutic modes as described in IRM. The items mirror each other in content but worded accordingly to the different perspectives.

Table 9. Clinical Assessment of Modes- Client Preference, Version 1 (CAM-P)

Item No.	Subscale Items
	Advocating
9	I want my therapist to help me get access to resources or people in the community in which I live.
17	I want my therapist to talk with me about legal rights for people with disabilities.
26	I want my therapist to say things that help me to feel normal and like other people.
32	I want my therapist to tell me about people and resources in the community that are not a part of the hospital or clinic.
36	I want my therapist to help me contact people who have a similar experience or disability.
	Empathizing
10	I want my therapist to listen to me with true interest.
15	I want my therapist to ask questions that make me feel comfortable talking.
21	I want my therapist to try to understand my thoughts and feelings, no matter what they are.
28	I want my therapist to share something about his/her personal experience so that I do not feel alone.
37	I want my therapist to try hard to understand my needs by listening and asking as many questions as necessary.
	Collaborating
14	I want my therapist to allow me to choose what will happen next.
18	I want my therapist to make sure that I work on what matters most to me.
22	I want my therapist to improve or change something when I point out that it is not helpful.
27	I want my therapist to say things that make me feel that we are working together as a team.
31	I want my therapist to give me control over what I accomplish.
	Problem Solving
12	I want my therapist to help me to think about a problem or activity in a different way.
20	I want my therapist to explain different choices to me when guiding me to make a decision.
25	I want my therapist to help me think about a problem in a clear-headed, non-emotional way.
34	I want my therapist to help me consider many different ways of doing things.
38	I want my therapist to help me look at a problem by breaking it down into smaller parts.

Item No.	Subscale Items
	Encouraging
13	I want my therapist to point out what I am good at doing.
19	I want my therapist to make me feel confident about what I am doing.
24	I want my therapist to be positive when he/she believes I am ready to try something I think I cannot do.
29	I want my therapist to say things that make me feel hopeful.
33	I want my therapist to give me a compliment or other kind of reward for something I did.
	Instructing
11	I want my therapist to explain what is happening or tell me what will happen next.
16	I want my therapist to tell me how to improve my performance or behavior.
23	I want my therapist to provide me with clear directions.
30	I want my therapist to show a sense of conviction when making a recommendation.
35	I want my therapist to teach me something.

Table 10. Clinical Assessment of Modes- Client Experience, Version 1 (CAM-E)

Item No.	Subscale Items
	Advocating
1	My therapist helped me get access to resources or people in the community in which I live.
9	We talked about legal rights for people with disabilities.
18	My therapist said things that helped me to feel normal and like other people.
24	My therapist made me aware of people and resources in the community that were not a part of the hospital or clinic.
28	My therapist helped me contact people who had a similar experience or disability.
	Empathizing
2	My therapist listened to me with true interest.
7	My therapist asked questions that made me feel comfortable talking.
13	My therapist tried to understand my thoughts and feelings, no matter what they were.
20	My therapist shared something about his/her personal experience so that I did not feel alone.
29	My therapist tried hard to understand my needs by listening and asking as many questions as necessary.
	Collaborating
6	My therapist allowed me to choose what would happen next.
10	My therapist made sure that I worked on what mattered most to me.
14	My therapist improved or changed something when I pointed out that it was not helpful.
19	My therapist said things that made me feel that we were working together as a team.
23	My therapist gave me control over what I accomplished.
	Problem Solving
4	My therapist helped me to think about a problem or activity in a different way.
12	My therapist explained different choices when guiding me to make a decision.
17	My therapist helped me think about a problem in a clear-headed, non-emotional way.
26	My therapist helped me consider many different ways of doing things.
30	My therapist helped me look at a problem by breaking it down into smaller parts.
	Encouraging
5	My therapist pointed out what I was good at doing.
11	My therapist made me feel confident about what I was doing.
16	My therapist's positive attitude showed me that he or she believed I was ready to do something I thought I could not do.
21	My therapist said things that made me feel hopeful.
25	My therapist gave me a compliment or other kind of reward for something I did.

Item No.	Subscale Items
	Instructing
3	My therapist explained what was happening or told me what would happen next.
8	My therapist told me how to improve my performance or behavior.
15	My therapist provided me with clear directions.
22	My therapist showed a sense of conviction when making a recommendation.
27	My therapist taught me something.

Table 11. Clinical Assessment of Modes- Therapist Version (CAM-T)

Item No.	Subscale Items
	Advocating
6	I helped this client to get access to resources or people in the community in which he/she lives.
14	We talked about legal rights for people with disabilities.
23	I said things that enabled this client to feel normal and like other people.
29	I made this client aware of people and resources in the community that were not a part of the traditional medical care system.
33	I helped this client contact people who had a similar experience or disability.
	Empathizing
7	I listened to this client with true interest.
12	I asked questions that made this client feel comfortable talking.
18	I tried to understand this client's thoughts and feelings, no matter what they were.
25	I revealed something about my personal experience so that this client did not feel alone.
34	I made a special effort to listen and ask as many questions as necessary to understand this client's needs.
	Collaborating
11	I allowed this client to choose what would happen next.
15	I made sure that this client worked on what mattered most to him/her.
19	I improved or changed something when this client indicated that it was not helpful.
24	I said things that made this client feel that we were working together as a team.
28	I gave this client control over what he/she accomplished.
	Problem Solving
9	I helped this client think about a problem or activity in a different way.
17	I explained different choices to this client when guiding him/her to make a decision.
22	I helped this client think about a problem in a clear-headed, non-emotional way.
31	I helped this client consider many different ways of doing things.
35	I helped this client look at a problem by breaking it down into smaller parts.
	Encouraging
10	I pointed out what this client was good at doing.
16	I said things to make this client feel confident.
21	Being particularly positive showed that I believed the client was ready to try something he/she was not confident of doing.
26	I said things that made this client feel hopeful.
30	I gave this client a compliment or other kind of reward for something he/she did.
	Instructing
8	I explained what was happening or told this client what would happen next.

Item No.	Subscale Items
13	I told this client how to improve his/her performance or behavior.
20	I provided this client with clear directions.
27	I conveyed a sense of conviction when making a recommendation.
32	I taught this client something.

Validity and reliability. Fan and Taylor (in press) used Rasch analysis to conduct a psychometric study of the first version of the CAM questionnaires in a population of physical and occupational therapists and therapy students and their adult patients in an acute care hospital. Fan and Taylor found that the client versions (CAM-P and CAM-E) and the therapist version (CAM-T) questionnaires demonstrated excellent item separation reliabilities. The item separation reliabilities ranged from 0.80 to 0.94 for CAM-P, 0.70 to 0.99 for CAM-E and 0.89 to 0.99 for CAM-T. All three questionnaires also demonstrated excellent unidimensionality, which means that the modes items fit together as a measure of six distinct therapeutic modes. When examining unidimensionality, the criteria for item "fit" statistics were set at the mean-square between 0.6 to 1.4 with a standardized z-score between -2 to +2. Fan reported 93.3% of the CAM-C items, 100% of CAM-E items and 100% of CAM-T items met the fit statistics criteria. Validity was examined using item rating scale analysis, Fan and Taylor reported that the rating scales of five therapeutic modes in CAM-C, all the therapeutic modes in CAM-E and two therapeutic modes in CAM-T were disordered and should be further investigated. If rating scales are disordered, it means that the transitions between the ordinal rating categories (1, 2, 3, 4 and 5) were not clearly perceived by respondents. Therefore, Fan and Taylor recommended combining rating categories for future studies. A tendency for ceiling effects was found for two modes of CAM-C (instructing and problem solving) and four modes of CAM-E (collaborating, empathizing, instructing and problem-solving mode) but not in the CAM-T. No floor effects were found for all the questionnaires. Fan and Taylor interpreted this to mean that clients tended to perceive all therapeutic modes as desirable and experienced during therapy.

Working Alliance Inventory- Short Form.

Development and description of the questionnaires. The original Working Alliance Inventory (WAI) was developed by Horvath and Greenberg (1986) and used mainly in a psychotherapy context. The WAI includes therapist and client self-report versions of the questionnaire and measures the quality of therapeutic alliance as defined by Bordin (1975). There are three subscales: Bond, Goals and Task, which measure the "positive attachments" between the therapist and the client, the mutual agreement towards therapy goals and therapy tasks respectively (Horvath & Greenberg, 1989, p.224). The original WAI contained 36 items, with 12 items in each subscale. Items were rated on a 7-point Likert scale. Tracey and Kokotovic (1989) conducted a factor analysis of the WAI questionnaires, and selected the four highest loading items from each subscale and created a short form (WAI-SF) for both the client and therapist versions (WAI-C and WAI-T respectively). The resulting questionnaire contained 12 total items, with 4 items in each subscale. As there are no quantitative and validated measures that exist in occupational therapy to measure the therapeutic relationship, the WAI-C and WAI-T will be used in this study to measure perceptions of the therapeutic relationship between occupational therapists and their clients.

Validity and reliability. The original WAI questionnaires demonstrated good internal consistency for both the client version (overall: $\alpha = 0.93$ overall, subscales: $\alpha =$ 0.85 to 0.88) and the therapist version (overall: $\alpha = 0.87$, subscales: $\alpha = 0.68$ to 0.87) (Horvath & Greenberg, 1986). The WAI also demonstrated good convergent, concurrent and predictive validity (Horvath & Greenberg, 1986). Although the WAI has mainly been validated in a psychotherapy setting, it has demonstrated good internal consistency in

psychiatric rehabilitation (Gehrs & Goering, 1994). Using confirmatory factor analyses, Tracey and Kokotovic (1989) showed that the WAI had good validity and acceptable internal consistency when administered to 124 pairs of clients and therapists in a counseling setting. They found that a bi-level hierarchical model had the best fit, showing support that the WAI measured the three subscales on one level as well as an assessment of general alliance. The WAI-SF demonstrated good internal consistency in the therapist version (overall: $\alpha = 0.95$; subscales: $\alpha = 0.83$ to 0.91) and client version (overall: $\alpha = 0.98$; subscales: $\alpha = 0.90$ to 0.92). In a brain injury outpatient rehabilitation setting, Schonberger and colleagues (2006a) found that WAI-SF demonstrated good overall internal consistency and moderate subscale internal consistency in both the therapist version (overall: $\alpha = 0.86$ to 0.89; bond and task subscales: $\alpha = 0.74$ to 0.96; goal subscale: $\alpha = 0.60$ to 0.67) and client version (overall: $\alpha = 0.74$ to 0.83; bond and task subscales: $\alpha = 0.78$ to 0.88; goal subscale: $\alpha = 0.45$ to 0.65).

Pittsburgh Rehabilitation Participation Scale.

Description and reliability of questionnaire. Lenze and colleagues (2004b) developed the Pittsburgh Rehabilitation Participation Scale (PRPS) to measure participation during rehabilitation therapy. To refine the measure, the developers used observations and interviews with occupational and physical therapists. It is a one-item measure with a 6-point scale (1= "None" to 6 = "Excellent") that is rated by the therapist to assess the client's intensity of participation (Lenze et al., 2004b). The total possible score is 6. In a sample of 242 clients, it was found to have high interrater reliability ($r = 0.91$) and found to predict therapeutic outcome in occupational and physical therapy as measured by the motor component of the Functional Independence Measure, a widely

used measure of functional improvement in acute rehabilitation settings ($r = 0.32$, $p < 0.0001$).

Managing missing data in questionnaires.

According to a study by Downey and King (1998), person mean substitution is suitable for ordinal and Likert scales, as it does not affect the internal consistency of the scale if the number of respondents and number of missing data is less than 20%. An inspection of the therapist data (i.e. CAM-T, WAI-T and NEO-PI-3) showed that there was no missing data in the individual scale items. An inspection of the client data shows that there were two clients with missing data and less than 20% of missing data in the CAM-E scale items. Therefore, a decision was made to substitute missing scale data using person mean substitution for CAM-E.

3. STUDY 1: DESCRIPTIVE STUDY OF OCCUPATIONAL THERAPISTS' PERCEPTION OF MODE USE AND THERAPEUTIC RELATIONSHIP

3.1. Study 1A Methods

Specific aims.

Aim 1: To examine the internal consistency of the CAM-T questionnaire in this Singapore study using Cronbach's alpha coefficients for Cohort A (n=16).

Aim 2: To determine which CAM-T modes can be further analyzed from internal consistency findings in Aim 1.

Aim 3: To conduct descriptive analyses of occupational therapists' perceptions of their overall and specific therapeutic mode use (CAM-T) for the overall Cohort A sample, and among subgroups of therapists according to their area of practice.

Aim 4: To conduct descriptive analyses of occupational therapists' perception of the overall therapeutic relationship (WAI-T), the bond with their client, and the extent of agreement in regards to goals and therapeutic tasks for the overall Cohort A sample, and among subgroups of therapists according to their area of practice.

Cohort A sample.

Please refer to *Therapist datasets* (p. 35-36) for details of the Cohort A sample. The therapists' demographic characteristics were presented in Table 3 (p. 36). As this sample is quite homogenous in characteristics, it was not possible to compare the sample according to most therapists' characteristics (i.e. gender, ethnicity, educational level, or years of practice).

Therapist areas of practice groups. For Aims 3 and 4, to compare perception of therapist's therapeutic mode use and therapeutic relationship according to therapist's areas of practice, the therapists were grouped into three groups based on descriptions of their clients' diagnoses: 1) Acute medical care (33.3%), 2) Chronic conditions management (26.7%), and 3) Hand therapy (40.0%). The acute medical care group included therapists who saw clients in inpatient acute settings. The chronic conditions management group included therapists in inpatient or outpatient rehabilitation settings for chronic conditions. The hand therapy group included therapists in outpatient hand therapy, where they follow up with clients with acute to chronic upper limb conditions. See Table 12 below for further details of client diagnoses in each group.

Table 12. Cohort A Areas of Practice (n=15)

	F	%
Acute medical care		
Myelitis	1	6.7
Pneumonia	1	6.7
Renal Failure/Gangrene	2	13.2
Stroke	1	6.7
Chronic conditions management		
Lymphedema	1	6.7
Chronic Pain	2	13.3
Quadraparesis, Guillain-Barre	1	6.7
Hand therapy		
Wrist fracture	1	6.7
Finger injury	4	26.6
Hand crush Injury	1	6.7

Note: Percentages are "valid percentages" taking into account missing data.

Procedures.

Please refer to the *Procedure* section (p. 32-34) for details on the overall data collection process.

Data analysis.

All data analysis will be carried out using SPSS Statistics software (IBM, 2014).

Internal consistency of CAM-T questionnaire. From a classical test theory approach, the Cronbach's alpha would be most suitable for assessing the internal consistency (Gliner, Morgan & Leech, 2009). If a therapist completed two or more CAM-T questionnaires, the first completed rating will be used for the purposes of assessing the internal consistency of the questionnaire. Although the sample is relatively small (CAM-T: n = 16), the sample size does not affect the point estimate of Cronbach's alpha although it can affect the standard error (Duhachek, Coughlan & Iacobbucci, 2005). There have been previous examples of the Cronbach's alpha being used in psychometric studies with similarly small sample sizes. For example, Accurso, Hawley and Garland (2013) used the Cronbach's alpha to estimate internal consistency of the Spanish version of the Therapeutic Alliance Scale for Caregivers and Parents with a sample of 12 Latino caregivers. Ely, Alexander and Reed (2005) also reported the Cronbach's alpha in a psychometric study of the Working Alliance Inventory with subsamples of 6 children and 12 adolescents. However, as the sample size affects the precision of the alpha, I will report the confidence interval together with the alpha value (Duhachek et al., 2005).

As all modes were perceived as similarly "desirable and therapeutic" in the study by Fan and Taylor (in press, p. 137), an *overall sum score* will be suitable to represent overall therapeutic mode use. The overall sum score will first be calculated by summing

the subscale scores for all the six modes (30 items). Next, the internal consistency of an overall sum score will be examined using the Cronbach's alpha. However, if any of the subscales are found to have poor internal consistency, the internal consistency of the overall sum score will be recalculated, excluding those subscales.

If any of the CAM-T subscales were eliminated from the overall sum score due to poor internal consistency, the internal consistency of the CAM-T overall sum score will be recalculated without the items from the eliminated subscale(s). Subsequently, for further descriptive and correlational analyses, I would use the *overall mean score* to account for missing items. The overall mean score will be calculated by summing the remaining subscale mean scores and dividing it by the number of remaining subscales.

Descriptive analyses. As the subscales in the CAM-T and WAI-T are continuous variables, I will use summary tables and graphs to describe the distribution in terms of normality testing, central tendencies, and variability. As the samples are small, it would be appropriate to use the Shapiro-Wilk test for normality testing. After discussion the normality of the distributions, a decision will be made regarding the use of mean or median overall and subscale scores in further analyses when comparing perceptions of the therapeutic mode use (CAM-T) and therapeutic relationship (WAI-T) between different areas of specialty.

Managing missing data. Refer to *Managing missing data in questionnaires* (p. 55) for further details on managing missing data in the ordinal scale items. Any other missing data will be excluded based on pairwise deletion.

3.2. Study 1A Results

Internal consistency of CAM-T.

The internal consistencies of the CAM-T subscales are presented in Table 13. The Cronbach's alpha values for collaborating, empathizing and problem-solving modes were 0.80, 0.80 and 0.78 respectively, indicating acceptable to good internal consistency. The Cronbach's alpha values for advocating, encouraging and instructing modes were 0.48, 0.63 and 0.46 respectively, indicating questionable to poor internal consistency (George & Mallery, 2003). The Cronbach's alpha value for the overall mode use (i.e. overall sum score) was 0.90, reflecting excellent internal consistency.

Table 13. Internal Consistency of Clinical Assessment of Modes Questionnaire- Therapist Version (n=16)

Mode	Cronbach's Alpha	95% CI
Advocating Mode (5 items)	0.48	[-0.08, 0.79]
Collaborating Mode (5 items)	0.80	[0.58, 0.92]
Encouraging Mode (5 items)	0.63	[0.24, 0.85]
Empathizing Mode (5 items)	0.80	[0.59, 0.92]
Instructing Mode (5 items)	0.46	[-0.12, 0.79]
Problem Solving Mode (5 items)	0.78	[0.54, 0.91]
Overall Mode Use (30 items)	0.90	[0.82, 0.96]

In the study by Fan and Taylor (in press), the CAM-T had good unidimensionality as there were no items that had misfit. The item separation reliabilities were also found to be good (0.99, 0.98, 0.99, 0.79, 0.95, and 0.99) which indicates good internal consistency. Therefore, the findings in my study do not represent an exact replication of Fan and Taylor's findings.

Determining the use of CAM-T in further analyses.

The internal consistency of the collaborating, empathizing and problem-solving modes are acceptable and will be used in further descriptive analysis. The internal consistency of advocating, encouraging and instructing modes were low and possible reasons include the following:

1. Reliability coefficients, such as Cronbach's alpha, in Classical Test Theory (CTT) only measure errors based on one source and it is possible that there were multiple sources of error unaccounted for (Domino & Domino, 2006)

2. As a scale length increases, the reliability also increases (Cronbach, 1951). It is suggested that scale lengths, especially those less than seven items, may affect the alpha values (Swailes & McIntyre-Bhatty, 2002). As the CAM-T subscales only have five items each, the alpha values could have been affected. Cronbach (1951) recommended using the mean inter-item correlation to estimate the internal consistency, as it is independent of the number of items. The mean inter-item correlations for the advocating mode, encouraging mode and instructing mode are 0.17, 0.26 and 0.20. Clark and Watson (1995) recommended that the mean inter-item correlations be at least 0.15 to 0.20 for more general constructs and 0.40 to 0.50 for more specific constructs. It could be argued that therapeutic modes can be considered more general as a construct as opposed to a

narrow construct. Although in IRM, the items theoretically reflect the same mode, they reflect different dimensions of the same construct and do not necessarily overlap. For example, in the advocating mode, it is possible that item 33 (contact people with similar difficulties) may not be an item that is not always necessary or timely in an acute setting while items 6 and 29 (items related to getting resources) would be more relevant to a client's needs in discharge planning. This can affect the inter-item correlations and the variability of responses depending on the therapeutic needs of the client. Therefore, according to Clark and Watson (1995), the mean inter-item correlations may be considered acceptable even though the Cronbach's alpha values were considered low.

3. Low variability and skewed data in subscale total scores could also affect the alpha values. High variability in scores lead to greater score reliability (Helms, Henze, Sass & Mifsud, 2006). The therapist population in Fan and Taylor (submitted, provisionally accepted) study appeared different from my study in various ways such as variability in terms of gender, different professions represented, years of experience, and qualifications of the therapists. The therapists in the Singapore study appeared more homogeneous in many of these demographics. It could be expected that since the therapist population in Fan's study was more heterogeneous and overall fairly different compared to my study, it may have affected the variability in responses as well. If there is a strong ceiling/ floor effect or skewed data, it may have affected the variance of the scores as well (Wilcox, 1992). A comparison of the subscale total scores revealed that the standard deviation of the advocating, encouraging and instructing modes were lower in this study (i.e. 2.19, 2.14, and 1.67 respectively) compared to the study by Fan and Taylor (i.e. 2.90, 2.70, and 2.17 respectively), possibly affecting Cronbach's alpha value.

The item-total correlations can be used to further examine items that may be causing most inconsistency (Kielhofner, 2006). The item-total correlation is the correlation between the item score and the total subscale score. The criterion for good item-total correlation is recommended to be between 0.70 and 0.90 (Kielhofner, 2006). When examining the advocating, encouraging and instructing mode subscales, none of the item-total correlations for all three modes were above 0.70. A low item-total correlation could mean that the item is not measuring the same construct, or in this study, the particular therapeutic mode. A negative item-total correlation means that participants who have low scores in the item had high subscale total scores. This could indicate that the item was possibly ambiguous or confusing to the participants. For the advocating mode subscale, one item (item 33: contact people with similar experiences) had extremely low item-total correlation, $r = 0.085$, and one item (item 23: say things that help the client feel normal) had a negative low item-total correlation, $r = -0.081$. For the encouraging mode, one item (item 21: being particularly positive) had a negative low correlation, $r = -0.031$. For the instructing mode subscale, the item-total correlation of item 13 (tell the client how to improve), item 27 (sense of conviction) and item 32 (taught the client something) were low, $r = 0.063$, 0.181 and 0.109.

Taking into account the possible reasons for low Cronbach's alpha coefficient values above, I decided to include the encouraging and instructing modes in further analyses. However, I propose to remove the advocating mode from further analyses due to 1) a questionably low Cronbach's alpha, 2) a relatively low mean inter-item correlation and 3) two items with either an extremely low or negative item-total correlations. In summary, further analyses will be conducted using all the subscales of the CAM-T

questionnaire, except the advocating mode. When the reliability of the CAM-T overall score was recalculated without the advocating mode, the alpha value increased slightly to 0.92, 95% CI [0.84, 0.97], reflecting excellent internal consistency of the overall sum score.

Descriptive analyses of Cohort A.

Demographic characteristics of Cohort A were previously presented in Table 3. Most of the Cohort A identified themselves as female (93.8%) with a mean age of 26.1 (SD = 3). Most of the participants held a bachelor degree in occupational therapy (93.8%) and had been practicing for less than 5 years (85.7 %).

Mode Use. Descriptive analyses of CAM-T mode subscales and overall mode use is presented in Table 14. The distributions of the five subscales and overall mode use, with the normal curve plotted, are displayed in Figures 2 to 7. The x-axis represents the raw scores and the y-axis represents the frequency.

Table 14. Summary Statistics of Cohort A- Therapeutic Mode Use (n=16)

Therapeutic Mode	Shapiro-Wilk Test	Mean (*SD*)	Median (IQR)	Skewness
Collaborating	0.84*	18.75 (2.59)	19.00 (2.75)	-1.68
Encouraging	0.90	18.06 (2.14)	19.00 (3.00)	-.70
Empathizing	0.89	18.25 (3.02)	19.50 (4.75)	-.79
Instructing	0.86*	19.56 (1.67)	20.00 (1.75)	-1.44
Problem Solving	0.86*	17.13 (3.16)	18.00 (3.75)	-1.61
Overall	0.82*	91.75 (10.56)	93.50 (7.75)	-2.00

Total possible score for all mode subscales is 25 and the total possible overall score is 125.
* p <0.05.

When examining the descriptive statistics in Table 14, the Shapiro-Wilk test for normality was statistically significant for the collaborating mode ($W = .84$, $p = .008$), instructing mode ($W = .86$, $p = .017$), problem-solving mode ($W = .86$, $p = .020$) and overall mode use ($W = .82$, $p = .003$), indicating there was a statistically significant lack of normality. The collaborating, instructing and problem solving modes had negative skewness values < -1, indicating that the distributions were skewed to the left. A visual inspection of the histograms of collaborating mode, instructing mode and problem solving mode revealed that these modes appeared to reflect distributions close to the normal curve, apart from a suspected outlier (see Figure 2, 5, and 6). This outlier was confirmed in a comparison of the boxplots of the five subscales, which represented responses from the same therapist (see Figure 8). When the Shapiro-Wilk test was re-examined with the outlier removed, the results were insignificant for all modes and overall mode use, while the test for the empathizing mode was statistically significant ($W = .880$, $p = .047$).

In summary, apart from the presence of the outlier, most of the modes and the overall mode use could be described as approximating a normal distribution. Despite the non-normality of the distributions due to the outlier, it is still appropriate to be included in further descriptive analyses. The differences between the values for the means and medians range were less than 1-point apart, except for the empathizing mode. A comparison of the means reveals that the therapeutic modes that therapists reportedly used, from most to least, were the instructing mode, collaborating mode, empathizing mode, encouraging modes, and problem solving mode (see Figure 9). According to the standard deviations, therapists were most homogenous in rating their use of the

instructing mode and were most heterogeneous in rating their use of the problem solving mode.

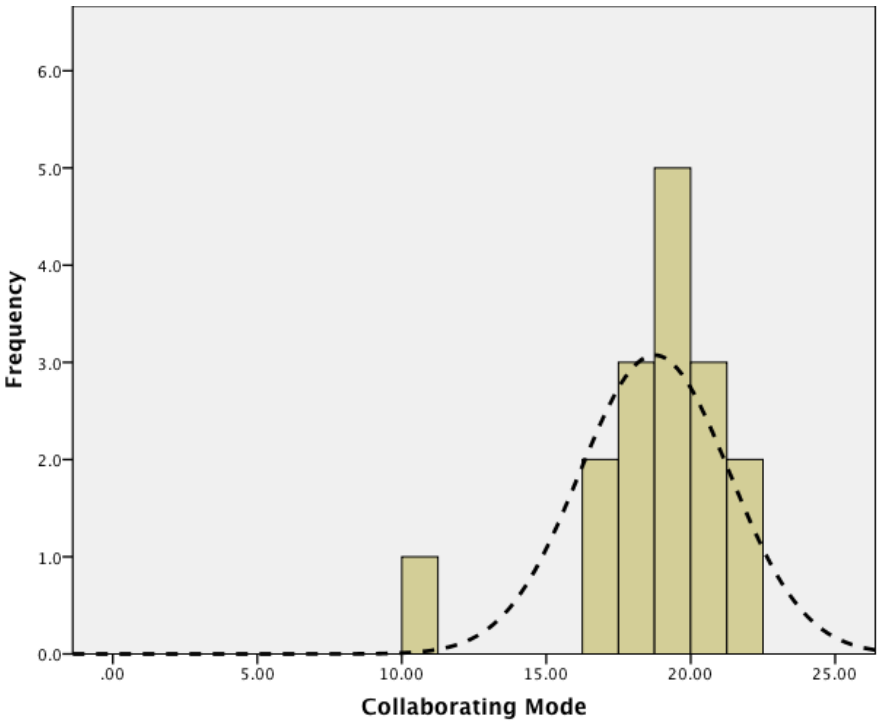


Figure 2. Histogram of CAM-T collaborating mode.

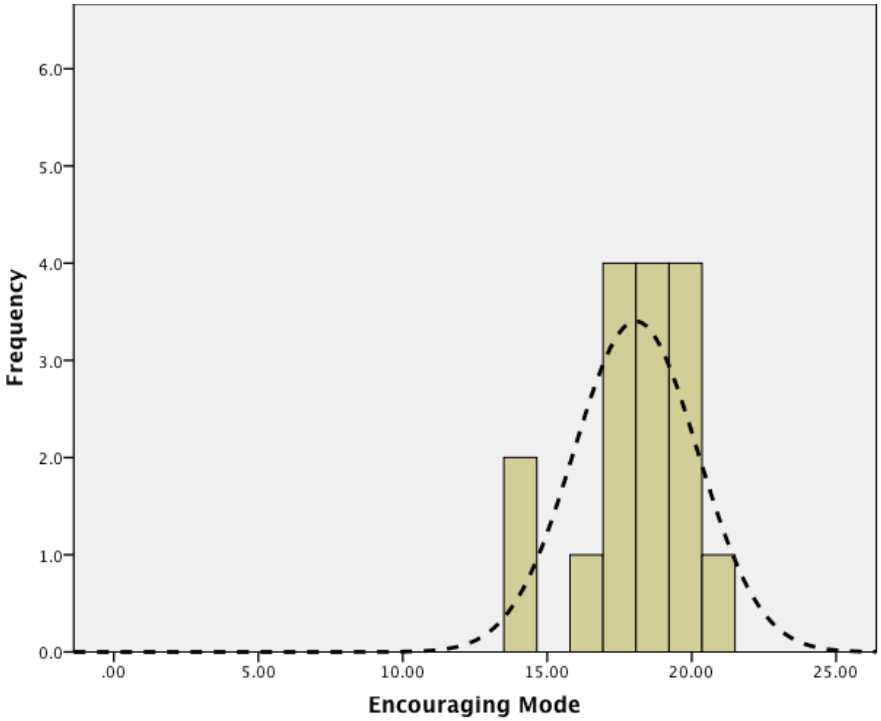


Figure 3. Histogram of CAM-T encouraging mode.

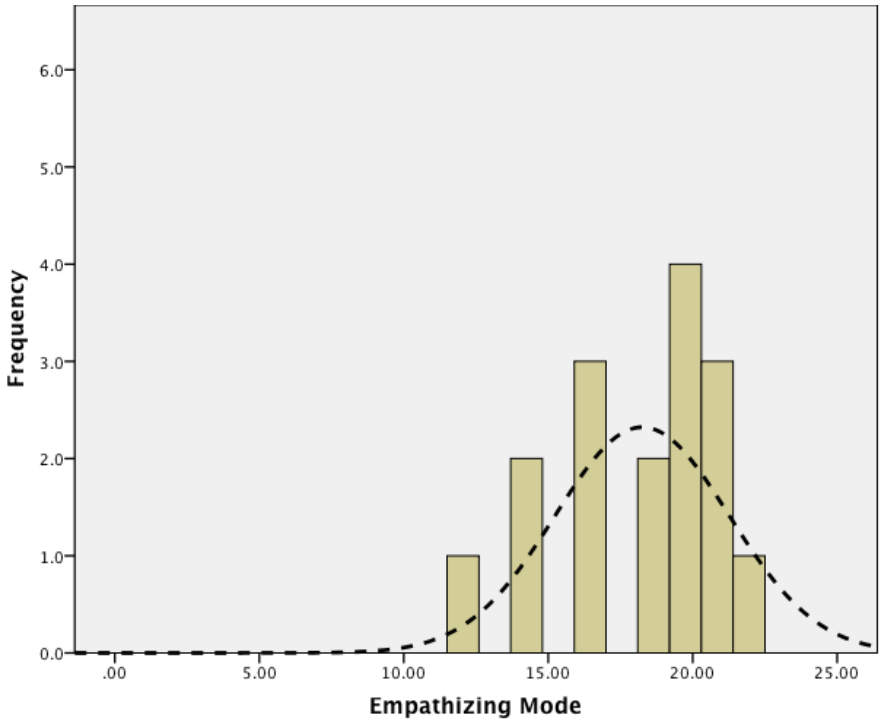


Figure 4. Histogram of CAM-T empathizing mode.

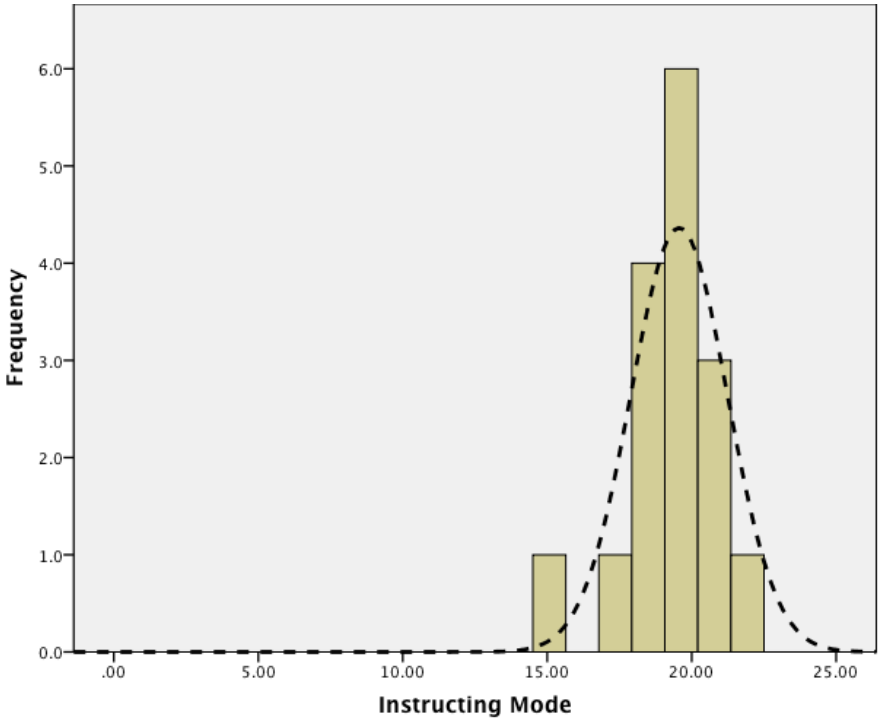


Figure 5. Histogram of CAM-T instructing mode.

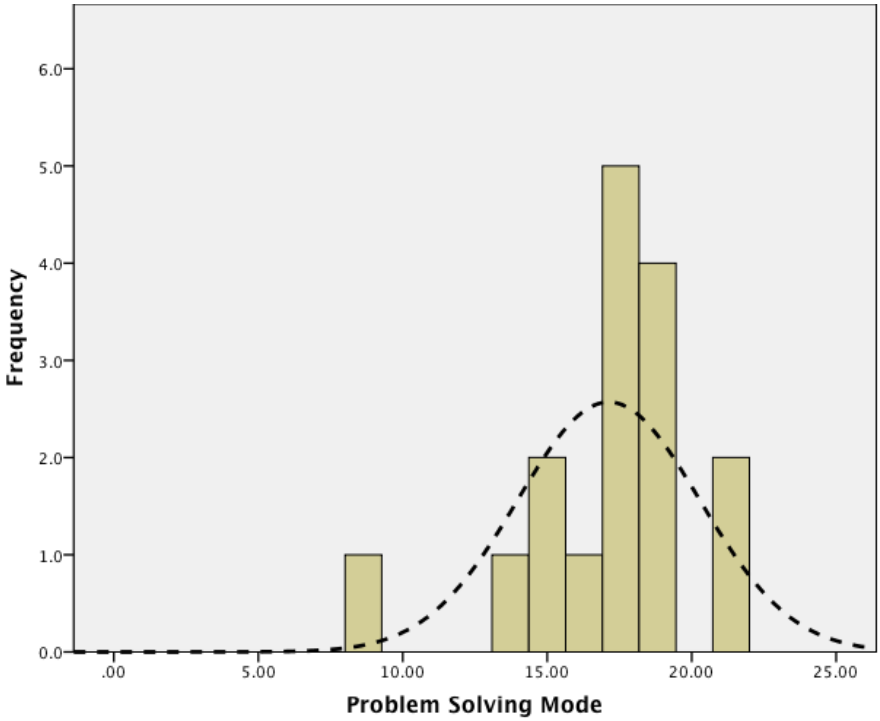


Figure 6. Histogram of CAM-T problem solving mode.

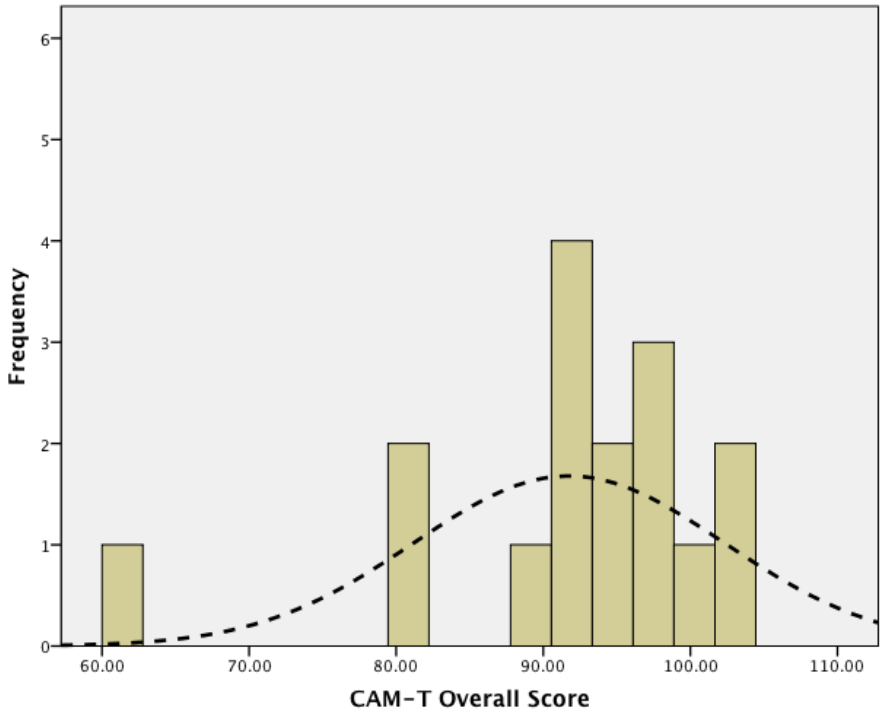


Figure 7. Histogram of CAM-T overall sum score.

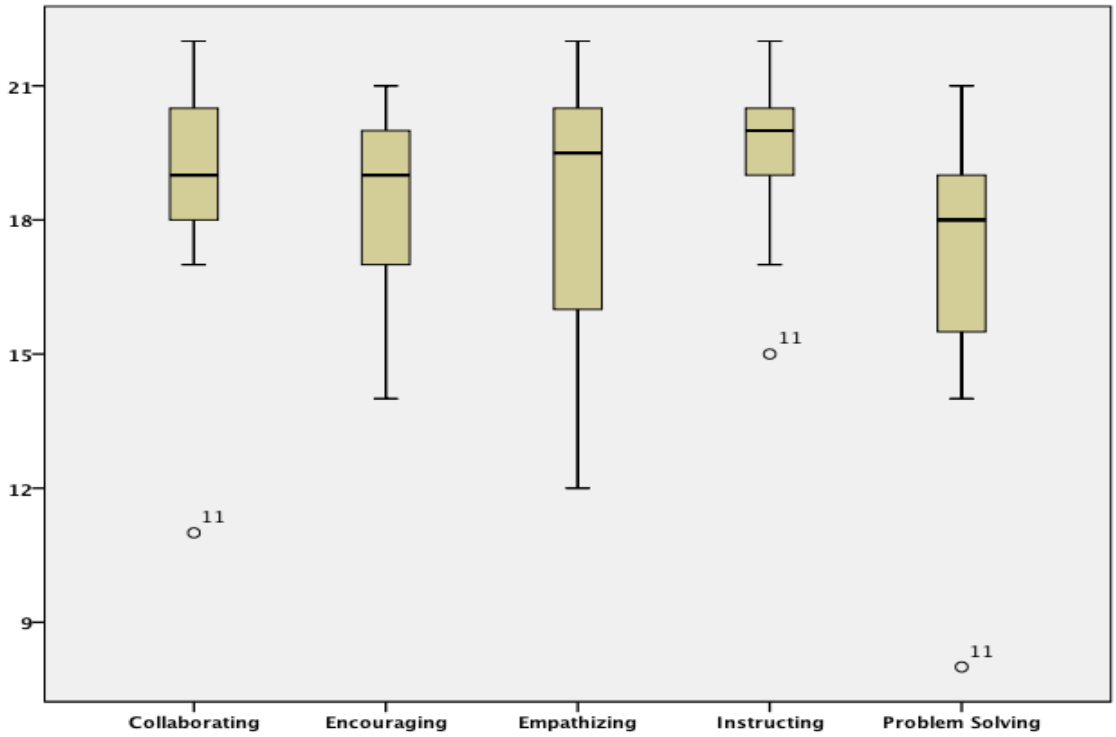


Figure 8. Boxplot comparison of CAM-T five therapeutic modes.

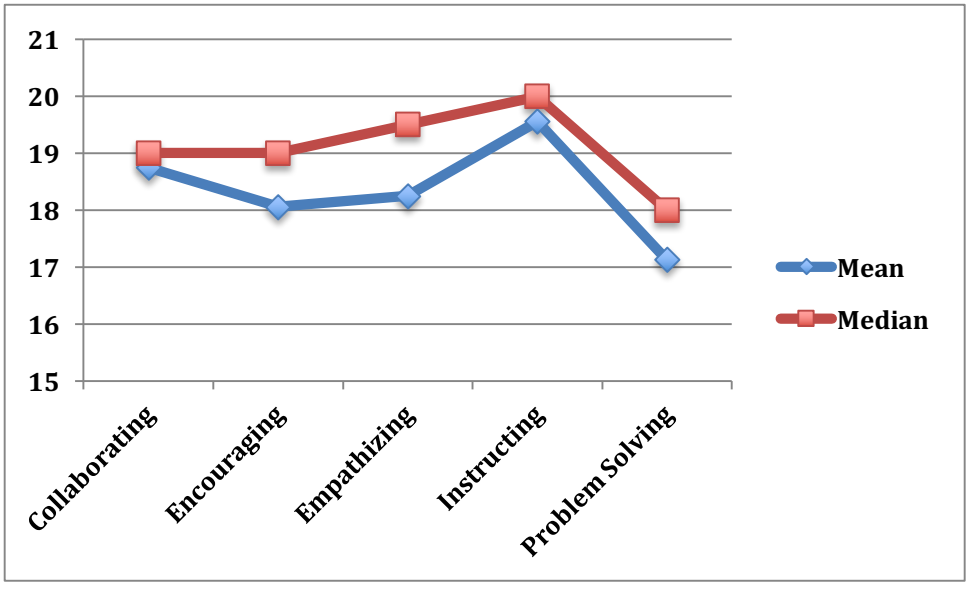


Figure 9. Mean and median scores of the five therapeutic modes.

Comparing mode use according to area of practice. The mean scores for the therapeutic modes subscales according to the three areas of practice are presented in Figure 10.

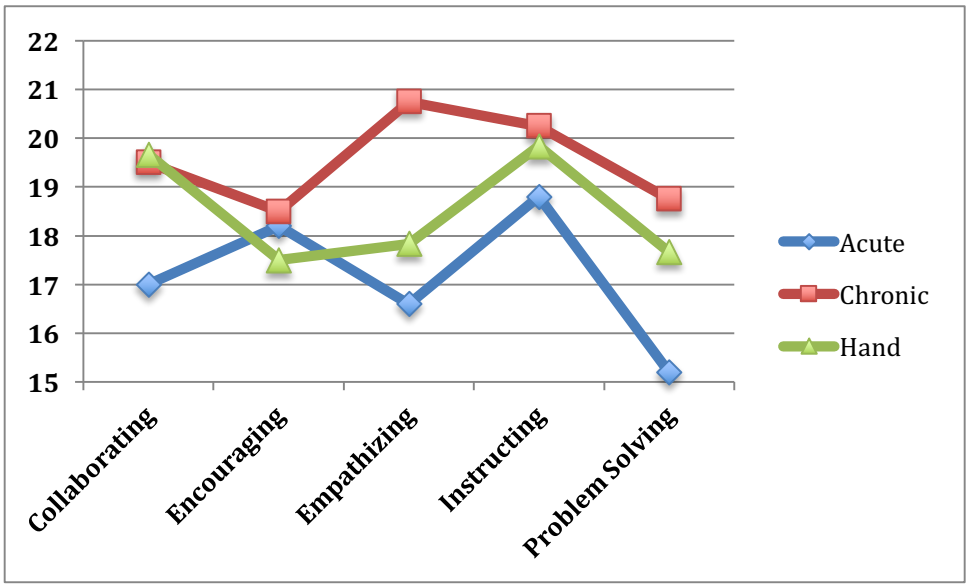


Figure 10. Comparison of CAM-T mode mean scores according to area of practice.

A visual inspection revealed that regardless of area of practice, all three groups used the instructing mode at a similarly high extent while they used the problem solving mode to a relatively low extent. Therapists who work with clients who had chronic conditions used the empathizing mode relatively higher compared to other modes when comparing with other groups. Therapists in acute medical care tended to use the encouraging mode relatively more than other modes when compared to other therapist groups. On the other

hand, they used the collaborating mode and problem solving mode relatively lower compared to other modes in comparison with other groups of therapists. Overall mean scores, from most to least, were for therapists working with clients with chronic illness reported using all therapeutic modes to the highest extent (M = 21.8), followed by those working with clients who had hand injury (M = 20.3) and acute medical conditions (M = 19.2).

Therapeutic relationship. Descriptive analyses of WAI-T for Cohort A are presented in Table 15. The Shapiro-Wilk tests for the overall alliance and all three subscales were not statistically significant, indicating that the scores were normally distributed. A visual inspection of the histograms and boxplot revealed one outlier for the Goal subscale and three outliers for the overall alliance (See Figures 11 to 15). Overall, the means and variance for all subscales appeared to be similar, indicating that therapists perceived the strength of all aspects of the relationship in a similar way.

Table 15. Summary Statistics of Cohort A- Working Alliance (n=15)

	Shapiro-Wilk Test	Mean	SD	Skewness
Overall alliance	0.96	62.07	6.77	-.43
Subscale				
Bond	0.94	21.20	2.34	.15
Goal	0.89	20.60	2.59	-1.32
Task	0.94	20.27	2.40	-.04

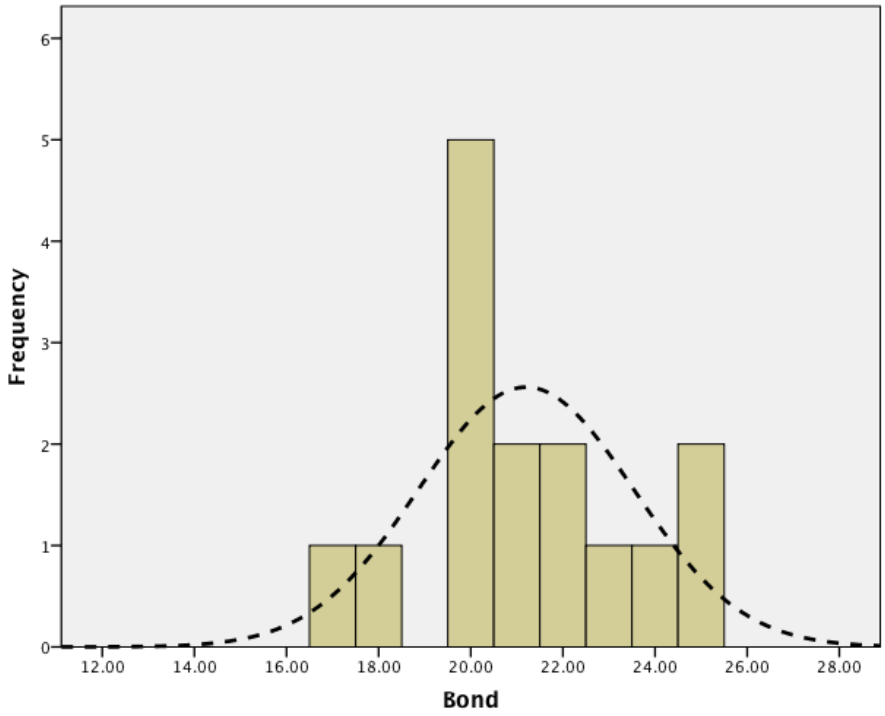


Figure 11. Histogram of WAI-T Bond subscale.

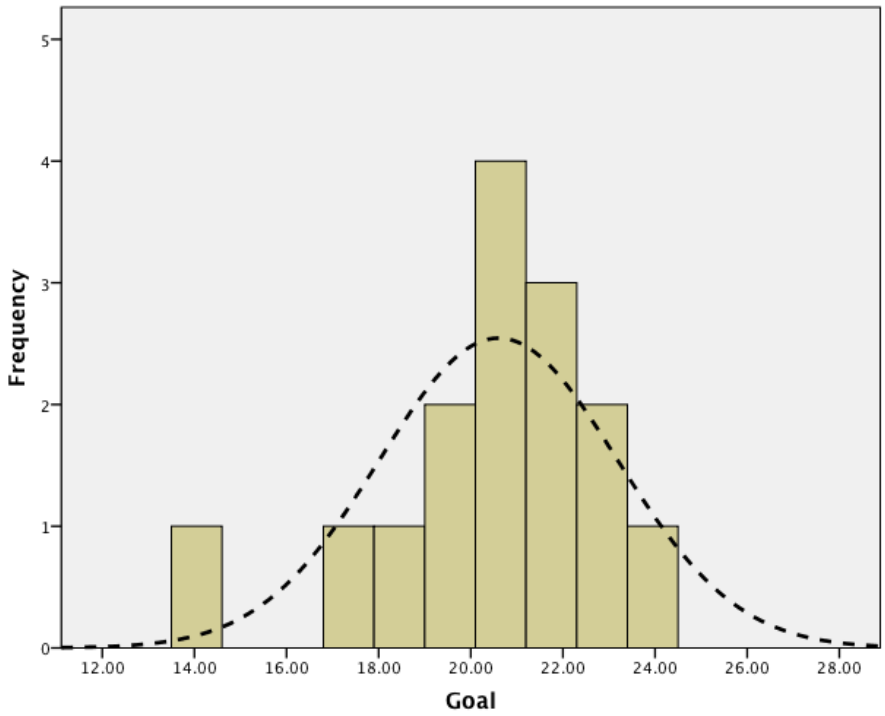


Figure 12. Histogram of WAI-T Goal subscale.

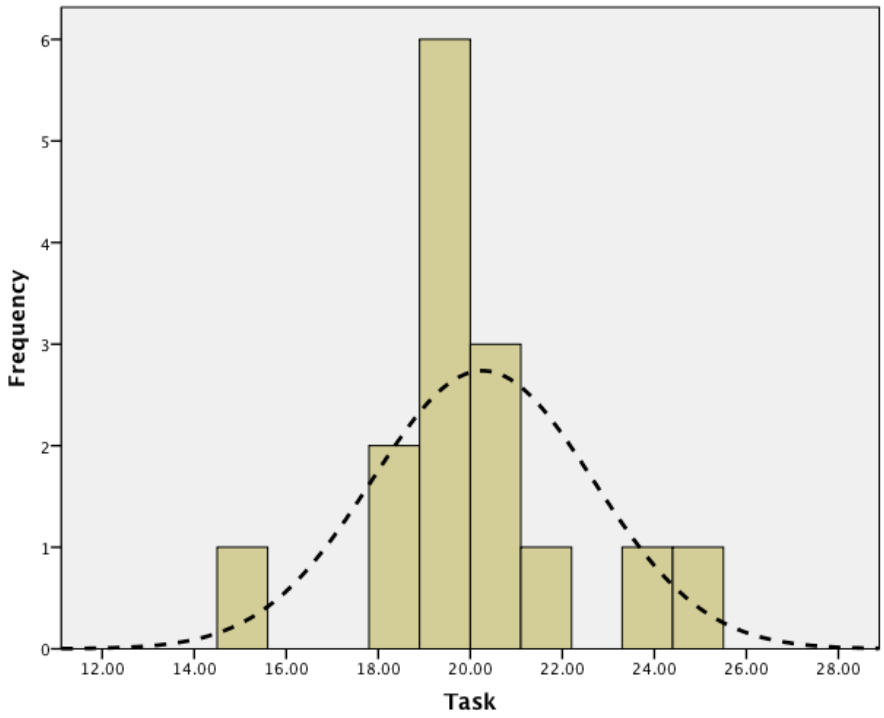


Figure 13. Histogram of WAI-T Task subscale.

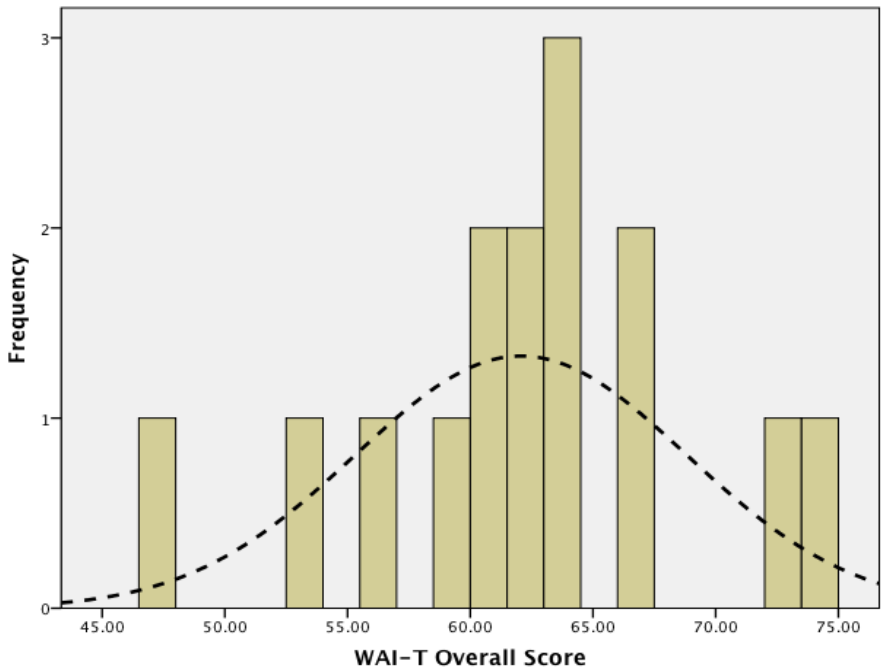


Figure 14. Histogram of WAI-T overall therapeutic alliance score.

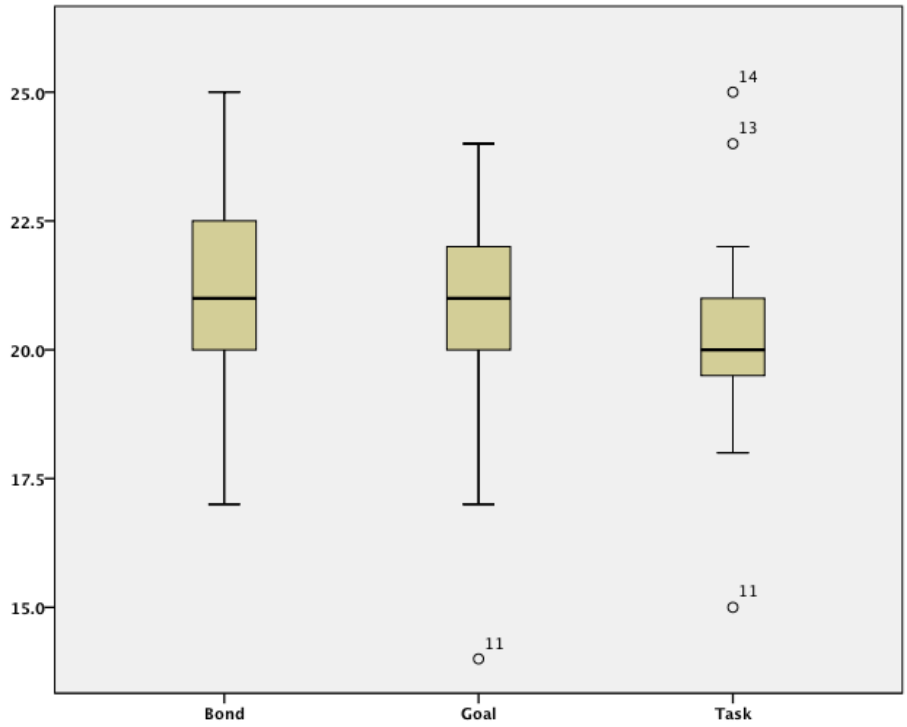


Figure 15. Boxplot comparison of WAI-T subscales.

Comparing therapeutic relationship according to area of practice. According to overall scores, the overall therapeutic relationship was perceived by to be strongest by the therapists working in hand therapy (65.7), followed by the group whose clients had chronic conditions (61.3) and acute medical (58.3). The mean scores for the three subscales according to the three areas of practice are presented visually in Figure 16. An inspection of the mean scores of the subscales reveal that therapists whose clients had hand injuries perceived their mutual understanding regarding therapeutic goals and tasks relatively higher compared to therapists in the other three groups. On the other hand, therapists in acute medical care rated their bond aspect of the relationship relatively lower compared with the other two groups.

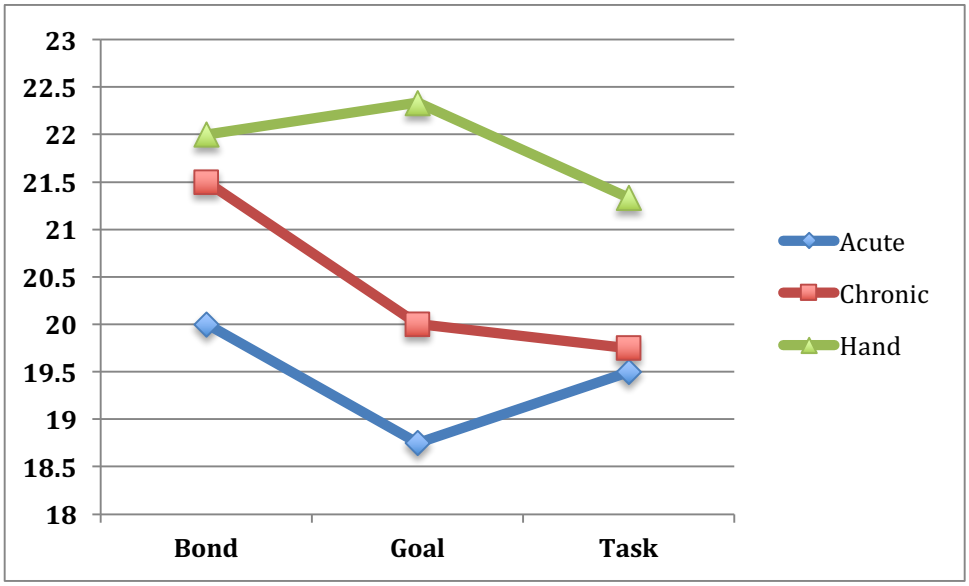


Figure 16. Comparison of WAI-T mean scores according to area of practice.

3.3. Study 1B Case Study Methods

Specific aims.

Aim 5: To conduct descriptive analysis of 1) therapeutic mode use (CAM-T), 2) the therapeutic relationship (WAI-T) and 3) the client's participation (PRPS) as reported by one therapist (Therapist ID: 11) across 12 therapy sessions with 12 unique clients.

Aim 6: To examine if there are positive associations between the therapist's ratings over time by using autocorrelational analyses of CAM-T, WAI-T and PRPS scores between clients.

Aim 7: To examine the association between therapist's perception of mode use (CAM-T) and the strength of the therapeutic relationship (WAI-T) using non-parametric correlational analyses (n=12 client points).

Aim 8: To examine the association between 1) therapist perceptions of the strength of the therapeutic relationship and 2) the clients' participation during therapy (i.e. WAI-T with PRPS) using non-parametric correlational analyses (n=12 client points).

For Aims 6-8, only the mode-subscale scores that demonstrated acceptable internal consistency upon prior analysis (see Internal consistency results of CAM-T in Study 1, p. 60-65) will be used.

Aim 9: To conduct descriptive analysis of the therapist's and corresponding clients' 1) perception of the overall and individual mode use (i.e. CAM-T and CAM-E) and 2) strength of the overall and different aspects of the therapeutic relationship (i.e. WAI-T and WAI-C).

Case study B sample.

The case study is based on one occupational therapist (Therapist ID: 11), who worked in the inpatient rehabilitation ward, providing therapy to clients who require subacute rehabilitation. She completed the CAM-T, WAI-T and PRPS at 12 time points, corresponding to 12 unique clients. For demographic information of the therapist, refer to Table 2 (p. 35). To provide the context for this case study, refer to Table 16 for the sociodemographic details of the 12 clients. For Aim 10, if the client was English-speaking, the client data was included for analyses.

Table 16. Description of Clients in Case Study B (n =12)

Client	Age	Gender	Diagnosis	Ethnicity	Education	Occupation	Marital	Living status [a]
1	69	Female	Lumbar fracture	Chinese	High School	Retired	Married	Spouse/p
2[b]	35	Male	Quadraparesis	Other	> High School	Full-time	Married	Spouse/p
3[b]	61	Male	Central cord syndrome	Chinese	High School	Full-time	Married	Spouse/p
4[b]	37	Male	Multiple fractures	Malay	< High School	Full-time	Married	Spouse/p
5[b]	63	Male	Cervical spondylosis	Malay	< High School	Retired	Married	Other
6[b]	53	Male	Cervical myelopathy	Chinese	High School	Full-time	Widowed	Family member
7	60	Female	Myelitis	Chinese	< High School	Full-time	Married	Spouse/p
8	50	Male	Stroke	Chinese	< High School	Retired	Single	Alone
9	62	Female	Alcohol intoxication, fall	Chinese	< High School	Part-time	Widowed	Family member
10	72	Male	Stroke	Chinese	High School	Retired	Married	Other
11	63	Male	Multiple fractures, fall	Chinese	< High School	Full-time	Married	Spouse/p
12[b]	77	Male	Multiple fractures, fall	Other	< High School	Retired	Married	Spouse/p

[a] Categories of Living Situation include: Spouse/p = Living with spouse or partner, Family = Living with other family member, alone= Living alone, other= Other living arrangements.
[b] Clients who were English-speaking.

Procedures.

Please refer to the *Procedure* section (p. 32-34) for details on the overall data collection process.

Data analysis.

All data analysis will be carried out using SPSS Statistics software (IBM, 2014). Any missing data will be excluded based on pairwise deletion.

When analyzing the results of the CAM questionnaires, the advocating mode will be excluded due to poor internal consistency (see p. 65-66). As in Cohort A, to calculate the *overall mean score* for each time point (i.e. each client), the mean subscale scores for the collaborating, encouraging, empathizing, instructing and problem solving modes will be summed and divided by the five modes. Raw scores will be used to describe all subscale scores for the CAM and WAI questionnaires as well as the overall score of the WAI questionnaires.

Descriptive analyses. For Aim 5, I will use summary tables and conduct visual analyses of graphs (line graphs and scatterplots) to describe and compare CAM-T, WAI-T, and PRPS scores according to level, trend and variability across the 12 clients.
For Aim 9, I will use descriptive graphs to compare similarities and differences in the CAM-T and CAM-E subscale and overall mean scores to describe perceptions of extent of mode use. I will also compare similarities and differences in the WAI-T and WAI-C subscale and overall raw scores to describe the strength of the therapeutic relationship overall and in terms of perceptions of the strength of the different aspects of the therapeutic relationship (i.e. affective bond and mutual agreement concerning tasks and goals).

Correlational analyses. For Aim 6, I will conduct autocorrelational analyses for CAM-T, WAI-T and PRPS results at lag-1 time units. As the data is time-ordered, it is possible that the results may not be independent due to the same therapist rating over time. For example, if the therapist rated each therapy session independently and used modes in an intentional way according to client needs, there should not be any positive correlations between CAM-T observations for one client and the subsequent client (i.e. at lag-1). If observations are negatively correlated, it indicates that observations and the adjacent observation are dissimilar. If observations are not correlated, it indicates that the observations are not associated.

Subsequently for Aim 7 and 8, if results are not autocorrelated or negatively autocorrelated (i.e. indicating that the therapist rated the client's very differently or independently between time points), I will use Spearman's rho for all bivariate non-parametric correlational analyses between 1) CAM-T and WAI-T and 2) WAI-T and PRPS. However, if there are positive autocorrelations, indicating that one observations are similar along a time-order, I will use partial correlations to examine associations between 1) CAM-T and WAI-T and 2) WAI-T and PRPS controlling for time order.

3.4. Study 1B Results

Therapist's mode use with 12 clients.

Descriptive analyses. The summary of results is presented in Table 17. Individual graphs of CAM, WAI and PRPS scores, are presented separately from Figures 17 to 22. The level of mode use, from most to least, is as follows: 1) instructing mode (M = 20.92), 2) empathizing mode (M = 20.67), 3) problem solving mode (M = 19.92), 4) encouraging mode (M = 19.83) and 5) collaborating mode (M = 18.92). A visual inspection of the

CAM-T overall score graph shows that there does not appear to be a clear change or differences in level of individual or overall mode use scores over 12 sessions with different clients (See Figure 22). Most modes demonstrated an increase in scores for the therapy session with client 9. There also does not appear to be a consistent trend of increase or decrease in mode use for each of the subscales and the overall mode use as well. There was low variability for the first 6 clients for all the modes, except the instructing mode, which demonstrated more variability across the 12 clients. The modes, with most to least variability, were 1) empathizing mode (*SD* = 1.89), collaborating mode (*SD* = 1.71), instructing mode (*SD* = 1.66), encouraging mode (*SD* = 1.57) and problem solving mode (*SD* = 1.38).

Table 17. Summary of Post-Therapy Questionnaire Scores for Therapist 11

Questionnaire	1	2	3	4	5	6	7	8	9	10	11	12
CAM												
Collaborating	18	18	19	19	21	21	21	17	21	17	19	16
Encouraging	19	19	22	20	20	21	20	20	23	19	18	17
Empathizing	20	22	22	20	22	22	20	18	25	19	19	19
Instructing	22	22	21	20	22	23	21	19	23	21	20	17
Problem Solving	20	21	20	20	20	21	19	19	23	19	17	20
Overall [a]	19.8	20.4	20.8	19.8	21.0	21.6	20.2	18.6	23.0	19.0	18.6	17.8
	1.33	*1.63*	*1.17*	*0.40*	*0.89*	*0.80*	*0.75*	*1.02*	*1.27*	*1.27*	*1.02*	*1.47*
WAI												
Bond	23	22	20	22	22	24	21	21	25	22	21	20
Goal	24	21	22	20	23	26	20	18	22	20	22	20
Task	21	21	18	21	20	23	19	17	25	19	18	17
Overall	68	64	60	63	65	73	60	56	72	61	61	57
PRPS	5	5	5	4	5	6	5	3	5	4	4	4

[a] Overall Score = Mean subscale score, with standard deviation (in italics).

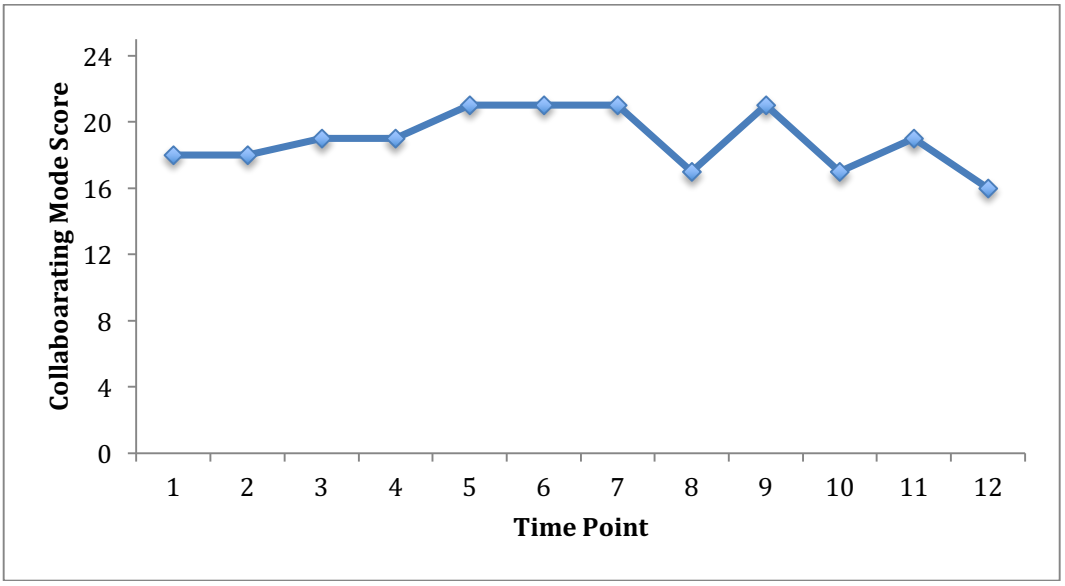


Figure 17. Therapist's use of the collaborating mode with 12 clients.

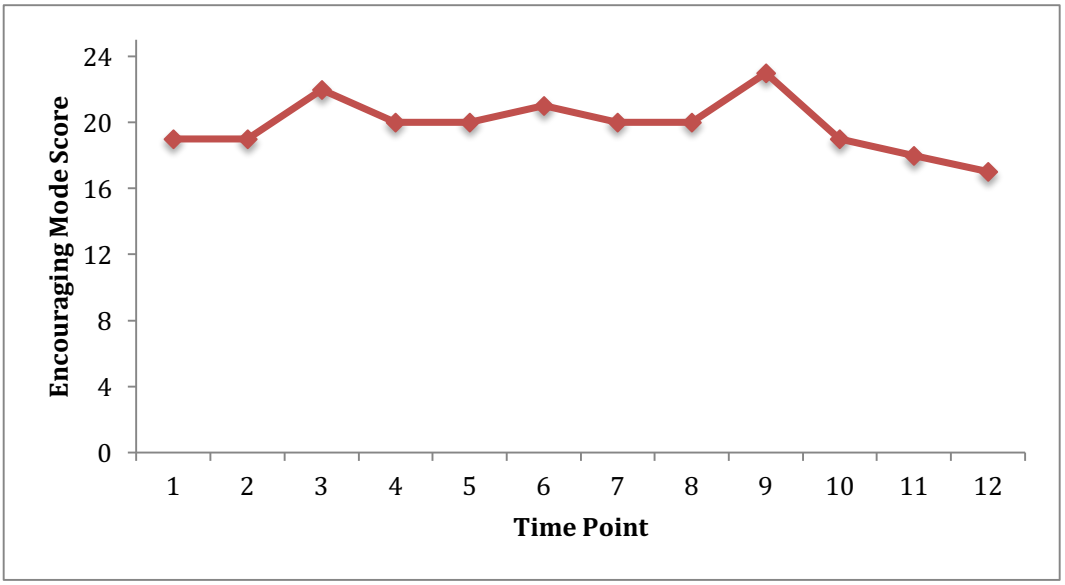


Figure 18. Therapist's use of the encouraging mode with 12 clients.

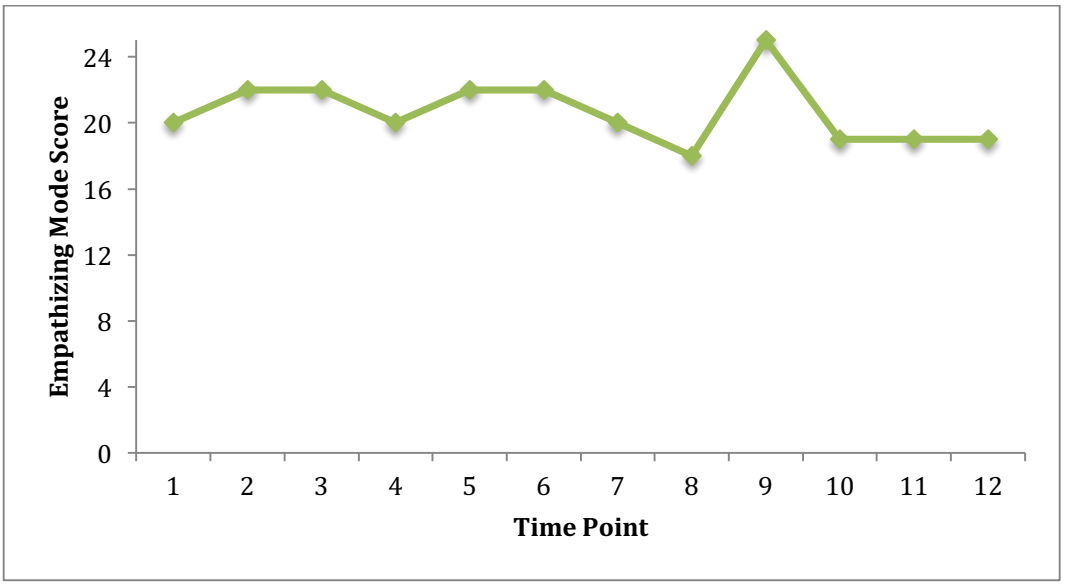


Figure 19. Therapist's use of the empathizing mode with 12 clients.

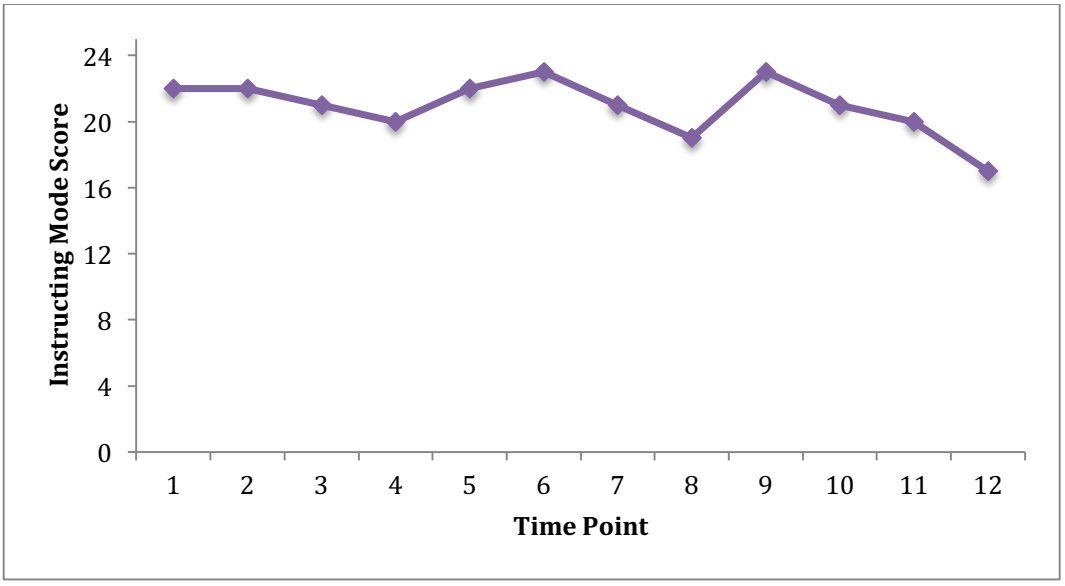


Figure 20. Therapist's use of the instructing mode with 12 clients.

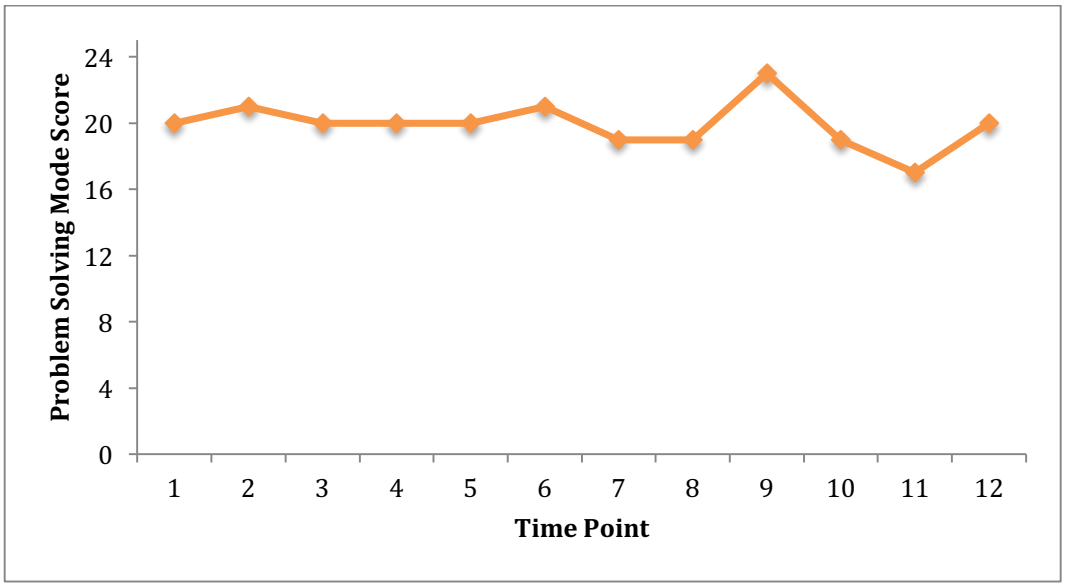


Figure 21. Therapist's use of the problem solving mode with 12 clients.

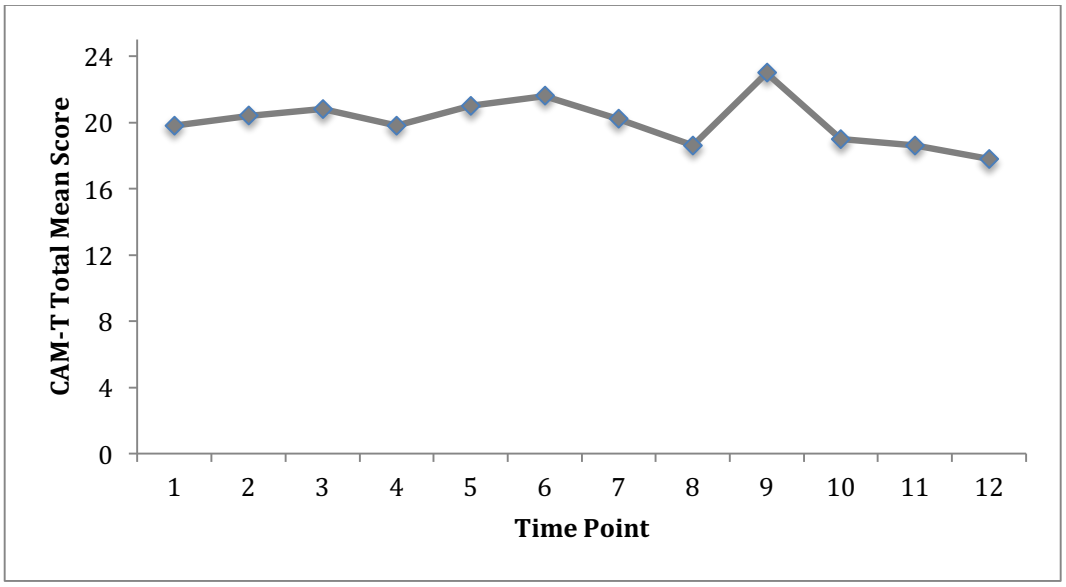


Figure 22. Therapist's overall mode use with 12 clients.

Autocorrelational analyses. As shown in Table 18, autocorrelational analyses revealed that there were significant moderate negative autocorrelations for the therapist's ratings of collaborating and empathizing modes, indicating that the mode use for one client were moderately different to mode used with the next client. There were insignificant negligible to low negative correlations for all other therapeutic modes, indicating that the mode use for one client were not related or different to the next client for the encouraging, instructing and problem solving modes.

Table 18. Autocorrelation coefficient (ρ) and Box Ljung statistic (q) at lag-1, with significance level (p)

	ρ	q	p
Collaborating	-.70	6.98	.008**
Encouraging	-.34	1.67	.197
Empathizing	-.54	4.12	.042*
Instructing	-.21	.65	.420
Problem Solving	-.33	1.53	.216
Overall Mode Use	-.51	3.74	.053

Therapist's perception of the therapeutic relationship with 12 clients.

Descriptive analyses. A visual inspection of the WAI-T graphs shows that there does not appear to be clear differences in levels between the three aspects of the therapeutic relationship (See Figure 23 to 26). The level of perceived strength, from most to least, is as follows: 1) the affective bond (M = 21.92), 2), 2) mutual agreement on goals

(*M* = 21.50), 3) and 3) mutual agreement on therapeutic tasks (*M* = 19.92). A visual inspection shows that there does not appear to be a clear trend of increase or decrease in strength of the bond, task and goals subscales, as well as the overall therapeutic relationship. There also appears to be the more variability for the goal (*SD* = 2.06) and task (SD =2.33) subscales compared to the bond subscale (*SD* = 1.44).

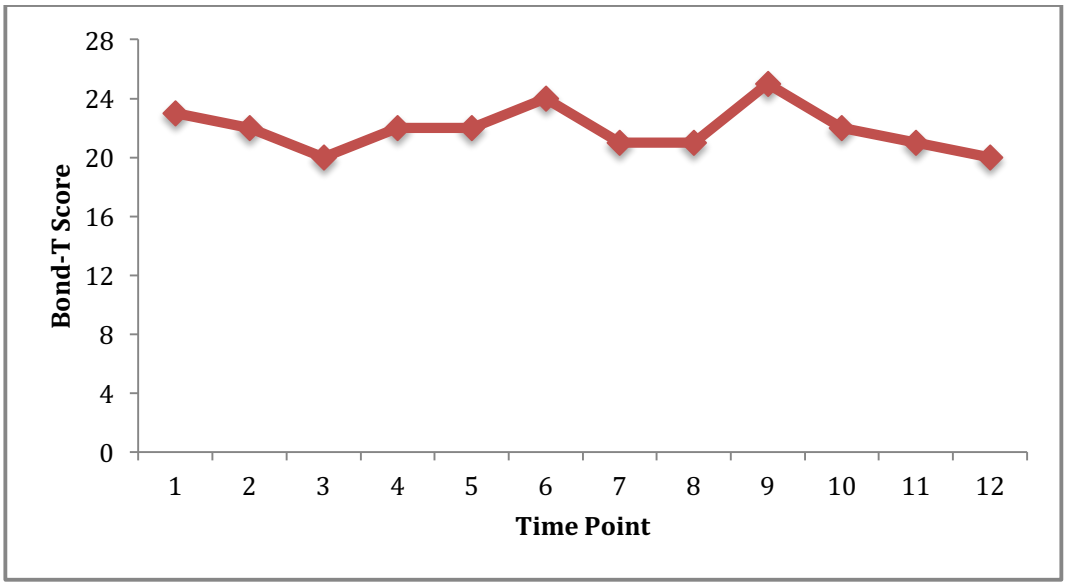


Figure 23. Therapist's perception of the bond aspect with 12 clients.

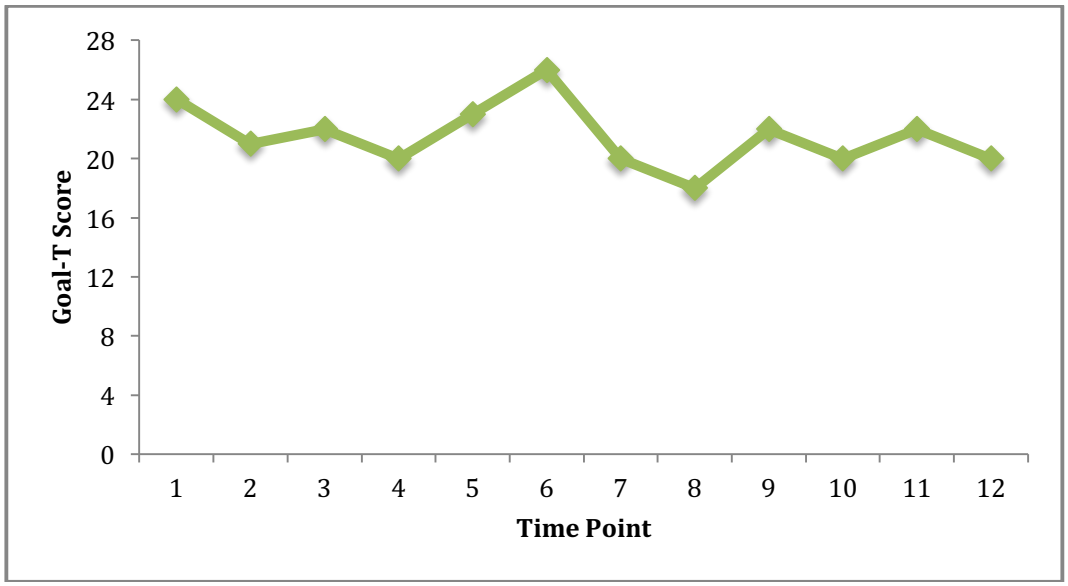


Figure 24. Therapist's perception of the mutual agreement on therapeutic goals with 12 clients.

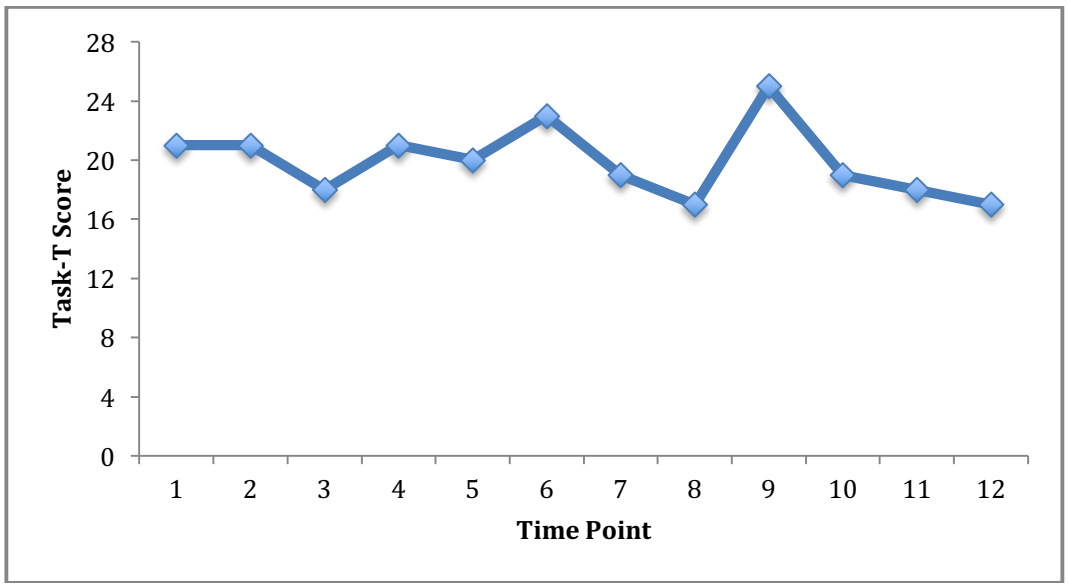


Figure 25. Therapist's perception of the mutual agreement on therapeutic tasks with 12 clients.

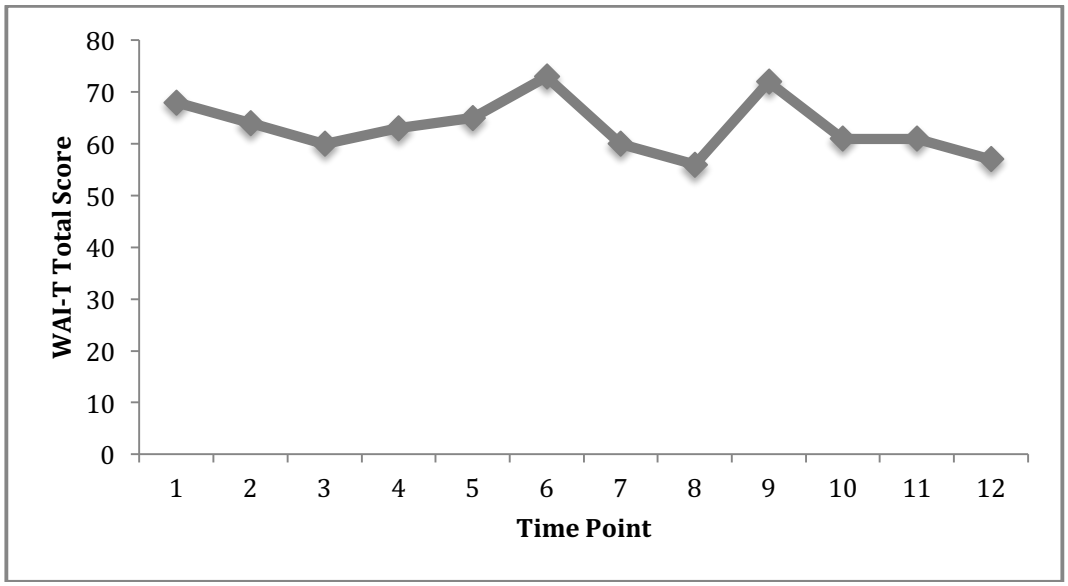


Figure 26. Therapist's perception of the overall therapeutic relationship with 12 clients.

Autocorrelational analyses. As shown in Table 19, autocorrelational analyses revealed that there was a significant moderate negative autocorrelation for the tasks aspect of the therapeutic relationship, indicating that the strength of agreement in therapeutic tasks with one client were moderately different to the strength of agreement in therapeutic tasks with the next client. There were insignificant low negative correlations for all other aspects of the therapeutic relationship, indicating that the ratings of the therapeutic relationship with one client were not related to the ratings for the next client in terms of the strength of the affective bond, agreement in therapeutic goals and overall therapeutic relationship.

Table 19. Therapeutic relationship- Autocorrelation coefficient (ρ) and Box Ljung statistic at lag-1, with significance level (p)

	ρ	*q*	*p*
Bond	-.339	1.646	.199
Goal	-.332	1.486	.223
Task	-.520	3.865	.049*
Overall	-.399	2.281	.131

Client's participation during therapy for 12 clients.

The therapist rated the client participation for most clients as 4 (good) to 5 (very good) ($M = 4.58$) with possible negative trend (see Figure 27). However, an increase in variability of client participation is noticed between clients 4 to 9 compared to other time points. Overall, insignificant low negative autocorrelation ($\rho = -.395$, $q = 2.23$, $p = .135$) indicated that there was no to low association between the therapist's ratings of one client's participation and the next client.

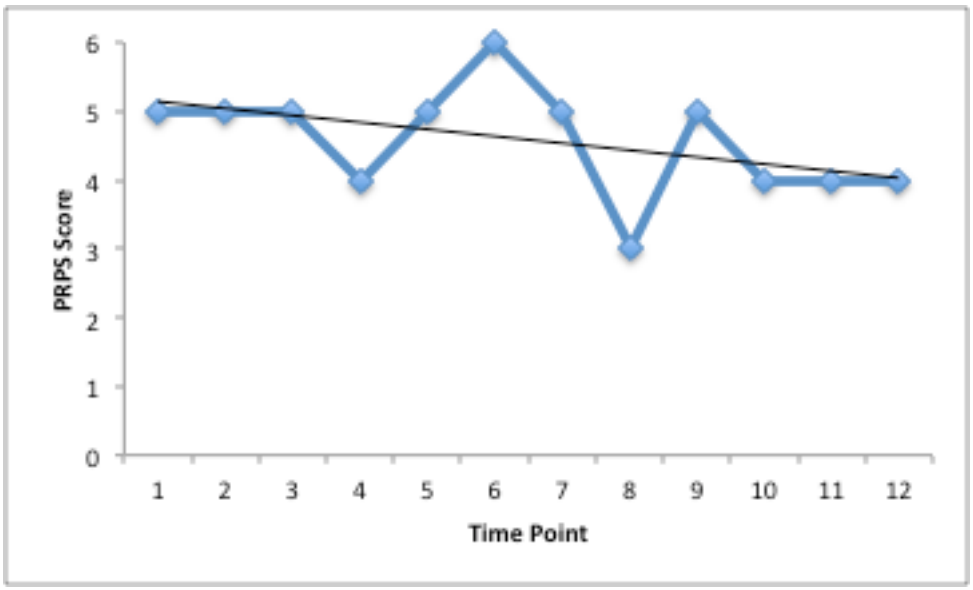


Figure 27. Ratings of clients' participation across 12 therapy sessions, with trend line plotted.

Comparing ratings of overall therapeutic mode use, overall therapeutic relationship, and participation during therapy.

As results of autocorrelational analyses above showed that all the results were not positively correlated, this indicated that the therapist's ratings were not related or dissimilar from one client to the next. Therefore, bivariate correlational analyses were used to analyses the relationship between mode use and the therapeutic relationship. Results for the non-parametric correlational analyses between therapist's perception of the modes used during therapy (CAM-T) and the strength of therapeutic relationship (WAI-T) are found in Table 20. The empathizing mode, instructing mode, problem solving mode and overall mode use were found to have significantly moderate to strong positive correlation with all aspects of the therapeutic relationship. Although they did not attain statistical insignificance, the collaborating and encouraging modes were found to

have low to moderate positive correlation with all aspects of the therapeutic relationship. Overall mode use was also found to have moderate positive correlation with the overall strength of the therapeutic relationship. Refer to Figures 28 to 31 for a visual representation of the data in scatterplots.

Table 20. Spearman's rho correlation coefficients between therapist's perceptions of mode use and the therapeutic relationship (p-value in parentheses)

	Bond	Goal	Task	Overall
Collaborating	.41 (.187)	.54 (.073)	.57 (.055)	.56 (.060)
Encouraging	.36 (.287)	.25 (.440)	.44 (.153)	.32 (.313)
Empathizing	.52 (.082)	.63 (.028)*	.74 (.006)**	.70 (.011)*
Instructing	.81 (.002)**	.74 (.006)**	.85 (.000)**	.88 (.000)**
Problem Solving	.59 (.046)*	.47 (.127)	.73 (.007)**	.67 (.017)*
Overall Mode Use	.59 (.042)*	.61 (.034)*	.75 (.005)**	.71 (.010)**

* $p < .05$.
** $p < .01$.

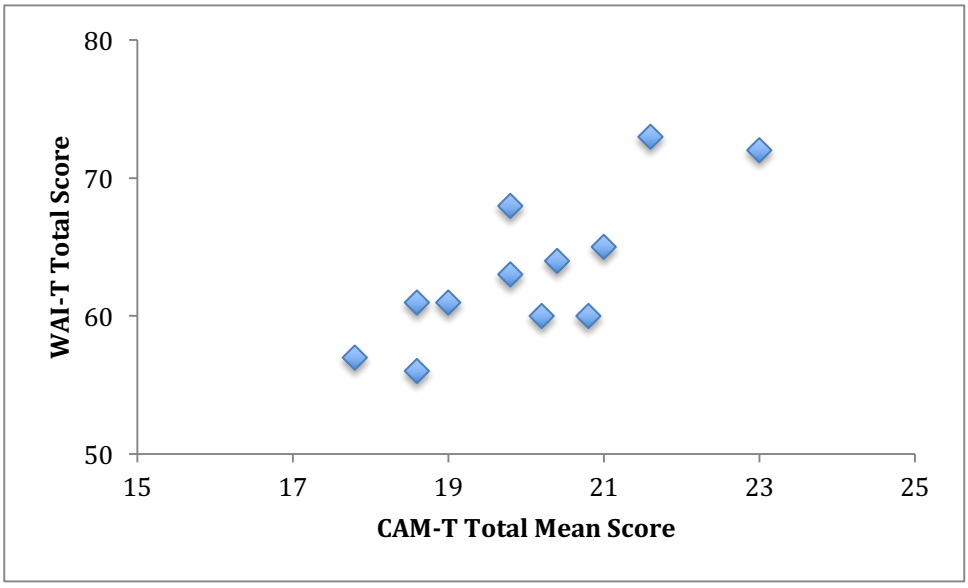


Figure 28. Scatterplot of CAM-T overall mean score and WAI-T overall score.

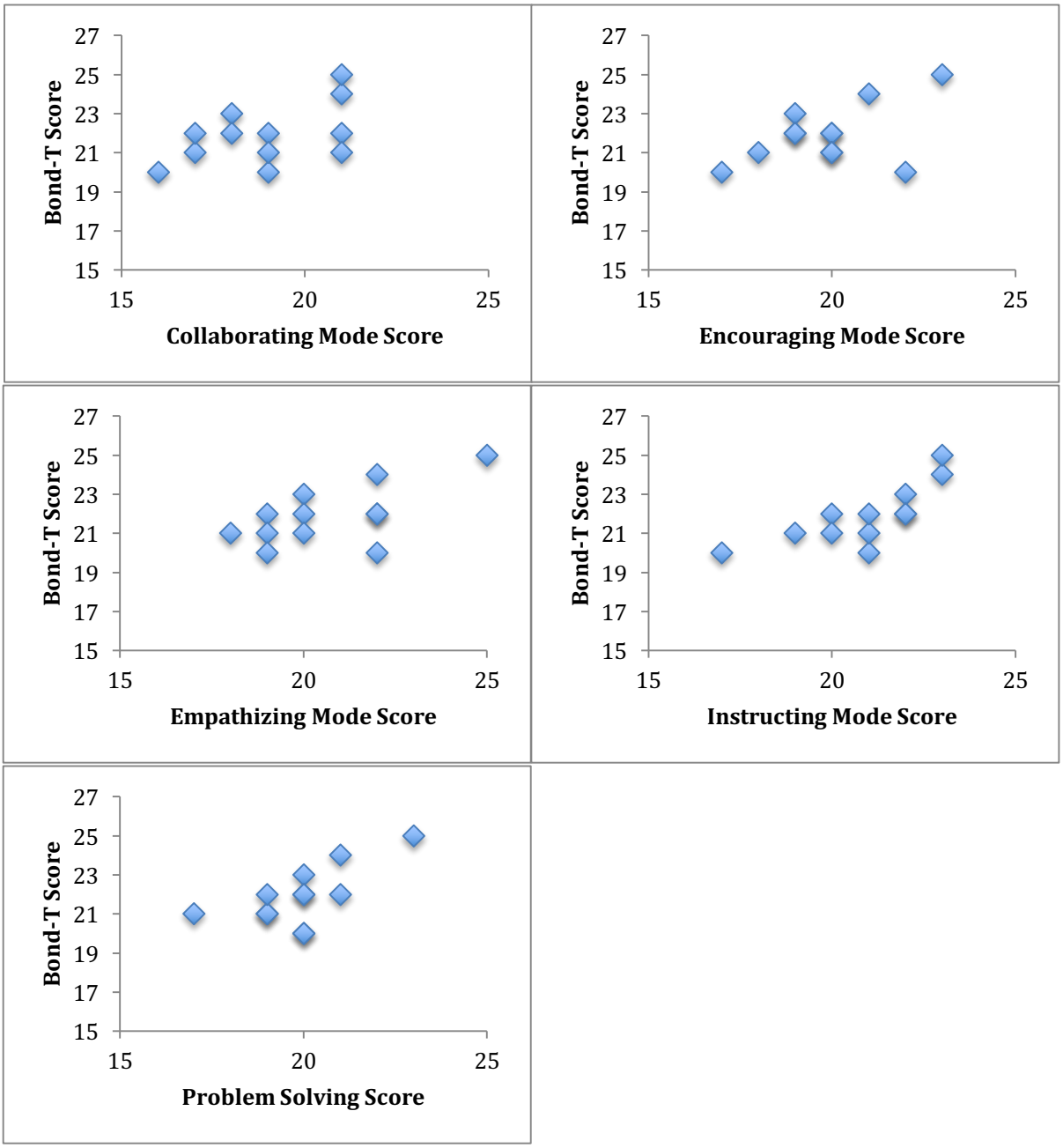


Figure 29. Scatterplots of therapist's perception of five therapeutic mode subscales scores and bond aspect of the therapeutic relationship (CAM-T subscales and WAI-T Bond subscale).

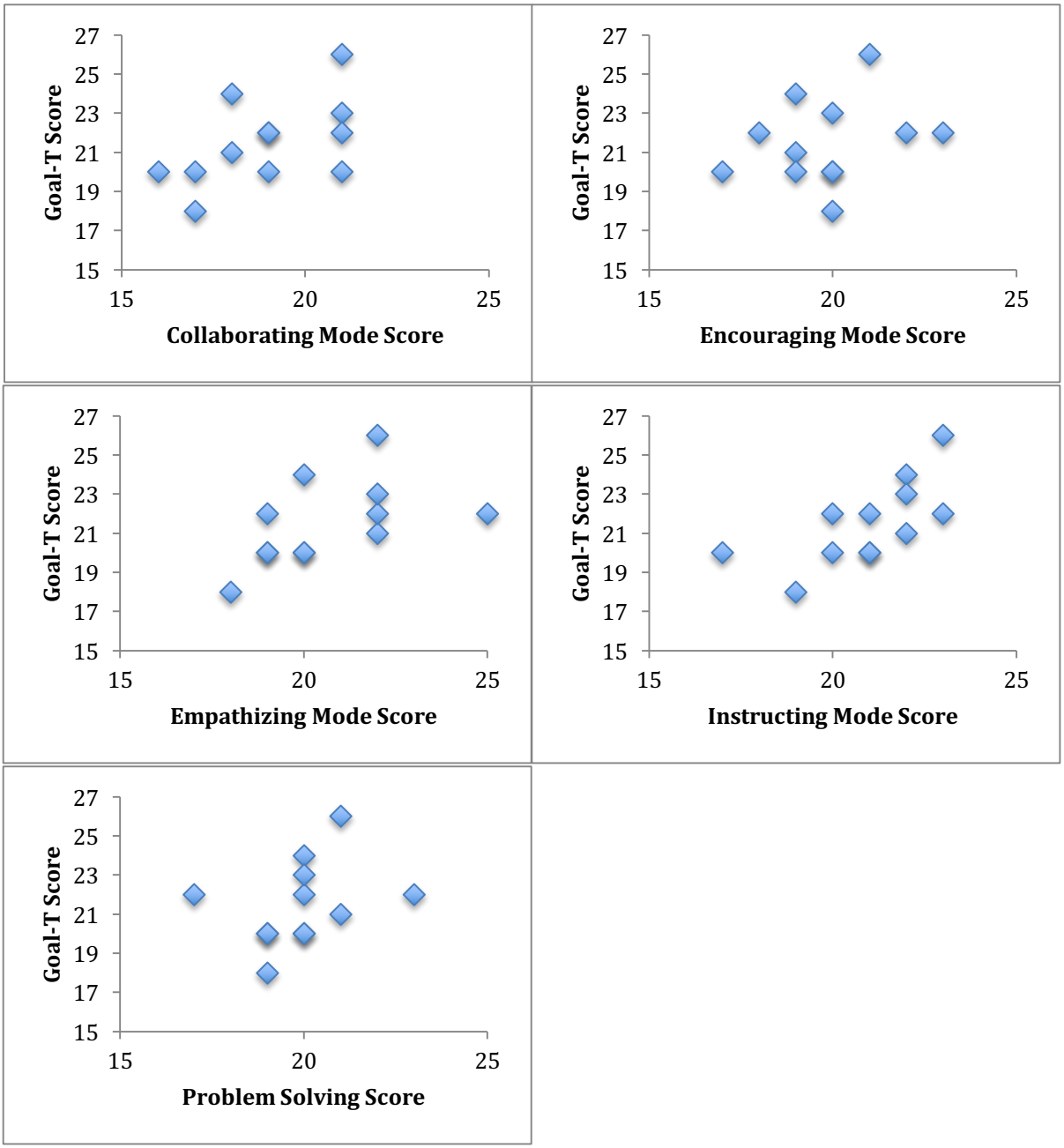


Figure 30. Scatterplots of therapist's perception of five therapeutic mode subscales scores and agreement on therapeutic goals (CAM-T subscales and WAI-T Goals subscale).

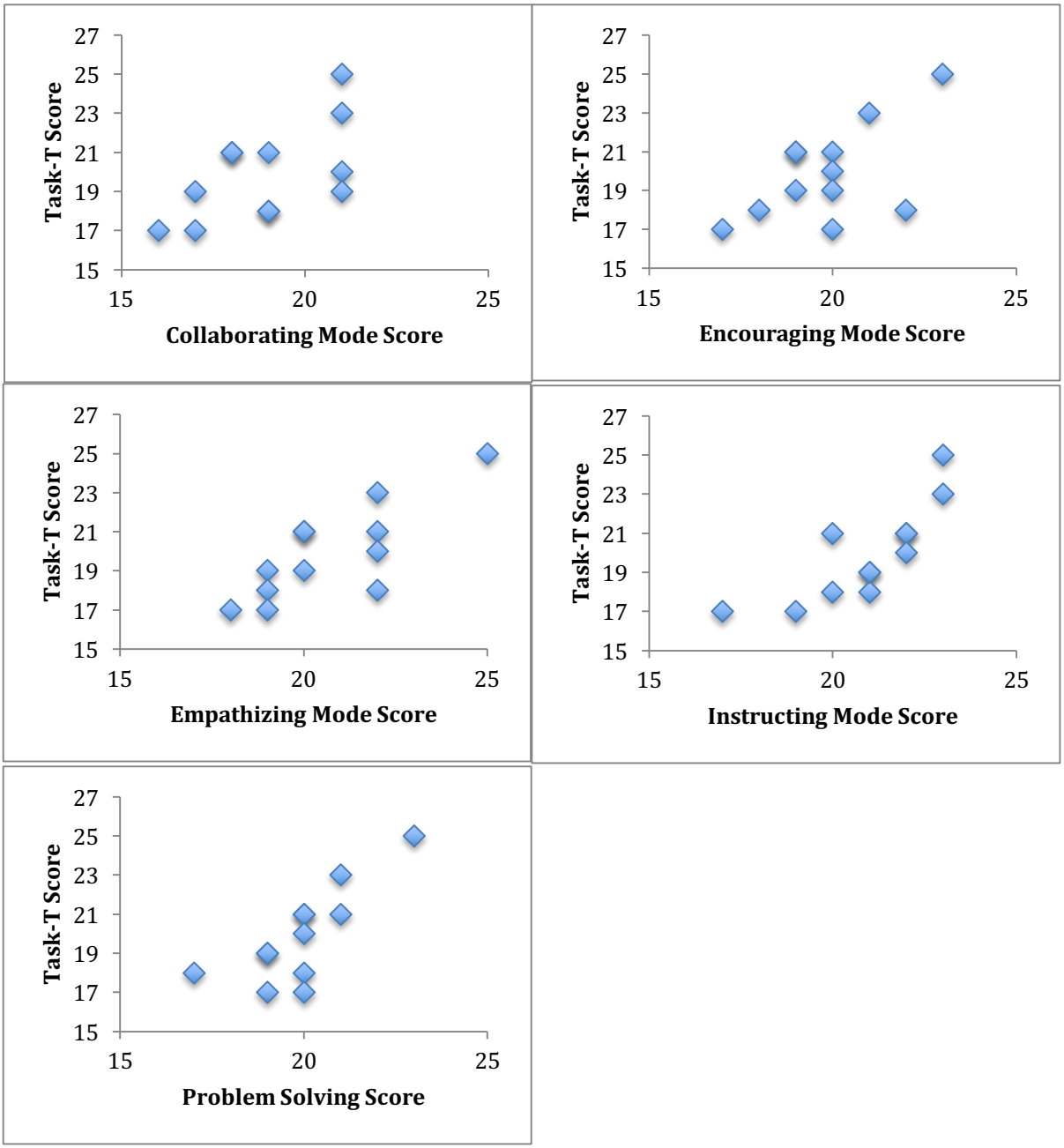


Figure 31. Scatterplots of therapist's perception of five therapeutic mode subscales scores and agreement on therapeutic tasks (CAM-T subscales and WAI-T Task subscale).

Examining the relationship between the therapeutic relationship and client participation. From visual analysis of the scatterplots, as the therapist's ratings of the overall therapeutic relationship increase, there appears to be a pattern of increased ratings of client participation during therapy (see Figure 32). A similar pattern of increased ratings of client participation were noticed more clearly for the goals and task aspects compared to the bond aspect of the relationship (see Figure 33 to 35). Results of bivariate correlational analyses similarly found that there were significant moderate to strong positive correlations between client participation and the goal aspect (ρ = .77, p = .004), task (ρ = .66, p = .019), and overall therapeutic relationship (ρ = .69, p = .013) while there was an insignificant low positive correlation between client participation and the bond aspect (ρ = .49, p = .110).

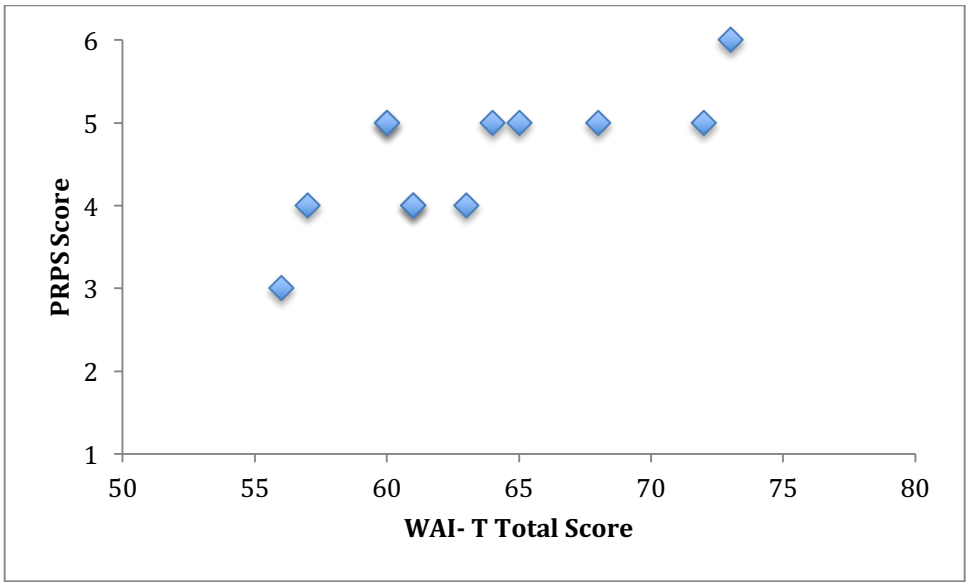


Figure 32. Scatterplot of therapist ratings of overall therapeutic relationship (WAI-T) and client's participation (i.e. PRPS).

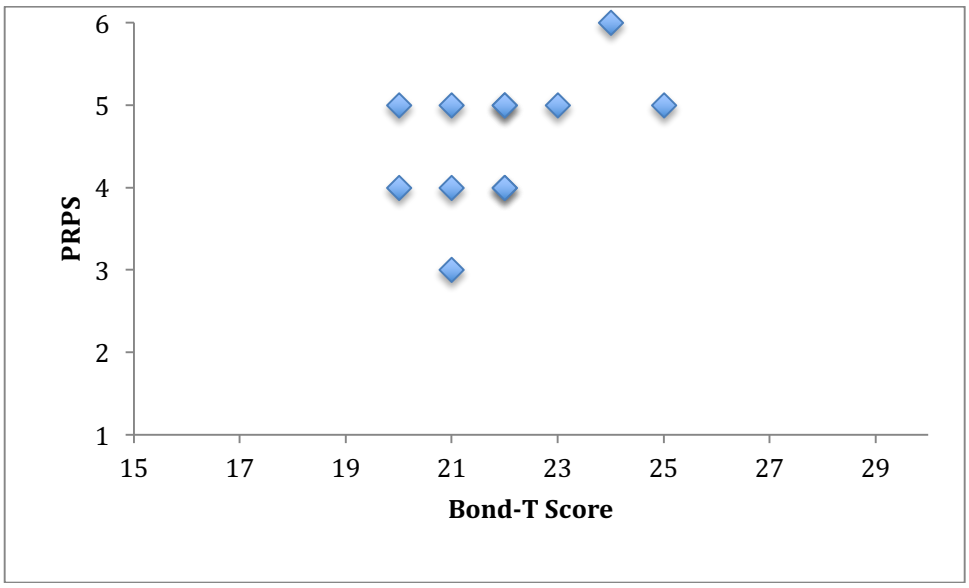


Figure 33. Scatterplot of therapist ratings of affective bond (WAI-T Bond subscale) and client's participation (PRPS).

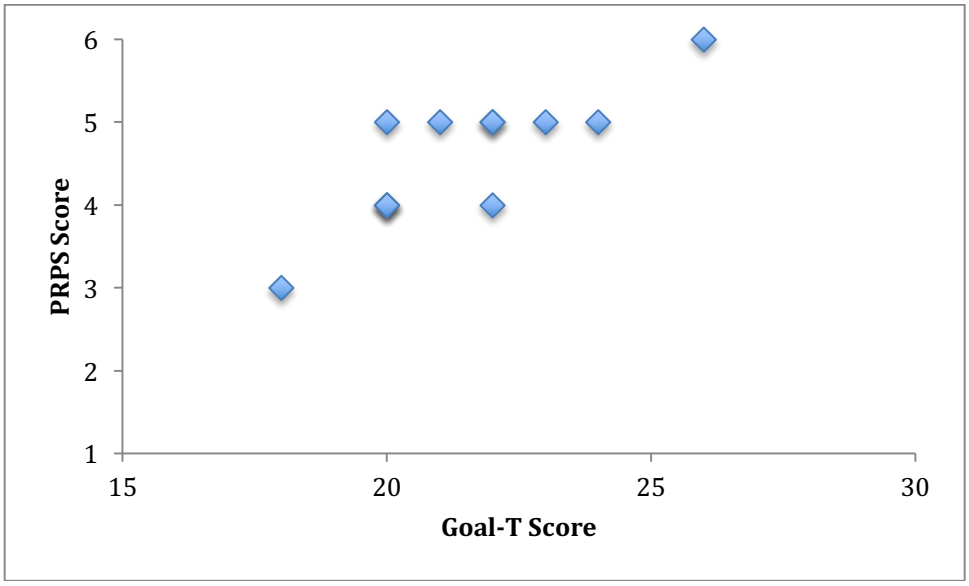


Figure 34. Scatterplot of therapist ratings of agreement on therapeutic goals (WAI-T Goal subscale) and client's participation (PRPS).

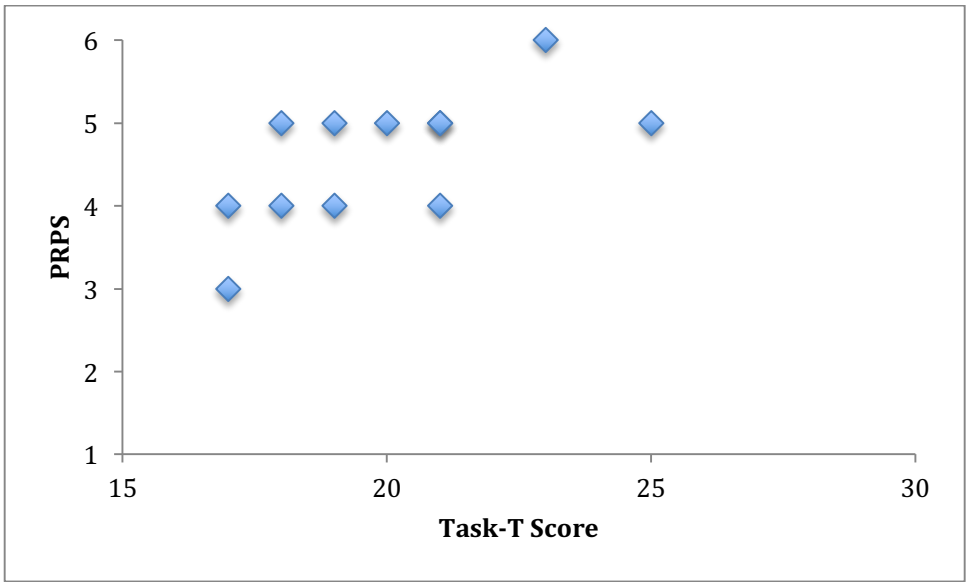


Figure 35. Scatterplot of therapist ratings of agreement on therapeutic tasks (WAI-T Task subscale) and client's participation (PRPS).

Comparing therapist and client perceptions of mode use and the therapeutic relationship. The results of therapists and client self-report of therapeutic mode use (i.e. CAM-T and CAM-E) and the therapeutic relationship (i.e. WAI-T and WAI-C) at therapy sessions with six clients are presented in Table 21 and visually displayed from Figure 36 to 47. A visual inspection of the overall mean scores show that the therapist perceived use of modes higher compared to most clients, with the exception of client 4. During the therapy session with client 4, the therapist perceived use of all modes to a similar extent compared to the clients' perceptions, with M = 19.8 and 20.2 respectively (see Figure 38). A visual inspection of the graphs and values of standard deviation show that the clients 3 and 5 tended to have relatively more variability in perceptions of mode use compared to the therapist and to other clients (see Table 21 and Figures 36 to 41).

On the other hand, most clients perceived the strength of the overall therapeutic relationship more positively compared to the therapist, with the exception of clients 6 and 12 (See Table 21). Clients 2 and 3 rated the bond relatively more positively compared to other clients. A visual inspection of the subscale scores and figures also revealed that all clients perceived the mutual agreement on goals to be relatively more positive compared to agreement on therapeutic tasks.

Table 21. Summary of Post-Therapy Questionnaire Scores for Therapist 11 (T) and Clients (C) at six therapy sessions

Questionnaire	Client ID											
	2		3		4		5		6		12	
	T	C	T	C	T	C	T	C	T	C	T	C
CAM												
Collaborating	18	20	19	13	19	20	21	13	21	21	16	11
Encouraging	19	21	22	23	20	21	20	23	21	17	17	11
Empathizing	22	19	22	21	20	19	22	21	22	20	19	15
Instructing	22	21	21	23	20	21	22	23	23	21	17	13
Problem Solving	21	20	20	12	20	20	20	12	21	19	20	13
Overall	20.4	20.2	20.8	18.4	19.8	20.2	21.0	18.4	21.6	19.6	17.8	12.6
(SD)	*1.63*	*0.98*	*1.17*	*3.03*	*0.40*	*0.75*	*0.89*	*4.88*	*0.80*	*1.50*	*1.47*	*1.50*
WAI												
Bond	22	28	20	28	22	24	22	26	24	22	20	16
Goal	21	28	22	24	20	26	23	27	26	26	20	19
Task	21	26	18	20	21	23	20	21	23	22	17	14
Overall	64	82	60	72	63	73	65	74	73	70	57	49
PRPS	5		5		4		5		6		4	

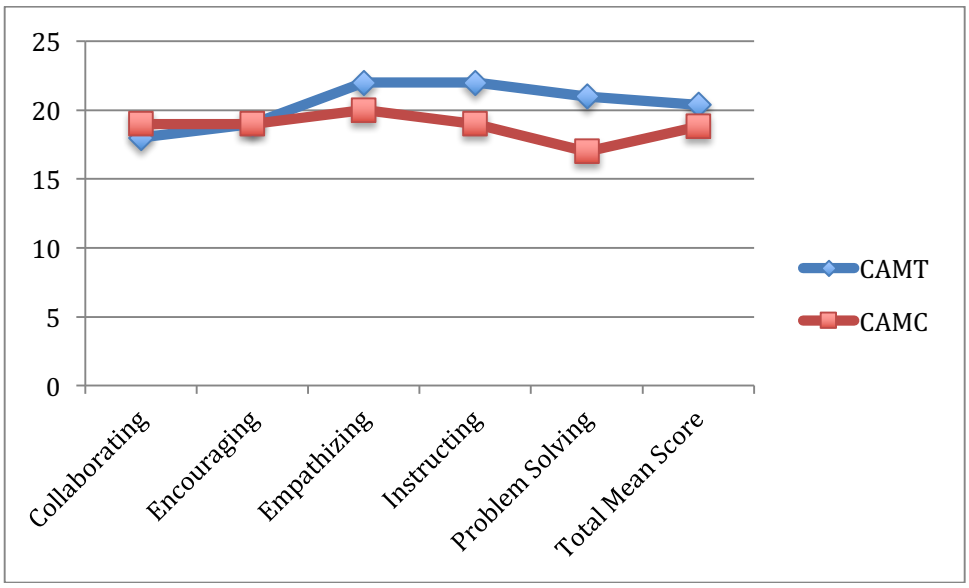


Figure 36. Therapist's and client's perception of mode use during therapy session with client 2.

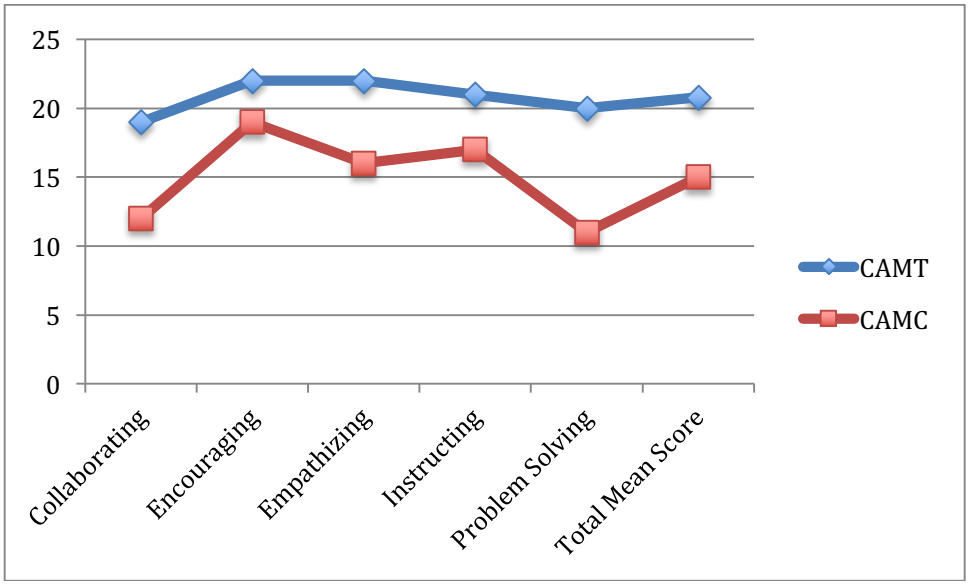


Figure 37. Therapist's and client's perception of mode use during therapy session with client 3.

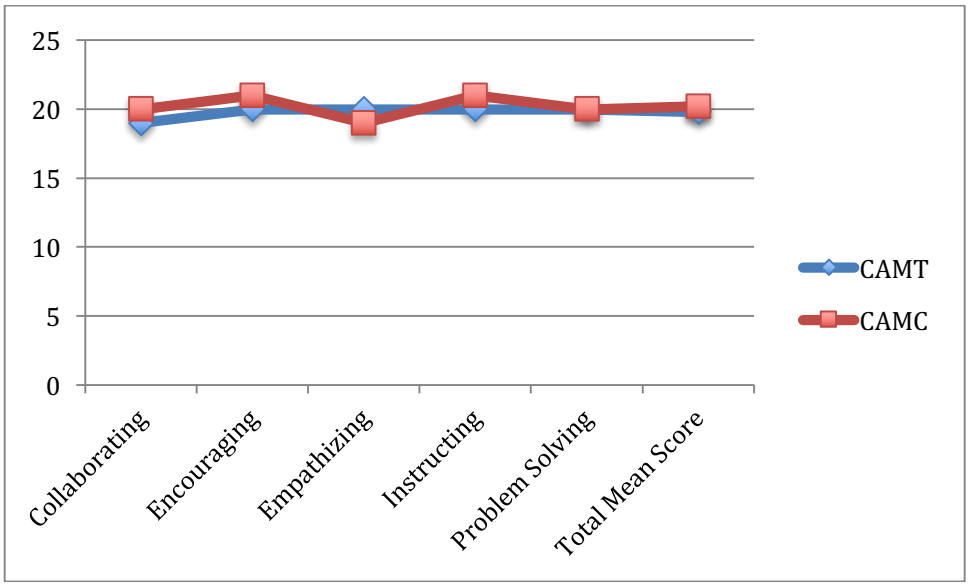


Figure 38. Therapist's and client's perception of mode use during therapy session with client 4.

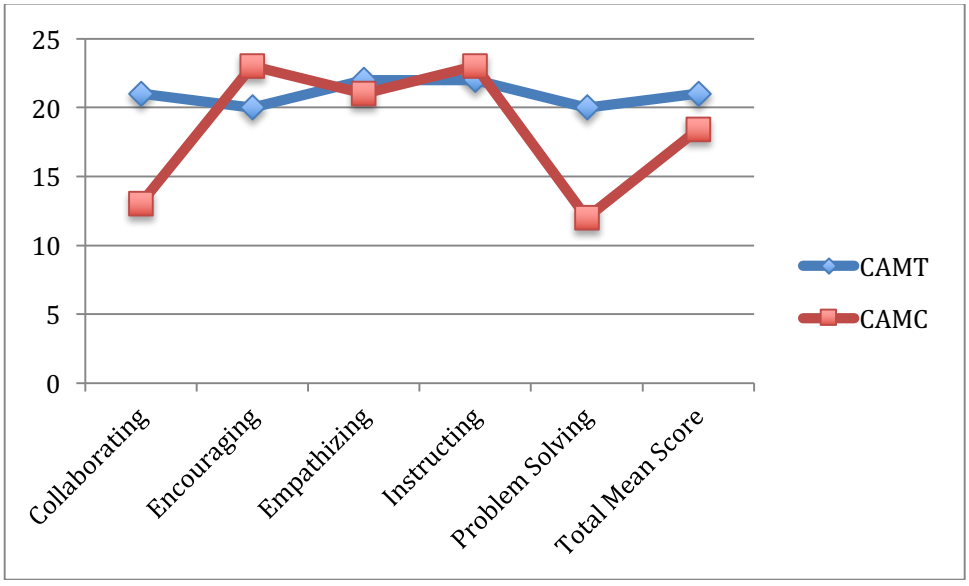


Figure 39. Therapist's and client's perception of mode use during therapy session with client 5.

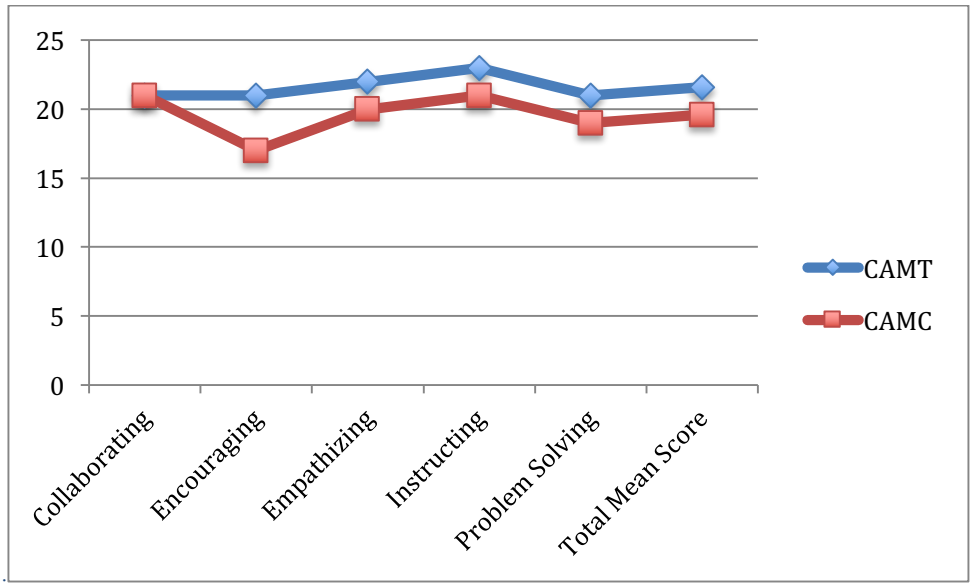


Figure 40. Therapist's and client's perception of mode use during therapy session with client 6.

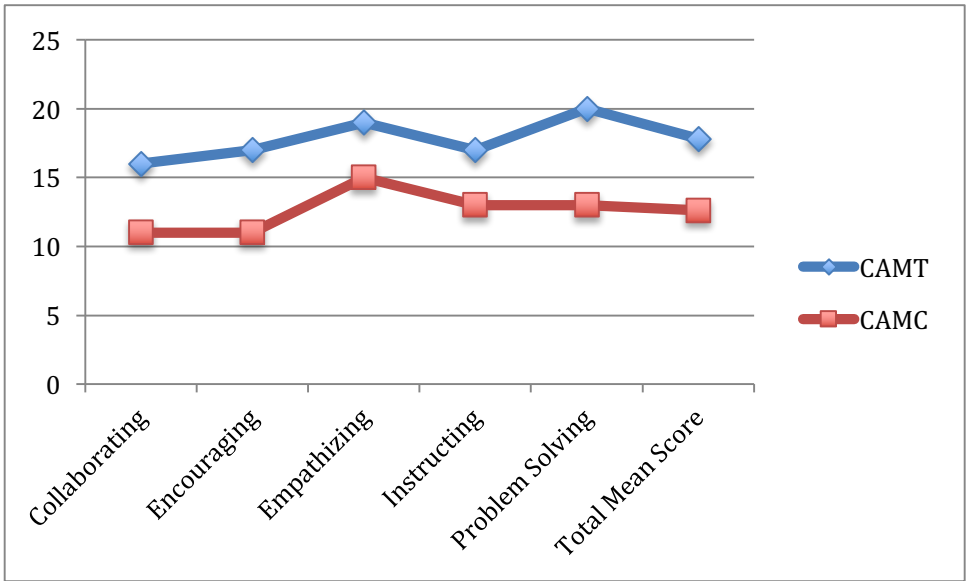


Figure 41. Therapist's and client's perception of mode use during therapy session with client 12.

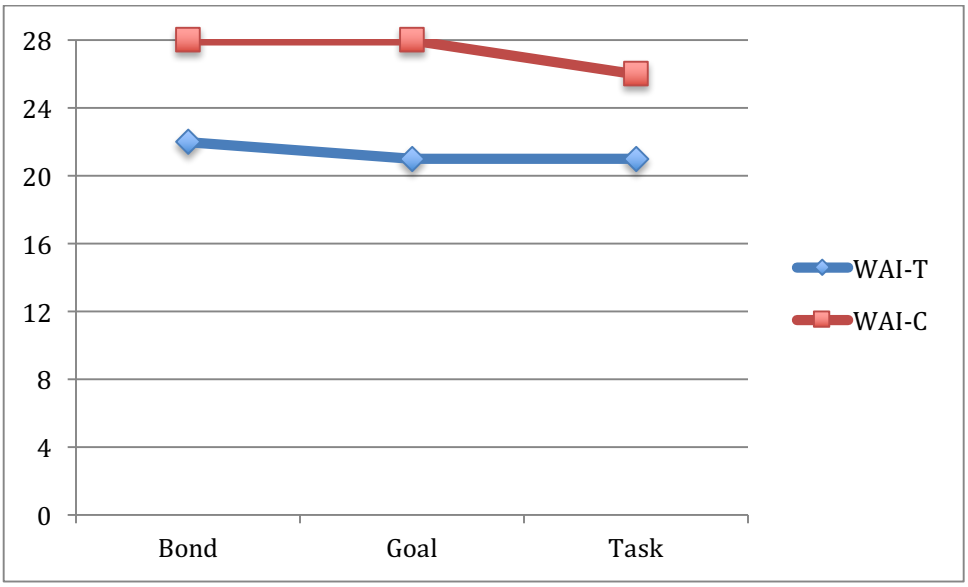


Figure 42. The therapist's and client's perception of the therapeutic relationship during therapy session with client 2.

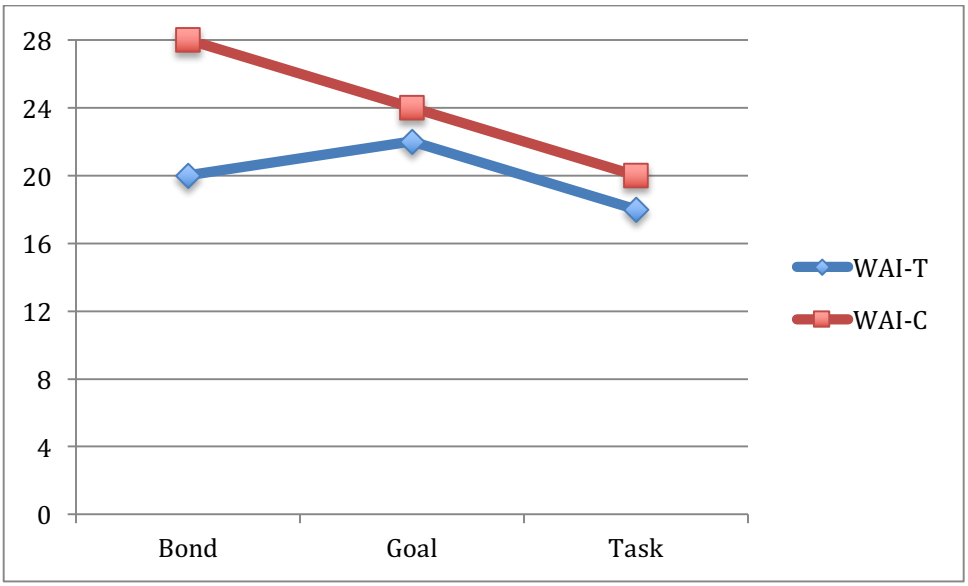


Figure 43. The therapist's and client's perception of the therapeutic relationship during therapy session with client 3.

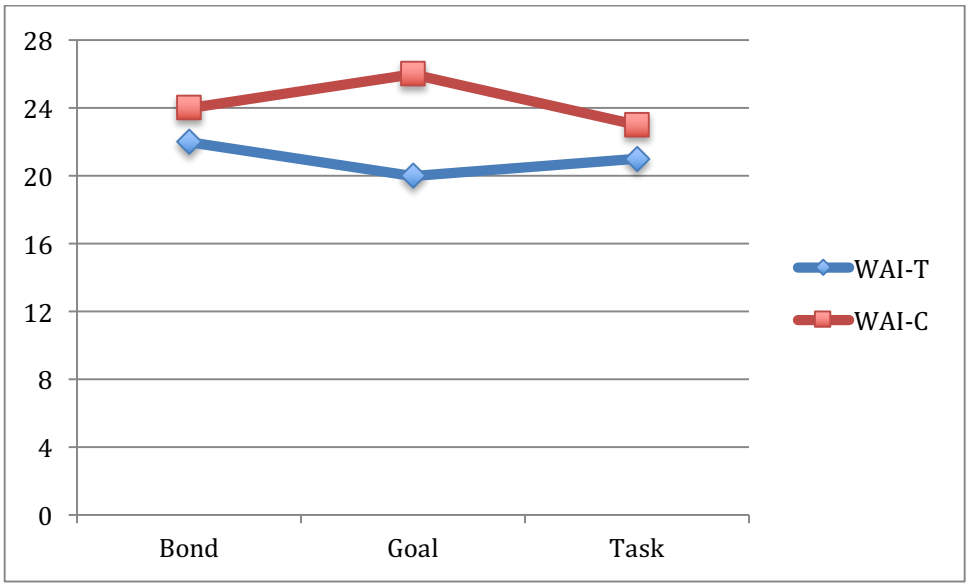


Figure 44. The therapist's and client's perception of the therapeutic relationship during therapy session with client 4.

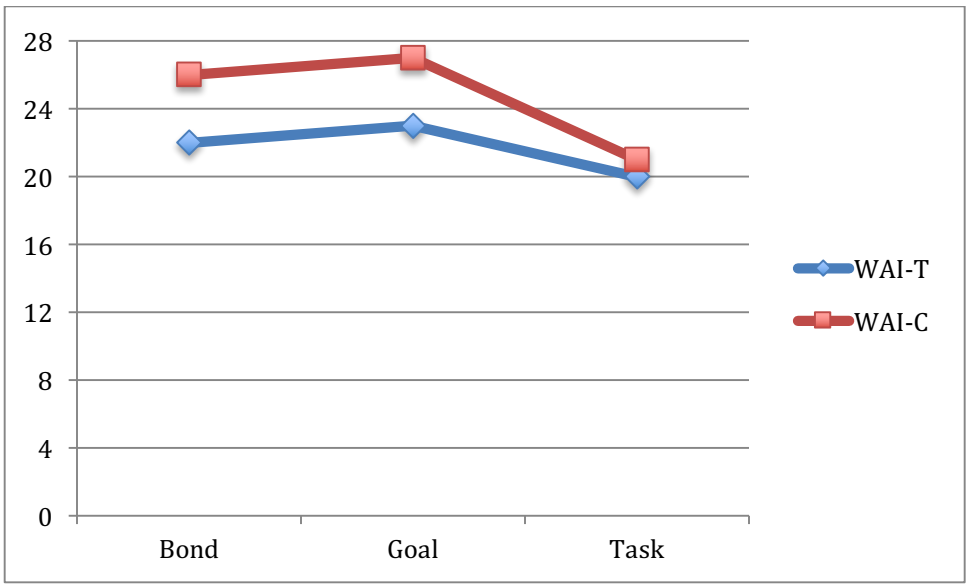


Figure 45. The therapist's and client's perception of the therapeutic relationship during therapy session with client 5.

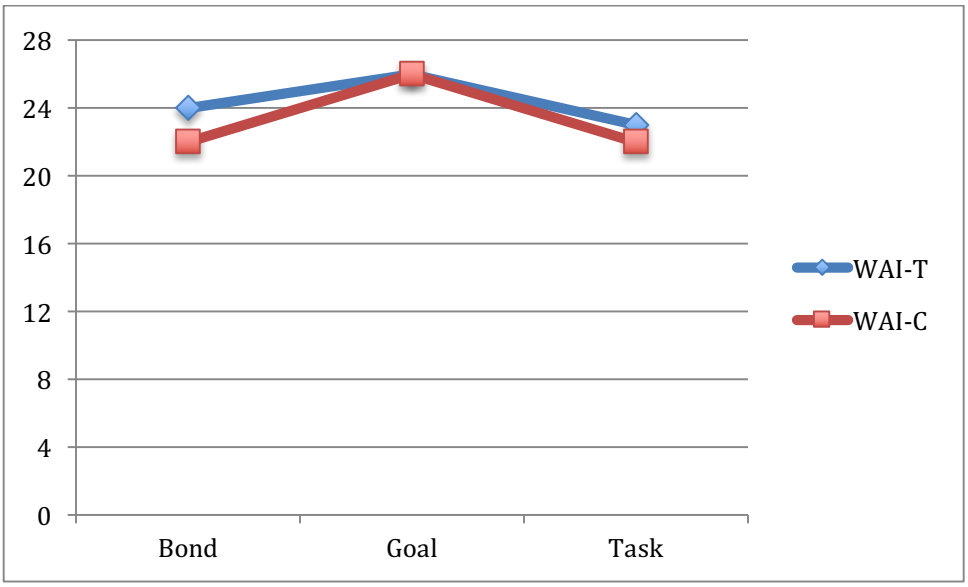


Figure 46. The therapist's and client's perception of the therapeutic relationship during therapy session with client 6.

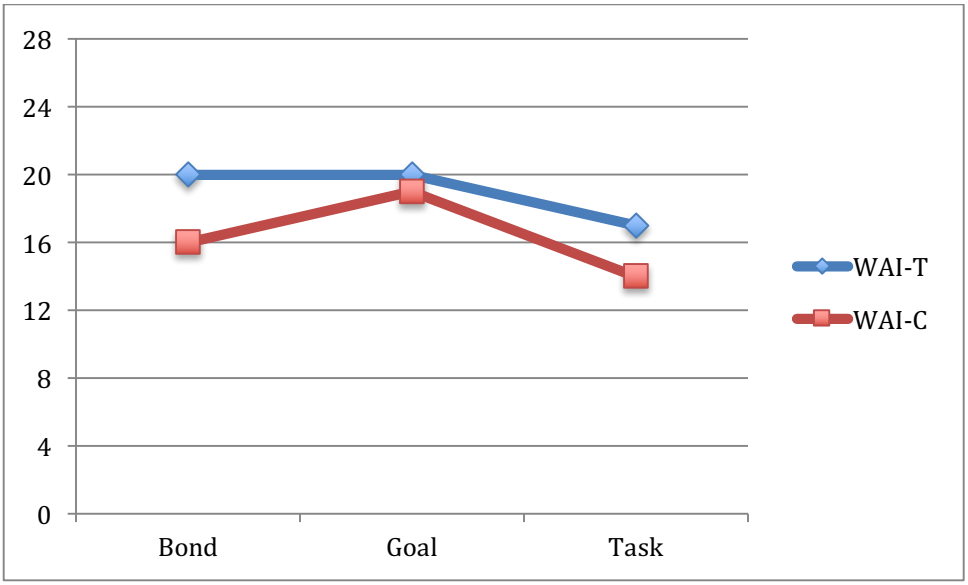


Figure 47. The therapist's and client's perception of the therapeutic relationship during therapy session with client 12.

3.5. Study 1 Discussion

Therapists' perception of use of modes.

In this study, the top three modes used were the 1) instructing mode, 2) collaborating mode and 3) empathizing mode. In a recent study conducted in an acute metropolitan hospital setting in Chicago, therapists perceived their top three modes used to be the 1) empathizing mode, 2) instructing mode and 3) encouraging mode (Fan & Taylor, in press). Conversely, in another study by Taylor and colleagues (2011), the instructing mode and empathizing modes were the least used modes (Taylor, et al., 2011). From an IRM perspective, differences in patterns of mode use are not unexpected as therapists are expected to adapt their approach according to the interpersonal needs and characteristics of their specific clientele (Taylor, 2008). However, as significance was not tested, no definitive conclusions can be drawn.

Mode use across practice areas.

Considering the therapists' lack of training in IRM, different patterns of interpersonal approaches may have been a reflection of therapists behaving according to certain internal and external scripts about interpersonal behavior according to clients' physical or contextual differences. Internal scripts are described as sets of knowledge structures within a person that guides behavior in certain well known situations, and are developed through repeated experience (Carmien, Kollar, Fischer, & Fischer, 2007). External scripts are similar to internal scripts, except that they may originate from sources in the individual's environment or in social groups (Carmien et al., 2007). Therefore, therapists who have worked frequently with a similar group of clientele may have developed internal scripts of interpersonal behavior and goal setting for clients with

similar clinical presentation. In addition, through professional socialization and clinical supervision, they may have been exposed to professional frameworks and rehabilitation guidelines about treatment and goal setting in certain populations (Levack, Dean, Siegert & McPherson, 2011).

In an acute setting, researchers found that healthcare professionals perceived their clients as less knowledgeable, less medically or cognitively stable, less realistic about their future capabilities, and thus, less capable of an active partnership (Rosewilliam, Roskell, & Pandyan, 2011; Rosewilliam, Sintler, Pandyan, Skelton & Roskell, 2015). In inpatient rehabilitation, health professionals were not purely client-centered in their approach, as therapists placed "privilege" on certain goals above others (Levack et al., 2011, p. 210). That is to say, therapists implicitly used interpersonal approaches to ensure certain goals were included, as therapists may have been affected by implicit and explicit understanding about what should be achieved in acute care. These factors may have contributed to a lower use of collaborating mode in acute care.

As clients' illness progresses to a chronic stage, they realize that their expectations for recovery may not be met (Thorne & Robinson, 1989, p. 154). Clients may therefore go through a stage of "disenchantment" where they experience increasing distrust and emotional turmoil, which eventually may result in a form of "guarded alliance" with the therapist (Thorne & Robinson, 1989, p. 154). It is possible that there were more interpersonal challenges and issues among clients with chronic care. Taylor et al (2011) found that as clients' challenging behaviors and emotional difficulties increased (e.g. anxiety and depression), therapists increased their use of all modes. It is possible that therapists in chronic care may have attempted to be more flexible in the use of all

modes, especially the empathizing mode, to develop trust and help clients process the challenges of accepting a long-term disability. However, although it appears that there was lower use of collaborating mode by therapists in the acute care and the higher use of empathizing mode by therapists working in chronic care, no definitive conclusions can be drawn due to absence of significance testing.

Use of self within a therapist.

The purpose of the case study was to examine one therapist's use of modes, the therapeutic relationship and client participation across 12 clients. The lack of autocorrelation between clients may have reflected that this therapist used modes in an intentional way, rather than within her comfort zone of preferred modes (Taylor, 2008). The lack of autocorrelation of the therapeutic relationship also showed that the therapist was aware of the fluctuations in the strength of the relationship between clients. According to IRM, if the therapist was effective in all mode use, the therapeutic relationship would still be strengthened even if there were shifts in mode use (Taylor, 2008). The results support that this therapist was generally effective in mode use, as that overall and individual mode use were positive association with all aspects of the therapeutic relationship.

It is interesting that the instructing mode was found to be most positively associated with all three aspects of the therapeutic relationship. It also appeared that the empathizing mode was moderately to strongly associated with the goal and task aspects, while the problem solving mode was moderately to strongly associated with the bond and task aspects of the relationship. It may be interpreted that this therapist is most effective in the instructing mode, followed by the problem solving and empathizing modes.

Designing therapy according to client-centered goals and meaningful tasks are essentially part of the core philosophy of occupational therapy (Awaad, 2003; Price & Miner, 2007). Effective therapists are constantly adapting activities during therapy are relevant to the client's life roles. It is therefore not surprising that modes use were most associated with the strength of the agreement on goals and therapeutic tasks. Interestingly, it appeared that agreement on goals and tasks were more critical than the emotional bond in facilitating client participation. Taylor (2008) describes the therapeutic relationship as having a social component (i.e. it is primarily a professional helping relationship) as well as a personal component (i.e. it is grounded in subjective experience). In this particular case, successful occupational engagement was related to the mutual agreement on the purposes and 'doing' aspects of therapy, rather than the 'feeling' of emotional closeness. It would be interesting to examine if the phenomenon is consistent across different therapists, or unique to this therapist.

4. STUDY 2: DESCRIPTIVE STUDY OF CLIENTS' PERCEPTIONS OF MODE USE AND THERAPEUTIC RELATIONSHIP

4.1. Methods

Specific aims.

Aim 1: To examine the internal consistency of the CAM-P questionnaire in this Singapore study by examining the Cronbach's alpha coefficients, using a combined sample of Samples 1 and 2 (n=22).

Aim 2: To examine the internal consistency of the CAM-E questionnaire in this Singapore study by examining the Cronbach's alpha coefficients separately for Samples 2 and 3 (n=11 per sample).

Aim 3: To determine which samples and modes can be used for further analysis by utilizing findings from Aims 1 and 2.

Aim 4: To conduct descriptive analyses of clients' preferred therapeutic mode use (CAM-P) for combined Samples 1 and 2 (n = 22), and among subgroups of clients according to their diagnoses.

Aim 5: To conduct descriptive analyses of client's actual experience of therapeutic mode use (CAM-E) and perception of the therapeutic relationship (WAI-C) for combined Sample 2 and 3 (n = 22), and among subgroups of clients according to their diagnoses.

Aim 6: To conduct descriptive analyses of client's preferred and actual experience of therapeutic mode use (CAM-P and CAM-E respectively), therapeutic relationship (WAI-C) and participation (PRPS) for Sample 2 (n = 11), and among subgroups of clients according to their diagnoses.

Samples.

Overall samples. Please refer to *Client datasets* (p. 42-48) for details of Samples 1, 2 and 3 (n =11 per sample) with sociodemographic characteristics presented in Tables 6, 7, 8 respectively.

Combined samples 1 & 2. *For* Aim 1 and 4, a combined sample of 1 and 2 will be used (see Table 22 for sociodemographic characteristics of the combined sample). To compare preferred mode use (i.e. CAM-P) according to client diagnosis, the clients were grouped into three groups based on descriptions of their clients' diagnoses: 1) Acute medical conditions (28.8%), 2) Subacute or chronic conditions (23.8%), and 3) Hand injuries (47.4%). The acute medical care group included clients in inpatient acute wards. The chronic conditions management group included clients seen for rehabilitation of subacute to chronic conditions. The hand therapy group included clients with acute to chronic upper limb conditions, seen in an outpatient therapy setting.

Combined Samples 2 & 3. For Aim 5, a combined sample of 2 and 3 will be used (see Table 23 for the sociodemographic information of the combined sample). To compare experienced mode use (i.e. CAM-E) according to client diagnosis, the clients were grouped into three groups based on descriptions of their clients' diagnoses: 1) Acute medical conditions (23.8%), 2) Chronic conditions (47.6%), and 3) Hand injuries (28.6%). The acute medical care group included clients in inpatient acute wards. The chronic conditions management group included clients seen for rehabilitation of subacute to chronic conditions. The hand therapy group included clients with acute to chronic upper limb conditions, seen in an outpatient therapy setting.

Table 22. Demographic characteristics of combined Samples 1 & 2 who completed CAM-P (n =22)

Characteristic	Mean	SD
Age	45.5	17.7
Gender	F	%
Male	8	36.4
Female	14	63.6
Highest Educational Level		
Less than High School	9	40.9
High School	6	27.3
Bachelor Degree	6	27.3
Post-Graduate Degree	1	4.5
Occupational Role		
Employed Full-time	13	59.1
Employed Part-time	1	4.5
Retired	4	18.2
Student	2	9.1
Other	2	9.1
Marital Status		
Single, Never Married	11	50.0
Married	11	50.0
Living Situation		
Living alone	4	23.5
Living with spouse/partner	7	41.2
Living with other family member	5	31.3
Ethnicity		
Chinese	14	66.7
Malay	4	19.0
Other	3	14.3
Client diagnosis		
Acute conditions		
Basal Ganglia Bleed	1	4.8

Characteristic	F	%
Client diagnosis		
Acute conditions		
Chest and Right Cervical Mass	1	4.8
Contusion	1	4.8
Dizziness	1	4.8
Pneumonia	1	4.8
Renal failure/Gangrene	1	4.8
Subacute/Chronic conditions		
Cervical pain	1	4.8
Quadraparesis	1	4.8
Central cord syndrome	1	4.8
Multiple fractures	2	9.4
Hand injuries		
Finger injury	5	23.7
Wrist fractures/pain	5	23.7

Note: Percentages are “valid percentages” taking into account missing data.

Table 23. Combined Sample 2 & 3: Demographic characteristics of clients who completed CAM-E (n=22)

Characteristic	Mean	SD
Age	48.86	17.5
Gender	F	%
Male	16	72.7
Female	6	27.3
Highest Educational Level		
Less than High School	8	36.4
High School	8	36.4
Bachelor Degree	5	22.7
Post-Graduate Degree l	1	4.5
Occupational Role		
Employed Full-time	15	68.2
Retired	6	27.3
Student	1	4.5
Marital Status		
Single, Never Married	7	31.8
Married	12	54.5
Divorced	1	4.5
Separated	1	4.5
Widowed	1	4.5
Living Situation		
Living alone	4	19.0
Living with spouse/partner	11	52.4
Living with other family member	5	23.8
Other	1	4.8
Ethnicity		
Chinese	14	63.6
Malay	3	13.6
Other	5	22.7

Characteristic	F	%
Client diagnosis		
Acute Medical		
Pneumonia/Septic Shock	1	4.8
Gangrene	2	9.5
Dizziness	1	4.8
Myelitis	1	4.8
Subacute/Chronic Conditions		
Lymphedema	2	9.5
Chronic Pain	2	9.5
Multiple Fractures	2	9.5
Spinal cord injury/syndrome	4	19.0
Hand Injury		
Hand/Arm Fracture	4	19.0
Hand Tendon Injury	1	4.8
Hand Crush Injury	1	4.8

Note. Percentages are valid percentages, which take into account any missing data.

Sample 2 client groups. For Aim 6, clients will be grouped according client's conditions (Please refer to Table 7, p. 46 for details of these demographics). To compare the variables, the clients were grouped into three groups based on descriptions of their clients' diagnoses: 1) Acute medical conditions (27.2%), 2) Subacute or chronic conditions (45.6%), and 3) Hand injuries (27.2%). The acute medical care group included clients in inpatient acute wards. The chronic conditions management group included clients seen for rehabilitation of subacute to chronic conditions. The hand therapy group included clients with acute to chronic upper limb conditions, seen in an outpatient therapy setting.

Procedures.

Please refer to the *Procedure* section (p. 32-34) for details on the overall data collection process.

Data analyses.

All data analysis will be carried out using SPSS Statistics software (IBM, 2014). Any missing data will be excluded based on pairwise deletion.

Internal consistency of CAM-P and CAM-E questionnaire. From a classical test theory approach, the Cronbach's alpha would be most suitable for assessing the internal consistency (Gliner et al., 2009). Although the sample is relatively small (i.e. CAM-P: n=22 and CAM-E: n=11), the sample size does not affect the point estimate of Cronbach's alpha although it can affect the standard error (Duhachek et al., 2005). There have been previous examples of the Cronbach's alpha being used in psychometric studies with similarly small sample sizes, which have been summarized in the Data Analysis section of Study 1 (p. 59).

As all modes were perceived as similarly "desirable and therapeutic" in the study by Fan and Taylor (submitted, provisionally accepted, p. 137), an overall sum score will be appropriate to represent overall therapeutic mode use in further descriptive analyses. The CAM-P and CAM-E overall sum scores for will first be calculated by summing the subscale scores for all the six modes (30 items) respectively. Next, the internal consistency of the overall sum scores will be examined using the Cronbach's alpha. If found to be internally consistent, the overall sum score will be used in further analyses. However, if any of the subscales are found to have poor internal consistency, the internal consistency of the overall sum score will be recalculated, excluding those subscales.

Descriptive analyses. As the subscales in the CAM-P, CAM-E, WAI-T and PRPS are continuous variables, I will use describe, with summary tables and graphs, the distribution in terms of normality testing, central tendencies, and variability. As the samples are small, it would be appropriate to use the Shapiro-Wilk test for normality testing. After discussion the normality of the distributions, a decision will be made regarding the use of mean or median overall and subscale scores in further analyses when comparing perceptions of the therapeutic mode use (CAM-P and CAM-E), therapeutic relationship (WAI-C) and participation during therapy (PRPS) between different groups (i.e. client diagnosis and client educational level).

Managing missing data. If any of the CAM-P or CAM-E subscales were eliminated from the overall sum score due to poor internal consistency, the internal consistency of the CAM-P or CAM-E overall sum score will be recalculated without the items from the eliminated subscale(s). Subsequently, for further descriptive and correlational analyses, I would use the overall mean score to account for missing

subscales. The overall mean score will be calculated by summing the included subscale mean scores and dividing it by the number of remaining subscales.

Refer to *Managing missing data in questionnaires* (p. 55) for further details on managing missing data in the ordinal scale items. Any other missing data will be excluded based on pairwise deletion.

4.2. Results

Internal consistency of CAM-P.

To examine the internal consistency of CAM-P, I will use combine data from Sample 1 and 2 (n = 22, Table 24). The Cronbach's alpha values for CAM-P advocating, collaborating, encouraging, empathizing, instructing and problem solving modes were 0.78, 0.71, 0.71, 0.76, 0.71 and 0.69 respectively, indicating acceptable internal consistency (George & Mallery, 2003). The overall sum score also reflected excellent internal consistency. In the study by Fan and Taylor (submitted, provisionally accepted), the CAM-P subscales had good unidimensionality except for one item in the advocating mode and one item in the instructing mode, *Infit MnSq = 1.51, 1.49, Zstd = 2.1, 2.1* respectively. The item separation reliabilities were also found to be good (0.91, 0.93, 0.94, 0.89, 0.80, and 0.80 respectively), indicating good internal consistency. Therefore, the findings in this study reflect Fan and Taylor's findings.

Internal consistency of CAM-E.

When examining the internal consistency of the CAM-E data, it will be important to consider the independence of the dataset. As CAM-P and CAM-E are matching questionnaires with similar content (See Tables 9 and 10, p.49-52), it may be expected that in Sample 2, the CAM-E data may not be independent of the CAM-P data.

Therefore, I will examine the internal consistency of CAM-E separately for Sample 2 (n=11) and Sample 3 (n=11). When examining CAM-E data from Sample 2, the Cronbach's alpha values for advocating, collaborating, encouraging, empathizing, instructing and problem solving modes were 0.87, 0.85, 0.87, 0.89, 0.81 and 0.91 respectively, indicating good internal consistency (George & Mallery, 2003). When examining CAM-E data from Sample 3, the Cronbach's alpha values for advocating, collaborating, encouraging, empathizing, instructing and problem solving modes were 0.59, 0.90, 0.89, 0.78, 0.89 and 0.87 respectively, indicating good internal consistency for all subscales except for the advocating mode (George & Mallery, 2003). The results for the overall sum scores for Sample 2 and 3 were 0.97 and 0.96 respectively, reflected excellent internal consistency. The internal consistency for CAM-E is presented in Tables 25 and 26 for Sample 2 and Sample 3 respectively.

In the study by Fan and Taylor (in press), the CAM-E demonstrated good unidimensionality with acceptable MnSq and Zstd values for all items. The item separation reliabilities were also found to be good except for the problem-solving mode (0.99, 0.96, 0.97, 0.92, 0.92, and 0.60 respectively). Therefore the results in this study reflect Fan's findings except for the advocating mode in Sample 3.

Table 24. Internal Consistency of CAM-P (n =22)

Subscale	Cronbach's Alpha	95% CI
Advocating Mode (5 items)	0.78	[0.59, 0.90]
Collaborating Mode (5 items)	0.71	[0.47, 0.87]
Encouraging Mode (5 items)	0.71	[0.47, 0.87]
Empathizing Mode (5 items)	0.76	[0.55, 0.89]
Instructing Mode (5 items)	0.71	[0.46, 0.87]
Problem Solving Mode (5 items)	0.69	[0.43, 0.86]
Overall (30 items)	0.93	[0.87, 0.97]

Table 25. Sample 2: Internal Consistency of CAM-E (n =11)

Subscale	Cronbach's Alpha	95% CI
Advocating Mode (5 items)	0.87	[0.68, 0.96]
Collaborating Mode (5 items)	0.85	[0.64, 0.95]
Encouraging Mode (5 items)	0.87	[0.70, 0.96]
Empathizing Mode (5 items)	0.89	[0.73, 0.97]
Instructing Mode (5 items)	0.81	[0.56, 0.94]
Problem Solving Mode (5 items)	0.91	[0.79, 0.97]
Overall (30 items)	0.97	[0.94, 0.99]

Table 26. Sample 3: Internal Consistency of CAM-E (n =11)

Subscale	Cronbach's Alpha	95% CI
Advocating Mode (5 items)	0.59	[-0.03, 0.88]
Collaborating Mode (5 items)	0.90	[0.73, 0.97]
Encouraging Mode (5 items)	0.89	[0.73, 0.97]
Empathizing Mode (5 items)	0.78	[0.46, 0.93]
Instructing Mode (5 items)	0.89	[0.74, 0.97]
Problem Solving Mode (5 items)	0.87	[0.67, 0.96]
Overall (30 items)	0.96	[0.91, 0.99]

Determining the use of CAM-P and CAM-E in further analyses.

The internal consistency of the CAM-P is acceptable and will be used in further descriptive analysis. The internal consistency of CAM-E in Sample 2 is acceptable but the advocating mode in Sample 3 is low. Possible reasons for the low Cronbach's alpha for the advocating mode include the following:

1. Reliability coefficients, such as Cronbach's alpha, in Classical Test Theory (CTT) only measure errors based on one source and it is possible that there were multiple sources of error unaccounted for.
2. As a scale length increases, the reliability also increases (Cronbach, 1951). It is suggested that scale lengths, especially those less than seven items, may affect the alpha values (Swailes & McIntyre-Bhatty, 2002). As the CAM-E subscales only

have five items each, the alpha values could have been affected. Cronbach (1951) recommended using the mean inter-item correlation to estimate the internal consistency, as it is independent of the number of items. The mean inter-item correlation for Sample 4, advocating mode is 0.22. Clark and Watson (1995) recommended that the mean inter-item correlations be at least 0.15 to 0.20 for more general constructs and 0.40 to 0.50 for more narrow constructs. It could be argued that therapeutic modes can be considered more general as a construct as opposed to a narrow construct as described in Study 1. Therefore, the mean inter-item correlation may be considered good even though the Cronbach's alpha values were considered low.

3. Low variability and skewed data in subscale total scores could also affect the alpha values. High variability in scores lead to greater score reliability (Helms et al., 2006). The client population in Fan and Taylor's study could be quite different from my study in various ways (such as variability in terms of diagnoses and ethnicity). However, it is difficult to determine if they are significantly different due to the small sample size. The cultural differences in the samples may have affected the heterogeneity of the sample and affected the variability of the responses. If there is a strong ceiling/ floor effect or skewed data, it may have affected the variance of the scores as well (Wilcox, 1992). Variability and normality of the data can be explored further when examining descriptive statistics.

The item-total correlations can be used to further examine items that may be causing most inconsistency (Kielhofner, 2006). The criterion for good item-total

correlation is recommended to be between 0.70 and 0.90 (Kielhofner, 2006). When examining the advocating mode, all of the item-total correlations for advocating mode items are moderate to low (0.37, 0.33, 0.37, 0.37, 0.30). It is recommended that a value of lower than 0.2 or 0.3 could warrant the item to be dropped (Everitt, 2002; Field, 2005). When examining the item-total correlations, dropping any specific item to improve the Cronbach's alpha will not significantly improve the internal consistency.

In summary, the internal consistency of CAM-E in Sample 2 is acceptable but the advocating mode in Sample 3 could be low due to various reasons. However, as the mean item-total correlations are higher than the acceptable range for the advocating mode in Sample 3, it may be possible to present the data for this mode despite the low Cronbach's alpha. I propose to include the advocating mode subscale in the CAM-E data for further descriptive analysis.

Combining Sample 2 and 3 data for CAM-E. As the CAM-E questionnaires in both Sample 2 and 3 have good to acceptable internal consistency, I would propose to combine the data for further analysis of CAM-E. To ensure that the demographic characteristics for both the samples were similar, I use normality testing, independent sample t-test and the Chi-Square test to examine the demographic characteristics.

For testing similarity in age of participants, before using the independent sample t-test t, I used the Shapiro-Wilk test of normality to determine if the distributions are normal. The Shapiro-Wilk test of normality was insignificant for Sample 2, $W = 0.87$, $p = 0.095$. The Shapiro-Wilk test of normality was insignificant for Sample 3, $W = 0.96$, $p = 0.74$. Therefore, I proceeded to use the independent sample t-test to examine if there is a significant difference of the age of participants between groups. As Levene's test of

equality of variances was significant ($F = 5.82$, $p = 0.026$), I referred to SPSS results that do not assume equal variances. The result showed that age was not significant different between groups, $t = -1.15$, $p = 0.27$.

For nominal data, I used the Chi-Square test to test the similarity of the demographic characteristics of Sample 2 and 3. Results showed that gender ($\chi^2 = 3.32$, $p = 0.072$), ethnicity ($\chi^2 = 0.56$, p=0.754), education ($\chi^2 = 3.30$, $p = 0.347$), occupation ($\chi^2 = 1.62$, $p = 0.444$), marital status ($\chi^2 = 3.58$, $p = 0.311$), and living situation ($\chi^2 = 2.60$, $p = 0.457$), are not significantly different between the groups.

In summary, the data can be combined for further analyses of CAM-E as 1) the internal consistencies for CAM-E are acceptable for both samples and 2) the demographic characteristics are not significantly different between Sample 2 and 4.

Preferred mode use.

Descriptive analyses of CAM-P for a combined sample of Samples 1 and 2 are presented in Table 27. None of the results of the Shapiro-Wilk test for normality were statistically significant, indicating that all six therapeutic modes were normally distributed. The graphs of the six mode distributions are presented in Figures 48 to 54. Therefore, the mean and standard deviation were presented for each of the six modes. The preferred mode use reported by clients in Samples 1 and 2, from most to least, were the instructing mode, collaborating mode, problem solving mode, empathizing mode, encouraging mode and advocating mode.

Table 27. Summary Statistics of Combined Sample 1&2 - Preferred Therapeutic Communication (CAM-P, n=22)

Therapeutic Mode	Shapiro-Wilk Test	Mean	SD
Advocating	0.92	17.18	3.86
Collaborating	0.97	19.32	2.95
Encouraging	0.94	18.82	3.28
Empathizing	0.95	18.95	3.26
Instructing	0.94	20.05	2.97
Problem Solving	0.92	19.00	2.93
Overall	0.96	113.3	16.92

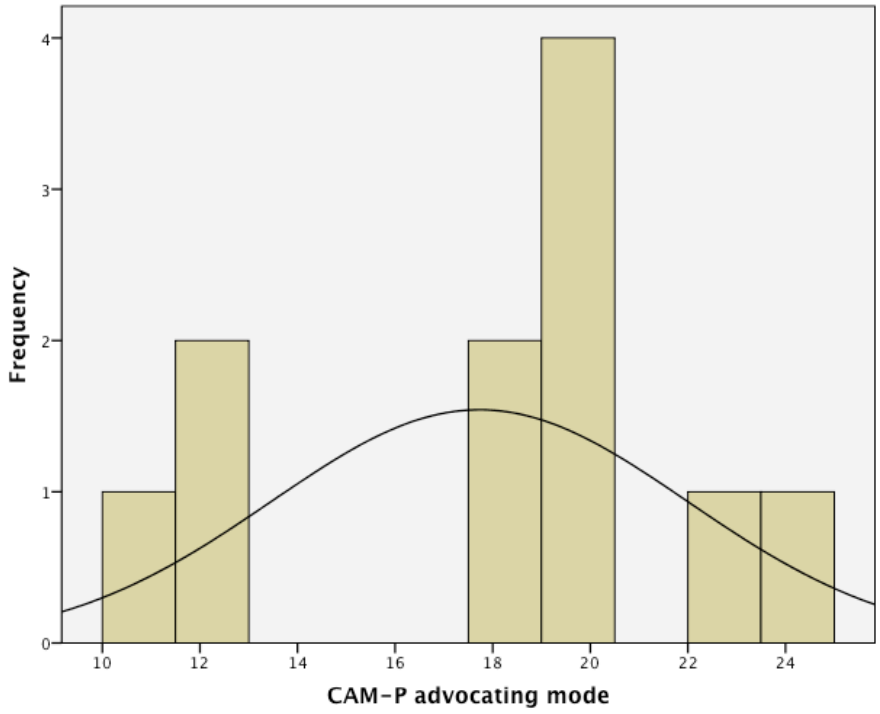


Figure 48. Histogram of CAM-P advocating mode.

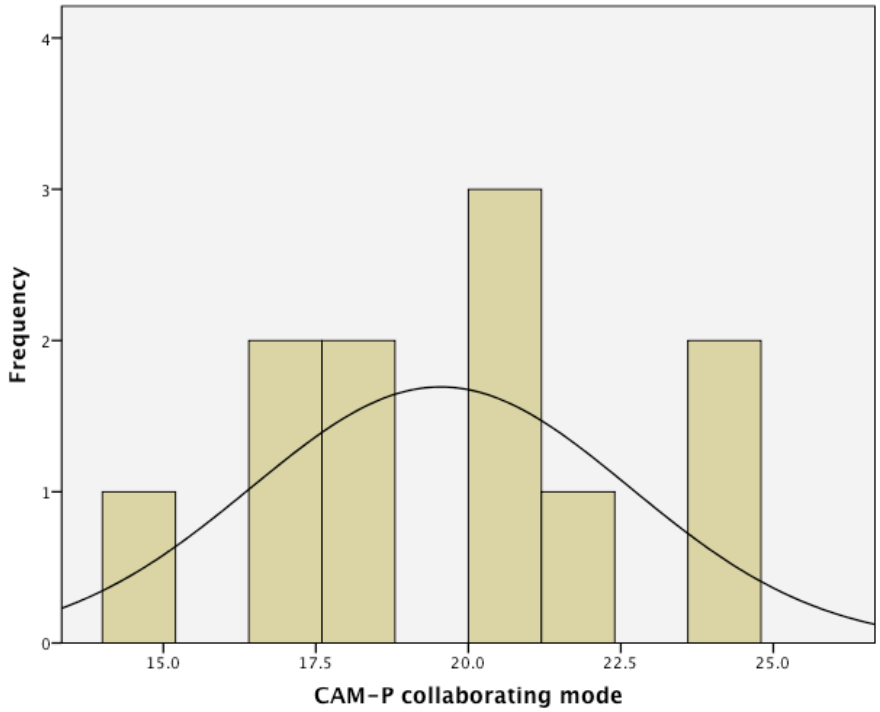


Figure 49. Histogram of CAM-P collaborating mode.

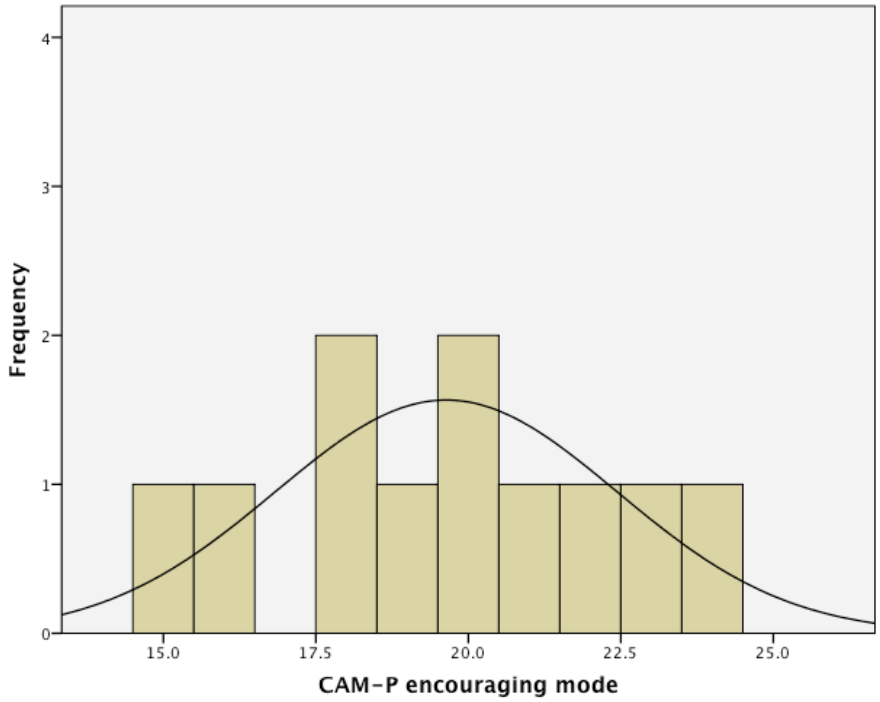


Figure 50. Histogram of CAM-P encouraging mode.

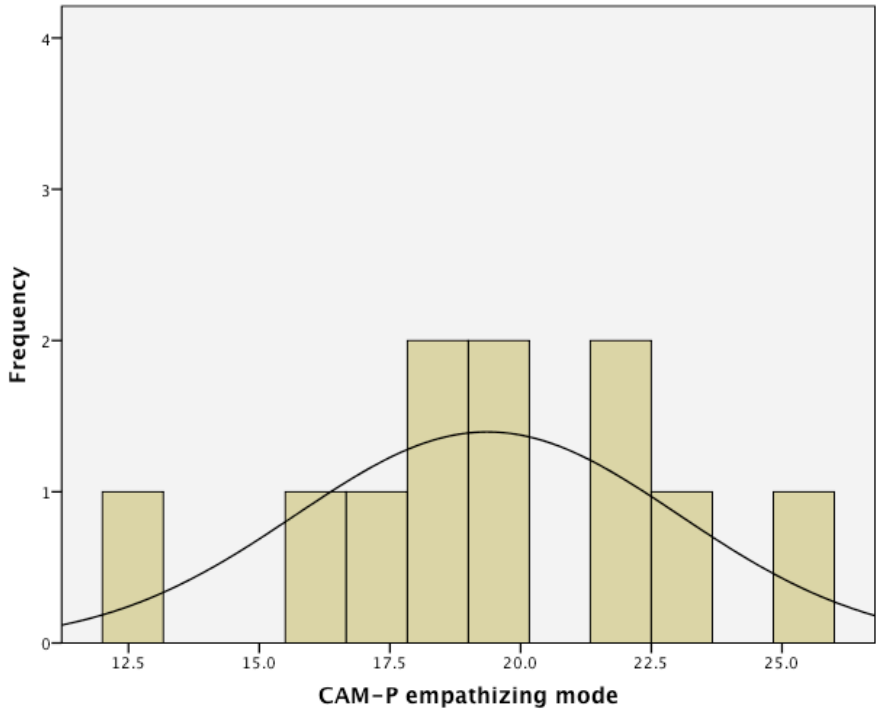


Figure 51. Histogram of CAM-P empathizing mode.

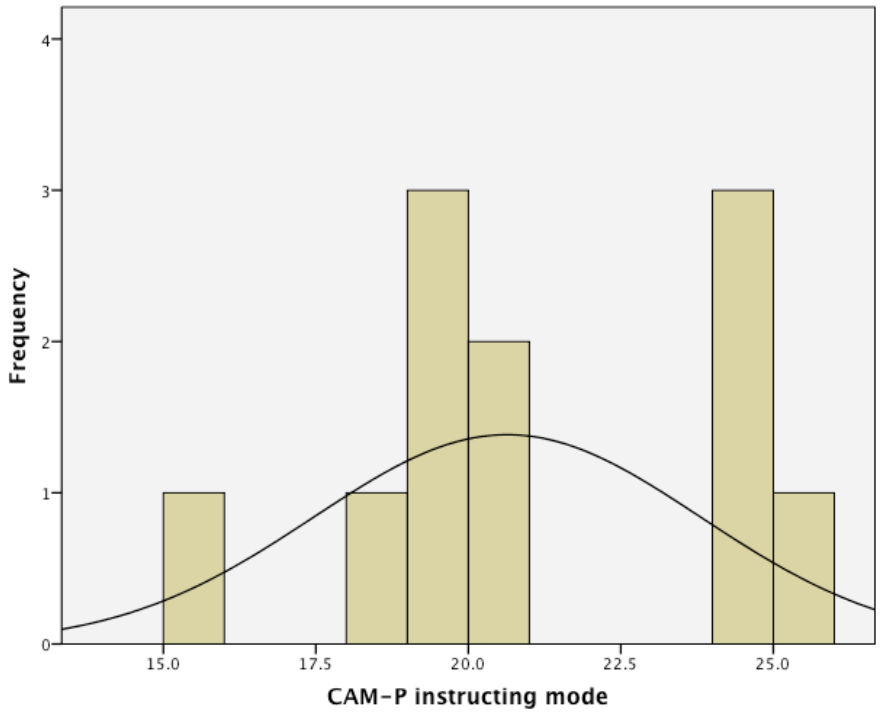


Figure 52. Histogram of CAM-P instructing mode.

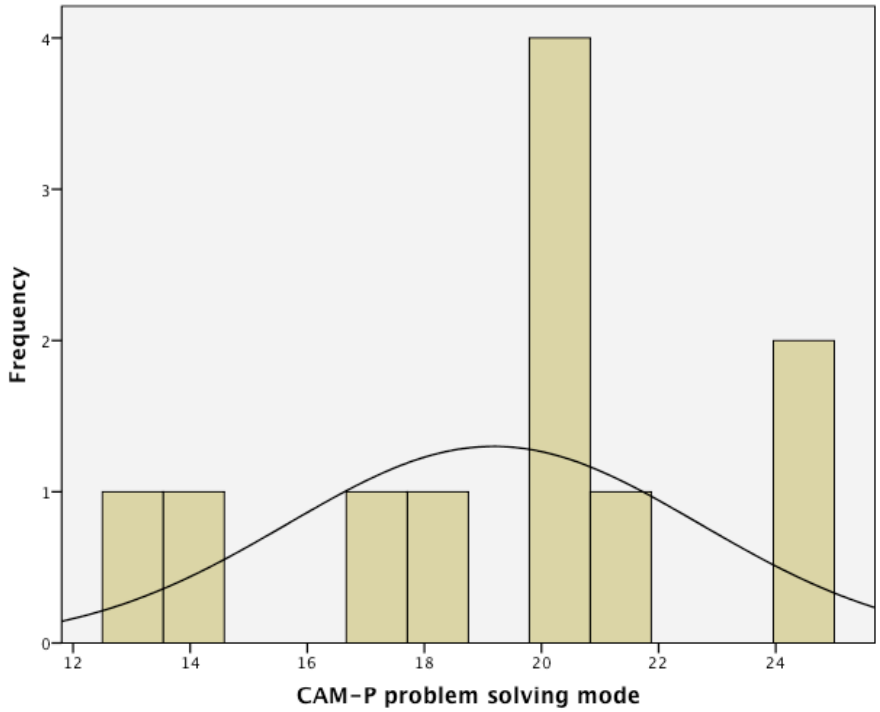


Figure 53. Histogram of CAM-P problem solving mode.

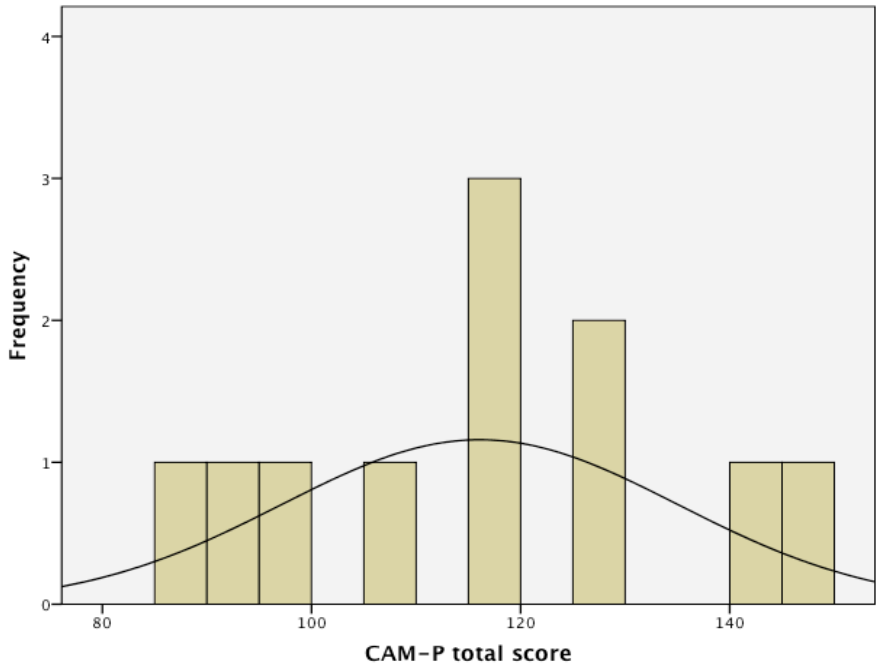


Figure 54. Histogram of CAM-P overall sum score.

Comparing preferred mode use by client diagnosis. The clients were grouped into three groups based on their diagnosis (see Table 22). The preferred modes mean scores for each of these groups are presented in Figure 55. Overall, all groups rated the instructing mode as their most preferred mode. Clients with hand injuries preferred the collaborating and problem solving modes to a similarly high extent while rating the advocating mode as the least preferred mode. Clients with acute conditions preferred the empathizing and encouraging modes to a relatively higher extent compare to the other two groups. Clients with subacute and chronic conditions preferred the advocating and collaborating modes to a relatively higher extent compared to the other two groups.

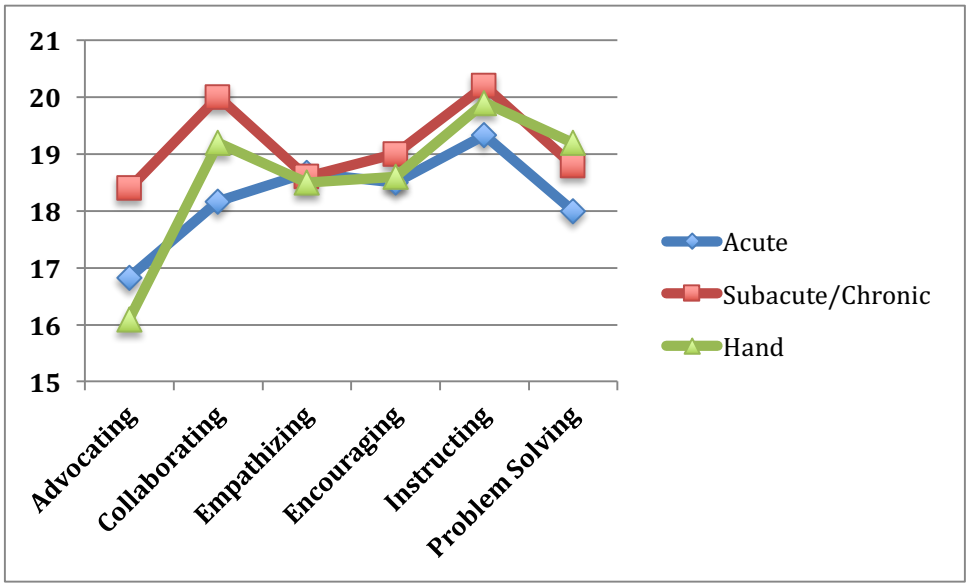


Figure 55. Comparison of preferred mode mean scores according to client diagnosis.

Experienced mode use.

Descriptive analyses of CAM-E for a combined sample of Samples 2 and 3 are presented in Table 28. None of the results of the Shapiro-Wilk test for normality were statistically significant, indicating that all six therapeutic modes were normally distributed. Visual representations of the mode distributions are presented in Figures 56 to 62. Therefore, the mean and standard deviation were presented for the six modes. The modes experienced during therapy, from most to least, were the instructing mode, encouraging mode, empathizing mode, collaborating mode, problem solving mode and advocating mode.

Table 28. Summary Statistics of Combined Sample 2& 3 - Actual Experienced Therapeutic Communication (n=22)

Therapeutic Mode	Shapiro-Wilk Test	Mean	SD
Advocating	0.97	12.32	4.82
Collaborating	0.95	17.64	4.69
Encouraging	0.92	18.55	4.96
Empathizing	0.94	18.45	4.33
Instructing	0.92	19.68	4.30
Problem Solving	0.94	16.95	5.36
Overall	0.96	103.4	24.77

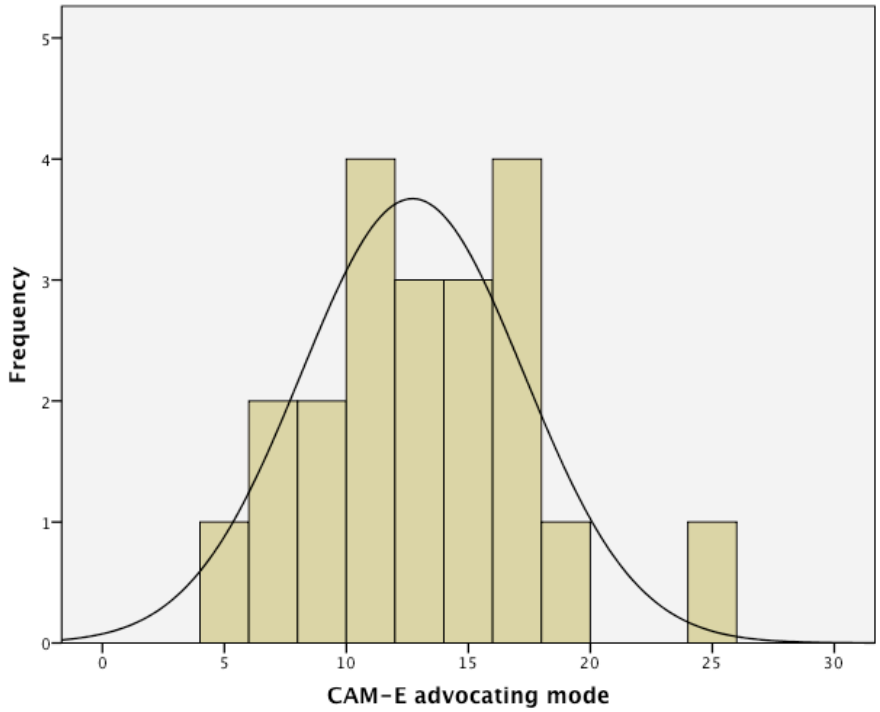


Figure 56. Histogram of CAM-E advocating mode.

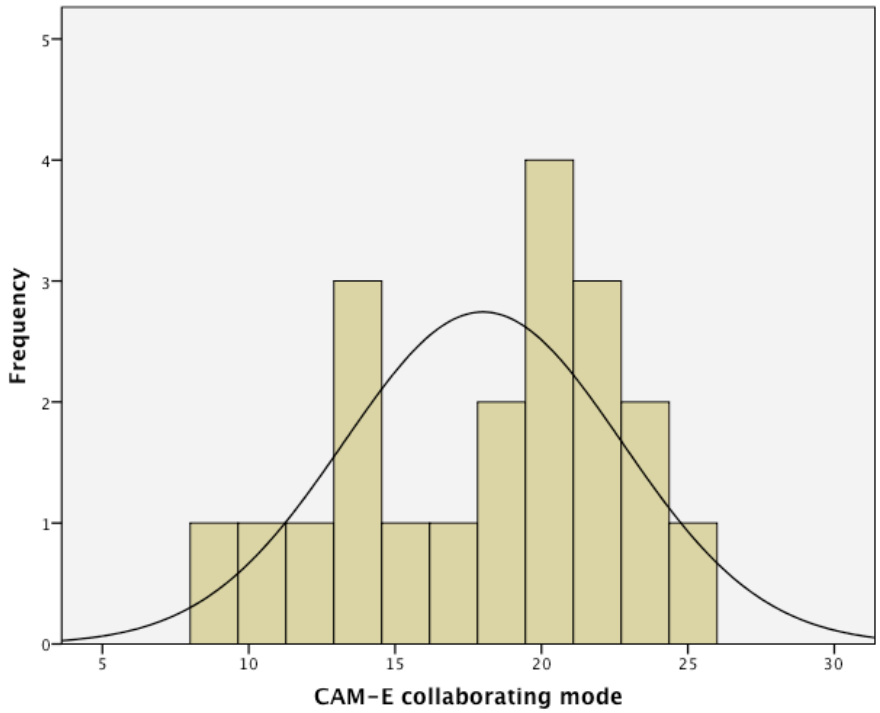


Figure 57. Histogram of CAM-E collaborating mode.

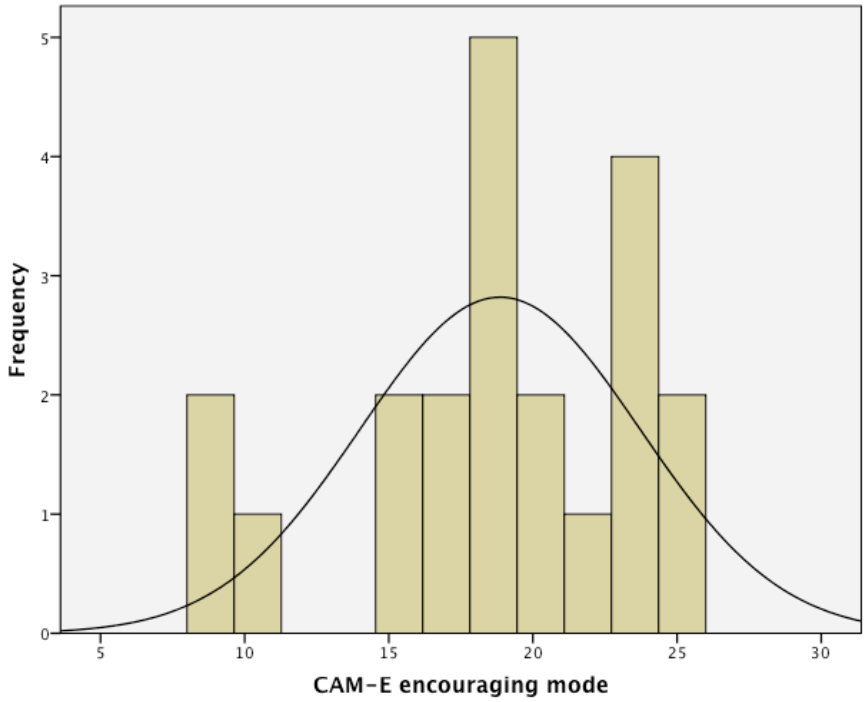


Figure 58. Histogram of CAM-E encouraging mode.

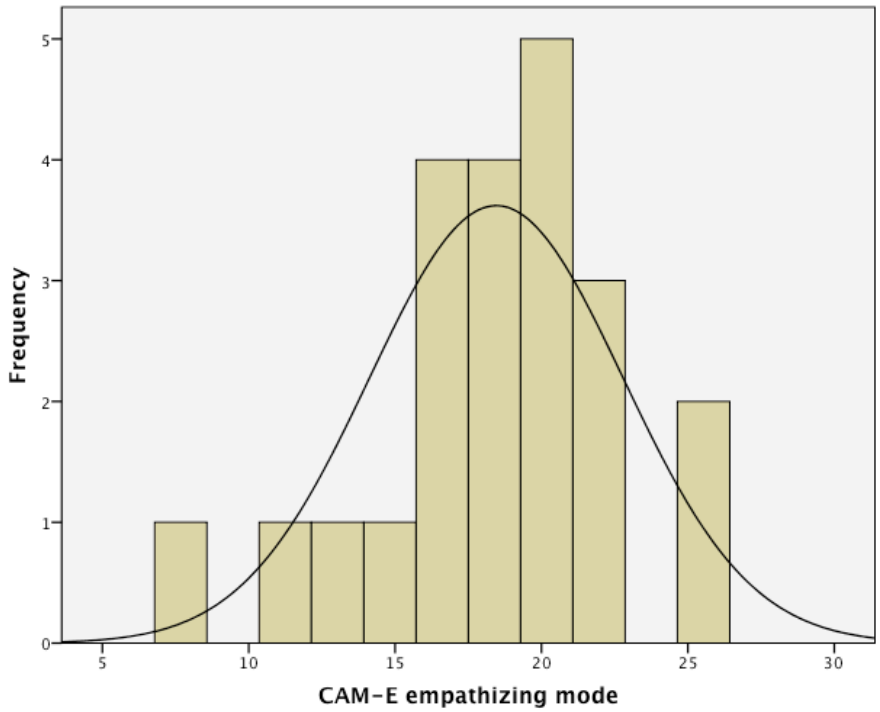


Figure 59. Histogram of CAM-E empathizing mode.

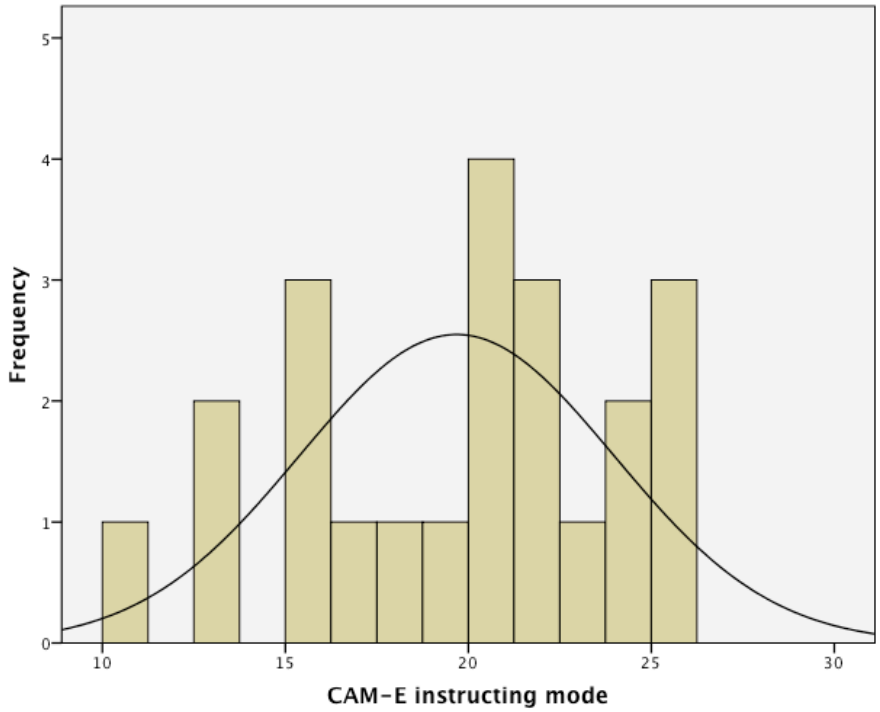


Figure 60. Histogram of CAM-E instructing mode.

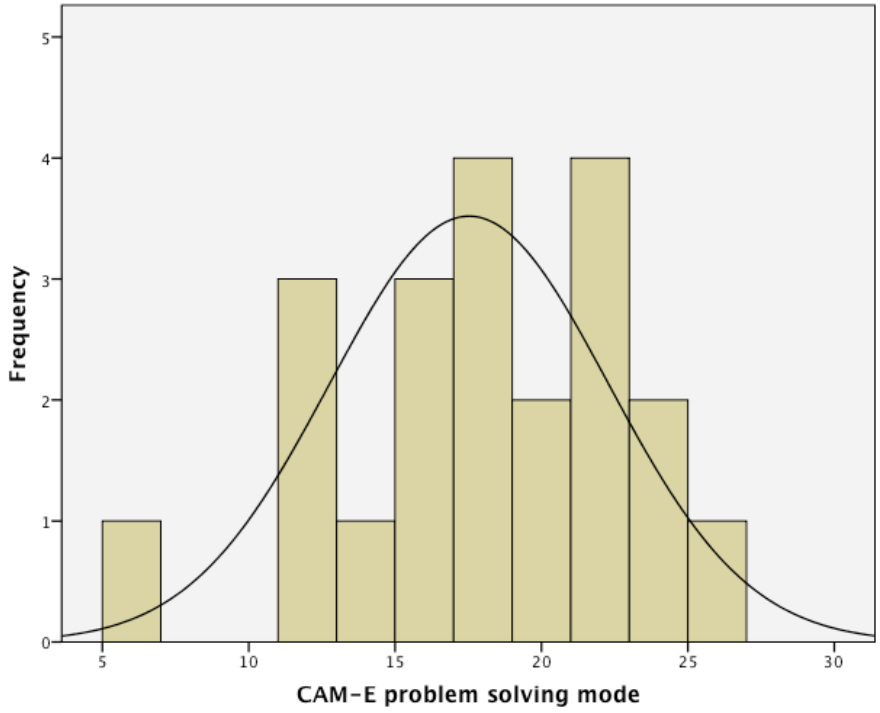


Figure 61. Histogram of CAM-E problem solving mode.

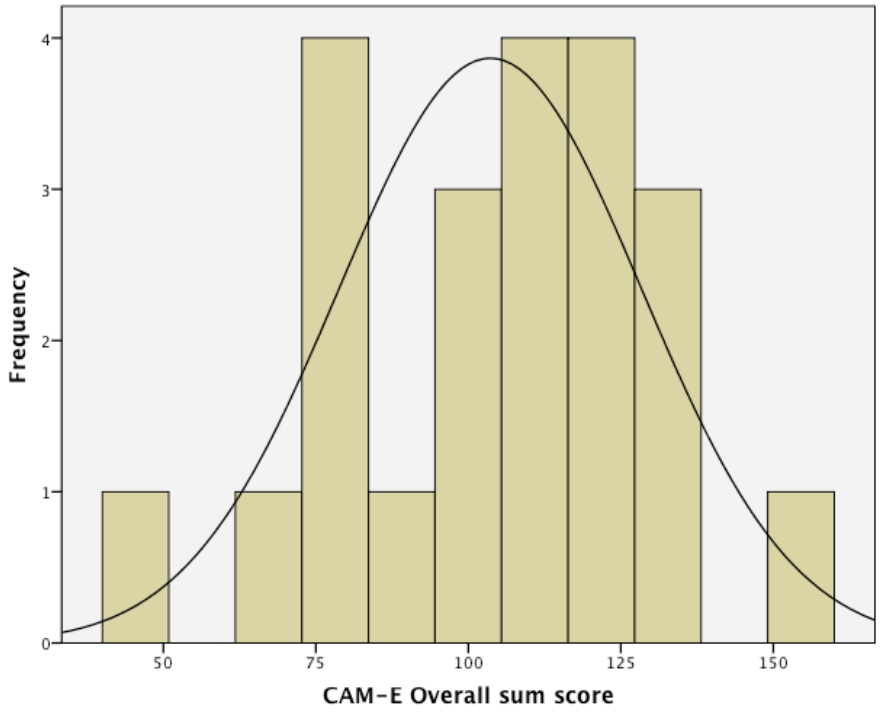


Figure 62. Histogram of CAM-E overall sum score.

Comparing experienced mode use according to client diagnosis. Overall, therapeutic modes were experienced most by clients with hand conditions (M = 110.5) and subacute and chronic conditions (M = 109.0), and relatively lower by clients with acute medical conditions (M = 88.6). The mean scores for each of the therapeutic modes subscales according to the three diagnosis groups are presented in Figure 63. Clients with acute conditions experienced all six modes to a relatively lesser extent compared to the other two groups. Clients with subacute and chronic conditions experienced most modes to a similar extent compared to other groups. In relation to other modes, clients with hand conditions experienced the instructing mode to a higher extent. Clients with hand conditions experienced the encouraging mode to a lower extent while clients with acute

medical conditions experienced the encouraging mode to a higher extent relative to other modes.

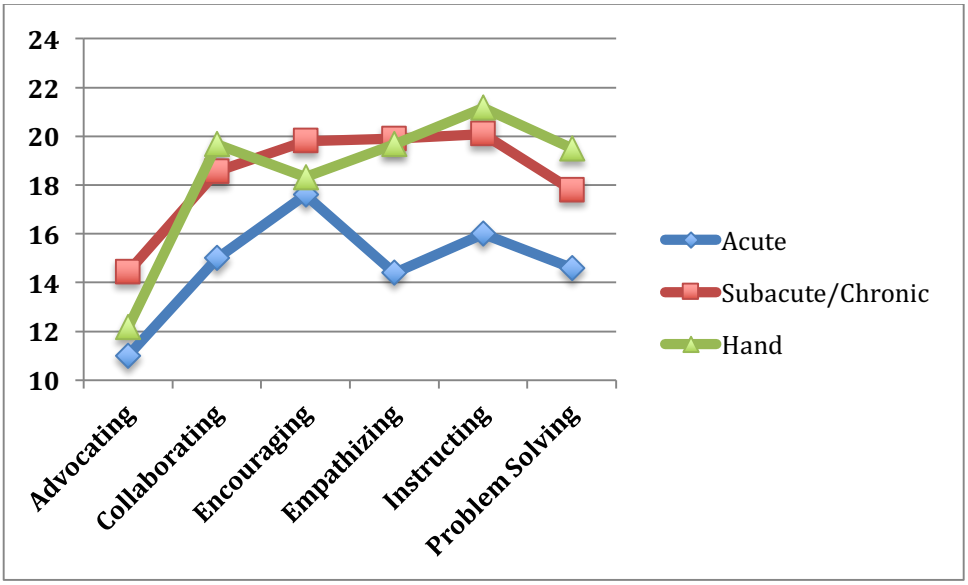


Figure 63. Client's experience of mode use according to diagnosis groups.

Client's perception of the therapeutic relationship.

Descriptive analyses of WAI-C for a combined sample of Samples 2 and 3 are presented in Table 29. Histograms of the Bond, Goal and Task subscales and the Overall score are presented in Figures 64 to 67. The results of the Shapiro-Wilk test for normality were statistically significant, indicating that the three subscales and the overall alliance scores were not normally distributed. A visual inspection of the histograms confirmed that the subscale distributions were similarly varied and skewed to the left. The median scores for the subscales, from most to least, were Bond, Goal and Task

subscales. Further analyses will be done using the median to describe the central tendency due to the non-normality of the distributions.

Table 29. Summary Statistics of Combined Sample 2& 3 - Therapeutic Relationship (n=22)

Working Alliance	Shapiro-Wilk Test	Mean (*SD*)	Median (IQR)	Skewness
Bond	0.90*	22.55 (4.96)	24.50 (7.00)	-.65
Goal	0.91*	22.73 (4.78)	23.50 (7.00)	-1.01
Task	0.88*	21.23 (5.81)	21.50 (6.50)	-1.43
Overall	0.90*	66.50 (14.68)	72.00 (16.00)	-1.13

*$p < .05$.

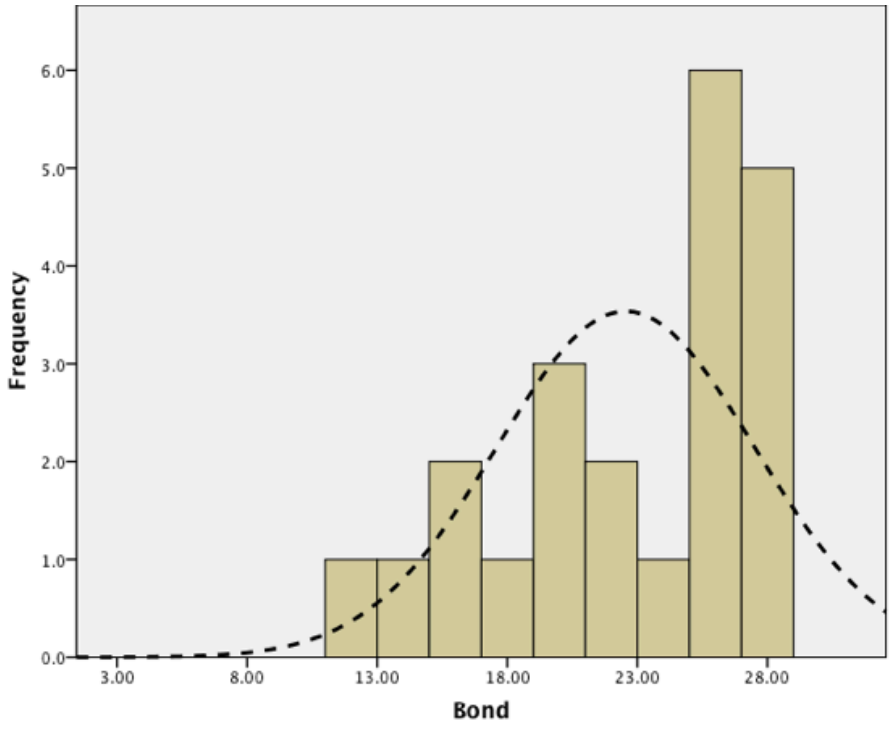


Figure 64. Histogram of WAI-C Bond subscale.

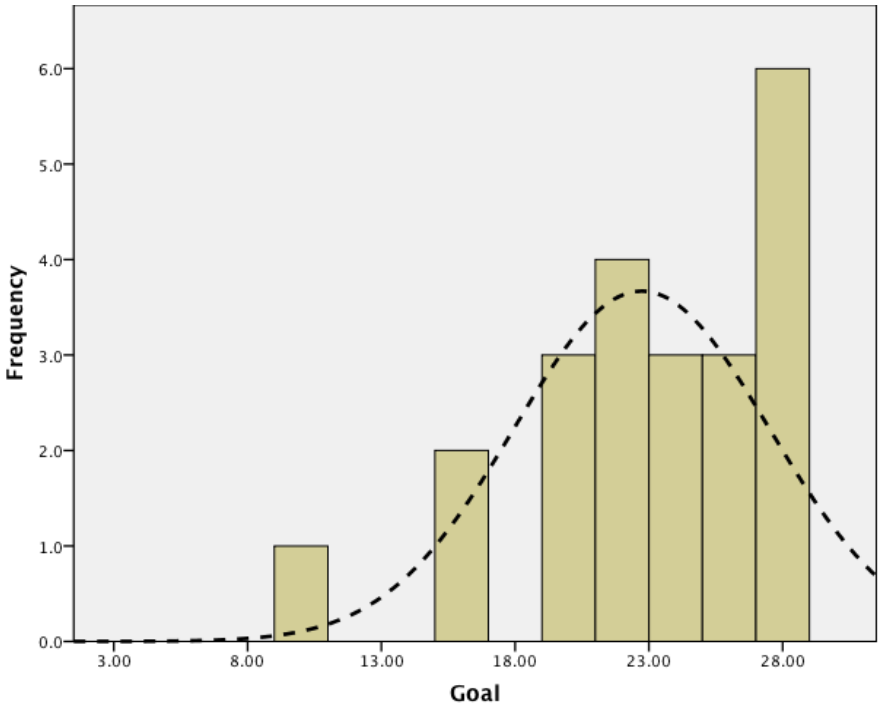


Figure 65. Histogram of WAI-C Goal subscale.

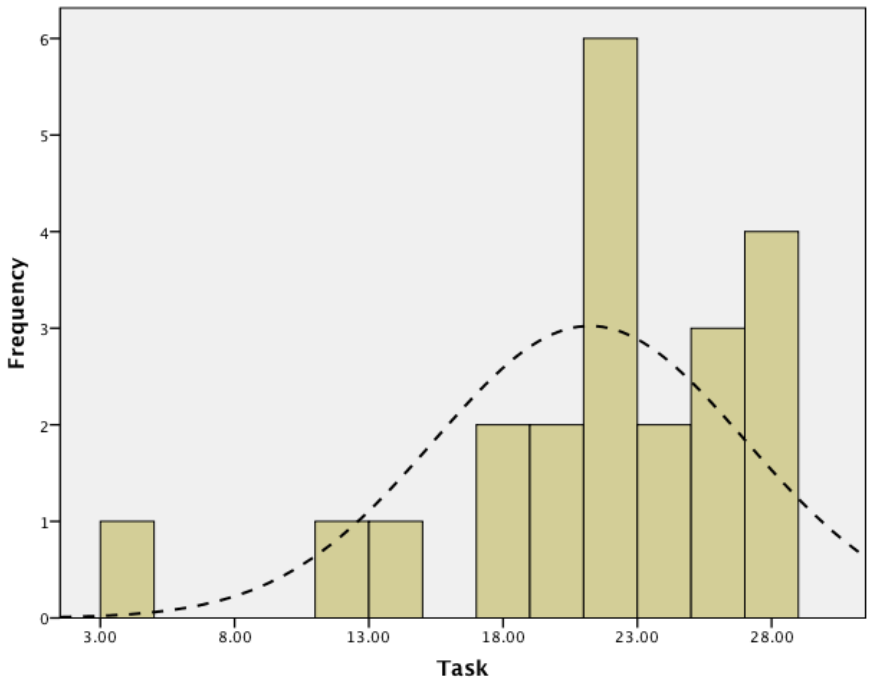


Figure 66. Histogram of WAI-C Task subscale.

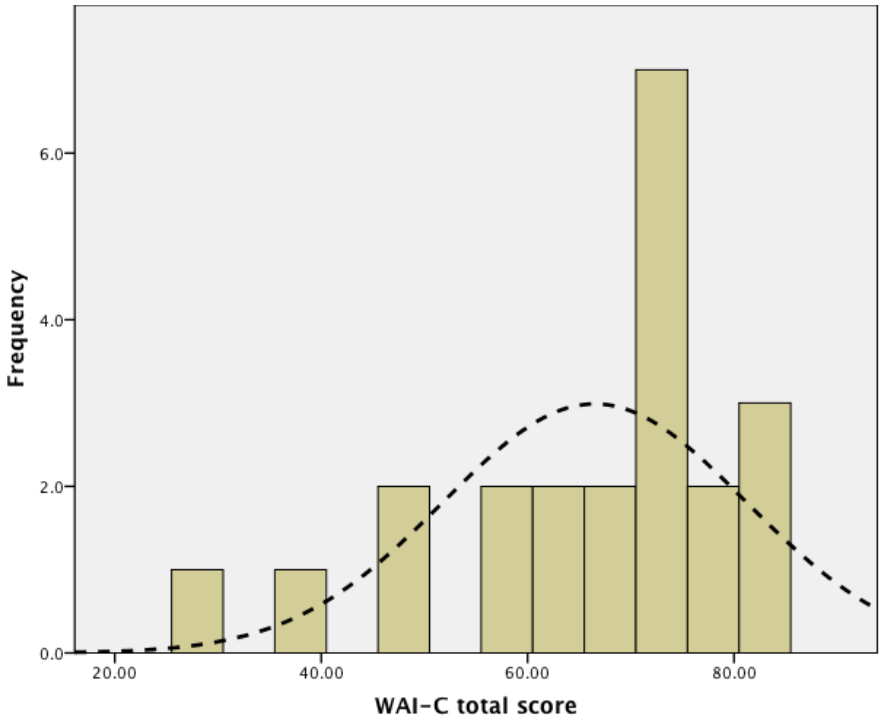


Figure 67. Histogram of WAI-C Overall score.

Comparing therapeutic relationship according to client diagnosis. When comparing the medians for each of the aspects of the therapeutic relationship as shown in Figure 68, clients in the subacute/chronic conditions group and hand conditions group appeared to perceive their agreement on goals as more positive compared to their agreement on therapeutic tasks. For clients in the acute conditions group, the perception of the strength of the affective bond with their therapists was relatively lower compared to other aspects of the therapeutic relationship. Perceptions of the overall therapeutic relationship, from most positively to least, were 1) clients with chronic illnesses (*Mdn* = 72.5), clients with hand conditions (*Mdn* = 69.0) and 3) clients with acute medical conditions (*Mdn* = 60.0).

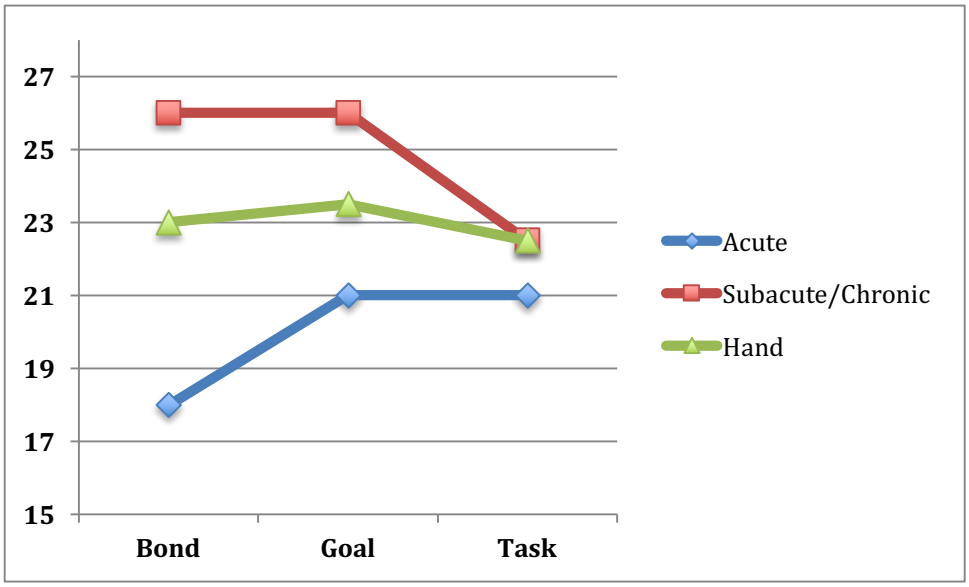


Figure 68. Comparison of WAI-C subscale median scores according to client diagnosis.

Descriptive analyses of CAM-P, CAM-E and WAI-C in Sample 2.

Descriptive analyses of CAM-P and CAM-E for Sample 2 are presented in Table 30. None of the results of the Shapiro-Wilk test for normality were statistically significant for both CAM-P and CAM-E, indicating that all six therapeutic modes were normally distributed. Therefore, the means and standard deviations were presented for both questionnaire subscales. The preferred mode use reported by clients in Samples 2, from most to least, were the instructing mode, collaborating mode, problem solving mode, empathizing mode, encouraging mode and advocating mode. This reflected the results from the combined sample reported above. The therapeutic modes experienced during therapy, from most to least, were the encouraging mode, instructing mode, empathizing mode, collaborating mode, problem solving mode and advocating mode. The mean score of each of the therapeutic modes were lower for all experienced modes compared to

preferred mode use, except for the encouraging mode. See Figure 69 for a visual representation of the preferred and actual mode use.

Table 30. Summary Statistics of Sample 2 - Preferred and Actual Experienced Therapeutic Communication (n=11)

	CAM-P			CAM-E		
Therapeutic Mode	Shapiro-Wilk Test	Mean	SD	Shapiro-Wilk Test	Mean	SD
Advocating	0.92	16.64	3.53	0.92	13.82	4.90
Collaborating	0.95	19.09	2.91	0.94	17.55	4.60
Encouraging	0.90	18.00	3.63	0.86	19.00	5.06
Empathizing	0.92	18.55	2.91	0.98	18.00	4.22
Instructing	0.97	19.45	2.77	0.93	18.64	4.30
Problem Solving	0.87	18.82	2.36	0.97	17.45	4.37

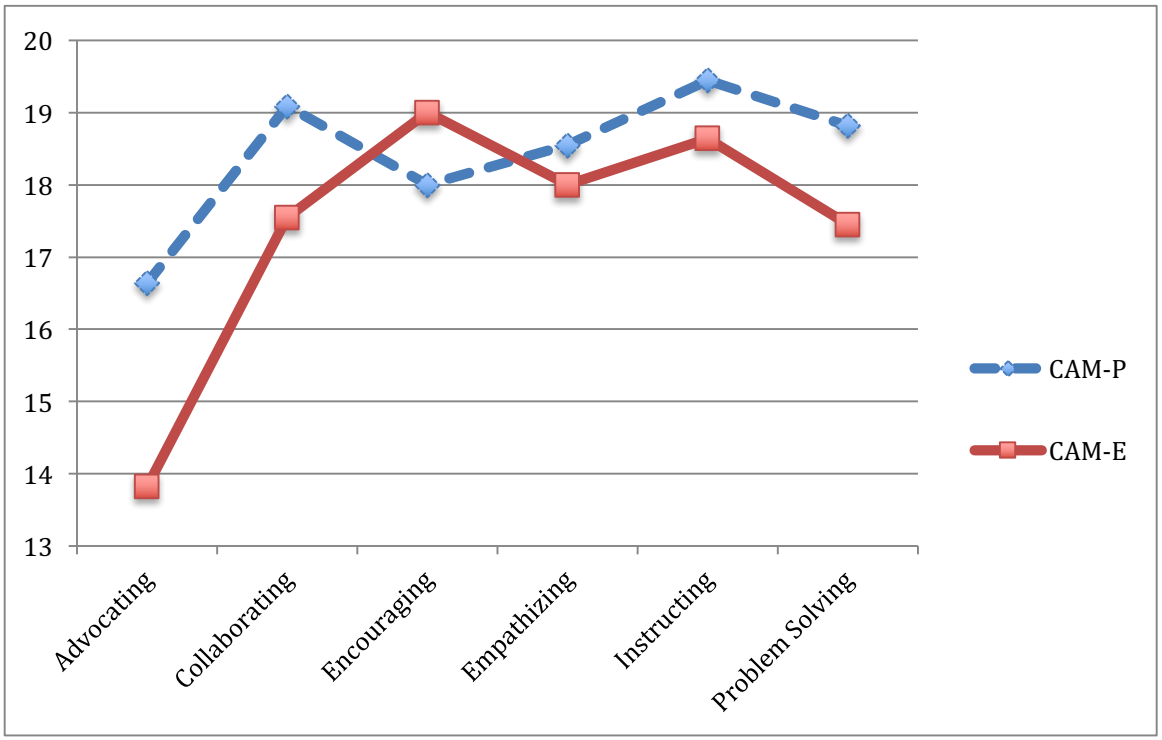


Figure 69. Mean scores of CAM-P and CAM-E. Total possible score for each subscale is 25.

Descriptive analyses of WAI-C for Samples 2 are presented in Table 31. None of the results of the Shapiro-Wilk test for normality were statistically significant, indicating that the three subscales and the overall alliance scores were normally distributed. The mean scores for the subscales, from most to least, were Goal, Bond and Task subscales. The median scores for the subscales, from most to least, were Bond, Goal and Task subscales, reflecting the results of the WAI-C of the combine sample of Samples 2 and 3.

Table 31. Summary Statistics of Sample 2 - Therapeutic Relationship (n=11)

Working Alliance	Shapiro-Wilk Test	Mean (SD)	Median (IQR)
Bond	0.90	21.81 (5.67)	24.00 (12.00)
Goal	0.92	22.73 (4.67)	23.00 (9.00)
Task	0.95	21.18 (5.31)	21.00 (8.00)
Overall	0.93	65.72 (14.99)	72.00 (31.00)

Comparing variables by client diagnosis groups.

Preferred and experienced mode use. The mean scores for the preferred and experienced modes for the three client groups (acute conditions, subacute and chronic conditions, hand conditions) are presented in Table 32 and Figures 70 to 72 respectively. A visual inspection of the figures and tables show that clients with acute conditions experienced the encouraging mode relatively higher while experiencing the advocating and empathizing modes relatively lower compared to their preferences. Clients with subacute and chronic conditions experienced the encouraging, empathizing and instructing modes to the most similar extent compared to their preferences. Overall, clients with hand conditions reportedly had the most similar perception of preferred and experienced therapeutic modes.

Table 32. Sample 2- Mean scores of Preferred (P) and Experienced (E) Mode Use by Diagnosis Groups

Therapeutic Mode	Acute		Subacute/Chronic		Hand	
	P	E	P	E	P	E
Advocating	17.0	13.0	18.4	14.4	13.3	**13.7**
Collaborating	17.7	**16.7**	20.0	17.4	19.0	**18.7**
Encouraging	18.0	**21.0**	18.6	**19.0**	17.0	**17.0**
Empathizing	19.0	15.3	19.0	**19.0**	17.3	**19.0**
Instructing	18.3	17.0	20.2	19.0	19.3	**19.7**
Problem Solving	18.3	17.0	18.8	17.2	19.3	**18.3**
Overall	108.3	100	115.0	106.0	105.3	**106.3**

Note: Values in bold indicate that the experience mode mean score (CAM-E) is more than or similar (i.e. $\leq$ 1-point difference) to the preferred mode mean score (CAM-P).

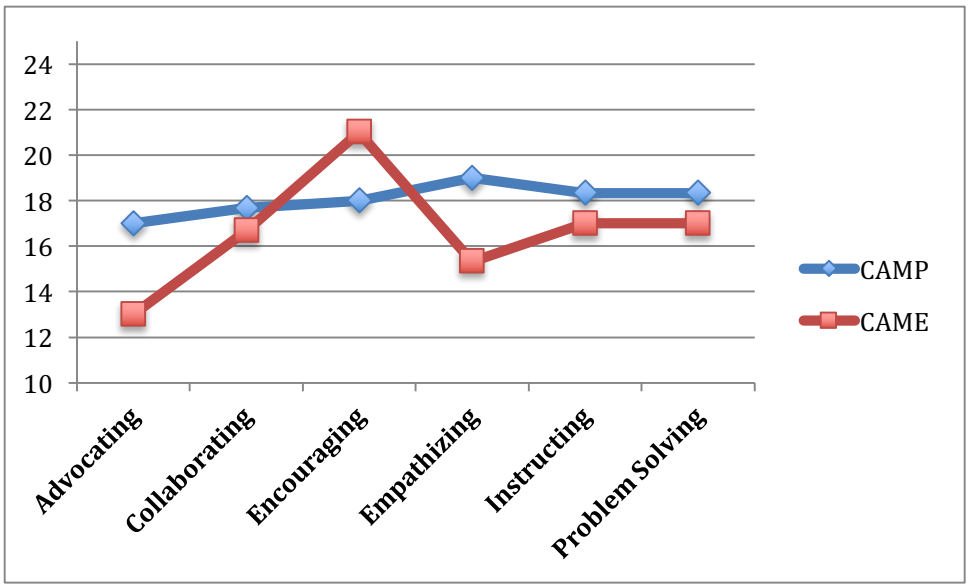


Figure 70. Mean scores of preferred and experienced mode use for clients with acute conditions.

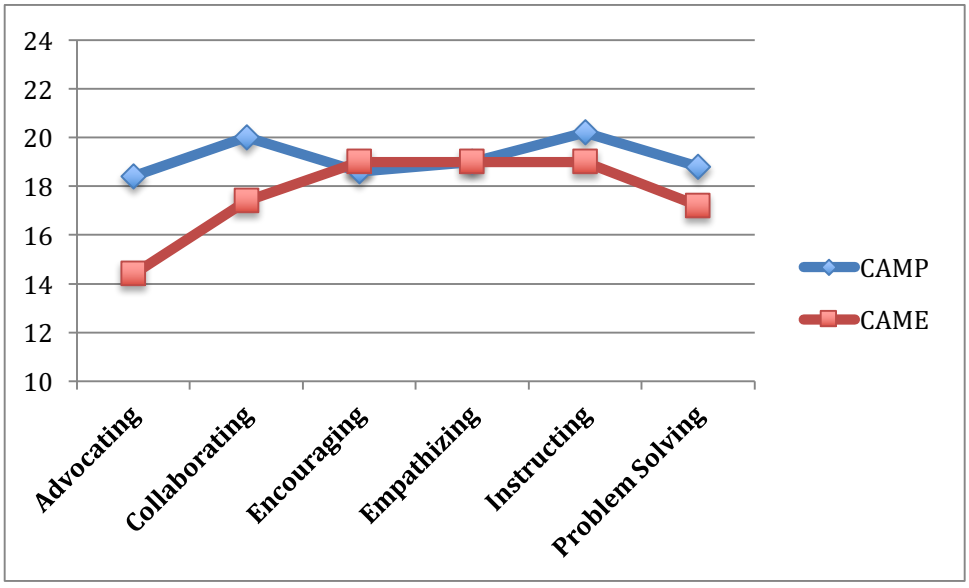


Figure 71. Mean scores of preferred and experienced mode use for clients with subacute and chronic conditions.

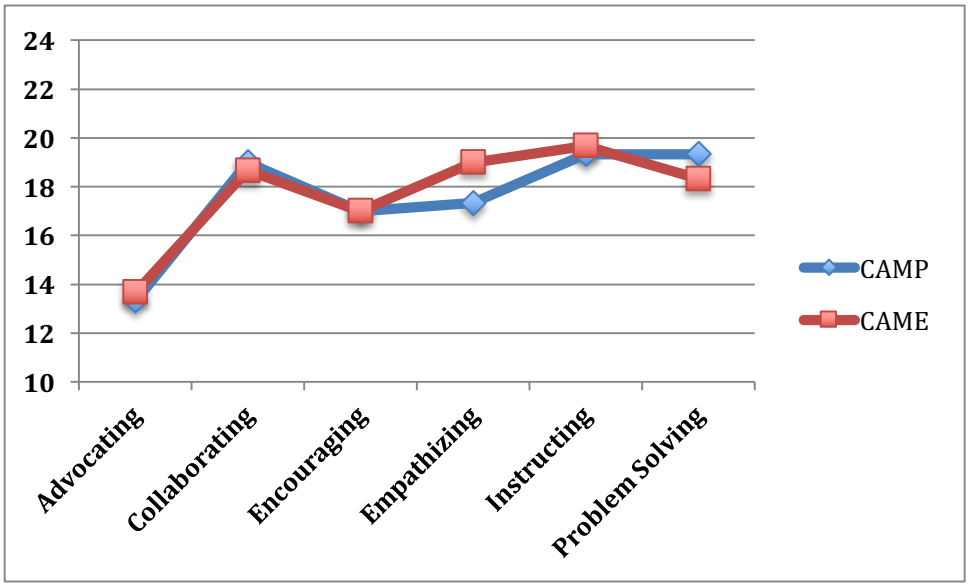


Figure 72. Mean scores of preferred and experienced mode use for clients with hand conditions.

Perception of the therapeutic relationship. The mean scores for the Bond, Goals and Task subscales by client diagnosis groups are presented in Table 33 and Figure 73. In all aspects of the therapeutic relationships, client with subacute and chronic conditions had the highest mean scores compared to other groups, indicating that clients in this group perceived the therapeutic relationship most positively.

Participation during therapy. The mean scores for PRPS indicated that participation during therapy was relatively higher for clients with hand conditions (M = 5.67) compared to those with those with subacute and chronic condition (M = 4.6) and acute conditions (M = 4.33).

Table 33. Sample 2- Mean scores of Working Alliance Scale by Diagnosis Groups

	Acute	Subacute/Chronic	Hand
Bond	18.0	24.8	20.7
Goal	19.3	25.0	22.3
Task	20.0	22.2	20.7
Overall	57.3	72.0	63.7

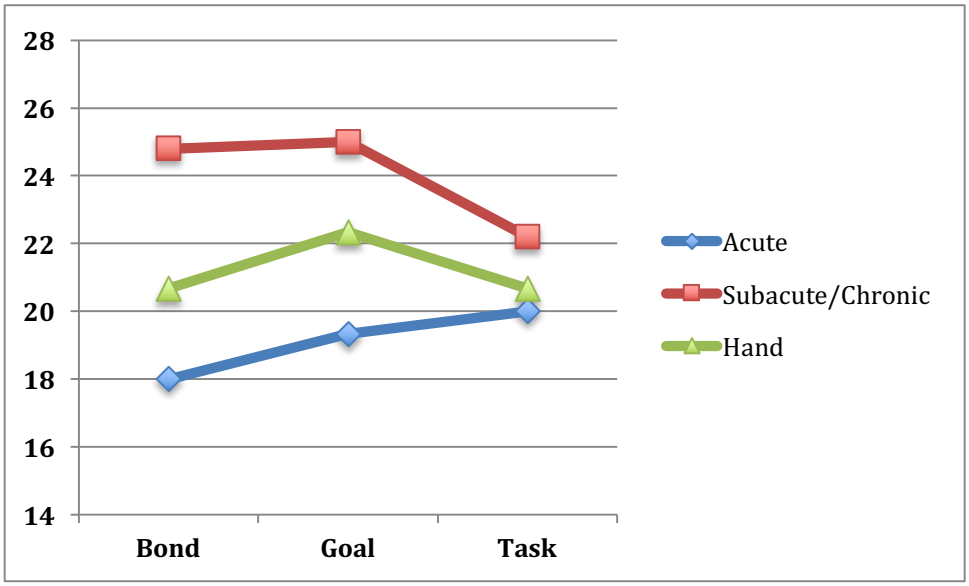


Figure 73. Mean scores of WAI-C subscales according to client diagnosis.

4.3. Discussion

Preferred mode use.

When examining preferred interpersonal approach, clients most valued a directive and educational approach where they were provided with advice on what to do or how to improve. On the other hand, the advocating mode was the least preferred and experienced

by clients. However, as significance was not tested, no definitive conclusions can be drawn.

In a study of therapeutic mode use by Fan & Taylor (in press), clients newly referred for therapy preferred the instructing approach the most. In a study of the general population regarding medical decision making, Levinson, Kao, Kuby and Thisted (2005) found that although most individuals wanted to be aware of their choices and asked for their preferences (96%), about half of them preferred to relinquish the final decision to their health professional while the other half wanted to be actively involved in the decision making process. Deber, Kraetschmer and Irvine (1996) also found that although the majority of clients wanted to be knowledgeable of their treatment options (78%), most clients ultimately wanted the healthcare professional to decide which was the best option (98.4%). Deber et al. (1996) also found that clients relinquished their control to the medical professional when the decision was associated with higher risk (e.g. surgery options) compared to issues of lesser risk (e.g. quality of life). Although the instructing mode was most highly desired by clients, a high desire for collaborating mode and problem solving mode may have also reflected the clients' fluctuating desire for interpersonal control in different circumstances. Clients with higher need for control may prefer a more collaborative approach, while clients who prefer to relinquish their control may prefer a more structured and directive approach (Taylor, 2008).

The advocating mode was least preferred by newly referred clients in the study by Fan and Taylor (in press). A low desire and experience of the advocating mode may suggest that most clients in this setting may not find it premature to be connected to community resources and normalize disability as part of their identity. Instead, clients

may be more focused on returning to to their pre-illness healthy state and discharging home (Holliday, Ballinger & Playford, 2007). Moreover, in a society where filial piety and collectivism are valued (Kim, Atkinson & Umemoto, 2001), families are traditionally expected to assume the responsibility to care for injured or disabled persons. In Singapore, a low proportion of people live independently (12.2%, Koh & Lee, 2014) and about 20% of the households employ live-in domestic helpers (TWC2, 2011). Therefore, as independent living is not the norm, the need to be connected to community resources may be less crucial for many patients to safely discharge home.

Preferred mode use across client groups.

Overall, the patterns of preferred mode use were very similar between the acute, chronic and hand condition groups. However, interestingly, the results showed that clients who had chronic illnesses preferred the advocating and collaborating modes to a greater extent compared to those with acute conditions. Thorne & Robinson (1989, p. 154-155) described different levels of trust patients were found to have at the chronic stage of illness. *Hero worship* was used to describe clients who have low trust for others in the health care system but had high trust for one particular professional. *Consumerism* referred to the attitude where clients come for treatment because they think it is important for their recovery, and did whatever they needed to do, in order to get what they deemed was important. *Resignation* was used to describe clients who either stop treatment or go through the motion of coming for treatment with little hope of getting better. Some clients, who worked through their disenchanted feelings may have resulted in higher level of trust in both themselves and the therapist's competence, known as *team playing*. In this study, some clients with chronic illnesses could be described as team players,

resulting in a greater desire for a collaborative approach compared to the acute phase. Other clients may have desired the therapist to facilitate alternative or complementary services or help them realize their legal rights in situations where they feel disillusioned and mistrustful of others. Also in chronic disability, it can be suggested that clients may have been more ready for the therapist reinforces a positive disability identity and reinforce available opportunities and resources in the community.

Experienced mode use.

Overall, the instructing mode appeared to be the most desired and most experienced mode while the advocating mode appeared to be the the least desired and the least experienced. Interestingly, the pattern of mode use that the clients experienced were consistent with the study by Fan and Taylor (in press). The empathizing and encouraging modes appeared to be perceived to a greater extent compared to the collaborating and problem solving modes, which was contrary to what the clients desired. However, even though there were discrepancies between what clients desired and what they experienced, the overall therapeutic relationship appeared to be still relatively strong, with evidence of ceiling effects. A ceiling effect is said to be present when more than 15% of clients score maximum scores (McHorney & Tarlov, 1995). In the results of the combined sample, apart from one item in the Task subscale, all items in the WAI-C had a tendency for ceiling effects (range of clients rating maximum score: 27.3 to 45.5%). Moreover, 54.5% of the clients scored in the top 20% for the bond and goal subscales. However, as significance was not tested, no definitive conclusions can be drawn.

Experience of mode use across client groups.

Interestingly, results for both the combined sample and sample 2 showed that client groups who perceived higher experience of overall therapeutic mode use also perceived stronger therapeutic relationships and increased client participation. Clients in the acute setting experienced every mode to a lower extent compared to clients in the hand therapy and chronic conditions groups. It is possible that these client diagnostic groups may represent client and contextual variables impacting interpersonal communication. It is also possible that acute clients may have experienced relatively suboptimal therapeutic communication due to therapists' reliance on other internal or external scripts (Carmien et al., 2007). However, no definitive conclusions may be made, as significance was not tested.

Even though the hand therapy clients had lower ratings of the therapeutic relationship compared to the subacute/chronic group, the group still had the highest level of participation during therapy. Other factors (e.g. the complexity of the medical conditions, fear of pain) may have had an impact on the level of participation in the therapy (Lequerica et al., 2009). The hand therapy group had injuries affecting the function of a single limb (e.g. fractures of the hand) while the subacute/chronic group had more complex and unpredictable injuries affecting whole body functions (e.g. spinal cord injury and chronic pain). It is possible that clients may have perceived their therapeutic relationships to be relatively strong but their participation level may be impacted by other limiting factors. However, similar to other descriptive results, no definitive conclusions may be made, as significance was not tested. Further research with multivariate analyses and a larger sample size would be recommended.

5. STUDY 3: EXPLORATORY CORRELATIONAL ANALYSIS

5.1. Methods

Specific aims.

Aim 1: To examine the association between the therapists' mode use (CAM-T) and the clients' actual experience of mode use (CAM-E) by conducting non-parametric correlational analyses with therapist-client data from the Cohort A sample (n= 14 dyads).

Aim 2: To examine the association between therapists' perception of mode use (CAM-T) and the strength of the therapeutic relationship (WAI-T) using non-parametric correlational analyses using therapist data from Cohort A (n= 14).

Aim 3: To examine the association between clients' perception of the actual experience of mode use (CAM-E) and the strength of the therapeutic relationship (WAI-C) using non-parametric correlational analyses using client data corresponding to therapists in Cohort A (n= 14).

Aim 4: To examine the association between therapists' and clients' perceptions of the strength of the therapeutic relationship (WAI-T and WAI-C respectively) while controlling for the number of sessions of therapy received by conducting partial correlational analyses with therapist-client data from the Cohort A sample (n= 14 dyads).

Aim 5: To examine the association between 1) therapist and clients' perceptions of the strength of the therapeutic relationship and 2) the clients' participation during therapy (i.e. WAI-T with PRPS, and WAI-C with PRPS respectively) with therapist-client data from the Cohort A sample (n= 14 dyads).

For Aims 1-5, only the mode-subscale scores that demonstrated acceptable internal consistency upon prior analysis (see Internal consistency results of CAM-T in Study 1, p. 60-65 and CAM-E in Study 2, p. 84-88) will be used.

Samples.

Therapist sample.

Therapist data from Cohort A will be used for all the aims above (Refer to Table 3, p. 42 for details of the demographic characteristics of this sample). Therapist data will be included in this study if 1) it was the first administration of the post-therapy questionnaires and 2) if the questionnaires were completed after a therapy session with an English-speaking client.

Client sample.

When therapists from Cohort A completed their post-therapy questionnaires, all of their clients also completed post-therapy questionnaires at the same time frame (see Procedures, p. 32-34). The client data was included in this study if 1) the client completed the CAM-E corresponding to the first administration of the therapist's CAM-T questionnaire, and if 2) the client was English-speaking. Therefore, two clients were excluded as they were Mandarin-speaking. Therefore, the resulting data was from 14 clients, including 6 clients from Sample 2 and 8 clients from Sample 3. The demographic characteristics for the clients are presented below in Table 34.

Table 34. Demographic characteristics of Study 3 clients (n =14)

Characteristic	Mean	SD
Age	42.9	17.0
Gender	F	%
Male	10	71.4
Female	4	28.6
Highest Educational Level		
Less than High School	4	28.6
High School	4	28.6
Higher than High School	6	42.8
Occupational Role		
Employed Full-time	11	78.6
Retired	2	14.3
Student	1	7.1
Marital Status		
Single, Never Married	6	42.9
Married	8	57.1
Living Situation		
Living alone	4	30.8
Living with spouse/partner	6	46.2
Living with other family member	3	23.1
Ethnicity		
Chinese	10	71.4
Other	4	28.6
Client diagnosis		
Acute conditions		
Gangrene	2	15.4
Myelitis	1	7.7
Pneumonia	1	7.7

Characteristic	F	%
Client diagnosis		
Subacute/Chronic conditions		
Lymphedema	1	7.7
Pain	2	15.4
Spinal cord injury/syndrome	1	7.7
Hand conditions		
Finger Fracture	4	30.7
Hand crush injury	1	7.7

Note. Percentages are valid percentages, which take into account any missing data.

Procedures.

Please refer to the *Procedure* section (p. 37-39) for details on the overall data collection process.

Data analysis.

All data analysis will be carried out using SPSS Statistics software (IBM, 2014). Due to the small sample size, I will use Spearman's rho for all bivariate non-parametric correlational analyses (i.e. Aims 1, 2, 3, and 5). When analyzing correlations between WAI-T and WAI-C questionnaires (Aim 2), partial correlational analyses of the matching three subscale sum scores and overall sum scores will be examined while controlling for the number of therapy sessions.

From Study 1, the advocating mode was removed from subsequent analyses of the CAM-T due to poor internal consistency (See Study 1, p. 60-65). Therefore, when conducting analyses involving CAM-T overall scores, it would be more appropriate to use the *overall mean* scores, instead of the overall sum scores. The overall mean score

will be calculated by summing the mean scores of the five modes (i.e. collaborating, encouraging, empathizing, instructing and problem solving modes) and dividing it by five (i.e. the number of subscales). For consistency in comparison, as the advocating mode in the CAM-T has been excluded, the advocating mode in the CAM-E will also be excluded from analyses. Therefore, henceforth, any analyses involving either the CAM-T or CAM-E overall scores will reflect the overall mean scores. Apart from this exception, all other correlational analysis involving the CAM-T individual subscales and other questionnaires (WAI and PRPS) will be conducted using raw sum scores.

Refer to *Managing missing data in questionnaires* (p. 55) for further details on managing missing data in the ordinal scale items. Any other missing data will be excluded based on pairwise deletion.

5.2. Results

Therapists' and clients' perception of mode use.

As shown in Table 35, non-parametric correlational analyses revealed that there were no associations between therapist's and client's perception of the use of the collaborating mode, encouraging mode, empathizing mode, instructing mode and problem solving mode during therapy. Results reveals that there was also no correlation between therapist and client's perception of overall therapeutic mode use.

Table 35. Spearman's rho correlation coefficients between therapist and client's perception of mode use (CAM-T and CAM-E)

	Correlation	*p*
Collaborating	.13	.677
Encouraging	-.24	.424
Empathizing	-.04	.895
Instructing	.04	.897
Problem Solving	-.11	.728
Overall	-.02	.943

Perception of mode use and therapeutic relationship.

As shown in Table 36, there was a statistically significant association between therapist's perception of the extent of empathizing mode use and their perception of the affective bond aspect of the therapeutic relationship. Although insignificant, there were other low correlations found. There were low positive correlations between 1) the instructing mode use and mutual agreement regarding therapeutic goals and tasks, and 2) the problem solving mode and the bond and overall therapeutic relationship. There were also low negative correlations between 1) the collaborating mode and agreement on tasks, and 2) encouraging mode and mutual agreement on goals and tasks, and overall therapeutic relationship.

Table 36. Spearman's rho correlation coefficients between therapists' perceptions of their mode use and the therapists' perception of the therapeutic relationship (p-value in parentheses)

	Bond	Goal	Task	Overall
Collaborating	-.11 (.721)	-.25 (.420)	-.38 (.207)	-.21 (.501)
Encouraging	-.01 (.970)	-.40 (.178)	-.41 (.162)	-.30 (.327)
Empathizing	.61 (.026)*	-.13 (.679)	-.25 (.402)	.18 (.552)
Instructing	.10 (.751)	.33 (.270)	.46 (.115)	.26 (.393)
Problem Solving	.38 (.206)	.15 (.630)	.18 (.550)	.33 (.271)
Overall Mode Use	.15 (.629)	-.30 (.325)	-.16 (.597)	-.10 (.744)

* $p < .05$.

Results for the correlational analyses between client's perception of the modes used during therapy (CAM-E) and the strength of therapeutic relationship (WAI-C) are found in Table 37. All modes used were found to have significantly moderate to strong positive associations with the strength of the Tasks aspects of the therapeutic relationship. Although only the instructing mode was attained statistical significance, all modes were found to have low to moderate positively correlated with the Goals aspect of the therapeutic relationship. Statistically significant moderate to strong positive associations were also found between three modes (collaborating mode, empathizing mode, instructing mode) and the bond subscale and overall strength of the therapeutic relationship. Overall mode use was also positively moderate correlated with the overall strength of the therapeutic relationship ($\rho = .68$, $p = .015$).

Table 37. Spearman's rho correlation coefficients between clients' perceptions of their mode use and the clients' rating of the therapeutic relationship (p-value in parentheses)

	Bond	Goal	Task	Overall
Collaborating	.71 (.006)**	.55 (.052)	.84 (.000)**	.71 (.006)**
Encouraging	.44 (.131)	.32 (.293)	.65 (.017)*	.45 (.125)
Empathizing	.78 (.002)**	.47 (.103)	.87 (.000)**	.70 (.007)**
Instructing	.62 (.024)*	.56 (.046)*	.70 (.008)**	.67 (.013)*
Problem Solving	.51 (.077)	.42 (.149)	.73 (.004)**	.52 (.071)
Overall Mode Use	.70 (.007) **	.52 (.068)	.84 (.000)**	.68 (.015)*

* $p < .05$.
** $p < .01$

Therapists' and client's perception of the therapeutic relationship.

Results of partial correlations between therapists' and clients' perceptions of the therapeutic relationship are presented in Table 38. In summary, there were no significant associations between the therapists' and clients' perception of the strength of the therapeutic relationship, when controlling for length of therapy. However there was a low correlation between the therapists' and clients' perception of the agreement on therapeutic goals ($r = .34$, $p = .307$).

Table 38. Partial correlation coefficients between therapist and client's perception of the strength of the therapeutic relationship controlling for length seen

	Correlation	*p*
Bond	.16	.632
Goal	.34	.307
Task	.15	.653
Overall	.17	.623

Therapeutic relationship and client participation during therapy.

Results of correlational analyses between perceptions of the strength of the therapeutic relationship and the client's participation during therapy were presented in Table 39. Strong positive associations were found between ratings of the client's participation during therapy and the therapist's perception of the strength of the therapeutic relationship in terms of goals ($r = .82$, $p < .01$), tasks ($r = .75$, $p < .01$) and overall relationship ($r = .78$, $p < .01$). Moderate positive association was found between the client's participation during therapy and the client's perception of the strength of the therapeutic relationship in terms of goal ($\rho = .61$, $p = .047$). Low positive associations were found for all other analyses, although they were not statistically significant.

Table 39. Spearman's rho correlation coefficients between therapists' or clients' perceptions of the therapeutic relationship and clients' participation in therapy (p-value in parentheses)

	Bond	Goal	Task	Overall
Therapist	.41 (.212)	.82 (.002)**	.75 (.007)**	.78 (.004)**
Client	.35 (.290)	.61 (.047)*	.37 (.257)	.48 (.137)

5.3. Discussion

Therapists' and clients' perspectives of effectiveness of mode use.

Results showed that this therapist sample perceived effectiveness with some aspects of mode use. The empathizing and problem solving modes appeared to be positively associated with strengthening of the affective bond in the therapeutic

relationship. Although it is understandable that the empathizing mode is associated with the bond aspect of the relationship, it is interesting that a less emotional approach (i.e. problem solving mode) was also as effective in this aspect. From a perspective of Asian values, individuals have high respect and admiration for individuals who have professional education, specialized expertise or competency (Kim et al., 2001). As professional competence and emotional restraint are valued in the Singapore context (Kim, et al., 2001), this approach may have resulted in therapists perceiving increased clients' positive feelings towards them.

Further research with multivariate analyses should be conducted with a larger sample size in order to determine the meaning of the negative correlations between therapist's perception of collaborating and encouraging modes and the therapeutic relationship. One possible explanation is that the therapists may have demonstrated suboptimal mode use in other aspects. The gap between therapists' and their clients' perceptions of mode use imply that the modes were not perceived as intended. According to the IRM, therapeutic modes are said to be effective if 1) they are perceived by clients as therapeutic and 2) result in the strengthening of the therapeutic relationship (Taylor, 2008). In order for modes to be used effectively, Taylor (2008) encourages therapists to use modes in their pure forms. In therapy it is not uncommon to switch between modes. However, if the switch occurs too quickly, clients may perceive the therapist as sending mixed messages. In addition, modes may be confusing is if they were communicated in an emotionally incongruent manner. Such interpersonal behavior may be perceived as insincere and potentially non-therapeutic, resulting in weakening of the therapeutic relationship. Considering the therapists in this study did not have any IRM training, it is

possible that the therapists may have been unaware and less disciplined regarding their own interpersonal behavior.

Interestingly, the clients' experiences of mode use were mostly moderately to strongly related to strengthening of the therapeutic relationship. In particular, the modes were most strongly related to improving agreement on therapeutic tasks more than strengthening the affective bond with their therapist. This may reflect a stronger desire for the relationship to be more focused on the occupational aspect of therapy rather than primarily on the emotional connection. This does not imply that the bond aspect is unimportant. Instead, the stronger association with tasks is consistent with the ultimate purpose of occupational therapy (i.e. occupational engagement, Taylor, 2008). According to IRM, an underlying assumption is that the client defines a successful relationship (Taylor, 2008). This means that one client may desire a relationship characterized by strong emotional connection while another client may prefer a more task-oriented and business-like relationship. However, the responsibility for a successful therapeutic relationship is assigned to the therapist. It is possible that the gap between therapists' and clients' perceptions of the therapeutic relationship may imply that the therapists did not perceive the relational needs of the client accurately. However, one should exercise caution in interpreting these insignificant correlations between the therapists and client samples due to the small sample size.

Therapeutic relationship and client participation.

Ultimately, the function of the therapeutic relationship in occupational therapy is to impact the client's participation and engagement in therapy. It is important to address the client's emotional challenges in therapy in order to support participation during

therapy (Taylor, 2008). Interestingly, both perspectives were associated with client participation during therapy. This finding provides preliminary evidence that the therapeutic relationship is indeed a key component of occupational therapy outcomes. However, it appears that the therapist's perceptions of the therapeutic relationship were relatively stronger in associated with client participation (ρ = .41 to .82) compared to the client's perception of the relationship (ρ = .35 to .61).

Methodological bias.

One type of possible methodological error occurs when therapists possess implicit "beliefs about the covariation among particular traits, behaviors, and/or outcomes" (Podsakoff, MacKenzie, Lee & Podsakoff, 2003, p. 882). In previous studies, an overwhelming majority of therapists reported that they believed therapeutic relationship was crucial to therapeutic outcomes (e.g. Cole & McLean, 2003; Taylor et al., 2009). It is also an intrinsic belief of the profession as a whole, stated in the professional practice framework (AOTA, 2014). Therefore, adhering to *implicit theories* may be a possible source of error since therapists rated the client participation subsequently after their ratings of the therapeutic relationship. Alternatively, the client may have inflated their ratings of the therapeutic relationship, consciously or unconsciously. In a closer look at the client sample, apart from one item in the Task subscale, all items in the WAI-C had a tendency for ceiling effects (23.1 to 61.5%). It is therefore possible that there could have also been issues of social desirability, leniency bias and/or acquiescent response bias. *Social desirability* is defined as the tendency to over report desirable traits or abilities or to underrate one's undesirable traits and abilities (Podsakoff, et al., 2003). On the other hand, *leniency bias* refers attributing "socially desirable traits, attitudes, and/or behaviors

to someone they know and like" (Podsakoff, et al., 2003, p. 882). Both of these biases could be possible in ratings of a relationship (Tryon, Blackwell & Hammel, 2008). Tryon and colleagues (2008) found that when rating the therapeutic relationship in psychotherapy, clients tended to use the top 20% of ratings while therapists used the top 30% of rating scales. However, even with such a restricted range of scores, this study still showed positive correlations between the client's perception of the therapeutic relationship and client participation scores. It is possible that with greater variability in scores, the associations may be expected to be stronger (Tryon, et al., 2008).

6. OVERALL DISCUSSION

6.1. Reliability of the CAM Questionnaires

Internal consistency is a widely accepted reliability measure of whether proposed items are in a scale measure are intercorrelated (Cohen & Swerdlik, 2005). The results showed excellent internal consistency for overall mode use for all versions of the CAM questionnaires (α: 0.90 to 0.97), indicating that the six modes were highly intercorrelated. The results also indicated that the CAM-C individual modes subscales demonstrated good to excellent internal consistency (α: 0.69 to 0.91). However, the advocating mode, encouraging mode and instructing mode in the CAM-T appeared to have questionable internal consistency (α: 0.46 to 0.63).

One of the main factors that may have affected internal consistency is the low variability. Low variability was evident in the advocating mode, encouraging mode and instructing mode (*SD* ranged from 2.18, 2.14 and 1.67 respectively). A closer examination of the results revealed that floor effects were detected in the advocating mode items, with 25.0-75.0% of clients used the minimum rating (1= Never) in four of the five items. On the other hand, ceiling effects were detected in the instructing mode items, with 18.75% of clients using the maximum rating (5 = Very Frequently) in four of the five items.

Differences in sociocultural characteristics may have affected the variability of the results. Overall, the therapists in the current study were more homogenous compared to the study by Fan and Taylor (in press). The therapists sample in Fan and Taylor's study

was larger (n=38), included a larger proportion of males (28.9%), older (mean age was 32.5 years old, *SD* = 11.03), and from different professional disciplines, with the majority being physical therapists (64%). As Fan and Taylor (in press) conducted their study in Chicago, it may be assumed that the therapist sample was culturally dissimilar to the Singaporean Chinese therapists in this study. In the cross-cultural application of the same assessment tool, it is possible that there could have been differences in psychological and language interpretation of certain words and phrases, which may have affected therapists' implicit understanding of scale items (van de Vijver & Tanzer, 1997).

When interpreting the results, it is important to consider how the internal consistency may have been affected by the relative specificity (i.e. overlap of item content) of each of the modes (Clark & Watson, 1995). For example, the advocating mode may be considered a construct that is less specific as it assesses the use of different activity and interpersonal focusing strategies. Within the advocating mode subscale, items assessing activity focusing strategies may include 1) empowering a client with information for self-advocacy (e.g. "we talked about legal rights for people with disabilities"), or 2) the therapist actively pursuing opportunities and resources on behalf of the client (e.g. "I helped the client contact other people who had a similar experience or disability"). In addition, the subscale includes an interpersonal focusing strategy such as an emphasis on normalizing and reframing disability (i.e. "I said things that enabled this client to feel normal and like other people"). In an acute hospital setting, individuals may find it premature to own their disability as a normative part of their life. Closer examination of the advocating mode revealed floor effects for four of the five items (i.e. 25-75% of clients used the lowest rating score in the item). This may be understandable

for the advocating mode if therapists may not have used different aspects of the mode within the same therapy session. On the other hand, the empathizing mode subscale could be seen as a relatively specific construct (i.e. more overlap in item content). The subscale items in the empathizing mode primarily described interpersonally focused strategies (e.g. "I listened to the client with true interest" and "I made a special effort to listen and ask as many questions as necessary to understand this client's needs."). Due to the substantial overlap in items content, it is likely to identify these subscale items within the same session, and therefore displaying higher inter-item correlation. Therefore, caution is necessary when interpreting the low internal consistency without considering the relative specificity of the therapeutic modes (Briggs & Cheeks, 1986; Clark & Watson, 1995). Furthermore, as the CAM questionnaires are still in the early stages of development in this Asian context, certain modes should not be dismissed for low alpha coefficients but further analyzed with a larger sample size and in various clinical contexts.

6.2. Client-centered Practice

Client-centered practice has been emphasized in professional guidelines and throughout contemporary discussions on therapeutic use of self (e.g. AOTA, 2014; Corring & Cook, 1999; Townsend & Polatajko, 2007). In a literature review by Sumsion and Law (2006), the authors found the commonalities in the different definitions of client-centered practice included 1) using a collaborative approach, 2) valuing and respecting the client and 3) choice and active participation in goal setting and decision making. However, the idea that client-centered practice is mainly associated with the collaborating mode has been challenged in previous literature. For example, a client may

desire a directive approach or a client may have impairments that his or her ability to collaborate in a mutual partnership (Fan & Taylor, in press; Kjellberg et al., 2012; Taylor, 2008).

Studies have also shown that there have been gaps between what occupational therapists and clients think about client-centered practice (Maitra & Erway, 2006). When clients were asked whether it was important to participate in goal setting, 13.3% said it was somewhat important, while 26.7% said it was not important (Maitra & Erway, 2006). Larsson Lund, Tamm & Branholm (2001) also found that in a hospital setting, 35% of clients wanted to participate in the planning and decision making during rehabilitation, while a similar proportion (40%) did not want to participate. Instead of assuming a collaborating approach, an underlying empathic understanding of the client's needs and desires is the key factor in a client-centered approach (Fan & Taylor, in press; Taylor, 2008). Therefore, a variety of interpersonal approaches may be effective depending on how emotionally invested and actively involved clients want to be in the process. Taylor (2008) encourages therapists to continue to exercise the control and intentionality in modes that are not within their comfort zone, in order to develop a therapeutic style that is effective with a wide range of clients.

6.3. Cultural Implications

Although the focus of this study, it may be important to acknowledge how the cultural implications of the study. Considering the IRM was developed in a Western context, this study provides insight into how the use of interpersonal approaches may be used in an Asian context. In a collective Asian society, such as Singapore, traditional core values are evident, despite the Westernization and modernization of this urban city state

(Chang, Wong & Koh, 2003; Lau, 1992). Singapore represents a modern collective society, which has a mix of traditional and modern values. For example, a few values of particular relevance to interpersonal behavior include 1) interpersonal harmony, 2) saving face 3) deferring to authority, 5) respect for authority and 6) self-control. *Interpersonal harmony* is to be maintained as much as possible; therefore, in situations of conflict or disagreement of opinions, one may not express their true feelings honesty in order to maintain interpersonal harmony (Kim et al., 2001; Liu et al., 2012; Schoen, 2005). *Saving face* refers to the need to maintain the dignity and pride of a person or a community as a whole. Therefore, even if the client has a negative impression of the therapist, the client may still believe it important to represent others a dignified and respectful light. Next, *deferring to authority* is readily accepted, often resulting in welcomed power differentials between medical professionals and the patient (Kim, et al., 2001; Liu et al., 2012; Schoen, 2005). Moreover, health professionals are *respected* for their authority, professional standing or expertise (Kim et al., 2001). Finally, in Asian cultures, it is seen as a strength to exercise *self-control* not only in expressing negative but also positive emotions (Kim, et al., 2001; Liu et al., 2012; Schoen, 2005).

In considering such Asian values, it is not surprising that results show that the instructing mode was the most preferred, and experienced by clients and therapists alike. Overall, it was the most effective mode, with strong associated with all aspects of the therapeutic relationship. The instructing mode is congruent with Asian values of deferring to authority and respect for the professional, who may be regarded as an authority figure in their field of expertise. Although clients who hold to more traditional values may not prefer the collaborating mode as the first choice, the results suggest that it

is still effective when used appropriately. Even if the client eventually does not want to participate in decision-making, clients may still like to be given the chance.

It is also interesting to note that results showed lower desires for the empathizing mode and encouraging mode. Considering the Asian value for emotional self-control, it is not surprising that clients may have a lower preference for interpersonal styles that emphasize emotional closeness or expression (i.e. empathizing mode and encouraging mode). However, the results of this study showed that even though the empathizing mode was not reported as strongly preferred, it seemed to still be perceived as positive in strengthening the therapeutic relationship. As self-expression is not a cultural norm in most Asian groups, it may be an uncomfortable thing for clients to directly report that they want to talk about their feelings and struggles (Kim, 1993). However, the empathizing mode may still be secretly desired as clients may have suppressed many feelings that they did not feel possible to share with their loved ones (Kim, 1993; Choi & Yeom, 2011).

It is also not surprising that the advocating mode was the least desired and least experienced by clients. The assumptions and recommendations in the advocating mode are based on the client desiring a positive personal identity (Taylor, 2008). However, positive identity may not be found in asserting their rights and goals without considering the importance of their social identity in a collective society. The therapist has to consider how the cultural value of collectivism and saving face may cause advocacy and empowerment to have a negative effect (Kawahara & Fu, 2007). Therefore, encouraging autonomy and individual identity apart from the family or societal unit may not be seen as immediately desired.

In this study, ceiling effects were also more profound in the client-rated questionnaires (76% of the CAM-C items and 91.7% of WAI-C items) compared to the therapist-rated questionnaires (12% of the CAM-T items and 8.3% of WAI-T). When rating others, acquiescent response bias (Smith, 2004) and leniency bias (Yildiz & Baltaci, 2009) were found to be higher in collectivistic cultures compared to individualistic cultures. These are consistent with the desire to maintain interpersonal harmony and the value of saving face (Yildiz & Baltaci, 2009). However, when rating oneself, individuals may be more modest as collectivistic societies also value humility and not elevating one's achievements over others (Yildiz & Baltaci, 2009).

Depending on how one views the rating scale as a rating of self or a rating of others, it may affect the relative salience of leniency bias and social desirability. In this study, it appears that clients were more positive in their ratings and therapists were more modest in their ratings. Instead of treating social desirability and acquiescent response bias as methodological error, an alternative argument is that they may be culturally embedded (Johnson & van der Vijver, 2002, Smith, 2004). Therefore, if bias is a result of cultural values, eliminating it would the result in less meaningful interpretations (Johnson & van der Vijver, 2002, Smith, 2004). If indeed these biases were culturally embedded, they should not be neglected as important pieces of information. This may be something to explore further in research when exploring subjective ratings in different cultural settings.

6.4. Implications for the Therapeutic Practice

Although the therapists and clients in this study may come from similar Asian backgrounds, it is important for therapists to remain vigilant in developing the

interpersonal skill base and interpersonal reasoning (Taylor, 2008). Occupational therapy in itself is a culture is based on values of autonomy, performance and goal-directed intervention (Awaad, 2003). When occupational therapy professional values do not parallel client values, therapists have the responsibility to use decide, in the client's best interest, what value is most important in the situation (Awaad, 2003; Taylor, 2008). Taylor (2008) reinforces that it is the therapist's responsibility to ensure that they communicate in a flexible and congruent way. Instead of relying primarily on their preferences and internalized scripts of what clients need, it is crucial for the therapist to ensure the use of an individualized approach (Taylor, 2008). Moreover, the results show that although therapists perceived an increase in use of therapeutic modes, they did not necessarily perceive a stronger therapeutic relationship. Therefore, it is possible that an increased therapist's perception of mode use could have reflected a lack of self-awareness or self-discipline in interpersonal behavior. For example, it is possible that therapists may have overestimated their mode use when it was in fact perceived as a mixed mode. If the gap in the therapists' self-awareness or self-discipline in this study is representative of the profession, this reinforces the need for therapists to be better equipped with skills in therapeutic use of self. If therapeutic use of self is indeed a key component of facilitating participation in therapy, use of self is not to be left to be learnt through implicit and indirect methods (Davidson, 2011; Fidler, 1996; Taylor, 2008; Taylor et al., 2011).

6.5. Limitations

The main limitation of this dissertation was the very small sample size and was therefore, underpowered. There is also a risk of Type 1 error due to multiple correlational analyses. Further research is recommended with a larger and more heterogeneous sample

to increase generalizability of the results. The cultural aspects and response biases should also be considered when generalizing the results to occupational therapy in different contexts. Another limitation is that all participants were volunteers and not blinded to each other's participation in the study. Even though they were assured of confidentiality, it is possible that participants may have felt the need to report a positive therapeutic experience if they were concerned about a possible loss of confidentiality. Also, as clients were screened for initial eligibility through therapists, it is possible that the clients were recommended were ones who were more positive about their therapeutic experience. Finally, as the analyses were primarily descriptive and correlational, there should not be any assumptions of any causal effects between any of the variables.

6.6. Conclusion

This study uses the IRM as a systematic framework to describe how therapists and clients perceive therapeutic communication, the therapeutic relationship and client participation. The results support the professional belief that therapeutic use of self and the therapeutic relationship are key in facilitating the client towards the ultimate goal of occupational engagement. However, gaps were found between therapists' and clients' perceptions of mode use and the therapeutic relationship, which may indicate the need for therapists to develop more self-awareness and self-discipline in their interpersonal approach. Further research is recommended with a larger sample size for greater generalizability of results and to further examine reliability and validity of the CAM questionnaires in an Asian context.

APPENDICES

Appendix A: IRB Approval Notice

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice
Initial Review (Response To Modifications)

May 31, 2012

Renee Taylor, MA., Ph.D.
Occupational Therapy
1919 W Taylor Street
Room #348, M/C 811
Chicago, IL 60612
Phone: (312) 413-7469 / Fax: (312) 413-0256

RE: **Protocol # 2012-0411**
"An Association Study between Therapeutic Communication, Participation and Therapeutic Outcomes"

Dear Dr. Taylor:

Your Initial Review application (Response To Modifications) was reviewed and approved by the Expedited review process on May 29, 2012. You may now begin your research.

Please note the following information about your approved research protocol:

Please remember to obtain IRB approval, or its local equivalent, from the School of Health Sciences and/or National University Health system prior to accessing/analyzing information and/or recruiting/enrolling subjects at Singapore sites. A copy of IRB or equivalent approval must be accompanied by an Amendment form when submitted to the UIC IRB.

Protocol Approval Period: May 29, 2012 - May 28, 2013
Approved Subject Enrollment #: 200
Additional Determinations for Research Involving Minors: These determinations have not been made for this study since it has not been approved for enrollment of minors.
Performance Sites: UIC, National University Hospital - Singapore, Nanyang Polytechnic - Singapore
Sponsor: None
Research Protocol:

a) An Association Study between Therapeutic Communication, Participation, and Therapeutic Outcomes; Version 1; 04/24/2012

Recruitment Materials:

a) Therapeutic Script 2 (NUH); Version 2; 05/21/2012
b) Therapeutic Communication Script 1 (UIC); Version 2; 05/21/2012

Informed Consents:

a) UIC Client; Version 2; 05/17/2012
b) UIC Student Therapist; Version 2; 05/21/2012
c) NUH Therapist; Version 2; 05/21/2012
d) NUH Client; Version 2; 05/21/2012
e) A waiver of documentation of consent has been granted under 45 CFR 46.117 for mock client subjects in Study 1 (signed consent document will be destroyed after it is verified that the appropriate client was interviewed for assignment assessment purposes; maintaining the signed client's consent document would be the only documentation linking the subject with the research)

Your research meets the criteria for expedited review as defined in 45 CFR 46.110(b)(1) under the following specific categories:

(5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for non-research purposes (such as medical treatment or diagnosis),
(7) Research on individual or group characteristics or behavior (including but not limited to research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
05/03/2012	Initial Review	Expedited	05/05/2012	Modifications Required
05/25/2012	Response To Modifications	Expedited	05/29/2012	Approved

Please remember to:

→ Use your **research protocol number** (2012-0411) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the enclosure,
"UIC Investigator Responsibilities, Protection of Human Research Subjects"

Please note that the UIC IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact OPRS at (312) 996-1711 or me at (312) 996-2014. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Sandra R Costello

Sandra Costello
Assistant Director, IRB # 2
Office for the Protection of Research Subjects

Enclosures:

1. **UIC Investigator Responsibilities, Protection of Human Research Subjects**
2. **Data Security Enclosure**
3. **Informed Consent Documents:**
   a) UIC Client; Version 2; 05/17/2012
   b) UIC Student Therapist; Version 2; 05/21/2012
   c) NUH Therapist; Version 2; 05/21/2012
   d) NUH Client; Version 2; 05/21/2012
4. **Recruiting Materials:**
   a) Therapeutic Script 2 (NUH); Version 2; 05/21/2012
   b) Therapeutic Communication Script 1 (UIC); Version 2; 05/21/2012

cc: Yolanda Suarez-Balcazar, Occupational Therapy, M/C 811

Appendix B. DSRB Approval Notice

6 Commonwealth Lane
Level 6 GMTI Building
Singapore 149547
Tel: 6496 8900 Fax: 64966870
www.nhg.com.sg
RCB No. 200002150H

NHG DSRB Ref: **2012/00379**

12 July 2012

Ms Wong Su Ren
Department of Rehabilitation
National University Hospital

Dear Ms Wong,

NHG DOMAIN SPECIFIC REVIEW BOARD (DSRB) APPROVAL

STUDY TITLE: An Associational Study Between Therapeutic Communication, Personality, Participation and Therapeutic Outcomes

We are pleased to inform you that the NHG Domain Specific Review Board has approved the above research study to be conducted in **National University Hospital**.

The approval period is from **12 July 2012** to **11 July 2013**. The NHG DSRB reference number for this study is **2012/00379**. Please use this reference number for all future correspondence.

The documents reviewed are:

a) NHG DSRB Application Form: **Version No. 1**
b) Therapeutic Communication protocol: **Version No. 1 dated 24/04/2012**
c) Clinical Assessment of Modes-Preference Questionnaire (CAM-P): **Version dated 30/04/2012**
d) Clinical Assessment of Modes- Client Post-test (CAM-C): **Version dated 30/04/2012**
e) Clinical Assessment of Modes- Therapist Post-test (CAM-T): **Version dated 30/04/2012**
f) Self-Assessment of Modes- Therapist Questionnaire (SAM): **Version dated 01/05/2012**
g) Pittsburgh Rehabilitation Participation Scale (PRPS): **Version dated 19/04/2012**
h) NEO-PI-R: Item Booklet S

i) Working Alliance Inventory Short Form (WAI-SF Client version): **Version dated 01/05/2012**
j) Working Alliance Inventory Short form (WAI-SF-Therapist version): **Version dated 01/05/2012**
k) Data Collection Form and Master Coding Lists: **Version No. 1**
l) Script for Initial Contact- NUH: **Version No. 2**
m) Participant Information Sheet and Consent Form- NUH (Therapist Version): **Version No. 3 date 02/07/2012**
n) Participant Information Sheet and Consent Form-NUH (Client Version): **Version No. 3 date 02/07/2012**

Continued approval is conditional upon your compliance with the following requirements:

1. Only the approved Participant Information Sheet and Consent Form should be used. It must be signed by each subject prior to initiation of any protocol procedures. In addition, each subject should be given a copy of the signed consent form.

2. No deviation from or changes to the study should be implemented without documented approval from the NHG DSRB, except where necessary to eliminate apparent immediate hazard(s) to the study subjects, or when the change(s) involves only logistical or administrative aspects of the study.

3. Any deviation from or changes to the study to eliminate an immediate hazard should be promptly reported to the NHG DSRB within seven calendar days.

4. Please note that for studies requiring Clinical Trial Certificate, apart from the approval from NHG DSRB, no deviation from, or changes of the Research Protocol and Participant Information Sheet and Consent Form should be implemented without documented approval from the Health Sciences Authority unless otherwise advised by the Health Sciences Authority.

5. Please submit the following to the NHG DSRB:

a. All unanticipated problems involving risk to subjects or others should be reported using the NHG DSRB Unanticipated Problems Involving Risk to Subjects or Others Reporting (UPIRTSO) Form. Reporting guidelines are available at www.research.nhg.com.sg.

b. Report(s) on any new information that may adversely affect the safety of the subject or the conduct of the study.

c. NHG DSRB Study Status Report Form – this is to be submitted 4 to 6 weeks prior to expiry of the approval period. The study cannot continue beyond **11 July 2013** until approval is renewed by the NHG DSRB.

d. Study completion – this is to be submitted using the NHG DSRB Study Status Report Form within 4 to 6 weeks of study completion.

7. The NHG Research QA Program aims to promote responsible conduct of research in a research culture with high ethical standards, and to identify potential systemic weaknesses and make recommendations for

continual improvement. Hence, this research study may be randomly selected for study review by the QA team. For more information, please visit www.research.nhg.com.sg.

Yours sincerely,

A/Prof Low Yin Peng
Chairman
NHG Domain Specific Review Board D

Cc: Institutional Representative, NUHS
c/o Research Office, NUHS
Departmental Representative of Rehabilitation, NUHS

(This is an electronic-generated letter. No signature is required.)

Appendix C. Clinical Assessment of Modes- Therapist Version (CAM-T)

Communicating with your Client in Therapy

The purpose of our research is to better understand the different ways that therapists communicate with their clients in therapy.

When responding to these questions, please reflect only on the one client that was originally selected for the pre-test. At this time, please give that same client the post-test questionnaire entitled "Communicating with your Therapist." PLEASE DO NOT HAVE THE CLIENT GIVE YOU HIS/HER COMPLETED QUESTIONNAIRE. Please return your questionnaire to the research assistant or place it in the data collection box.

If you did not select the client for the pre-test, then please select any client from your caseload who is willing to answer the following questions and follow the same procedures above.

Before proceeding, please verify that you have seen your selected client for at least three sessions:

____ Yes, I saw this client for at least three sessions

____ No, I did not see this client for at least three sessions (please stop here - do not respond to this questionnaire and do not give the client the "Communicating with your Therapist" questionnaire).

We will be summarizing your answers for research purposes. All of your responses will be kept strictly confidential. Your client will NOT EVER see your responses. Please answer as truthfully as you can.

Section I. About You
1) Your Age: _____
2) Are you a… PLEASE CIRCLE THE CORRECT RESPONSE Female……..... 1 Male..…… 2
3) Indicate the degree that you earned in order to become an OT, PT, OTA, or PTA

Associates/Certificate …..……	1
Diploma ……..…….	2
Bachelors ……..	3
Entry Masters ……..…….	4
OTD..……..……	5

4) Indicate the highest degree you have earned (in any field)

Associates/Certificate …..……	1
Diploma ……..…….	2
Bachelors ……..	3
Masters ..……...	4
Doctorate (OTD, DPT, PhD, EdD, DrPH, etc.) ...	5

5) How long have you been practicing as a therapist or therapy assistant?

Less than 1 year …...……..…….……..	1
1 to 5 years ……..…….……	2
6 to 10 years …….…….	3
11 to 20 years ..…….…….	4
More than 20 years …….……..…	5

Section II. Communicating with your Client

By circling a number, please rate the extent to which you have done the following with <u>your selected client</u> thus far. For example:
"I read a mystery novel"

1	2	(3)	4	5
Never	**Rarely**	**Occasionally**	**Frequently**	**Very Frequently**

6) I helped this client to get access to resources or people in the community in which he/she lives.

1	2	3	4	5
Never	Rarely	Occasionally	Frequently	Very Frequently

7) I listened to this client with true interest.

1	2	3	4	5
Never	Rarely	Occasionally	Frequently	Very Frequently

8) I explained what was happening or told this client what would happen next. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
9) I helped this client think about a problem or activity in a different way. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
10) I pointed out what this client was good at doing. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
11) I allowed this client to choose what would happen next. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
12) I asked questions that made this client feel comfortable talking. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
13) I told this client how to improve his/her performance or behavior. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
14) We talked about legal rights for people with disabilities. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently

15) I made sure that this client worked on what mattered most to him/her. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
16) I said things to make this client feel confident. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
17) I explained different choices to this client when guiding him/her to make a decision. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
18) I tried to understand this client's thoughts and feelings, no matter what they were. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
19) I improved or changed something when this client indicated that it was not helpful. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
20) I provided this client with clear directions. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
21) Being particularly positive showed that I believed the client was ready to try something he/she was not confident of doing. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently

22) I helped this client think about a problem in a clear-headed, non-emotional way. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
23) I said things that enabled this client to feel normal and like other people. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
24) I said things that made this client feel that we were working together as a team. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
25) I revealed something about my personal experience so that this client did not feel alone. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
26) I said things that made this client feel hopeful. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
27) I conveyed a sense of conviction when making a recommendation. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
28) I gave this client control over what he/she accomplished. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently

29) I made this client aware of people and resources in the community that were not a part of the traditional medical care system. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
30) I gave this client a compliment or other kind of reward for something he/she did. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
31) I helped this client consider many different ways of doing things. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
32) I taught this client something. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
33) I helped this client contact people who had a similar experience or disability. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
34) I made a special effort to listen and ask as many questions as necessary to understand this client's needs. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
35) I helped this client look at a problem by breaking it down into smaller parts. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently

Section III. Satisfaction

36) Overall, how satisfied do you think your client was with the therapy services he/she received from you?

1	2	3	4	5
Not at all Satisfied	Slightly Satisfied	Somewhat Satisfied	Very Satisfied	Extremely Satisfied

37) Overall, how satisfied were you with the way you carried out treatment with this particular client?

1	2	3	4	5
Not at all Satisfied	Slightly Satisfied	Somewhat Satisfied	Very Satisfied	Extremely Satisfied

38) If there was any ONE thing you would have done differently with this client, what would it have been? (please choose only your top priority)

___ been more directive or firm
___ given the client more control
___ introduced the client to others with similar disabilities or connected the client with resources in the community
___ asked more questions and listened more to try to understand the client's needs
___ been more positive or reinforcing with the client, instilled hope more
___ outlined options, analyzed potential consequences of choices, and asked logical questions
___ none of the above, I think that what I did adequately met the needs of this client.

Thank you for responding to these questions. Is there anything else I have left out that you feel is important for me to know or something you would like to share?

_____

Thank you again for participating.

Taylor, R. R., Wong, S., Fan, C. W., Kjellberg, A., Alfredsson-Agren, K., Andersson, E., & Zubel, B. (2013c). *Clinical assessment of modes - therapist (CAM-T): Communicating with your client.* Chicago, IL: University of Illinois at Chicago.

Appendix D. Clinical Assessment of Modes- Client Preference (CAM-P)

Communicating with your Therapist in Rehabilitation

The purpose of our research study is to better understand the different ways that therapists communicate with their clients in therapy. In answering the questions, the researchers want you to think about how you would like your therapist to communicate with you while you are undergoing rehabilitation here. We will be summarizing your answers for research purposes only.

All of your answers will be kept strictly confidential. PLEASE DO NOT PUT YOUR NAME ON THIS QUESTIONNAIRE. Your therapist will NOT EVER see your answers. Your therapist's boss or supervisor will NOT see your answers. Your answers will NOT affect your care here. Please answer as truthfully as you can.

When you are finished with this questionnaire, please return it to the research assistant or drop it in the data collection box. PLEASE DO NOT RETURN IT TO YOUR THERAPIST.

Section I: About You

1) Your age: _____

2) Your sex:
   i. Male ___
   ii. Female ___

3) Your occupational roles: (please check all that apply)
   i. Employed full time___
   ii. Employed part time___
   iii. Receiving Disability Pension___
   iv. Retired___
   v. Student ___
   vi. Other ___ (please describe: _____)

4) Your marital status:
   i. Single, Never Married ___
   ii. Married ___
   iii. Separated ___
   iv. Divorced ___
   v. Widowed ___

5) Your living situation: (please check all that apply)
   i. Living alone ___
   ii. Living with partner or spouse___
   iii. Living with other family member ___
   iv. Other (please describe: _____)

6) Highest educational degree earned:
   i. Less than high school ___
   ii. High School Diploma or Equivalent ___
   iii. Associate's or Technical Degree ___
   iv. Bachelor's Degree___
   v. Post-Graduate Degree (Doctorate, Law, Etc.) ___

7) Reason you are receiving therapy here (your diagnosis):
   _____

8) How long have you been working with your therapist:
   i. This is the first time I have met the therapist ___
   ii. Less than five sessions ___
   iii. 5 – 10 sessions ___
   iv. More than 10 sessions ___
   v. More than 20 sessions ___

Section II. Your Therapist's Ability to Communicate

Circling a number, please rate the extent to which the following statements are important to you. For example:
"I want to read a mystery novel"

(1)	2	3	4	5
Not at all Important	**Slightly Important**	**Moderately Important**	**Very Important**	**Extremely Important**

9) I want my therapist to help me get access to resources or people in the community in which I live.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
10) I want my therapist to listen to me with true interest.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
11) I want my therapist to explain what is happening or tell me what will happen next.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
12) I want my therapist to help me to think about a problem or activity in a different way.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
13) I want my therapist to point out what I am good at doing.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
14) I want my therapist to allow me to choose what will happen next.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important

15) I want my therapist to ask questions that make me feel comfortable talking.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
16) I want my therapist to tell me how to improve my performance or behavior.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
17) I want my therapist to talk with me about legal rights for people with disabilities.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
18) I want my therapist to make sure that I work on what matters most to me.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
19) I want my therapist to make me feel confident about what I am doing.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
20) I want my therapist to explain different choices to me when guiding me to make a decision.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important

21) I want my therapist to try to understand my thoughts and feelings, no matter what they are.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
22) I want my therapist to improve or change something when I point out that it is not helpful.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
23) I want my therapist to provide me with clear directions.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
24) I want my therapist to be positive when he/she believes I am ready to try something I think I cannot do.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
25) I want my therapist to help me think about a problem in a clear-headed, non-emotional way.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
26) I want my therapist to say things that help me to feel normal and like other people.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important

27) I want my therapist to say things that make me feel that we are working together as a team.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
28) I want my therapist to share something about his/her personal experience so that I do not feel alone.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
29) I want my therapist to say things that make me feel hopeful.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
30) I want my therapist to show a sense of conviction when making a recommendation.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
31) I want my therapist to give me control over what I accomplish.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important
32) I want my therapist to tell me about people and resources in the community that are not a part of the hospital or clinic.				
1 Not at all Important	2 Slightly Important	3 Moderately Important	4 Very Important	5 Extremely Important

33) I want my therapist to give me a compliment or other kind of reward for something I did.

1	2	3	4	5
Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important

34) I want my therapist to help me consider many different ways of doing things.

1	2	3	4	5
Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important

35) I want my therapist to teach me something.

1	2	3	4	5
Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important

36) I want my therapist to help me contact people who have a similar experience or disability.

1	2	3	4	5
Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important

37) I want my therapist to try hard to understand my needs by listening and asking as many questions as necessary.

1	2	3	4	5
Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important

38) I want my therapist to help me look at a problem by breaking it down into smaller parts.

1	2	3	4	5
Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important

Section III.
Thank you for responding to these questions. Is there anything else was left out that you feel is important for me to know or something you would like to share?

_____

Thank you again for participating.

Appendix E. Clinical Assessment of Modes- Client Experience (CAM-E)

Communicating with your Therapist

The purpose of our research study is to better understand the different ways that therapists communicate with their clients in therapy. In answering the questions, the researchers want you to think only about the therapist who gave you this survey. We do not want you to think about any other therapists or providers.

We will be summarizing your answers for research purposes only.

All of your answers will be kept strictly confidential. PLEASE DO NOT PUT YOUR NAME ON THIS QUESTIONNAIRE. Your therapist will NOT EVER see your answers. Your therapist's boss or supervisor will NOT see your answers. Your answers will NOT affect your care here. Please answer as truthfully as you can.

When you are finished with this questionnaire, please return it to the research assistant or drop it in the data collection box. PLEASE DO NOT RETURN IT TO YOUR THERAPIST.

Section I. Your Therapist's Ability to Communicate

By circling a number, please rate the extent to which your therapist has done the following thus far. For example:
"My therapist arrived on time."

1	**2**	**(3)**	**4**	**5**
Never	**Rarely**	**Occasionally**	**Frequently**	**Very Frequently**

1) My therapist helped me get access to resources or people in the community in which I live.

1	2	3	4	5
Never	Rarely	Occasionally	Frequently	Very Frequently

2) My therapist listened to me with true interest.

1	2	3	4	5
Never	Rarely	Occasionally	Frequently	Very Frequently

3) My therapist explained what was happening or told me what would happen next. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
4) My therapist helped me to think about a problem or activity in a different way. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
5) My therapist pointed out what I was good at doing. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
6) My therapist allowed me to choose what would happen next. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
7) My therapist asked questions that made me feel comfortable talking. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
8) My therapist told me how to improve my performance or behavior. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
9) We talked about legal rights for people with disabilities. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently

10) My therapist made sure that I worked on what mattered most to me. 1 2 3 4 5 Never Rarely Occasionally Frequently Very Frequently
11) My therapist made me feel confident about what I was doing. 1 2 3 4 5 Never Rarely Occasionally Frequently Very Frequently
12) My therapist explained different choices when guiding me to make a decision. 1 2 3 4 5 Never Rarely Occasionally Frequently Very Frequently
13) My therapist tried to understand my thoughts and feelings, no matter what they were. 1 2 3 4 5 Never Rarely Occasionally Frequently Very Frequently
14) My therapist improved or changed something when I pointed out that it was not helpful. 1 2 3 4 5 Never Rarely Occasionally Frequently Very Frequently
15) My therapist provided me with clear directions. 1 2 3 4 5 Never Rarely Occasionally Frequently Very Frequently
16) My therapist's positive attitude showed me that he or she believed I was ready to do something I thought I could not do. 1 2 3 4 5 Never Rarely Occasionally Frequently Very Frequently

17) My therapist helped me think about a problem in a clear-headed, non-emotional way. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
18) My therapist said things that helped me to feel normal and like other people. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
19) My therapist said things that made me feel that we were working together as a team. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
20) My therapist shared something about his/her personal experience so that I did not feel alone. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
21) My therapist said things that made me feel hopeful. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
22) My therapist showed a sense of conviction when making a recommendation. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
23) My therapist gave me control over what I accomplished. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently

24) My therapist made me aware of people and resources in the community that were not a part of the hospital or clinic. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
25) My therapist gave me a compliment or other kind of reward for something I did. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
26) My therapist helped me consider many different ways of doing things. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
27) My therapist taught me something. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
28) My therapist helped me contact people who had a similar experience or disability. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
29) My therapist tried hard to understand my needs by listening and asking as many questions as necessary. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently
30) My therapist helped me look at a problem by breaking it down into smaller parts. 1 Never 2 Rarely 3 Occasionally 4 Frequently 5 Very Frequently

Section II. Satisfaction

31) Overall, how satisfied are you with the therapy services you received from your therapist?

1	2	3	4	5
Not at all Satisfied	Slightly Satisfied	Somewhat Satisfied	Very Satisfied	Extremely Satisfied

32) If there was ONE thing you wished your therapist would have done differently, what would it have been? (Please choose only your top priority)

___ been more directive or firm
___ given me more control
___ introduced me to other people with disabilities like mine and/or connected me with resources in my community
___ asked more questions and listened more to try to understand what I needed
___ been more positive or reinforcing, instilled hope more
___ outlined options, analyzed potential consequences of choices, and asked logical questions
___ none of the above, I am satisfied with what my therapist did

Section III: About You

33) Your age: _____

34) Your sex:

iii. Male ___
iv. Female ___

35) Your occupational roles: (please check all that apply)

vi. Employed full time___
vii. Employed part time___
viii. Receiving Disability Pension___
ix. Retired___
x. Student ___
xi. Other ___ (please describe: _____)

36) Your marital status:

i. Single, Never Married ___
ii. Married ___
iii. Separated ___
iv. Divorced ___
v. Widowed ___

37) Your living situation: (please check all that apply)

i. Living alone ___
ii. Living with partner or spouse___
iii. Living with other family member ___
iv. Other (please describe: _____)

38) Highest educational degree earned:

i. Less than high school ___
ii. High School Diploma or Equivalent ___
iii. Associate's or Technical Degree ___
iv. Bachelor's Degree___
v. Post-Graduate Degree (Doctorate, Law, Etc.) ___

39) Reason you are receiving therapy here (your diagnosis):

_____

40) How long have you been working with your therapist:

i. This is the first time I have met the therapist ___
ii. Less than five sessions ___
iii. 5 – 10 sessions ___
iv. More than 10 sessions ___
v. More than 20 sessions ___

Thank you for responding to these questions. Is there anything else I have left out that you feel is important for me to know or something you would like to share?

Thank you again for participating.

Taylor, R. R., Wong, S., Fan, C. W., Kjellberg, A., Alfredsson-Agren, K., Andersson, E., & Zubel, B. (2013b). *Clinical assessment of modes - client time 2 (CAM-C2): Communicating with your therapist.* Chicago, IL: University of Illinois at Chicago.

Appendix F. Working Alliance Inventory- Therapist Version (WAI-T)

Working Alliance Inventory- Short Form
Therapist Version

Following are sentences that describe some of the different ways a person might think or feel about his or her client. Using the following seven-point scale, please respond to every item with your first impressions of your client. Please circle the most appropriate answer.

1. This client and I agree about the steps to be taken to improve his/her situation.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
2. This client and I both feel confident about the usefulness of our current activity in therapy.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
3. I believe this client likes me.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
4. I have doubts about what we are trying to accomplish in therapy.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
5. I am confident in my ability to help this client.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

6. We are working towards mutually agreed upon goals.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
7. I appreciate this client as a person.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
8. We agree on what is important for this client to work on.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
9. This client and I have built a mutual trust.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
10. This client and I have different ideas on what his/her real problems are.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
11. We have established a good understanding between us of the kind of changes that would be good for this client.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
12. This client believes the way we are working with his/her problem is correct.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

Appendix G. Working Alliance Inventory- Client Version (WAI-C)

Working Alliance Inventory- Short Form
Client Version

Following are sentences that describe some of the different ways a person might think or feel about his or her therapist. Using the following seven-point scale, please respond to every item with your first impressions of your therapist. Please circle the most appropriate response.

1. My therapist and I agree about the steps to be taken to improve my situation.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
2. What I am doing in therapy gives me new ways of looking at my problem.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
3. I believe my therapist likes me.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
4. My therapist does not understand what I am trying to accomplish in therapy.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
5. I am confident in my therapist's ability to help me.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
6. My therapist and I are working towards mutually agreed upon goals.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

7. I feel that my therapist appreciates me.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
8. We agree on what is important for this therapist to work on.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
9. My therapist and I trust one another.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
10. My therapist and I have different ideas on what my real problems are.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
11. We have established a good understanding of the kind of changes that would be good for me.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always
12. I believe the way we are working with my problem is correct.						
1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

Appendix H. Pittsburgh Rehabilitation Participation Scale (PRPS)

PITTSBURGH REHABILITATION PARTICIPATION SCALE

Instructions to therapist: for each therapy session, please circle one of each of the following to assess the patient's *participation* (effort and motivation as perceived by you) in the therapy session.

Please rate as follows:
None: patient refused entire session, or did not participate in any activities/exercises in session. (see *Note* below)

Poor: patient refused or did not participate in at least half of session.

Fair: patient participated in most or all of activities/exercises*, but did not show maximal effort or finish most activities/exercises, or required much encouragement to finish activities/exercises.

Good: patient participated in all activities/exercises* with good effort and finished most but not all activities/exercises and passively followed directions (rather than actively taking interest in activities/exercises* and future therapy).

Very good: patient participated in all activities/exercises* with maximal effort and finished all activities/exercises*, but passively followed directions (rather than actively taking interest in activities/exercises* and future therapy).

Excellent: patient participated in all activities/exercises* with maximal effort, finished all activities/exercises*, and actively took interest in activities/exercises* and/or future therapy sessions.

Note: if patient was unable to attend therapy because of medical test, bed rest order, illness, or scheduling conflict, do not mark any score.
Note: in cases of doubt, choose the lower rating, e.g., "good" rather than "very good."

Session Number	Date	None	Poor	Fair	Good	Very good	Excellent	Remarks
1		1	2	3	4	5	6	
2		1	2	3	4	5	6	
3		1	2	3	4	5	6	

* For OT: use "activities"; For PT: use "exercises".

Lenze, E.J., Munin, M.C., Quear, T., Dew, M.A., Rogers, J.C., Begley, A.E., &Reynolds, C.F. (2004b). *The Pittsburgh Rehabilitation Participation Scale: reliability and validity of a clinician-rated measure of participation in acute rehabilitation.* Archives of Physical Medicine & Rehabilitation, 85:380-4.

Appendix I. Permission to reproduce the WAI

UIC

Su Ren Wong <swong26@uic.edu>

Fwd: WAI copyright release

Adam Horvath <prof.aoh@gmail.com> Mon, Mar 28, 2016 at 10:37 AM
To: Su Ren Wong <swong26@uic.edu>

Dear Su Ren
You do not need a new LCR to include the material in you dissertation.
Good luck with your defence.
Sincerely;

> On Mar 24, 2016, at 2:11 AM, Su Ren Wong <swong26@uic.edu> wrote:
>
> Dear Professor Horvath,
>
> Hope this finds you well. I have completed my study and am in the process of writing my dissertation based on this study. I'm wondering if you would be willing to grant permission for me to include a sample of your questionnaire in my dissertation appendix? Please let me know if I need to reapply for further copyright release? It is the same study as what is stated in the agreement in 2012 (in attached pdf) but the title of the dissertation will be:
>
> A Descriptive Study of Therapeutic Use of Self in Occupational Therapy: Applying the Intentional Relationship Model
>
>
> Thank you and I look forward to hearing from you.
>
> Best regards,
> Suren
>
> ---------- Forwarded message ----------
> From: Suren Wong <suren.wong@gmail.com>
> Date: Thu, Mar 24, 2016 at 5:07 PM
> Subject: Fwd: WAI copyright release
> To: SuRen Wong <swong26@uic.edu>
>
>
>
> ---------- Forwarded message ----------
> From: Adam Horvath <horvath@sfu.ca>
> Date: Sun, Sep 30, 2012 at 5:43 PM
> Subject: WAI copyright release
> To: swong26@uic.edu
>
>
>
>
>
>
> Good luck with your project.
>
> Sincerely;
> Adam O. Horvath
> Professor Emeritus
> Simon Fraser University
>

SFU SIMON FRASER UNIVERSITY
THINKING OF THE WORLD

Ms. Su Ren Wong
University of Illinois at Chicago
Occupational Therapy
School of Applied Health Science, UIC
Chicago IL
60612
USA

September 30, 2012

LIMITED COPYRIGHT LICENSE (ELECTRONIC) # 2012309.81

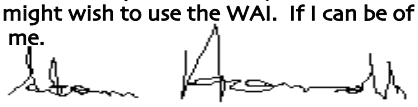
Dear Ms. Wong

You have permission to use the Working Alliance Inventory (WAI) for the investigation:

"An Associational Study Between Therapeutic Communication, Personality, Participation and Therapeutic Outcomes"

This limited copyright release extends to all forms of the WAI for which I hold copyright privileges, but limited to use of the inventory for not-for-profit research, and does not include the right to publish or distribute the instrument(s) in any form.

I would appreciate if you shared the results of your research with me when your work is completed so I may share this information with other researchers who might wish to use the WAI. If I can be of further help, do not hesitate to contact me.



Dr. Adam O. Horvath
Professor
Faculty of Education and
Department of Psychology

Ph# (778) 782-3624
Fax: (778) 782-3203
e-mail: horvath@sfu.ca
Internet: http://www.educ.sfu.ca/alliance/allianceA

Appendix J. Permission to reproduce the PRPS

UIC

Su Ren Wong <swong26@uic.edu>

Permission to use PRPS

Lenze, Eric <lenzee@psychiatry.wustl.edu> Mon, Mar 28, 2016 at 10:13 PM
To: Su Ren Wong <swong26@uic.edu>

Certainly you may. No permissions are needed. Eric

From: Su Ren Wong [mailto:swong26@uic.edu]
Sent: Monday, March 28, 2016 1:00 AM
To: Lenze, Eric
Subject: Fwd: Permission to use PRPS

Dear Prof Lenze,

I'm not sure if you are still using the email address that I initially emailed to so I am trying this one. Hopefully this gets to you!

The name of my dissertation is: A Descriptive Study of Therapeutic Use of Self in Occupational Therapy: Applying the Intentional Relationship Model

Best regards,

Suren

---------- Forwarded message ----------
From: **Su Ren Wong** <swong26@uic.edu>
Date: Thu, Mar 24, 2016 at 6:11 PM
Subject: Permission to use PRPS
To: lenzeej@msx.upmc.edu

Dear Dr Lenze,

I hope this email finds you well!

I included the use of the Pittsburgh Rehabilitation Participation Scale in a small exploratory study with a group of occupational therapists in Singapore. The study was approved by the ethics board at the National Health Group, Singapore and also in the University of Illinois at Chicago (Protocol #2012-0411). The use of PRPS is used for the purpose of exploring associations between the therapeutic relationship and participation during therapy in occupation therapy in a small group of therapist-client dyads.

I would like to request for your permission to include a sample of it in my dissertation as an appendix.

I look forward to hearing from you.

Thank you very much,

Su Ren Wong

PhD Candidate

University of Illinois at Chicago

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Taylor, R. R., Wong, S., Fan, C. W., Kjellberg, A., Alfredsson-Agren, K., Andersson, E., & Zubel, B. (2013b). *Clinical assessment of modes - client time 2 (CAM-C2): Communicating with your therapist.* Chicago, IL: University of Illinois at Chicago.

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Yerxa, E. J. (1980). Occupational therapy's role in creating a future climate of caring. *American Journal of Occupational Therapy*, *34*(8), 529–534.

Yildiz, G., & Baltaci, A. (2009). *Leniency and severity errors in performance appraisal in the context of collectivist and individualist culture.* Paper presented at the International Symposium on Sustainable Development, Sarajevo.

VITA

SU REN WONG

Education

2016	PhD in Kinesiology, Nutrition & Rehabilitation (Rehabilitation track), College of Applied Health Sciences, University of Illinois at Chicago, Illinois (PhD Thesis defended on 2 May, 2016)
2004	Bachelors of Occupational Therapy with Honors Class 1, University of Queensland, Australia (2004)

Scholarships

2011	Talent Development Award, National University Hospital, National University Healthcare System, Singapore to study PhD in Kinesiology, Nutrition & Rehabilitation at the University of Illinois at Chicago, Illinois.
2000	Overseas Specialist Awards (Paramedical) Scholarship, Ministry of Health, Singapore to study Bachelor of Occupational Therapy in University of Queensland, Brisbane, Australia.

Awards and Grants

2014	Provost Award for Graduate Research for "The Effectiveness of Intentional Relationship Model Training on Therapeutic Relationship and Participation." Graduate College, University of Illinois at Chicago, Chicago, Illinois. $2000. PI: Su Ren Wong. Faculty Advisor: Renee R. Taylor.

2012	Graduate Student Travel Award, Department of Occupational Therapy, University of Illinois at Chicago, Chicago, Illinois
2009	Go the Extra Mile Award. SPRING, Singapore
2008	Excellent Service Award (Star Award), SPRING, Singapore.
2007	Excellent Service Award (Gold Award), SPRING, Singapore.
2006	Quest@work Merit Award, National University Hospital, Singapore.
2002-2004	Dean's Commendation for High Achievement, University of Queensland, Brisband, Australia.
2001	Award for Academic Excellence. Cromwell College, University of Queensland, Brisbane, Australia.

Teaching Experience

Wong, S. R. (2008, 2009 & 2010). *Life Coaching, Year 2 Occupational Therapy: Lifestyle Redesign Module*. A guest lecturer at Nanyang Polytechnic, Singapore.

Wong, S. (2013, January to May). *PSCH 210: Personality Psychology.* Teaching Assistant at the Department of Psychology, University of Illinois at Chicago, Chicago, Illinois.

Wong, S. R. (2013, August to December). *OT 510 Course: Research in Occupational Therapy*. Teaching Assistant at the Department of Occupational Therapy, University of Illinois at Chicago, Chicago, Illinois.

Research Experience

Research Assistant, Ministry of Health, Singapore (2009 to 2010).

- Training needs of occupational therapist in Singapore

Research Assistant, Department of Occupational Therapy, University of Illinois at Chicago, Chicago Illinois (January 2013 to March 2014).

- Project: Refugee Communities: Disability, Health, & Inclusion Partnership Project (Supervised by: Dr. Mansha Mirza)

Research Assistant, Department of Occupational Therapy, University of Illinois at Chicago, Chicago Illinois (September 2011 to May 2015).

- Evidence-based reviews, submissions for ethics review, editing and collaborating on various projects (Supervised by: Dr. Renee R. Taylor)

Publications

Lloyd, C., Wong, S. R., & Petrchkovsky, L. (2007). Art and recovery in mental health: a qualitative investigation. *British Journal of Occupational Therapy, 70*(5), 207-214.

Wong, S. R., & Fisher, G. (2015). Comparing occupation-focused models. *Occupational Therapy in Health Care*. Advanced online publication. doi: 10.3109/07380577.2015.1010130

Book Chapter

Sood, D. Fisher, G., Mahaffey, L., Wong, S. R., Baum, C., & Cada, E. (in progress). *Occupation-focused models.*

Taylor, R.R. & Wong, S.R. (2016). Therapeutic rapport: Applications of the Intentional Relationship Model. In C. A. Manville, & J. L. Keough (Eds.), *Mental health practice for the occupational therapy assistant* (pp.285-306). Thorofare, NJ: Slack Inc.

Conference Presentations

Wong, S. R., Kadga, F., Poon, K., & Tay, K. (2010, July). *Screening for chronic pain in outpatients in a trauma clinic: a pilot study.* Poster session at the 1st Biennial Scientific Meeting of the Pain Association of Singapore, Singapore.

Wong, S. R., & Taylor, R. R. (2012, March). An association study between therapeutic use of self, participation and therapeutic outcomes. Poster session presented at the 1st Annual Occupational Science Summit, St. Louis, MO.

Clinical Experience

2005-present	Senior Occupational Therapist National University Hospital, National University Health System, Singapore
2009-2011	Mental Health Workgroup Leader, Occupational Therapy Section, National University Hospital
2006-2007	Acting Hand Therapy Workgroup Leader, Occupational Therapy Section, National University Hospital
2006- 2011	Mental Health - Acute Adult/ Adolescent Inpatient/Outpatient - Developed occupational therapy service as part of Cardiac Accelerated Lifestyle Modification Program (CALM) and traditional cardiac rehabilitation program: stress management & lifestyle coaching

- Developed occupational therapy services as part of the Women's Emotional Health Service: case management & parenting intervention

2007-2011 Chronic Pain Management

- Developed the first occupational therapy pain management service in Singapore
- Included a caseload of post-traumatic/surgical chronic pain, fibromyalgia, chronic pain syndrome, chronic regional pain syndrome, musculoskeletal and neuropathic pain conditions

2005-2007 Hand Therapy

- Including a wide range of acute polytrauma injuries and chronic upperlimb conditions

2005-2006 Pediatrics

- Includes a wide range of acute orthopaedic, congenital and neurological conditions
- Outpatient therapy for a range of conditions including children with global developmental delay, autism, attention deficit hyperactive disorder, sensory processing disorder, congenital, neurological and degenerative muscular disorders

2005-2011 Clinical Supervision for Nanyang Polytechnic Occupational Therapy Students clinical placements (various levels from Year 1 to 3)

Other Professional Activities

Wong, S. R. (2006). *1st Occupational Therapy Day, National University Hospital.* Chairman of organizing committee, National University Hospital. Singapore.

Wong, S. R. (2006). *Suicide Art: Symbols and Metaphors*. An invited speaker at the 2nd Asia Pacific Suicide Prevention Conference, Singapore.

Tan, M. (2008). *Lending a healing hand*, NHG Health Sciences Scholarships. Interviewed for a feature in a scholarship article.

Wong, S. R. (Aug, 2008). *Channeling chaos onto paper: calmness through art therapy.* An invited speaker at the Asia Pacific Psychiatric Rehabilitation Conference, Institute of Mental Health, Singapore.

Wong, S. R. (Oct, 2008). *Occupational therapy in pain management workshop. A* workshop speaker for occupational therapists, National University Hospital, Singapore.

Wong, S. R. (2009). *Nanyang Polytechnic Occupational Therapy Final Year project for Best Paper.* An invited Judge for Selection Panel. Singapore.

Wong, S. R. (Sept, 2009). *Women and stress of modern life.* An invited speaker for a public education talk, National University Hospital, Singapore.

Wong, S. R. (Dec, 2009). *Coping Strategies and Meaningful activities*. A speaker at the NUHS-SPIN Meeting: Networking in Pain Management, National University Health System, Singapore.

Wong, S. R. (Feb, 2010). *Lifestyle Coaching.* An invited speaker for Singapore Association of Occupational Therapists Mental Health Special Interest Group.

Wong, S. R. (Feb 2010). *Making a difference*, The New Paper. Scholarship feature article.

Wong, S. R. (Nov, 2010) *Life coaching for patients undergoing cardiac rehab*. An invited speaker at the 1st Singapore Health & Biomedical Congress, Singapore.

Professional Development & Certifications

2007 Training Fellowship with Pain Management and Psychiatric Services in USA (Sponsored by National University Hospital, Singapore):

- Seattle Children's Hospital
- Stanford University Medical Center
- St Jude Medical Center: Chronic Pain Center
- University of Southern California: Lifestyle Redesign Program (Pain Management/Weight Management)
- Resnick Neuropsychiatric Hospital, UCLA
- MHA Village, Long Beach, Los Angeles

2010 Certification in Parent Management Training Part 1 & 2, Yale Parenting Center & Child Conduct Clinic

2010 Life Purpose Institute Coach Certification, San Diego

2013 Assessment of Motor and Process Skills Certification

Professional Organizations

2005 – present Singapore Association of Occupational Therapists (SAOT)