ABSTRACT

Title of dissertation: RELATION OF EFFICACY BELIEFS AND WORKING ALLIANCE TO PSYCHOTHERAPY OUTCOMES: A MULTILEVEL ANALYSIS

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The purpose of the study is to investigate the contributions of several common factor variables to individual psychotherapy outcomes at both individual and dyad levels. Two dyad-level variables (i.e., the working alliance and collective counseling efficacy) were hypothesized to mediate the relation of client individual-level predictors (i.e., coping efficacy, adult attachment, positive and negative affect) to outcomes (i.e., client-rated progress and session quality). The study involved a naturalistic research design in which no variables were manipulated and psychotherapy occurred without alteration. A novel instrument – the Collective

Counseling Efficacy Scale (CCES) – was developed to measure the concept of collective counseling efficacy. Data collected from 73 dyads of clients and therapists were analyzed using multilevel *structural equation modeling* (SEM) techniques.

Results of principal axis factoring procedures revealed a 1-factor structure for the CCES, and internal consistency estimates of the total scores were .96 and .93 for clients and therapists, respectively. Based on data from both clients and therapists, intraclass correlations showed that 59% and 34% of the variances of the alliance and collective counseling efficacy, respectively, occurred at the dyad level as opposed to the individual level. To model them as dyad-level factors, 2nd-order intercepts and slopes were created to represent the midpoint and the discrepancy of clients' and therapists' ratings of the two constructs. The alliance and collective counseling efficacy were further integrated by a set of 3rd-order intercept and slope, denoted relational factors.

Multilevel SEM analyses provided evidence for the mediating effect of relational factors on the relation of pre-therapy client predictors to post-therapy client-rated outcomes. Specifically, client coping efficacy indirectly predicted client-perceived progress and session quality through the 3rd-order intercept. Also, client coping efficacy (positively) and avoidance attachment (negatively) were

indirectly predictive of session quality through the 3rd-order slope. Post-hoc analyses indicated that clients' ratings of the alliance and collective counseling efficacy were significantly higher than those of therapists, and this pattern was positively associated with session quality. In conclusion, the importance of modeling common factor variables at different levels and the inclusion of collective counseling efficacy in psychotherapy research were initially supported by the findings of the study.

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

2007

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ACKNOWLEDGEMENTS

The completion of this dissertation project would not have been possible without the assistance, encouragement, and support of many people. First and foremost, I would like to acknowledge the significant contribution of my advisor, Dr. Robert W. Lent, to my professional and personal growth. You have been a wonderful mentor and a tremendous source of support throughout my graduate studies. I have truly enjoyed every moment we have spent together, and your endless patience and strong commitment to my dissertation project have led me to where I am today. Additionally, my gratitude and appreciation goes out to Dr. Greg Hancock who has provided unfailing statistical support for this project. In spite of your busy schedule, you have always responded to my questions and needs promptly.

I am deeply indebted to Drs. Mary Ann Hoffman and Damon Silvers. It was a true pleasure being your supervisee for my clinical training, and the richness of the supervision experiences has inspired me to conduct this study. I also wish to thank Dr. Dennis Kivlighan, Jr. and Dr. Clara Hill for being on the committee. Your feedback has no doubt helped improve the quality of my dissertation. Furthermore, I would like

to thank the American Psychological Association for financial support of this project.

Last, but not least, a huge thank you goes out to my parents in Taiwan. I would never have made it this far without the support from home. I know with you behind me I can continue to explore and reach exciting, far-way places with ease.

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Chapter I: Introduction

Based on decades of research and recent meta-analyses (e.g., *Consumer Reports*, 1995, November; Lambert & Ogles, 2004; Wampold, 2001), one can be confident that psychotherapy is effective. Psychotherapy can be broadly defined as "(a) a relation among persons, engaged in by (b) one or more individuals defined as needing special assistance to (c) improve their functioning as persons, together with (d) one or more individuals defined as able to render such special help" (Orlinsky & Howard, 1978, p. 284). More specifically, psychotherapy can be seen as "a primarily interpersonal treatment that is based on psychological principles and involves a trained therapist and a client who has a mental disorder, problem, or complaint …" (Wampold, 2001, p. 3).

According to Wampold, two competing models, the medical model and the contextual model, offer possible explanations about what makes psychotherapy work. The medical model of psychotherapy emphasizes treatment manuals and empirically supported treatments because positive outcomes are deemed to be caused by the specific ingredients codified in the manuals. In contrast, the healing context and common factors (e.g., client characteristics, therapeutic relationship) are main foci of the contextual model, which explains therapeutic outcomes as a function of these critical contextual phenomena. Thus far, the contextual or common factors model seems to have received more compelling empirical support as a basis for the explanation of psychotherapy outcomes (see Hubble, Duncan, & Miller, 1999; Wampold, 2001 for reviews).

Different sets of common therapeutic factors have been identified. For example, Lambert (1992) proposed that psychotherapy can be explained by four therapeutic factors: extratherapeutic change (e.g., client ego strength, social support), therapeutic relationship

(e.g., empathy, acceptance), expectancy (i.e., placebo effect), and techniques (e.g., biofeedback, systematic desensitization). On the other hand, Grencavage and Norcross (1990) identified five common factors: client characteristics, therapist qualities, change processes, treatment structure, and relationship elements. Moreover, Frank and Frank (1991) discussed six elements that are common across different theoretical orientations: therapeutic relationship, instillation of hope, new learning experiences, client emotional arousal, client's sense of mastery or self-efficacy, and opportunities for practicing new behaviors. Together, these models may be reduced to four larger sets of common factors – client characteristics, therapist characteristics and techniques, therapeutic relationship, and sense of hope or expectancy – that are important predictors of psychotherapy outcome.

Among these common factors, it should not be surprising that client characteristics have been found to be the most powerful predictor of outcomes – the client is, after all, the one who experiences psychological distresses and exercises change, and is often the one who judges the effectiveness of psychotherapy (Hubble et al., 1999). This by no means suggests that the therapist is only a cheerleader who does not contribute directly to the client's change process. To the contrary, the therapist facilitates the change process not only by co-creating a positive therapeutic relationship and a healing environment with clients but also by instilling hope. Put differently, our job as therapists is to work with clients in developing a forum in which they can showcase and improve their strengths, utilize the therapeutic relationship to make positive changes, and feel optimistic about achieving beneficial outcomes from therapy. Therefore, the powerful tools the therapist has at hand are the therapeutic relationship and his or her own efficacy beliefs in

providing the context for clients to grow and anticipate positive outcomes. In addition, the therapist can also use the structure provided by his or her clinical orientation and techniques to facilitate the change process.

Another common factor, the therapeutic relationship, can be defined as "the feelings and attitudes that the therapist and client have toward one another, and the manner in which these are expressed" (Gelso & Carter, 1985, p.159). In a response to Gelso and Carter's 1985 article, Barrett-Lennard (1985) emphasized the relationship as an emergent entity that has its own life and character. In other words, Barrett-Lennard pointed out that the psychotherapy relationship not only consists of two separate "I's," or the two individuals, but also includes the "we" of the relationship that emphasizes intimate interdependence between two participants.

Unfortunately, the importance of the therapeutic relationship in predicting outcomes has been recognized primarily through empirical research that takes the separate "I's" perspective rather than the collective "we" perspective. Take the Working Alliance Inventory (WAI), for example. Researchers have developed different forms of the WAI to capture the individual perspectives of the client, therapist, or observer (Horvath & Bedi, 2002). However, there is virtually no empirical study that goes beyond the individual level to the dyad level to explore the "character or personality" of the relationship with respect to outcomes. The dearth of psychotherapy research on the dyad level may be due, in part, to current limitations of the technical language in describing the dyadic nature of the psychotherapy relationship and the complexity of statistical analyses required.

Finally, sense of hope or expectancies represents another important common factor. There are several constructs that may fall into this category. For instance, in the hope

theory proposed by Snyder and his colleagues (Snyder, Michael, & Cheavens, 1999; Snyder, Rand, & Sigmon, 2002), pathway thinking refers to one's belief that he or she is capable of generating workable routes to desired goals, whereas agency thinking is the perceived capacity to use one's pathways to reach those goals. Moreover, positive client expectancies have been found to be associated positively with psychotherapy outcomes and duration of treatment (cf. Clarkin & Levy, 2004). Frank and Frank (1991) also considered clients' confidence in his or her therapist and treatment as a critical determinant of outcome.

The notion of hope or expectancies implies a focus on clients' confidence, whether in themselves, in treatment, or in their therapists. This set of common factors could be conceptualized from the perspective of Bandura's (1997) social cognitive theory. Drawing upon this theory, it seems reasonable to hypothesize that higher confidence level in psychotherapy (or in the self or the therapist) could lead to more favorable outcome expectations (i.e., beliefs that therapy can lead to desired outcomes, such as alleviation of symptoms, success in choosing a college major, or improvement in interpersonal relationships). Such specific social cognitive concepts as self-efficacy belief – including clients' coping efficacy (Longo, Lent, & Brown, 1992) and therapists' counseling self-efficacy (Larson & Daniels, 1998; Lent, Hill, & Hoffman, 2003) – could have important implications. However, they have not yet been widely applied to psychotherapy process and outcome research.

In addition to clients' and therapists' efficacy beliefs, the concept of collective efficacy also has important implications for psychotherapy. Bandura (1997) defined collective efficacy as "a group's shared belief in its conjoint capabilities to organize and execute the

courses of action required to produce given levels of attainments" (p. 477). The sense of collective competence is essential in clinical work because what happens in therapy is all about how the client and the therapist collaboratively allocate, coordinate, and integrate their resources in a successful concerted response to the client's presenting issues. Although the idea of collective efficacy has been researched in other domains (e.g., industrial/organizational psychology, sport psychology, military psychology), counseling and clinical psychologists have not yet fully recognized its importance in process and outcome research.

Numerous studies have been conducted to examine the effectiveness of common therapeutic factors. Based on his review, Lambert (1992) suggested that common factors – extratherapeutic change, therapeutic relationship, expectancy, and technique – explain 40%, 30%, 15%, and 15%, respectively, of the variance of therapy outcome. However, most research has investigated these common factors separately, and very little effort has been made to integrate them together in relation to outcome. To move the literature forward, it is necessary to test empirically Lambert's contention regarding the differential proportions of the variance in outcome associated with the common factors by including most or all of common factors in the same study.

Another weakness of the common factors literature pertains to the single-level analysis commonly used in process and outcome research. As pointed out by Kenny and his colleagues (Kashy & Kenny, 2000; Kenny, 1990; Kenny & Cook, 1999), the activities that occur in individual and group psychotherapy (e.g., helping, communication, leadership, cohesiveness) are social phenomena that intrinsically involve two or more persons. In other words, observations do not reflect the actions of a single person, but

rather those of multiple persons embedded within the context of psychotherapy. Accordingly, Kenny and colleagues suggested that our theories, research methods, and data analyses should take the interpersonal nature of the phenomena into consideration. In terms of the common factors, while some of them (e.g., client characteristics) take place at the individual level, others (e.g., working alliance, efficacy beliefs) may occur at both the individual and dyad levels.

Based on the above literature, it appears that we would be able to do a better job of explaining psychotherapy outcomes if we could include multiple common factors in one study and investigate them at the proper levels of analysis (i.e., dyad level and/or individual level). The purpose of the current study was to explore the predictive utility of a model including three types of common therapeutic factors: client characteristics (i.e., attachment style, positive and negative affect), positive expectancies (i.e., coping efficacy, collective efficacy), and the therapeutic relationship (i.e., the working alliance) with regard to psychotherapy outcome. Because the working alliance and collective counseling efficacy are most relevant to the psychotherapy process and provide vehicles through which therapists exert their impact by working together with clients, I am particularly interested in the possible role that these two dyad-level variables might play in mediating the relation of individual-level client characteristics (attachment style, positive and negative affect) and expectancies (coping efficacy) to therapy outcomes.

It should be noted that a fourth common factor, therapist characteristics, was included only indirectly in this study, that is, through its contribution to the development of the working alliance and collective counseling efficacy. Specifically, although data were also gathered for this study on therapist characteristics (i.e., therapists' counseling

efficacy, positive and negative affect, and attachment styles), these data were excluded from analyses because of the complex data structure and the modest final sample size. More explanation of this issue will be offered in the Method section.

Chapter II: Literature Review

The following literature review focuses on the common factors hypothesized in the study as predictors of therapy outcomes. These common factors include the working alliance, expectancy mechanism, and client characteristics. Definition and measurement issues of the working alliance and its relation to various outcomes will be discussed. Next, I will review conceptual and empirical writings on individual coping efficacy and collective counseling efficacy in relation to expectancy in psychotherapy, which will be followed by a review on client characteristics (i.e., adult attachment styles, positive and negative affect) associated with psychotherapy process and outcome. Additionally, multilevel characteristics of psychotherapy process and outcome research will be emphasized and statistical approaches suitable for multilevel analysis will be discussed. Finally, a statement of the problem, along with a list of research questions and hypotheses, will be presented.

Working Alliance: Definition, Measurement, and Relation to Therapy Outcomes

The concept of alliance was first proposed by Freud in the early 1900s to capture the special role of the relationship between therapist and client, which focuses on positive transference that the client has toward the therapist (cf. Horvath & Greenberg, 1994). Within the psychoanalytic tradition, several terms have been coined to capture different aspects of this concept, such as ego alliance (Sterba, 1934), therapeutic alliance (Zetzel, 1956), helping alliance (Luborsky, 1976), and working alliance (Greenson, 1965). In the past three decades, the concept of alliance has evolved from its psychodynamic origins into pantheoretical formulations (e.g., Bordin, 1975; Gelso & Carter, 1985; Horvath & Luborsky, 1993). Various assessment tools have been developed to assess this construct

(see Martin, Garske, & Davis, 2000, for a review), and more than 2,000 published articles have been generated between 1977 and 2000 (Horvath & Bedi, 2002). Despite its pantheoretical appeal, clinicians and researchers from different theoretical orientations may assign different weight to the importance of the alliance. A widely accepted perspective depicts the alliance as a common relationship variable across all forms of therapy (Grencavage & Norcross, 1990; Norcross, 1986), and this construct has been extensively studied in psychotherapy process and outcome research.

Probably due to its complexity, a universally agreed-upon definition for the concept of alliance does not seem to exist. Also, measurement has played an important role in defining the alliance. How researchers perceive this construct depends to a large degree on how they operationalize it. Gelso and Hayes (1998) defined working alliance as "the alignment or joining of the reasonable self or ego of the client and the therapist's analyzing or *therapizing* self or ego for the purpose of the work " (p. 23). The alliance can also refer to "the quality and strength of the collaborative relationship between client and therapist in therapy" (Horvath & Bedi, 2002, p.41). In keeping with Bordin's (1979) original conception, these researchers suggested that the alliance is influenced by the therapist's and the client's agreement on (a) goals, (b) assignment of tasks, and (c) development of bonds. Bordin's goal-tasks-bonds framework was also fully adopted by Horvath and Greenberg (1989) in developing the Working Alliance Inventory, and partially adopted by Gaston and Marmar (1994) in developing the California Psychotherapy Alliance Scale (CALPAS).

In addition to Bordin's (1979) theory, Luborsky (1976) suggested that the alliance between therapist and client would develop in two phases. The first phase, Type I alliance,

consists of the client's belief in the therapist as a potent source of help and the therapist providing a warm, supporting, and caring relationship. The second phase, Type II alliance, involves the client's investment and faith in the therapeutic process itself and a commitment to some of the concepts underlying the therapy. Luborsky's definition is operationalized by the Penn Helping Alliance scales (Luborsky, Crits-Cristoph, Alexander, Margolis, & Cohen, 1983). Among these definitions, perhaps the most important and distinguishing feature of the alliance as a conceptualization of the active component of the therapeutic relationship is its emphasis on collaboration and consensus between therapist and client (Bordin, 1994; Hatcher, Barends, Hansell, & Gutfreund, 1995; Horvath & Bedi, 2002).

Using different perspectives (i.e., therapist, client, and observer) and measures tapping different aspects of this construct, the alliance has consistently been found to correlate with various therapy outcomes. For instance, the alliance measured by the WAI was associated positively with satisfaction with treatment (e.g., Solomon, Draine, & Delaney, 1995; Wettersten, Lichtenberg, & Mallinckrodt, 2005), therapy improvement as assessed by the Target Complaints scale (e.g., Busseri & Tyler, 2003), and therapist-client mutually agreed upon termination (e.g., Tryon & Kane, 1993). The WAI has been associated negatively with psychological symptoms, depression, and anxiety (e.g., Sexton, 1996; Wettersten et al., 2005).

In additional to individual investigations, three meta-analytic studies were conducted to integrate empirical evidence that link the quality of the alliance to therapy outcome. Horvath and Symonds's (1991) meta-analysis (24 studies) showed an average effect size of $r = .26$ between the working alliance and outcome variables. Horvath (1994) later

suggested that this effect might be underestimated and that the link between early alliance and therapy outcome might be as high as .32. Several years later, Martin et al.'s (2000) meta-analysis showed a slightly smaller effect size of .22 (79 studies). After adding another 10 studies to Martin et al.'s data, Horvath and Bedi (2002) reported an effect size of .23 for the alliance-outcome relation. These meta-analyses showed a moderate by reliable association between the alliance and therapy outcomes regardless of the type of therapy, the length of treatment, publication status of the study, the type of outcome measures, and the type of alliance rater (e.g., the client, therapist, or observer).

Recent research efforts have tested the alliance as a mediator in the process (e.g., relationship conditions)-outcome (e.g., depression) link, and initial support has been found for this conceptualization (e.g., Watson & Geller, 2005). These findings suggest that the alliance is a robust and useful predictor of therapy outcomes. The potential mediating role played by the alliance is of particular interest in the current study because the alliance may be considered a relationship mechanism – and the relationship is where therapists can apply their skills and exert their influence on clients to produce positive therapy outcomes.

Empirical studies on the alliance have been conducted using different sources of data. Although the alliance instruments were first designed to assess the client's perspective, measures are now available for assessing the alliance from different perspectives, such as client or therapist self-report and observer-based coding, and most alliance measures have been shown to have adequate psychometric properties (Constantino, Castonguay, & Schut, 2002). The alliance-outcome relation has mostly been examined individually and separately through the client's, therapist's, or observer's perspectives (e.g., Tyron & Kane,

1993). Empirical research generally supports the idea that client ratings of the alliance are a better predictor of client-rated outcomes than are therapist or observer ratings (Fitzpatrick, Iwakabe, & Stalikas, 2005; Horvath & Symonds, 1991). However, research on how different perspectives converge (or diverge) over the course of therapy in predicting outcome variables has not produced conclusive findings (e.g., Horvath & Marx, 1990; Kivlighan & Shaughnessy, 1995; 2000).

While efforts have been made to study the alliance-outcome relation from different sources of data and the robustness of the alliance has been found, the way researchers assess the alliance seems to depart from how this construct is defined. Despite the fact that the alliance has been operationalized slightly differently by different instruments, at the core of current formulations of the alliance is the notion of agreement, consensus, and collaboration between client and therapist (Horvath & Greenberg, 1994). However, existing alliance measures (e.g., WAI, CALPAS) are designed to assess the quality of the alliance from each participant's individual perspective, which does not really capture the notion of interpersonal agreement or consensus. For instance, sample items from the WAI (client form) include, "I believe the way we are working with my problems is correct," or "my relationship with the therapist is important to me." These items represent one participant's viewpoint; they do not appear to tap either the agreement between therapist and client or the part of the variance shared by these two participants.

Agreement between therapist ratings and client ratings on the alliance has mostly been examined by the correlational approach. For example, Al-Darmaki and Kivlighan (1993) reported correlations of .51, .47, and .17 between therapist and client ratings on tasks, goals, and bond as measured by the WAI after the third counseling session. A more

recent study generated correlations of .36, .26, and .45 for the same three dimensions of the alliance (Cecero, Fenton, Nich, Frankforter, & Carroll, 2001) using the data collected in the second week of a 12-week treatment for substance abuse clients. Taking a different approach, Hatcher et al.'s (1995) study used confirmatory factor analyses and found that a significant amount of variance in the alliance was shared by the therapist-client dyad, in addition to that explained separately by the therapist and the client.

Unfortunately, research on the agreement or the shared portion of the alliance has not been investigated in relation to therapy outcomes. Given that clients' and therapists' individual ratings of the alliance each only explained 4% to 8% of the variance in therapy outcome (based on effect sizes from Horvath & Symonds's [1991] and Martin et al.'s [2000] meta-analyses), it may be fruitful to explore how much variance in outcome could be accounted for by the alliance as a dyad-level variable beyond the therapist's and client's individual perspectives. Specifically, operationalizing the alliance as a dyad-level variable would help researchers to re-focus their attention on the interaction between clients and therapists.

This dyadic approach not only takes both the client's and the therapist's perspectives into account, but also allows us to explore how different aspects of the interaction might relate to therapy. These aspects could include: (a) the combined perception of the alliance as perceived by the dyad, (b) the discrepancy between dyad members' perceptions, and (c) the direction of the discrepancy (i.e., client > therapist or client < therapist). More importantly, tapping the concept of alliance at the dyad level (i.e., the interaction between the therapist and client) may be more consistent with how this construct is defined. Such an approach would also provide an opportunity to challenge the assumption, implicit in

traditional alliance research designs, that the therapist's and client's perspectives on the working alliance are independent.

Expectancy Mechanisms: Individual Coping Efficacy and Collective Efficacy in Psychotherapy

Another group of common factors, expectancy or hope, pertains to clients' expectations for positive therapy outcomes (Frank & Frank, 1991) or their beliefs in generating and implementing workable routes to their goals (Snyder et al., 1999). Although Snyder et al.'s Hope Theory offers potential utility in explaining how positive expectancies relate to therapy outcomes, it also has some conceptual limitations. This theory contains two key components – pathways thinking and agency thinking. Pathways thinking refers to one's perceived capabilities at generating workable routes to desired goals; agency thinking involves the perceived capacity to use one's pathways to reach desired goals (Snyder, 1994). These two components are often conceptualized as personality traits – they may, therefore, be difficult to change (Snyder, Harris, Andrson, Holleran, Irving, Sigmon, et al., 1991). Even when they are measured as psychological states (with the State Hope Scale), Snyder and colleagues tend to assess the construct in a general sense with sample items such as "Right now, I see myself as being pretty successful," or "At this present time, I am energetically pursuing my goals." (Snyder, Sympson, Ybasco, Borders, Babyak, & Higgins, 1996). The lack of content or domain specificity may make it difficult to apply Hope Theory to psychotherapy research because therapy requires the client and therapist to successfully perform specific counseling tasks together.

Another theory, Social Cognitive Theory (Bandura, 1986, 1997), may provide a

more useful framework to conceptualize how the common factors of expectancy and hope influence therapy outcomes because Bandura's theory acknowledges the diversity of human capabilities. In other words, it treats the efficacy belief system as a differentiated set of self-beliefs associated with distinct realms of functioning, such as psychotherapy. Self-efficacy and outcome expectations are posited as the two key change mechanisms in social cognitive theory. Self-efficacy refers to individuals' judgments of their capabilities to successfully perform given tasks or courses of action within a specific life domain (e.g., "can I do this?"), whereas outcome expectations can be defined as beliefs about the positive and/or negative consequences that arise from one's actions (e.g., "if I do this, what will happen?") (Bandura, 1986). Efforts have been made to extend the concepts of self-efficacy and outcome expectations to interest development, career choice, and performance (Lent, Brown, & Hackett, 1994) and adjustment and well-being (Lent, 2004). In these theoretical frameworks, the concept of self-efficacy, in particular, plays an important role as it is hypothesized to be the key predictor of relevant outcomes.

Since Betz and Hackett (1981) first introduced Bandura's concept of self-efficacy to the field of counseling psychology, a relatively large volume of literature on this topic has accumulated. An example of the application of Bandura's theory in career development is Lent et al.,'s (1994) Social Cognitive Career Theory (SCCT), in which self-efficacy plays an instrumental role in interest development, goal pursuit, and performance. Additionally, roughly a dozen measures have been developed to assess counselor self-efficacy in relation to counselor training and supervision (e.g., Dillon & Worthington, 2003; Larson & Daniels, 1998; Lent et al., 2003). Larson (1998) proposed a model for counselor training derived from the social cognitive perspective. Specifically, Larson hypothesized

that, with adequate levels of skills, counselors with higher self-efficacy will tend to have more self-aiding thoughts, experience anxiety as challenging rather than debilitating, and set more realistic, moderately challenging goals. These examples show the many applications that self-efficacy, and more broadly, social cognitive theory, have had in the field of counseling psychology.

The concept of self-efficacy has also been widely applied to the prediction of psychological symptoms. Research has indicated that client self-efficacy is negatively associated with anxiety (Williams, 1995), depression (Maddux & Meier, 1995), eating disorders, and alcohol and drug abuse (Bandura, 1997; DiClemente, Fairhurst, & Piotrowaki, 1995). Posited as a central mechanism of psychological change, self-efficacy is assumed to play a mediating role in whether individuals pursue or avoid certain behaviors, their quality of performance in the target domain, and their persistence in the face of adversity (Bandura, 1997). This formulation seems particularly relevant to psychotherapy process and outcome research as it provides a framework to focus on therapeutic enablement factors, "the personal resources to select and structure … environments in ways that set a successful life course" (Bandura, 1997, p.177). In spite of theoretical and empirical progress, the concept of self-efficacy had not been widely applied to psychotherapy process and outcome research. Specifically, how the therapist's and the client's efficacy beliefs interact in the counseling process as well as how these two variables separately or jointly predict therapy outcome has been left unexamined.

Compared with the number of measures developed for assessing counselor self-efficacy and theoretical efforts made for conceptualizing the impact of this variable on counselor training, client coping efficacy has been largely ignored in counseling

research. Neither has much theoretical attention been paid to describing the role of client coping efficacy in the counseling process, nor has much effort been devoted to developing measures tapping this construct. In a rare study on this topic, Longo et al. (1992) showed that both client coping efficacy and outcome expectations were predictive of client motivation, although clients' self-efficacy seemed to be a stronger predictor. Moreover, clients' coping efficacy (η^2 = .19) and motivation (η^2 = .10) were significant predictors of actual continuance in counseling. For assessing client coping efficacy, Longo et al. developed the Self-Efficacy for Client Behavior Scale (SECB), which taps clients' perceived abilities to enact difficult in-session behaviors, manage barriers to therapy attendance, and take personal initiative in solving problems. Findings of Longo et al.'s study provide support for including social cognitive variables in predicting client attrition and therapy outcomes.

Although not developed specifically for use in studying the psychotherapy process, the integrative framework of restorative well-being proposed by Lent (2004) sheds some light on the important role that client coping efficacy may play in dealing with adverse events or circumstances. Lent portrayed an active-agent coping model in which the coping process is deemed as being jointly negotiated by personality variables, cognitive and behavioral coping strategies, coping self-efficacy, and social support and resources. Specifically, coping self-efficacy, defined as "perceived capability to manage domain-specific stressors or obstacles" (Lent, 2004, p. 502), is not only a key predictor of problem resolution but also a mediator of the relations of other personality, cognitive, and contextual predictors to this outcome. The emphasis of this model on maintaining or recovering well-being makes it relevant to psychotherapy process and outcome research.

Put together, Longo et al.'s (1992) empirical investigation provides initial evidence for the importance of client coping efficacy in the counseling process, while Lent's (2004) model of restorative well-being offers a conceptual argument for the inclusion of this construct in understanding the client coping process.

In addition to the individual's self-efficacy about his or her abilities to complete a task or overcome adversities (i.e., client coping efficacy), Lent, Hackett, and Brown (1998) encouraged counseling researchers to include the notion of collective efficacy in understanding the therapeutic relationship. While client coping efficacy is posited as an individual-level variable, perceived collective efficacy is defined as "a *group*'s shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments" (Bandura, 1997, p. 477). In other words, collective efficacy is a construct that occurs at the group level or, as in the current study, at the dyad level, where the dyad is formed by the client and the therapist in the context of individual psychotherapy.

Collective efficacy can be studied in groups of varying size, from dyads to nations (Zaccaro, Blair, Peterson, & Zazanis, 1995). Bandura (1997) summarized three different ways of assessing collective efficacy: (a) aggregation of members' appraisals of their personal capabilities for the particular functions they perform in the group (e.g., Tagger, 2003); (b) aggregation of members' appraisals of their group's capability as a whole (e.g., Kaplan & Maddux, 2002); and (c) formation of a consensus view by group members. However, Bandura also warned against using the third approach because a single judgment forged by group discussion is subject to the biases of social persuasion and pressures for conformity, which may mask the variability in members' beliefs about their

group's capabilities. Bandura's caution about forced consensus on collective efficacy has special implications for psychotherapy. Due to the professional role the therapist plays, there is an inherent power differential in favor of the therapist in the therapeutic encounter (Frank & Frank, 1991). Therefore, the power imbalance may grant the therapist greater influence over the client in the process of negotiating a consensus view of their collective efficacy.

Collective efficacy has been studied in disciplines in which team or group performance is important, such as sport psychology (e.g., Paskevich, Brawley, Dorsch, & Widmeyer, 1999), industrial/organizational psychology (e.g., Jex & Gudanowski, 1992), the military (e.g., Jex & Bliese, 1999), and community psychology (e.g, Duncan, Duncan, Okut, Strycker, & Hix-Small, 2003; Sampson, Raudenbush, & Earls, 1997). In the area of human development and educational psychology, several studies have demonstrated the importance of teacher collective efficacy in predicting student achievement at both the student level and school level (e.g., Bandura, 1993; Goddard, 2001).

To study collective efficacy, Prussia and Kinicki (1996) assigned 324 college students to 81 four-person groups. Collective efficacy in this study was assessed by two indicators, confidence in output quantity and confidence in process behaviors, through averaging individual responses. Findings indicated that group affective evaluations and collective efficacy mediated the relationship between performance feedback and group effectiveness. Recently, Lent, Schmidt, and Schmidt (2006) developed a novel measure of project team collective efficacy for engineering students. Their findings revealed that collective efficacy was predicted by percepts of team cohesion and self-efficacy, both at individual (β = .62 and .53 for cohesion; β = .22 and .36 for self-efficacy) and group (β

= .65 for cohesion and .45 for self-efficacy) levels of analysis. They also found moderate to strong correlations between collective efficacy and team performance based on student ratings of performance (r = .60 for the individual level analysis and .70 for the group level analysis) and instructor ratings of performance (r = .44 for the group level analysis).

In addition to larger groups and organizations, collective efficacy has also been studied in dyadic situations. Kaplan and Maddux (2002) investigated the collective efficacy of 117 married couples by aggregating each participant's beliefs about the couple's ability to accomplish its goals. They found a relatively large correlation (r = .55) between collective efficacy and marital satisfaction. Although psychotherapy involves at least two participants and the therapist-client dyad functions as a team in producing outcomes, process and outcome research that includes the concept of collective efficacy is (to my knowledge) nonexistent. Nevertheless, a recent empirical effort was made to explore the concept of collective efficacy in the supervisory relationship (Tagger, 2003). Specifically, collective efficacy (the aggregation of supervisor's and supervisee's personal efficacy) was found to be predictive of supervisee performance above and beyond supervisee developmental level and supervisee and supervisor demographic variables.

The above two studies lend support to the idea that dyad-level variables, such as collective efficacy, are related to interpersonal or training outcomes, which may have important implications for psychotherapy research. Also, findings derived from empirical research on client coping efficacy and collective efficacy show that it may be fruitful to explore efficacy beliefs at both individual and dyad levels in order to fully understand their functions in the psychotherapy process. Finally, similar to the working alliance, collective efficacy was tested as a mediator in the present study because the development of

collective efficacy is part of the psychotherapy process and because it has the potential to mediate the relationship between client characteristics (e.g., coping efficacy) and therapy outcomes.

Client Characteristics Associated with Psychotherapy Process and Outcome: Adult Attachment and Positive and Negative Affect

Many client characteristics have been found to be associated with psychotherapy outcomes (see Beutler et al., 2004, and Clarkin & Levy, 2004, for reviews). Given that the current study will emphasize the relations of working alliance and efficacy beliefs to psychotherapy outcomes, my review of the literature on client characteristics will focus on variables that may function as precursors of the working alliance and efficacy beliefs in the counseling process. Specifically, I concentrate on clients' attachment style, positive affectivity, and negative affectivity. These variables, along with client coping efficacy (reviewed in the previous section), are brought into psychotherapy individually by the client so they should be considered as variables at the individual-level rather than at the dyad-level.

Attachment bond refers to an affectional tie between two persons (Ainsworth, 1989; Bowlby, 1973). According to Bowlby, individuals' interactions with primary caregivers in the early years of life have significant impact on how they relate to others in their adulthood. In other words, attachment styles formed in early childhood may serve as templates for how individuals navigate their interpersonal relationships with others later in life. Also, Ainsworth (1989) described an attachment bond as "entailing representation in the internal organization of the individual" (p. 711), which suggests that attachment bond is not dyadic in origin, but rather is characteristic of the individual. Following

Bowlby and Ainsworth's work on infants, other researchers (e.g., Brennan, Clark, & Shaver, 1998; Hazan & Shaver, 1987; Main, Kaplan, & Cassidy, 1985) have helped to extend attachment research beyond infancy and childhood into adolescence and adulthood. Research on adult attachment generally focuses on four categories (i.e., secure, preoccupied, dismissing-avoidance, and fearful-avoidance) formed by two dimensions (i.e., avoidance and anxiety).

The construct of adult attachment is particularly relevant as psychotherapy involves the creation and use of a relationship between two or more individuals (e.g., client and therapist), and it has received growing empirical attention. Using both interview technique (e.g., Adult Attachment Interview) and self-report instrument (e.g., The Experiences in Close Relationships Scale), client adult attachment styles have been found to relate to the therapeutic alliance and psychological symptoms (see Clarkin & Levy, 2004; Meyer & Pilkonis, 2002 for reviews). For example, empirical support is present for the linkage of avoidant and anxious attachment to eating disorders (Tasca, Taylor, Bissada, Ritchie, & Balfour, 2004) and major depression (Reis & Grenyer, 2004). Also, attachment avoidance was found to correlate with help-seeking behaviors for college students (Larose, Bernier, Soucy, & Duchesne, 1999) and with counseling group members' tendency to underestimate positive interactions in the group (Chen & Mallinckrodt, 2002). Another study also revealed that clients' insecure attachment style was related to their insecure attachment with therapists (Mallinckrodt, Porter, & Kivlighan, 2005)

The influence of clients' adult attachment style may go beyond their own perceptions of the therapeutic relationship and therapy outcomes. Researchers, such as

Dolan, Arnkoff, and Glass (1993), and Clarkin and Levy (2004), have argued that client attachment may also impact the working alliance by influencing therapist responses. Dolan et al.'s research showed that the more secure clients were, the better the alliance from the therapist's perspective in terms of agreement on tasks and goals of therapy; conversely, the more avoidant clients were, the poorer the therapist saw the agreement between client and therapist on the goals of therapist. Also, Hardy, Stiles, Barkham, and Startup's (1998) study showed that, with manualized time-limited treatment, therapists tended to use more affective and relationship-oriented interventions with over-involved clients, and seemed to use more cognitive treatment methods with under-involved clients. The above review suggests that clients' adult attachment could affect therapy outcomes and their own perceptions of the working alliance. The review also suggests that therapists were responsive to clients' interpersonal styles even in manualized treatment.

Personality traits, such as positive and negative affect, have also been identified as predictors of psychotherapy outcomes. According to Watson, Clark, and Tellegen (1988), positive affect is characterized by high arousal and positive valence, and is the extent to which a person generally feels enthusiastic, active, and alert. Negative affect, on the other hand, is characterized by high arousal and negative valence, and is the degree to which one generally feels distress, including anger, guilt, and fear. Studying university counseling center clients, Kahn, Achter, and Shambaugh (2001) found that positive affect was negatively, while negative affect was positively, related to perceived stress and symptomatology in the intake session. Elliott, Shewchuk, Richeson, Pickelman, and Franklin's (1996) research showed comparable findings involving pregnant women with depression. Similar results were also found in group psychotherapy for complicated grief

(Piper, Ogrodniczuk, Joyce, McCallum, & Rosie, 2002). In addition to empirical research supporting the link of positive and negative affect to psychotherapy outcome, Lent's (2004) conceptual model of restorative well-being hypothesizes that affective dispositions have indirect impact on client coping efficacy which, in turn, may facilitate problem resolution.

Compared with client adult attachment, little empirical attention in the psychotherapy process and outcome literature has been devoted to positive and negative affect, perhaps because they may be viewed as trait-like variables that are difficult to change (Watson, 2000). Another possible reason is that positive and negative affect variables may be seen as relatively distal from the psychotherapy process, and, hence, less relevant to the design of psychological interventions. Nevertheless, given their relations to symptomatology, positive and negative affects were included in the present study. After all, whether these affective variables have direct or indirect impact on therapy outcomes is an empirical question, and we can test their effects on process and outcome only if we include them in the research design.

Multilevel Characteristics of Psychotherapy Process and Outcome Research

Among those variables reviewed in previous sections, some (positive and negative affect, adult attachment style, coping efficacy) are seen as unique to each client, whereas others (working alliance and collective efficacy) can be conceptualized as dyad-level variables. How to put these variables together and analyze them properly presents a special challenge as these variables occur at different levels and the data are hierarchically structured. Recent progress on multilevel data analysis sheds light on this complicated issue.

Multilevel data structure is nothing new in social science research. Half a century ago, Robinson (1950), using 1930 U.S. census data, documented that the correlation between illiteracy and race varied depending on the units and levels of analysis (e.g., r = .95 when using region of the country as the unit of analysis, .77 when using states, and .20 when using individuals). Researchers and statisticians (Cronbach, 1976; Haney, 1974) have identified the false conclusions that can be generated when ignoring the fact that variation in variables of interest occur at different levels, such as schools versus students and counseling dyads versus clients. The consequences include aggregation biases, systematic underestimation of group effects and overestimation of individual-level effects, misestimated standard errors, and failure to identify heterogeneity of regression slopes across groups (cf. Burstein & Miller, 1981). Luke (2004) also outlined various theoretical (e.g., ecological or atomistic fallacies) and statistical (e.g., the lack of independent observations) reasons for multilevel analysis.

The emphasis of counseling psychology on person-environment interactions indicates the importance of taking the environment into account in addition to the focus on intrapsychic explanations of behavior (Gelso & Fretz, 2001). For example, several concentric models have been proposed to explain individuals' health status (Gebbie, Rosenstock, & Hernandez, 2003; Hoffman & Driscoll, 2000). A common feature of these concentric models is that the elements hypothesized to influence health status are organized hierarchically, with individual factors (e.g., sex, race, cognitions/attitudes) at the lower levels being nested within environmental variables (e.g., family and community networks) at the higher levels. In other words, a complete understanding of correlates of health status requires investigation of variables at both individual and group levels.

Furthermore, the concepts of working alliance and collective efficacy beliefs, reviewed in previous sections, are phenomena that theoretically occur at the therapy dyad level, while client characteristics, such as coping efficacy, function at the individual level (i.e., belong to the client alone). The client's confidence in coping with his or her presenting issues (the individual level variable) could be improved or hindered by collective efficacy and the working alliance as perceived by the dyad (the dyad level variables). Therefore, it is important to study multiple predictors at the proper levels according to their natures in psychotherapy process and outcome research.

Special attention should be given to the dyadic variables, working alliance and collective efficacy, because they are an important part of the psychotherapy process and they constitute a medium through which the client and therapist work intimately together to produce positive outcomes. Furthermore, conceptualizing the alliance and collective efficacy as dyadic variables helps to shift our focus from individual perspectives (e.g., clients' or therapists' perspectives alone) to the interaction between the dyad members (i.e., dyad members' combined perceptions of the relationship, the discrepancy or agreement between dyadic members' perspective, and the direction of this discrepancy). This dyadic focus allows us to take a closer, and conceptually more accurate, look at the therapeutic relationship and how it may function as a mediator in the client characteristics-therapy outcome linkage.

Multilevel modeling techniques, such as *Hierarchical Linear Modeling (HLM)* and *Multilevel Structural Equation Modeling (SEM)*, offer researchers the opportunity not only to analyze their data in a more technically appropriate manner than traditional single-level methods allow, but also to extend the range of research questions to include

contextual richness and complexity (Duncan et al., 2003). According to Wendorf (2002), there is considerable overlap in the use of both HLM and SEM approaches on dyadic data (e.g., husband vs. wife, client vs. therapist). However, Wendorf pointed out that SEM may be considered more flexible because it allows for more appropriate model specification and for more complex residual structure. Also, SEM may provide a more powerful tool than HLM in testing mediating effects, which is a main focus of the current study. Therefore, to more appropriately describe and analyze the individual-level variables (i.e., coping efficacy, adult attachment, positive and negative affect) and dyad-level variables (i.e., the working alliance and collective efficacy), and their relations to therapy outcomes, multilevel SEM approach was chosen for this study.

Statement of the Problem

Psychotherapy researchers have identified several common factors (e.g., client characteristics, therapeutic relationship, expectancy and instillation of hope) that contribute to therapeutic outcomes. As an important aspect of the therapeutic relationship, the working alliance has been extensively researched and its relation to outcome is well documented (Horvath & Bedi, 2002; Martin et al., 2000). Efficacy beliefs, on the other hand, are psychological mechanisms that both therapist and client can take advantage of to improve the clients' adjustment process. While working alliance and collective efficacy beliefs are common factors that are co-constructed by the therapist and the client in the counseling process, others seem to be characteristics that uniquely belong to the therapist or the client. For example, adult attachment style and positive and negative affect represent relatively stable variables that are largely shaped by one's experiences prior to therapy. Although each of these variables has individually received extensive empirical

scrutiny, they have rarely been investigated together in relation to psychotherapy outcomes.

Conceptually, some of the common factors could manifest at a more collective rather than individual level. Two decades ago, Barrett-Lennard (1985) reminded us of the importance of the "we" (i.e., the therapy dyad) aspect of the therapeutic relationship. Nevertheless, most process and outcome research has been done at the "I" level (i.e., the individual therapist, or client, or both), but not at the dyad level. Similarly, efficacy beliefs can also function at different levels. For example, while client coping efficacy reflects the client's perceived capability to overcome barriers, collective counseling efficacy represents beliefs co-constructed by the therapist and the client about their ability to work together effectively to facilitate the client's adjustment process. As a complex phenomenon, psychotherapy can occur at the individual *and* the dyad levels – a likelihood that, unfortunately, has rarely been captured in previous research. Also, psychotherapy researchers have been concerned with how the therapy process (e.g., the interactions between the client and therapist) might relate to outcomes (e.g., client symptom relief) (Hill & Lambert, 2004; Kendall, Holmbeck, & Verduin, 2004). It would be beneficial to explore this link within a multilevel design.

Therefore, the purposes of this study were (a) to add to the existing process and outcome research literature by investigating the contributions of several common factor variables (working alliance, efficacy beliefs, adult attachment, positive and negative affect) in relation to psychotherapy outcomes at both individual and dyad levels; and (b) to investigate the mediating role of the alliance and collective counseling efficacy as dyadic variables. Multilevel SEM techniques were implemented to investigate these variables at

the proper levels in relation to therapy outcomes. It was hoped that, by expanding research into this new territory, we may be able to create a more complete picture of the psychotherapy process.

Research Questions and Hypotheses

The current study was designed to explore how individual-level variables and dyad-level variables interact with each other in predicting therapy outcomes. To measure the concept of collective counseling efficacy, a new instrument, the Collective Counseling Efficacy Scale (CCES), was developed prior to formal data analysis. Also, because the dyad-level variables were operationalized by incorporating data from clients and therapists, the instruments used to assess these variables (the CCES and the Working Alliance Inventory – Short Revised [WAI-SR]) were tested for measurement equivalence before combining the client and therapist data. Research questions answered in the study and their corresponding hypotheses include:

Research question A: Could the concept of collective counseling efficacy be properly operationalized by the Collective Counseling Efficacy Scale?

Hypothesis A-1: The CCES subscale and total scores would possess appropriate psychometric properties.

Research question B: Could the CCES and the WAI-SR be considered as equivalent across clients and therapist?

Hypothesis B-1: The CCES would show configural invariance (i.e., identical factor structure) across clients and therapists.

Hypothesis B-2: The WAI-SR would show configural invariance (i.e., identical factor structure) across clients and therapists.

Hypothesis B-3: The CCES would show metric invariance (statistically identical factor loadings) across clients and therapists.

Hypothesis B-4: The WAI-SR would show metric invariance (statistically identical factor loadings) across clients and therapists.

Research question C: After incorporating data from clients and therapist, could collective counseling efficacy and the working alliance be operationalized as a dyad-level variable?

Hypothesis C-1: The intraclass correlation coefficient derived from the client and therapist data on the CCES would exceed the cutoff of .30.

Hypothesis C-2: The intraclass correlation coefficient derived from the client and therapist data on the WAI-SR would exceed the cutoff of .30.

Research question D: As dyadic variables, would the second-order intercept and slope (η_{0C} and η_{1C}) derived from the CCES data and those (η_{0W} and η_{1W}) derived from the WAI-SR data function as mediators in the client predictor-therapy outcome linkage? Note that the intercept (η_0) represents the average (i.e., mid-point) of clients' and therapists' ratings, while the slope (η_1) represents the discrepancy between clients' and therapists' ratings.

Hypothesis D-1: The second-order intercept and slope (η_{0C} and η_{1C}) derived from the CCES data would mediate the relations of client coping efficacy, anxious and avoidant attachment styles, and positive and negative affect to client-perceived progress and client-rated session quality.

Hypothesis D-2: The second-order intercept and slope (η_{0W} and η_{1W}) derived from

the WAI-SR data would mediate the relations of client coping efficacy, anxious and avoidant attachment styles, and positive and negative affect to client-perceived progress and client-rated session quality.

Chapter III: Method

Participants

Counseling dyads formed by 54 therapists-in-training (i.e., doctoral- and master-level counseling practicum students) and 90 volunteer clients at the University of Maryland were recruited for the study. Among them, 90 and 73 dyads provided complete data after the first and the second sessions, respectively. Sources for recruiting volunteer clients included undergraduate courses (e.g., PSYC 100) and students contacted through flyers and a snowball technique. These clients were screened for proper presenting issues, and they received extra course credit for participation. Therapists-in-training were recruited from the Counseling Psychology doctoral program at all levels and a master-level pre-practicum class (EDCP 618).

The volunteer client sample consisted of 81 females (90%) and 9 males (10%). In terms of race/ethnicity, there were 41 (45%) White Americans, 14 (16%) Asian Americans/Pacific Islanders, 12 (13%) African Americans, 7 (8%) Hispanic Americans, 5 (6%) multiethnic, 4 (4%) Middle Eastern, 2 (2%) international, and 5 (6%) clients from other backgrounds. In terms of class year, 47 (52%) were seniors, 32 (36%) juniors, and 11 (12%) sophomores. The mean age of client participants was 20.79 years old, with a standard deviation of 1.20 years. The majority (n = 72; 80%) of the sample were psychology majors.

The therapist-in-training sample was comprised of 15 (28%) males and 39 (72%) females. Among them were 29 (54%) White Americans, 8 (15%) Black/African Americans, 6 (11%) Asian Americans/Pacific Islanders, 5 (9%) Hispanic Americans, and 4 (7%) individuals of either Middle Eastern, multiethnic, or international backgrounds. Two (4%) therapists did not report their race/ethnicity. The majority of the therapists had a Bachelor's

degree (n = 37; 68%) and were pursuing a Master's degree (n = 32; 59%) at the time of data collection, whereas the others had a Master's degree (n = 17; 32%) and were pursuing a doctoral degree (n = 22; 41%). Most therapists were in Counseling Psychology (n = 19; 35%) and College Student Personnel (n = 19; 35%) programs, followed by Rehabilitation Counseling (n = 10; 18%), School Psychology (n = 3; 6%), School Counseling (n = 2; 4%), and Counselor Education (n = 1; 2%). Prior to their participation in this study, the therapists had, on average, worked with 20 clients (*SD* = 34 clients) and accumulated 127.62 clinical hours (*SD* = 250.54 hours). All of them reported their clinical orientations as a combination of different theoretical frameworks. The mean age of therapists was 26.25 years (*SD* = 4.68 years).

By the end of the second therapy session, one therapist had seen four clients (4 dyads); five therapists had seen three clients (3 dyads); seven therapists had seen two clients (2 dyads); and the other forty therapists had seen one client apiece (1 dyad), resulting in a total of 73 dyads formed by 54 therapists. Because of this partially nested data structure, therapists' individual-level predictors (i.e., ECRS, PANAS, and counseling efficacy as assessed by the CASES) were not included in data analysis even though data on these variables were collected. Also, therapists' ratings on the outcome variable – session evaluation (SEQ) – were excluded from data analysis to reduce the complexity of model testing and to accommodate the relatively small sample size (73 dyads).

Because the SEM approach typically requires large sample sizes, 73 dyads are less than ideal for the current study, especially given the complexity in model testing. Researchers (e.g., Hancock, 2006; MacCallum, Browne, & Sugawara, 1996) have proposed different ways to estimate the statistical power of a model (or of a particular parameter in a model) and to

estimate the sample size needed to achieve a certain level of power. However, these methods are not designed specifically for dyadic data and multilevel analysis. In Zhang and Willson's review (2006), they suggested that minimum second-level unit (e.g., dyads, classrooms) sizes of 100 to 150 are required for stable estimation in multilevel SEM or HLM. Because the sample size of the current study falls short of Zhang and Willson's (2006) recommendation, the study's findings should be interpreted with caution.

Table 1

Data Collected and Variables Included in the Current Study

	Client	Therapist-in-training
Individual-level variables [a]	Attachment style (ECRS) Positive/negative affect (PANAS) Coping efficacy (SECB)	Attachment style (ECRS)* Positive/negative affect (PANAS)* Counseling self-efficacy (CASES)*
Dyad-level variables [b]	Working alliance (WAI-SR) Collective counseling efficacy (CCES)	Working alliance (WAI-SR) Collective counseling efficacy (CCES)
Outcome variables [b]	Session evaluation (SEQ) Target problem-change (TP-Change)	Session evaluation (SEQ)*

Note. Abbreviations of measures for corresponding variables are in parentheses.

[a] Variables assessed prior to the first counseling session.

[b] Variables assessed at the end of each session.

* Data were excluded from analysis due to the nested data structure and small sample size.

Measures

Several instruments were chosen and one instrument was developed to assess constructs included in the study (see Table 1). These measures are described in the following order: outcome measures, dyad-level predictors, and client individual-level predictors.

Session Evaluation Questionnaire – Depth and Smoothness Subscales (SEQ; Stiles & Snow, 1984*)*. As a 24-item semantic differential scale, the SEQ measures two evaluative dimensions of participants' perceptions of their sessions, called Depth and Smoothness, and two dimensions of their postsession mood, called Positivity and Arousal. In the current study, only two subscales – Depth and Smoothness – were used because of their greater relevance to session evaluation (see Appendix M). The Depth subscale (5 items) measures the degree to which the session is viewed as deep and valuable (e.g., "valuable vs. worthless," "shallow vs. deep"). The Smoothness subscale (5 items), on the other hand, assesses the degree to which the session is perceived to be pleasant and comfortable (e.g., "safe vs. dangerous," "difficult vs. easy"). Each items consists of a bipolar adjective placed on either side of a 7-point scale. Research has shown that the Depth and Smoothness subscale scores yield internal consistency estimates greater than .80 and are associated with therapy outcomes and premature termination (Stiles & Snow, 1984; Tryon, 1990). Although these two subscales were originally developed by factor analysis with orthogonal rotation, the observed relationship between them ranged from -.04 to .28 (Stiles, 1980; Stiles, Reynolds, Hardy, Rees, Barkham, & Shapiro, 1994). Given the high correlation (r = .50) between the Depth and Smoothness subscale scores in the current study, session quality was modeled as a latent client outcome with two

indicators formed by the two subscale scores. Also, although this instrument was administered to both clients and therapists, only client data were analyzed.

Target Problem (TP). The TP assesses the client's perceptions of his or her functioning level on the presenting issue discussed in sessions (see Appendix N). It is modeled after the Battle, Imber, Hoehn-Saric, Stone, Nash, & Frank's (1966) Target Complaints measure and has been used by other researchers (e.g., Hill et al., in press). Because clients might not be sure of their target problems (i.e., the actual issues presented in session) before the session, the TP was filled out after each session. Clients were first asked to "Please write here the primary problem, issue, or concern that brought you into counseling," and then to rate their current functioning and to rate, retrospectively, their pre-session functioning on this target problem using a scale from 1 (worst possible functioning) to 13 (best possible functioning). Target Problem-Change (TP-Change), representing clients' perceived progress, was calculated by subtracting retrospective pre-ratings from post-session ratings. Howard (1980) and Bray, Maxwell, and Howard (1984) found this to be a valid measure of pre-post change. TP-Change was treated as an observed client outcome variable.

Working Alliance Inventory-Short Revised (WAI-SR). The WAI-SR (Appendix I and J) is the shortened version of the Working Alliance Inventory (WAI) developed by Horvath and Greenberg (1986). Using a 1 (never) – 7 (always) scale, the WAI consists of 36 items assessing Bordin's (1979) formulation of working alliance from both the client and therapist perspectives: agreement on goals (12 items), agreement on tasks (12 items), and emotional bond (12 items). The WAI total score has internal consistency estimates of .93 and .87 for client and therapist perspectives, respectively (Horvath & Greenberg,

1989), and has been found to be associated with relevant outcomes (see Horvath, 1994, for a review).

Hatcher and Gillaspy (2006) developed the WAI-SR by revising the Working Alliance Inventory-Short (WAI-S; Tracey & Kokotovic, 1989) and the original WAI. They re-selected 12 items (4 for each subscale) for the WAI-SR based on results of confirmatory factor analyses with two separate samples. Their findings suggested that internal consistency estimates of the three subscales and the total scores of the WAI-SR ranged from .85 to .92 for clients. Validity of the WAI-SR scores was supported by their correlations with other alliance measures and client-rated improvement. Hatcher and Gillaspy agued that WAI-SR items and its factor structure corresponded to Bordin's (1979) model of alliance better than did WAI-S items. In the current study, the same WAI-SR items and instructions, except for minor changes in wording, were administered to clients and therapists. The three subscale scores were used as indicators of the latent working alliance.

Collective Counseling Efficacy Scale (CCES). Because there is no collective efficacy scale designed for use in psychotherapy, the CCES was developed for this study (Appendix K and L). Collective counseling efficacy is defined as the counseling dyad's shared belief in its conjoint capabilities to successfully carry out tasks deemed as essential in the counseling process. The method suggested by Gist (1987) and subsequently adopted by Earley (1993) and Prussia and Kinicki (1996) was used to gauge collective counseling self-efficacy. Specifically, clients and therapists were asked separately for their individual perceptions of therapy dyad efficacy using the same set of items. Because clients usually have less knowledge than do therapists about the

counseling process, the content of the CCSE focused on basic counseling tasks throughout the counseling process, with emphasis on those involved in the beginning stage. A sample item is "how confident you are that you and your therapist *as a dyad* could create an atmosphere conducive to counseling." It was expected that this scale would consist of 5 to 10 behavior-oriented items to be rated by the therapist and client using a 0 (no confidence at all) – 9 (complete confidence) scale. Details of instrument development of the CCES are provided in later sections.

Self-efficacy for Client Behaviors Scale (SECB). The SECB is a 20-item measure designed to assess clients' perceived abilities at negotiating counseling tasks (Longo et al., 1992; see Appendix H). Self-efficacy items were selected to represent client capabilities in three general areas: ability to enact difficult in-session behaviors, ability to manage barriers to therapy attendance, and ability to take personal initiative in solving problems. Client participants respond to these items on a 0 (not at all sure) – 9 (completely sure) scale. The total score is the average across 20 items, and higher scores indicate stronger client efficacy percepts. The SECB total score produced an internal consistency estimate of .94 and was associated with client outcome expectations (r = .48) and motivation (r = .53) in counseling (Longo et al., 1992). The SECB was administered to clients before the first therapy session to assess their coping efficacy.

Positive and Negative Affect Schedule (PANAS). Developed by Watson et al. (1988), the 20-item PANAS measures trait positive affectivity (PA, 10 items) and negative affectivity (NA, 10 items) (see Appendix F). Each item consists of an emotional term (e.g., "enthusiastic," "inspired" for PA; "distressed," "guilty" for NA), and respondents are asked to indicate the degree to which emotional terms are felt during a specified time period on a 1

(very slightly or not at all) – 5 (extremely) scale. With different time periods used, internal consistency estimates ranged from .86 to .90 for PA and .84 to .87 for NA. Test-retest reliability estimates with an 8-week interval ranged from .47 to .68 for PA and .39 to.71 for NA (Watson et al., 1988). Convergent validity of the PANAS scores was demonstrated through their adequate correlations with measures of mood, distress, and anxiety. Therapists' PA and NA (while engaged in the counseling role) were found to be related to their ratings of counselor self-efficacy (Lent et al., 2003). Although the PANAS was rated by both therapists and clients based on the time frame of the past few weeks, only the client data were analyzed.

The Experiences in Close Relationships Scale (ECRS). Using a 7-point Likert scale (1 = disagree strongly, 7 = agree strongly), Brennan et al. (1998) developed the 36-item self-report ECRS to assess the two dimensions of adult attachment – Avoidance (18 items) and Anxiety (18 items) – in the context of a current or past romantic relationship (Appendix E). The Avoidance subscale is designed to measure an individual's degree of discomfort with emotional closeness, openness, and interdependence in romantic relationships. Sample items include "I prefer not to show a partner how I feel deep down" and "I get uncomfortable when a romantic partner wants to be very close." The Anxiety subscale assesses the extent to which in individual fears being neglected, rejected, or abandoned by romantic partners. Respondents are presented with such items as "I worry about being abandoned" and "I worry a lot about my relationships." Both attachment dimensions were found to be related to such outcomes as interpersonal problems and core relationship conflict (Mallinckrodt & Wei, 2000). Internal consistency estimates of the Avoidance and Anxiety subscale scores range from .90 to .94 and .88 to .91, respectively (Brennan et al., 1998; Mohr, 2001; Woodhouse 2003). The three-week test-retest

reliability estimates for both subscales were.70 (Brennan, Shaver, & Clark, 2000). Similar to the PANAS, both clients and therapists responded to the ECRS, but only client ratings were included in data analysis.

Demographic variables. In addition to the above measures, information on basic demographic variables, such as gender, age, and race/ethnicity, were collected from therapists (Appendix C) and clients (Appendix D). Also, clients were asked to describe briefly their presenting issues and to indicate whether they had been in counseling before. Therapists were asked to provide information on their theoretical orientations.

Experimental Design and Procedures

The current study involved a naturalistic research design in which no variables were manipulated and psychotherapy occurred without alteration. Volunteer clients were screened by phone for proper presenting issues (e.g., interpersonal issues, adjustment difficulties). Although the procedure was established to refer those clients with severe problems (e.g., suicidal ideation, psychotic symptoms) to the Counseling Center or Mental Health Services on campus, no clients were referred out because of severe mental health issues. After recruiting therapists-in-training and clients, they were randomly matched up and had at least two consecutive therapy sessions. Because more clients were recruited than therapists, a therapist might have seen multiple clients.

After clients arrived for the first appointment, the researcher or an undergraduate research assistant instructed them to read and, if they wished, sign the informed consent form (Appendix B). Also, clients were reminded that therapists would not see any of the measures completed by them for this study. Clients were provided with a packet of questionnaires to be completed prior to the first counseling session. The packet included

measures of adult attachment style (ECRS), positive/negative affect (PANAS), coping efficacy (SECB), and a brief demographic questionnaire. Then, immediately after each session, clients were asked to fill out measures regarding the working alliance (WAI-SR), collective counseling efficacy (CCES), session quality (SEQ-Depth and Smoothness), and perceived progress (TP). At the end of the client's participation, he or she received a debriefing form (Appendix O) that explained the study. After the demographic form, the above instruments were presented to clients in counterbalanced order.

Therapists-in-training were instructed to sign the informed consent form (Appendix A) and fill out instruments regarding adult attachment (Appendix E), positive and negative affect (Appendix F), and general counseling self-efficacy (assessed by the Counselor Activity Self-Efficacy Scales; Lent et al., 2003) (Appendix G) before seeing any clients; however, therapists' responses to these instruments were not analyzed in the current study. No treatment manual or suggestions were provided to therapists; rather, they were instructed to carry out the sessions according to their clinical orientations and styles. After each session, therapists responded to measures of the working alliance, collective counseling efficacy, and session quality (not included in data analysis). These instruments were presented to therapists in counterbalanced order. Therapists were also consulted after each session about whether clients exhibited severe mental health issues or needed a higher level of care, and whether a referral was necessary. Throughout the process of data collection, no clients showed symptoms that were inappropriate for the study, and none of them were referred for additional care.

Scale Construction of the CCES

The guidelines for developing self-efficacy measures provided by Bandura (1995)

were followed in constructing the CCES. These guidelines emphasize efforts to ensure that the construct (a) is domain-specific and appropriately contextualized; (b) is operationalized clearly and comprehensively; (c) represents performance of a coherent and sufficiently challenging set of skills; and (d) involves assessment of current perceived ability. Based on these guidelines, collective counseling efficacy is defined in the current study as the therapy dyad's shared belief in its conjoint capabilities to successfully carry out tasks deemed as essential in the counseling process.

To properly contextualize items, the counseling stages/processes literature was consulted to inform item development for the CCES (Burke, 1989; Cormier & Hackney, 1987; Doyle, 1992; Egan, 1998; Hill, 2004; Peterson & Nisenholz, 1991). An initial pool of 15 items was generated to assess important tasks that the client and therapist work on together in individual counseling, such as developing the therapeutic relationship, remaining focused in sessions, and practicing new behaviors. These items were designed to tap the behavioral aspect of the counseling process, which most therapy dyads would experience in brief counseling, rather than tasks that only characterize specific theoretical orientations. Sample items include "develop a new perspective on the problem(s) that brought me [the client] into counseling," and "discuss differences in opinions or ideas between the two of us." See Table 2 in the Results section for a complete list of the CCES items.

The initial pool of 15 items first went through a research team brainstorming process, in which feedback was sought from two counseling psychology doctoral students. Then, a faculty member and an advanced doctoral student in counseling psychology provided open-ended comments on the entire draft of the CCES items and instructions. Through

this process, all 15 initial items were revised and retained. The CCES instructions directed participants (i.e., therapist and client) to respond to items (counseling tasks) based on their confidence in *the team* formed by oneself and one's therapist (or client) over the next week. Two versions of the CCES with identical item content and instructions, except for minor changes in wording (e.g., your counselor vs. your client; my feelings vs. the client's feelings; I feel safe vs. the client feels safe), were developed for clients and therapists, respectively. Also, CCES items were positively stated and rated on a scale ranging from 0 (no confidence at all) to 9 (complete confidence).

Preliminary Data Analysis and Data Management

Exploratory factor analysis. To explore the factor structure of the CCES, clients' and therapists' responses to the initial pool of 15 CCES items after the first and the second sessions were subjected to a series of Principal Axis Factoring (PAF) techniques. These analyses were conducted to answer research question A. Both the Kaiser-Guttman rule (i.e., eigenvalue ≥ 1) and the scree plot were taken into account to decide the number of factors extracted (Loehlin, 1998). Also, two criteria were used to select and anchor items in a given factor when there were more than one factors extracted. First, items loading most highly and beyond .50 on a given factor were retained (Gorsuch, 1997). Second, where cross-loadings were evident, items with loadings above .50 were anchored in the factor on which they loaded most highly if their loadings showed a difference of >.10 between this factor and the next highest loading factor. These criteria were designed to sharpen the factor structure of the CCES and provide an appropriate framework for interpretation. Results of four PAFs were used to determine the final factor structure of the CCES and its items.

Formation of observed indicators. Before entering the formal data analysis,

observed indicators were created for client individual-level predictors (i.e., SECB, PA, NA, avoidant attachment, and anxious attachment). Specifically, an average score was calculated (by summing clients' responses to all items in an instrument and then dividing the sum by the number of items) for each client on each of these predictors. While these predictors could be modeled as latent factors, the observed indicator approach was chosen to accommodate the relatively small sample size.

Creation of item parcels. Because dyadic variables (i.e., working alliance and collective counseling efficacy) were of primary interest in the current study, they were modeled as latent factors, each with three observed indicators, to remove measurement errors. Following Bandalos and Finney's (2001) recommendation that "Items should be combined only within well-documented unidimensional domains" (p. 290), three subscale (i.e., Goal, Task, Bond) average scores were calculated as indictors of the latent factor of working alliance separately for clients and therapists.

Depending on the factor structure of the CCES, different strategies could have been used to create observed indicators of this construct. If subscales of the CCES were developed according to the results of exploratory factor analysis, the same approach (i.e., subscale scores) as used for generating indictors of the working alliance would have been used to create indicators of collective counseling efficacy. In the event that only one factor had been extracted for the CCES, item parcels would have been formed by randomly selected items, and average scores of item parcels would serve as observed indicators. According to Bandalos and Finney (2001), the benefits of creating item parcels include (a) increased reliability, (b) creation of parcels with distributions that are more continuous and normally distributed than those of individual items, (c) a more

optimal indicator to sample size ratio and thus more stable parameter estimates. All of these advantages are important to the current study because of the relatively small sample size.

Descriptive statistics, outlier detection, and multivariate normality. Descriptive statistics, such as mean, standard deviation, range, and internal reliability estimates, were reported for each observed indicator. Data were examined for outliers through both univariate (i.e., observations outside the range of ± 3 *SD*) and multivariate (i.e., Mahalanobis distance [D^2]) techniques (Kline, 2005). Also, EQS outputs were used to identify extreme cases with respect to multivariate kurtosis. Finally, the assumption of multivariate normality was examined by Mardia's normalized estimate. Bentler (2005) suggested that, in practice, values of Mardia's normalized estimate > 5 are indicative of data that are non-normally distributed. If this assumption had been violated, Satorra-Bentler scaled χ^2 values and parameter estimates derived from the robust maximum likelihood procedure would have been reported.

Formal Data Analysis

A hierarchical procedure suggested by Newsom (2002) was adopted for formal data analysis. This approach involves first testing the measurement model for the constructs of working alliance and collective counseling efficacy, and the factorial invariance across clients and therapists. Then the intercept-only model was tested and the intraclass correlation was calculated separately for working alliance and collective counseling efficacy to provide evidence for the existence of dyadic variables. Depending on the intraclass correlation values, a second-order factor full model would be tested. In the current study, dyadic variables are represented by second-order latent factors.

Step 1: Testing of measurement models of WAI-S and CCES. A measurement model was first imposed on the data to test whether indicators of working alliance and collective counseling efficacy for therapists and clients were working properly and to explore potential modifications of covarying errors (i.e., residuals) within the factor. Because the same instruments were used to assess the working alliance and collective counseling efficacy for therapists and clients, covarying errors on corresponding indicators across therapists and clients were specified (see Figure 1). I assessed data model fit using three fit indices recommended by Hu and Bentler (1999): comparative fit index (CFI), standardized root-mean-square residual (SRMR), and root-mean-square error of approximation (RMSEA). According to Hu and Bentler (p. 27), values close to .95 for CFI, values close to .08 for SRMR, and values close to .06 for RMSEA suggest satisfactory data model fit. In this step, the model would be respecified if extra covarying residuals make theoretical sense and significantly improve the data-model fit based on model chi-square.

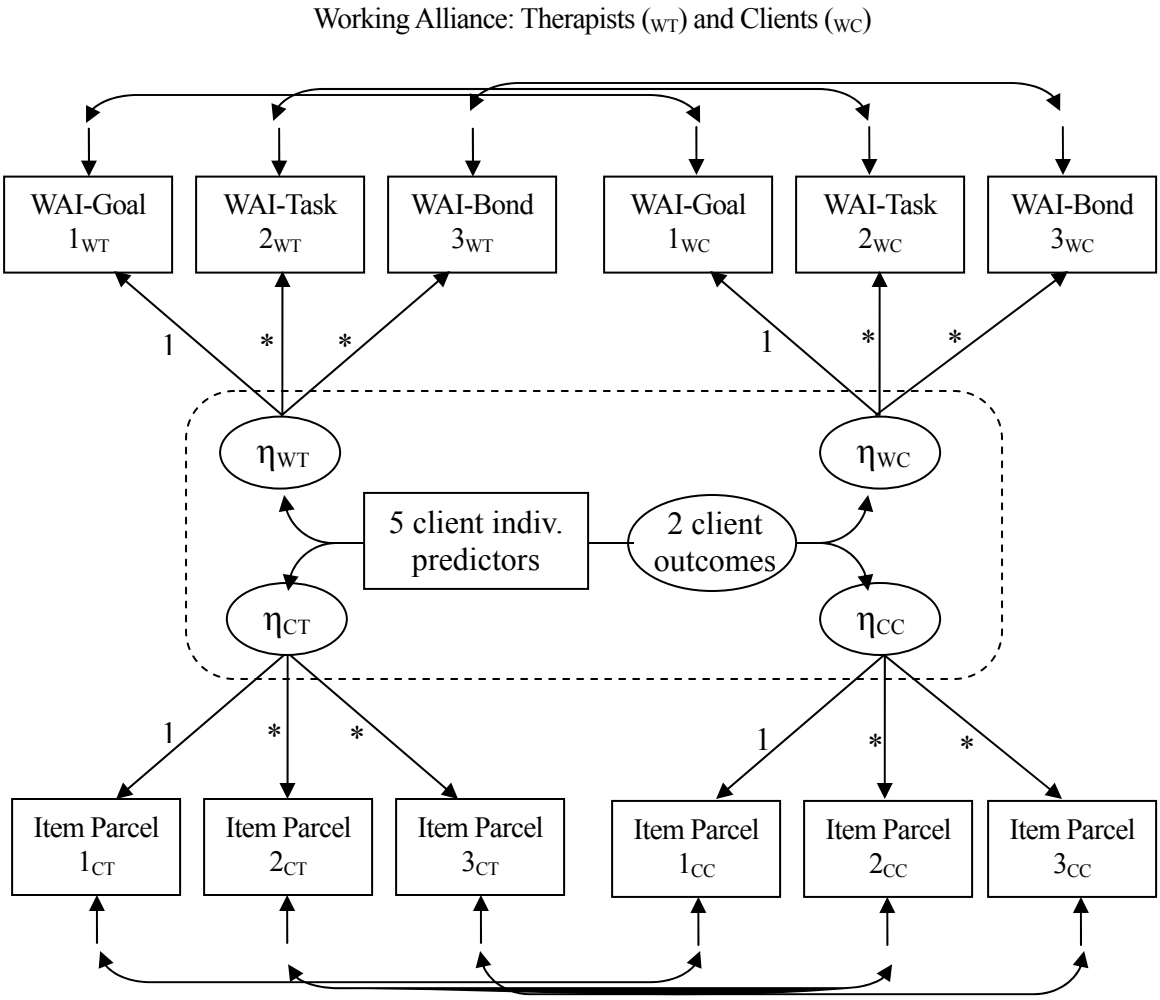

Figure 1. Hypothesized measurement model.

Note. Corresponding errors across therapists and clients on indicators of WAI-SR and CCES were allowed to covary. Indicators/factors within the dotted box – five client individual-level observed predictors, four 1st-order therapist and client factors on WAI-SR and CCES, one client latent outcome (SEQ) and one client observed outcome (TP-Change) – were allowed to covary freely. WT = Working alliance-therapist; WC = Working alliance-client; CT = Collective counseling efficacy-therapist; CC = Collective counseling efficacy-client.

Step 2: Testing of metric invariance of WAI-S and CCES across therapists and clients (for research question B). To obtain the evidence that the same sets of WAI-SR and CCES indicators were tapping the constructs in a similar way for therapists and clients, the invariance of corresponding factor loadings was tested (see Figure 2). Specifically, in addition to the loading set to 1, two loadings (i.e., p and q) for the working alliance and two loadings (i.e., r and s) for the collective counseling efficacy were set equal across therapists and clients in parameter estimation. The presence of factorial invariance would provide initial evidence for the equivalence of these two instruments across therapists and clients, which would then allow for meaningful comparison or integration of therapists' and clients' responses.

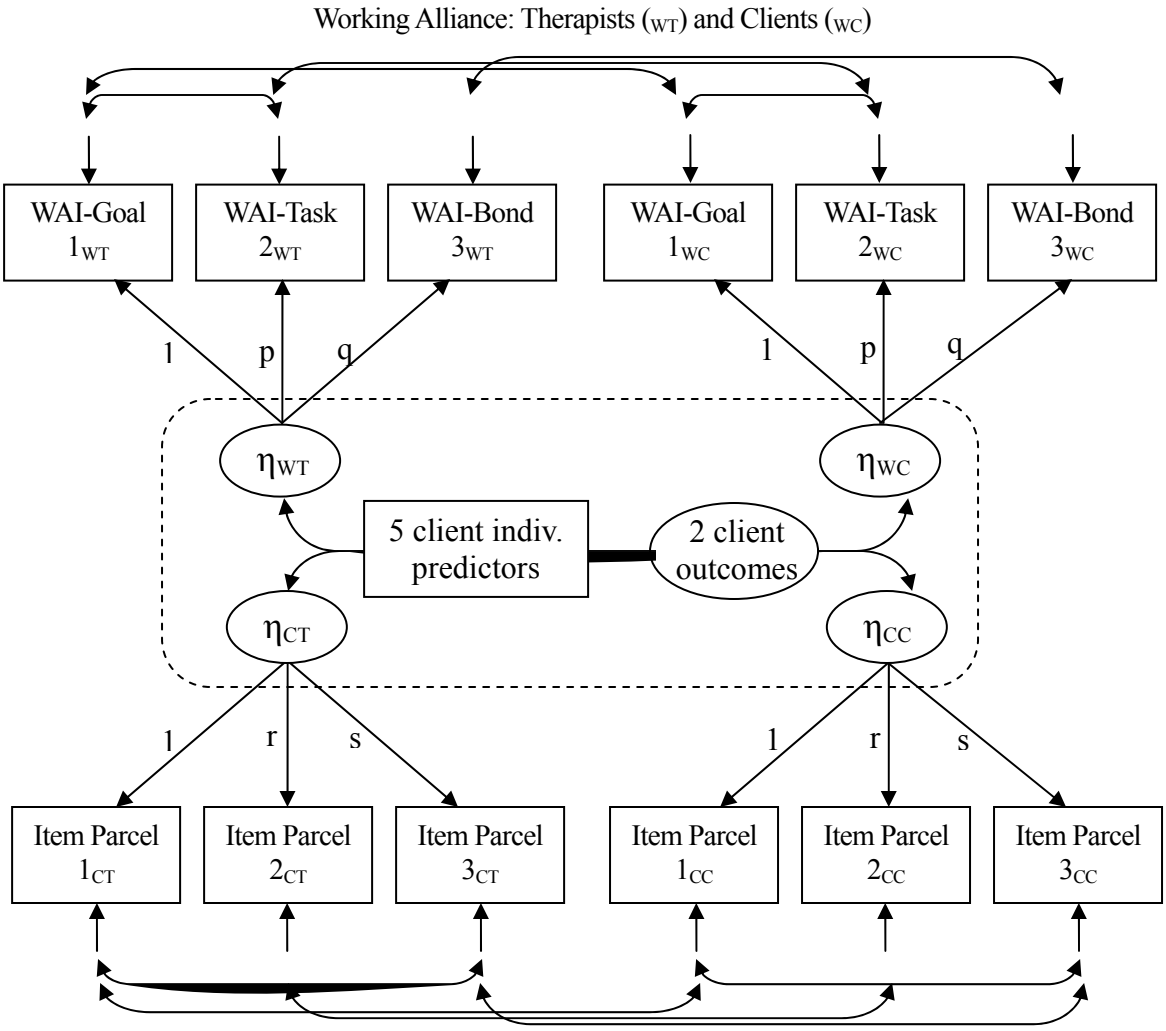

Figure 2. Hypothesized model for testing metric invariance.

Note. Corresponding errors across therapists and clients on indicators of WAI-SR and CCES were allowed to covary. Indicators/factors within the dotted box – five individual-level client observed predictors, four 1st-order therapist and client factors on WAI-SR and CCES, one client latent outcome (SEQ) and one client observed outcome (TP-Change) – were allowed to covary freely. WT = Working alliance-therapist; WC = Working alliance-client; CT = Collective counseling efficacy-therapist; CC = Collective counseling efficacy-client.

Step 3: Computation of intraclass correlation (Intercept-only model) (for research question C). In multilevel modeling, an important question typically asked is how much of the variance in the variables of primary interest occurs across groups (i.e., therapy dyads in the current study). A significant portion of variance that varies among dyads would justify the inclusion of dyad level variables in model testing. Defined as a ratio of the univariate between-dyad variance over the total variance, the intraclass correlation (ICC), $\rho = \sigma^2_B / (\sigma^2_B + \sigma^2_W)$, is often used for the above purpose. Taking the working alliance as an example (see Figure 3), letter *a* represents the variance in the working alliance from the therapist's perspective and the client's perspective, and they are set to be equal. Because it is the variance from each dyad member's perspective, letter *a* also represents the within-dyad variance in the working alliance. On the other hand, the mean of η_0 is the average latent variable working alliance score. Its variance, $\sigma^2_{\eta 0}$, thus represents between-dyad variance in the working alliance. So, ICC = $\sigma^2_{\eta 0w} / (a + \sigma^2_{\eta 0w})$ for the working alliance. ICC for collective counseling efficacy can be computed in the same way (see Figure 4). While there is no guideline for determining how high an ICC value should be for dyadic psychotherapy research, ICC values of .3 or .4 have been considered as high in educational studies involving intact classrooms (Muthén, 1996). Muthén's suggestion regarding the magnitude of ICC was adopted in the current study.

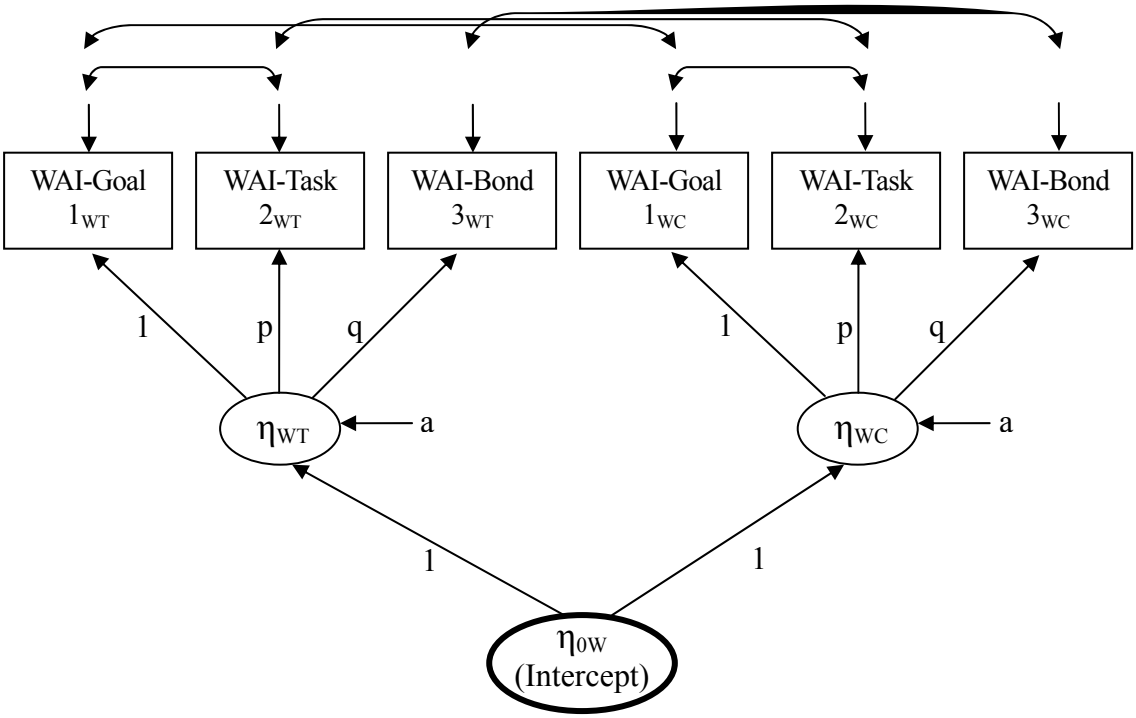

Figure 3. Multilevel model for testing the working alliance as a dyad-level variable (Intercept-only model). The letter *a* indicates that these error variances are set to be equal. Line in bold indicates dyad level variable. WT = Working alliance-therapist; WC = Working alliance-client.

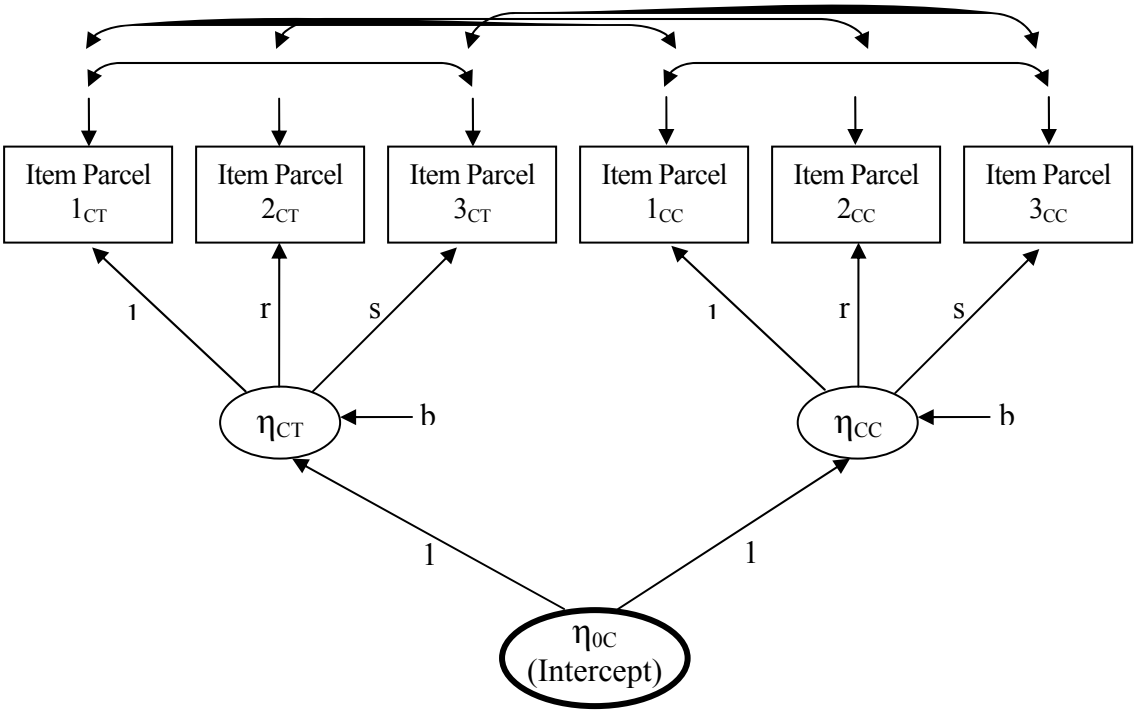

Figure 4. Multilevel model for testing collective counseling efficacy as a dyad-level variable (Intercept-only model). The letter *b* indicates that these error variances are set to be equal. Line in bold indicates dyad-level variable. CT = Collective counseling efficacy-therapist; CC = Collective counseling efficacy-client.

Step 4: Second-order factor full model with client individual-level predictors, dyad-level predictors, and client-rated outcome variables (for research question D). Assuming satisfactory ICC values from Step 3, two sets of intercepts and slopes would be used to represent the average and the difference between therapists' and clients' perceptions of the working alliance and collective counseling efficacy, respectively, at the latent level. The second-order full model includes: Five observed client predictors (i.e., SECB, PA, NA, avoidant attachment, anxious attachment), two sets of dyad-level predictors (i.e., intercepts and slopes) for the working alliance and collective counseling efficacy, and two client outcome variables (i.e., SEQ as a latent outcome and TP-Change

as an observed outcome). See Figure 5 for details. In this model, the dyadic working alliance and collective counseling efficacy were hypothesized to mediate the relationship between client predictors and outcome variables.

Although multilevel SEM is a powerful tool in terms of its capability to allow more appropriate model specification and more complex error structures (Chou, Bentler, & Pentz, 1998), it is important to point out that this approach should be carried out in a sequential order. For example, we should first ensure that the fit of the measurement model is adequate before proceeding. Steps 1-4 represent one of the possible sequences. As pointed out by Newsom (2002), little is known about the behavior of estimates and standard errors for multilevel models with dyadic data. Therefore, a more liberal Type I error rate (.10) was chosen for parameter estimation, with 2-tailed tests to avoid missing important relationships among variables/factors in the current study due to the small sample size.

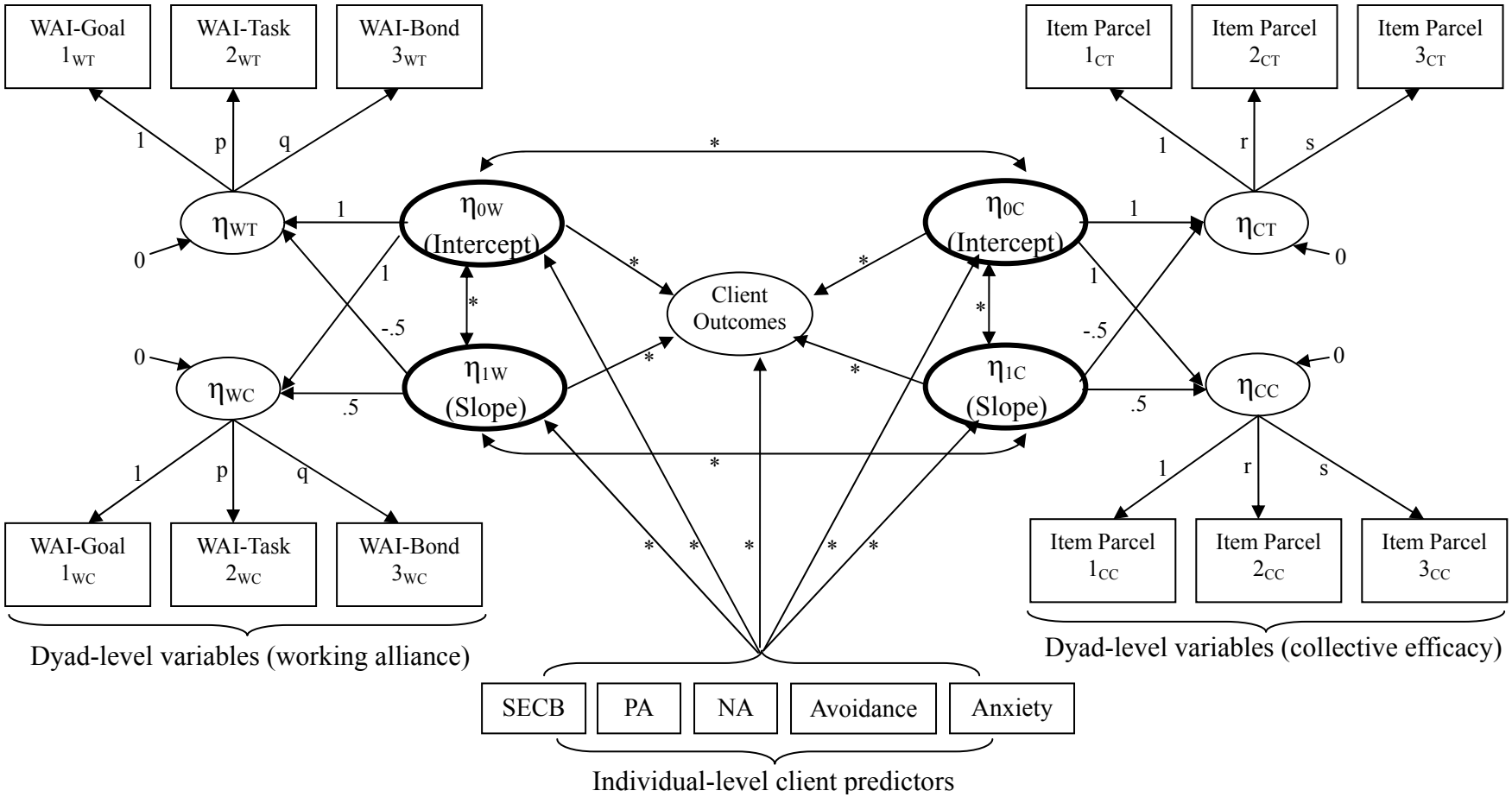

Figure 5. Hypothesized second-order full model. Second-order dyad-level factors are represented by circle in bold. WT = Working alliance-therapist; WC = Working alliance-client. CT = Collective counseling efficacy-therapist; CC = Collective counseling efficacy-client. Client outcomes include the latent SEQ and the observed Target Problem-Change. To prevent visual clutter, covariances among 5 client individual-level predictors, 6 sets of covariances across therapists and clients on corresponding errors of WAI-SR and CCES, and 4 covarying errors from Step 1 are omitted. Covariances among second-order dyad-level factors are modeled using their disturbances. * Parameters to be estimated.

Chapter IV: Results

The findings will be presented in two categories: Exploratory/descriptive analyses and confirmatory model testing. Given that the CCES was a new instrument developed specifically for this study, therapists' and clients' responses to CCES items were first subjected to a series of exploratory factor analyses. After the factor structure and items of the CCES were determined, descriptive statistics for the observed indicators were reported. I next conducted confirmatory model testing following the procedures outlined by Newsom (2002) and McArdle (1988). The procedures were hierarchical in nature, with satisfactory data model fit from the previous step providing the basis for proceeding to the next step.

Factor Analyses of the CCES

Although this concept was first proposed by Bandura (1986) two decades two ago, collective efficacy is a new construct in psychotherapy process and outcome research. For the current study, a novel 15-item instrument, the Collective Counseling Self-Efficacy Scale (CCES), was developed to assess the construct of collective counseling efficacy based on Bandura's social cognitive theory. Data were collected from both therapists and clients with respect to their shared beliefs in their conjoint capabilities to successfully carry out counseling tasks as a dyad in the context of individual counseling.

Data collected from therapists and clients in the first two therapy sessions were subjected to four separate principal-axis factoring (PAF) procedures. After the first session, client data indicated that there was only one eigenvalue (i.e., 10.03) greater than one while therapist data suggested three eigenvalues (i.e., 7.79, 2.57, 1.03) over one. After the second session, client data revealed two eigenvalues (i.e., 9.68, 1.37) greater than one, whereas

therapist data showed a similar result (i.e., eigenvalues = 7.74, 2.54). Scree plots of the above four PAFs, however, suggested more consistent support for the existence of a single factor underlying therapists' and clients' responses to CCES items.

Based on the 1-factor solution, loadings of all 15 items derived from four PAFs were above .55, which was greater than the commonly acceptable criterion of .40 for retaining items (Gorsuch, 1997). Therefore, the 1-factor structure was adopted and all of the 15 CCES items were retained to tap the latent construct, collective counseling self-efficacy. For individual CCES items and the total score, collective counseling efficacy indexes ranged from 0 to 9, with higher scores indicating dyad members' stronger confidence in the therapy dyad's conjoint capabilities to perform counseling tasks. The reliability estimates was .96 for clients and .93 for therapists using the data collected after the second therapy session. These findings provides initial support for the hypothesis A-1 in that the CCES total scores possess appropriate psychometric properties. The resulting factor, item content, and factor loadings from four PAFs are displayed in Table 2.

Table 2

Items and Factor Loadings for the Therapist and Client Versions of the Collective Counseling Efficacy Scale (1-Factor Solution)

Item	Factor Loading After 1st Session		Factor Loading After 2nd Session	
	Client [a]	Therapist [b]	Client [c]	Therapist [d]
1. Explore my [the client's] feelings at a deeper level.	.82	.66	.82	.74
2. Explore my [the client's] thoughts or ideas.	.85	.59	.86	.72
3. Become more aware of different factors that might be related to my [the client's] problems.	.82	.71	.83	.59
4. Become more aware of how the problem(s) that brought me [the client] into counseling might have developed.	.78	.61	.74	.56
5. Develop a new perspective on the problem(s) that brought me [the client] into counseling.	.80	.76	.89	.74
6. Discuss differences in opinions or ideas between the two of us.	.65	.60	.63	.58
7. Set mutually agreed-upon counseling goals.	.88	.76	.88	.71

Table 2 (continued)

Item	Factor Loading After 1st Session		Factor Loading After 2nd Session	
	Client [a]	Therapist [b]	Client [c]	Therapist [d]
8. Develop mutually agreed-upon action plans.	.88	.67	.87	.69
9. Practice new behaviors in sessions.	.70	.67	.78	.77
10. Identify and practice specific skills to help me [the client] deal with the problem(s) that brought me [him or her] into counseling.	.88	.77	.85	.80
11. Create an atmosphere in which I [the client] feel safe to share my [her or his] inner thoughts and feelings.	.77	.68	.63	.73
12. Resolve misunderstandings or conflicts between the two of us.	.72	.68	.68	.63
13. Develop a positive counseling relationship.	.86	.72	.85	.75
14. Remain focused on the issue(s) that brought me [the client] into counseling.	.80	.76	.72	.58
15. Use our time productively in sessions.	.79	.78	.72	.78

Note. $N = 90$ for data collected after the 1st session. $N = 73$ for data collected after the 2nd session. Factor loadings were obtained

from the 1-factor solution without rotation.

Instructions of the CCES: Based on your experiences so far with this counselor [client] whom you just saw, indicate how confident you are that you and your counselor [client] could work effectively *together* on each of the following tasks over the next week. Respond to each item according to your confidence in ***the team*** formed by yourself and your counselor [client] – rather than your confidence in yourself as an individual. Please do not skip any items.

Words in [ ] are derived from the therapist version of the CCES.

[a] Kaiser-Meyer-Olkin index = .925. The single factor accounted for 65% of the total variance.

[b] Kaiser-Meyer-Olkin index = .847. The single factor accounted for 49% of the total variance.

[c] Kaiser-Meyer-Olkin index = .885. The single factor accounted for 62% of the total variance.

[d] Kaiser-Meyer-Olkin index = .890. The single factor accounted for 48% of the total variance.

Creation of Indicators and Item Parcels for WAI-SR and CCES

For the purpose of treating working alliance and collective counseling efficacy as latent factors in model testing, item parcels and observed indicators were created for these two constructs. Bandalos and Finney's (2001) recommended that only items within well-documented unidimensional domains be combined. Following this suggestion, the three subscales of the WAI-SR were used as item parcels and their scores as observed indicators because previous research offered evidence that WAI-SR items were tapping three separate but related factors (Hatcher & Gillaspy, 2006).

Because the preliminary data analyses in the current study revealed support for a 1-factor structure of the CCES, the 15 CCES items were randomly and evenly assigned to three item parcels, with parcel scores serving as observed indicators. The first CCES item parcel consisted of items 1, 2, 6, 9, and 10; the second CCES item parcel consisted of items 4, 5, 13, 14, and 15; and the third CCES item parcel consisted of items 3, 7, 8, 11, and 12. The same item parcel assignment was applied to both clients and therapists, and resulting internal reliability estimates were acceptable (see Table 3).

Outliers Analysis

After observed indicators were formed, the data were screened for potential outliers by both univariate and multivariate approaches. Using the rule of thumb of three standard deviations beyond the mean (Kline, 2005), one therapy dyad (dyad 17) exhibited scores on two observed indicators and four therapy dyads (dyads 24, 31, 59, 60) each had a score on one indicator that were three standard deviations below the mean. However, these six scores spread across five indicators and seemed to be distributed randomly. Although univariate outlier analysis could identify dyads with extreme scores, it is the presence of multivariate

outliers that is most relevant to the statistical procedure – structural equation modeling – used in the study.

When testing the full model that included all 20 observed indicators, the output of EQS suggested that dyads 17, 24, 34, 45, and 60 contributed the most to the normalized multivariate kurtosis estimate, which could be used to locate extreme cases. Based on EQS output, dyads 17 and 60 could be potential outliers because their normalized multivariate kurtosis estimates (in the range of 120 to 140) seemed distinctively different from those of the other three dyads (in the range of 70 to 80). Nonetheless, Byrne (2006) pointed out that normalized multivariate kurtosis estimates for individual cases may not be a reliable index for identifying multivariate outliers.

A more rigorous approach using Mahalanobis distance (D^2) was then adopted to formally test outliers in multivariate analysis. D^2 was calculated for each dyad using all 20 observed indicators. A large D^2 with a relatively low p value in the appropriate chi-square distribution ($df = 20$ in this analysis) may be used to reject the null hypothesis that a particular case comes from the same population as the other cases. With the 73 therapy dyads in the current study, D^2 ranged from 8.32 ($p = .99$) to 36.89 ($p = .01$). Kline (2005) recommended using a conservative level of statistical significance (e.g., $p < .001$) for this test. Following this suggestion, no dyads qualified as multivariate outliers and, therefore, data from all 73 dyads were retained for further analyses.

Descriptive Statistics, Intercorrelations, and Internal Reliability Estimates

For each observed indicator and total score (e.g., WAI-SR, CCES, SEQ), its minimum and maximum values, mean, standard deviation, and internal reliability estimate (α) were reported in Table 3. All item parcels, subscales, and scales included in the study yielded

adequate internal consistency estimates, with Cronbach's alphas equal to or above .70. Before the first counseling session, clients tended to report higher coping efficacy, higher positive affect, lower negative affect, and lower avoidant and anxious attachment styles than the mid-point of the metric used to assess the variable. After the second counseling session, clients in general perceived having a deep and smooth session with therapists and a positive change of functioning level on their target problems by reporting average scores above the metric mid-point.

Table 3

Means, Standard Deviations, and Internal Consistency Estimates of Observed Indicators

Variable (Range)	Min. – Max.	*M*	*SD*	α
Individual client predictors [a]				
SECB (0-9)	4.05 – 8.90	6.79	1.10	.93
Positive affect (1-5)	1.70 – 4.90	3.33	.74	.85
Negative affect (1-5)	1.00 – 4.70	2.41	.80	.85
ECRS-Avoidance (1-7)	1.00 – 5.67	2.62	1.08	.93
ECRS-Anxiety (1-7)	1.17 – 6.61	3.79	1.12	.92
Dyadic predictors [b]				
Client-CCES-Item parcel 1 (0-9)	2.20 – 9.00	7.47	1.33	.89
Client-CCES-Item parcel 2 (0-9)	5.00 – 9.00	7.92	1.08	.91
Client-CCES-Item parcel 3 (0-9)	3.00 – 9.00	7.82	1.19	.88
Client-CCES-Total (0-9)	3.40 – 9.00	7.74	1.14	.96
Therapist-CCES-Item parcel 1 (0-9)	2.00 – 9.00	6.39	1.25	.84
Therapist-CCES-Item parcel 2 (0-9)	4.80 – 8.60	7.07	.97	.82

Table 3 (continued)

Variable (Range)	Min. – Max.	*M*	*SD*	α
Dyadic predictors [b]				
Therapist-CCES-Item parcel 3 (0-9)	4.20 – 8.80	6.71	1.05	.79
Therapist-CCES-Total (0-9)	4.07 – 8.80	6.72	1.02	.93
Client-WAI-SR-Goal (1-5)	1.00 – 5.00	3.71	1.03	.88
Client-WAI-SR-Task (1-5)	1.50 – 5.00	3.72	.77	.80
Client-WAI-SR-Bond (1-5)	3.00 – 5.00	4.29	.59	.79
Client-WAI-SR-Total (1-5)	1.92 – 5.00	3.90	.67	.90
Therapist-WAI-SR-Goal (1-5)	1.00 – 4.50	2.91	.77	.79
Therapist-WAI-SR-Task (1-5)	1.75 – 4.50	3.18	.60	.70
Therapist-WAI-SR-Bond (1-5)	2.50 – 4.75	3.57	.64	.74
Therapist-WAI-SR-Total (1-5)	1.92 – 4.50	3.22	.56	.86
Individual client outcomes [b]				
SEQ-Depth (1-7)	3.00 – 7.00	5.77	.87	.88
SEQ-Smoothness (1-7)	2.40 – 7.00	5.62	1.07	.87
SEQ-Total (1-7)	3.20 – 7.00	5.70	.84	.89
Target Problem-Change (-12 – 12)	-3.00 – 10.00	3.07	2.32	-

Note. N = 73. SECB = The Self-Efficacy for Client Behaviors Scale; ECRS = The Experiences in Close Relationships Scale; CCES = The Collective Counseling Efficacy Scale; WAI-SR = The Working Alliance Inventory – Short Revised; SEQ = The Session Evaluation Questionnaire. [a] Data collected before the first counseling session. [b] Data collected after the second counseling sessions.

After participating in two counseling sessions together, clients reported higher collective counseling efficacy than did therapists. Results of dependent *t*-tests showed that this difference was present across the first, second, and third CCES item parcel scores ($t = 6.12$, 5.75, and 6.80, respectively, $df = 72$, all $p < .001$) and the total score ($t = 39.02$, $df = 72$, $p < .001$). Similarly, clients also reported higher working alliance than did therapists across the Goal, Task, and Bond subscale scores ($t = 5.82$, 6.03, and 8.15, respectively, $df = 72$, all $p < .001$) and the total score ($t = 8.48$, $df = 72$, $p < .001$).

The intercorrelations among observed indicators and total scores (i.e., CCES, WAI-SR, SEQ) are displayed in Table 4. Clients' coping efficacy (SECB), assessed before therapy, produced significant and positive correlations with how they themselves perceived the dyad's conjoint capabilities in performing counseling tasks (*r* ranged from .32 to .42), but were not related to therapists" perceptions of these indicators (*r* ranged from .03 to .15). On the other hand, clients' coping efficacy seemed to relate to their own perceptions and their therapists' perceptions of the working alliance (*r* ranged from .22 to .37); the exception was that this client variable did not correlate with therapist-perceived WAI-SR-Goal subscale scores ($r = .03$). Client coping efficacy also correlated significantly with SEQ-Depth scores ($r = .29$) and SEQ total score ($r = .23$).

Measured before therapy, clients' positive and negative affects were not related to any of the dyadic variables (i.e., CCES, WAI-SR) as perceived by themselves or by therapists. Positive and negative affects also did not produce significant correlations with client outcome variables except that positive affect was associated with SEQ-Depth scores ($r = .31$). Another individual client predictor – avoidant attachment style – was associated with clients' own perceptions of the working alliance (*r* ranged from -.20 to -.26), but not with

therapist-perceived working alliance. Neither clients' avoidant or anxious attachment styles were related to their own or therapists' collective counseling efficacy. In terms of outcomes, avoidant attachment style was negatively associated with SEQ-Depth scores (r = -.32) while anxious attachment style was negatively related to SEQ-Smoothness scores (r = -.23).

The three item parcel scores of the CCES highly correlated with each other within clients (r ranged from .80 to .92) and within therapists (r ranged from .76 to .87), and to a lesser degree between the two groups (r ranged from .22 to .31). These item parcel scores also had high correlations with CCES total scores within both clients and therapists (r ranged from .89 to .96). Client CCES item parcel scores had moderate to large correlations with their own WAI-SR subscale scores (r ranged from .47 to .62) and small to moderate correlations with therapist WAI-SR subscale scores (r ranged from .17 to .47). On the other hand, therapist CCES item parcel scores produced moderate to high correlations (r ranged from .48 to .65) with their own WAI-SR subscale scores, and small to moderate correlations (r ranged from .09 to .33) with client WAI-SR subscale scores. WAI-SR subscale scores correlated with each other moderately to highly (r ranged from .42 to .74) within clients and highly (r ranged from .50 to .58) within therapists. Finally, client and therapist WAI-SR subscale scores had small to moderate correlations with each other (r ranged from .18 to .41).

Client CCES item parcel scores were associated moderately to highly with client-rated SEQ-Depth and Smoothness scores (r ranged from .38 to .63), and had small correlations with client perceived change on target problems (r ranged from .17 to .27). Moreover, client WAI-SR subscale scores generated moderate to high correlations with client-rated SEQ-Depth and Smoothness scores (r ranged from .40 to .55) and small to

moderate correlations with client perceived change on target problems (*r* ranged from .18 to .39). On the other hand, therapist CCES item parcel scores produced low to moderate correlations with client-rated SEQ-Depth and Smoothness scores (*r* ranged from .18 to .42) and small correlations with client perceived change on target problems (*r* ranged from .21 to .23). Finally, therapist WAI-SR subscale scores produced small to moderate correlations with client-rated SEQ-Depth and Smoothness scores (*r* ranged from .26 to .44), and small correlations with client perceived change on target problems (*r* ranged from .13 to .26).

Table 4

Intercorrelations between Observed Indicators

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. SECB [a]	-												
2. Positive affect [a]	.32	-											
3. Negative affect [a]	-.16	-.23	-										
4. ECRS-Avoidance [a]	-.19	-.29	.16	-									
5. ECRS-Anxiety [a]	-.20	-.38	.41	.17	-								
6. Client-CCES-Item parcel 1 [b]	.32	.18	-.11	-.20	-.08	-							
7. Client-CCES-Item parcel 2 [b]	.42	.21	-.07	-.16	-.05	.80	-						
8. Client-CCES-Item parcel 3 [b]	.41	.18	-.12	-.21	-.05	.92	.81	-					
9. Client-CCES-Total [b]	.40	.20	-.11	-.20	-.06	.96	.91	.96	-				
10. Therapist-CCES-Item parcel 1 [b]	.10	.14	.04	.01	-.15	.31	.27	.22	.28	-			
11. Therapist-CCES-Item parcel 2 [b]	.03	.08	-.02	.04	-.19	.30	.23	.23	.27	.76	-		
12. Therapist-CCES-Item parcel 3 [b]	.15	.05	-.04	.02	-.03	.28	.27	.23	.28	.87	.76	-	
13. Therapist-CCES-Total [b]	.10	.10	-.01	.02	-.14	.32	.28	.24	.30	.95	.89	.94	-

Table 4 (Continued)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
14. Client-WAI-SR-Goal [b]	.23	.19	-.10	-.23	-.12	.47	.48	.54	.52	.15	.09	.18	.15
15. Client-WAI-SR-Task [b]	.22	.11	-.15	-.20	-.16	.59	.62	.58	.63	.26	.25	.33	.30
16. Client-WAI-SR-Bond [b]	.37	-.04	-.06	-.25	0	.57	.57	.56	.60	.16	.17	.22	.19
17. Client-WAI-SR-Total [b]	.31	.13	-.13	-.26	-.12	.63	.64	.66	.68	.22	.19	.28	.25
18. Therapist-WAI-SR-Goal [b]	.03	.04	-.03	.08	-.04	.33	.17	.29	.28	.56	.48	.54	.57
19. Therapist-WAI-SR-Task [b]	.24	.12	-.17	-.12	-.12	.47	.30	.45	.43	.54	.56	.56	.59
20. Therapist-WAI-SR-Bond [b]	.33	.18	.01	-.02	-.14	.38	.33	.39	.39	.50	.65	.55	.60
21. Therapist-WAI-SR-Total [b]	.22	.13	-.07	-.02	-.11	.46	.31	.44	.43	.64	.66	.66	.70
22. SEQ-Depth [b]	.29	.31	-.07	-.32	-.15	.63	.63	.51	.62	.42	.34	.36	.40
23. SEQ-Smoothness [b]	.13	.08	0	-.02	-.23	.43	.41	.39	.43	.28	.33	.18	.28
24. SEQ-Total [b]	.23	.21	-.04	-.18	-.23	.60	.58	.51	.60	.40	.38	.30	.39
25. Target Problem-Change [b]	.09	.12	.07	-.17	-.03	.24	.27	.17	.24	.23	.22	.21	.23

Table 4 (Continued)

Variable	14	15	16	17	18	19	20	21	22	23	24	25
14. Client-WAI-Goal [b]	-											
15. Client-WAI-Task [b]	.74	-										
16. Client-WAI-Bond [b]	.44	.42	-									
17. Client-WAI-Total [b]	.92	.88	.68	-								
18. Therapist-WAI-Goal [b]	.18	.30	.21	.27	-							
19. Therapist-WAI-Task [b]	.34	.41	.36	.43	.58	-						
20. Therapist-WAI-Bond [b]	.22	.32	.26	.31	.50	.57	-					
21. Therapist-WAI-Total [b]	.29	.40	.32	.39	.86	.84	.81	-				
22. SEQ-Depth [b]	.40	.54	.55	.57	.26	.44	.27	.38	-			
23. SEQ-Smoothness [b]	.41	.44	.40	.50	.26	.32	.32	.35	.50	-		
24. SEQ-Total [b]	.47	.56	.54	.61	.30	.43	.34	.42	.83	.89	-	
25. Target Problem-Change [b]	.26	.39	.18	.33	.24	.26	.13	.25	.26	.26	.30	-

Note. $N = 73$. SECB = The Self-Efficacy for Client Behaviors Scale; ECRS = The Experiences in Close Relationships Scale; CCES =

The Collective Counseling Efficacy Scale; WAI-SR = The Working Alliance Inventory – Short Revised; SEQ = The Session Evaluation Questionnaire. Absolute values of correlation coefficients equal to and above .31 were significant at $p < .01$, in the range of .23 to .30 were significant at $p < .05$, below .23 were not significant.

[a] Data collected before the first therapy session.

[b] Data collected after the second therapy sessions.

Findings of Formal Data Analyses

Step 1: Testing of measurement models for CCES and WAI-SR.

A measurement model was first imposed on the data to explore whether indicators of the working alliance and collective counseling efficacy were tapping these two latent factors properly for both clients and therapists. Another goal was to identify possible covarying errors of indicators within a factor, which were both statistically significant and theoretically meaningful. Because the same set of subscales/item parcels of the WAI-SR and CCES were administered to therapists and clients, covarying errors of the corresponding indicators across therapists and clients were in place before testing the measurement model (see Figure 6).

The result of the Lagrange Multiplier (LM) test suggested allowing the errors of client WAI-SR-Goal and WAI-SR-Task indicators to covary ($\chi^2 = 15.93$, $p < .001$). A close examination of the item content of these two subscales showed that they seemed to tap the behavioral aspect of therapeutic relationship in addition to the latent factor of working alliance. Research on the WAI showed that the Goal-Task relation ($r = .88$) was somewhat higher than the Goal-Bond relation ($r = .84$) and the Bond-Task relation ($r = .79$) (Horvath & Greenberg, 1989). Using the WAI and the WAI-S, two factor analyses also indicated that a two-factor solution (i.e., Goal-Task vs. Bond) might explain the item variance better (Andrusyna, Tang, DeRubeis, & Luborsky, 2001; Reynolds, Hatcher, & Hancell, 1995). In the current study, the correlation between the WAI-SR-Goal and WAI-SR-Task indicators ($r = .74$) was clearly higher than those of the Goal and Bond indicators ($r = .44$) and the Goal and Bond indicators ($r = .42$) for the client version. Based on the above empirical evidence, the covariance between client WAI-SR-Goal and

WAI-SR-Task indicators was retained to account for the variance that might be explained by factors other than the single latent construct – the working alliance. The same covariance was also specified for therapists in order to keep the measurement model identical for both groups.

The second LM test recommended covarying the errors between therapist CCES item parcels 1 and 3 ($\chi^2 = 6.08$, $p = .014$). Items belong to these two parcels seemed to focus on exploration of clients' feelings and thoughts and the practice of new behaviors as opposed to item parcel 2's emphasis on gaining insights and keeping the session on track. At this point, due to this instrument's novelty, there was no substantial evidence supporting the connection between CCES item parcels 1 and 3 beyond the one dictated by the latent collective counseling efficacy. However, because of the contribution of this covariance to the overall data-model fit, I decided to allow this error covariance for therapists and also specified the same model modification for clients. Future research is needed to clarify whether the somewhat higher correlation between CCES item parcel 1 and 3 is the product of the item parceling procedure or other confounding conditions.

In the final measurement model, four model modifications (i.e., two for therapists, two for clients) were made by covarying two sets of residuals of indicators on the working alliance and two sets of residuals of indicators on collective counseling efficacy. These covariances contributed significantly to the data-model fit ($\Delta\chi^2 = 38.79$, $\Delta df = 4$, $p < .05$). The multivariate normality of the data was supported by its low Mardia's normalized estimate of .2034, which was smaller than the commonly acceptable cut-off value of 5.00 (Bentler, 2005). Fit indices of the initial measurement model (without four model modifications on residual covariances) were: CFI = .900, SRMR = .059, RMSEA

= .097 (90% CI = .072 - .120), χ^2 = 193.21 with *df* = 115 ($p < .001$). In contrast, fit indices of the final measurement model were: CFI = .944, SRMR = .055, RMSEA = .074 (90% CI = .043 - .099), χ^2 = 154.42 with *df* = 111 ($p = .004$). These satisfactory fit indices of the final measurement model provided support for moving to the next step.

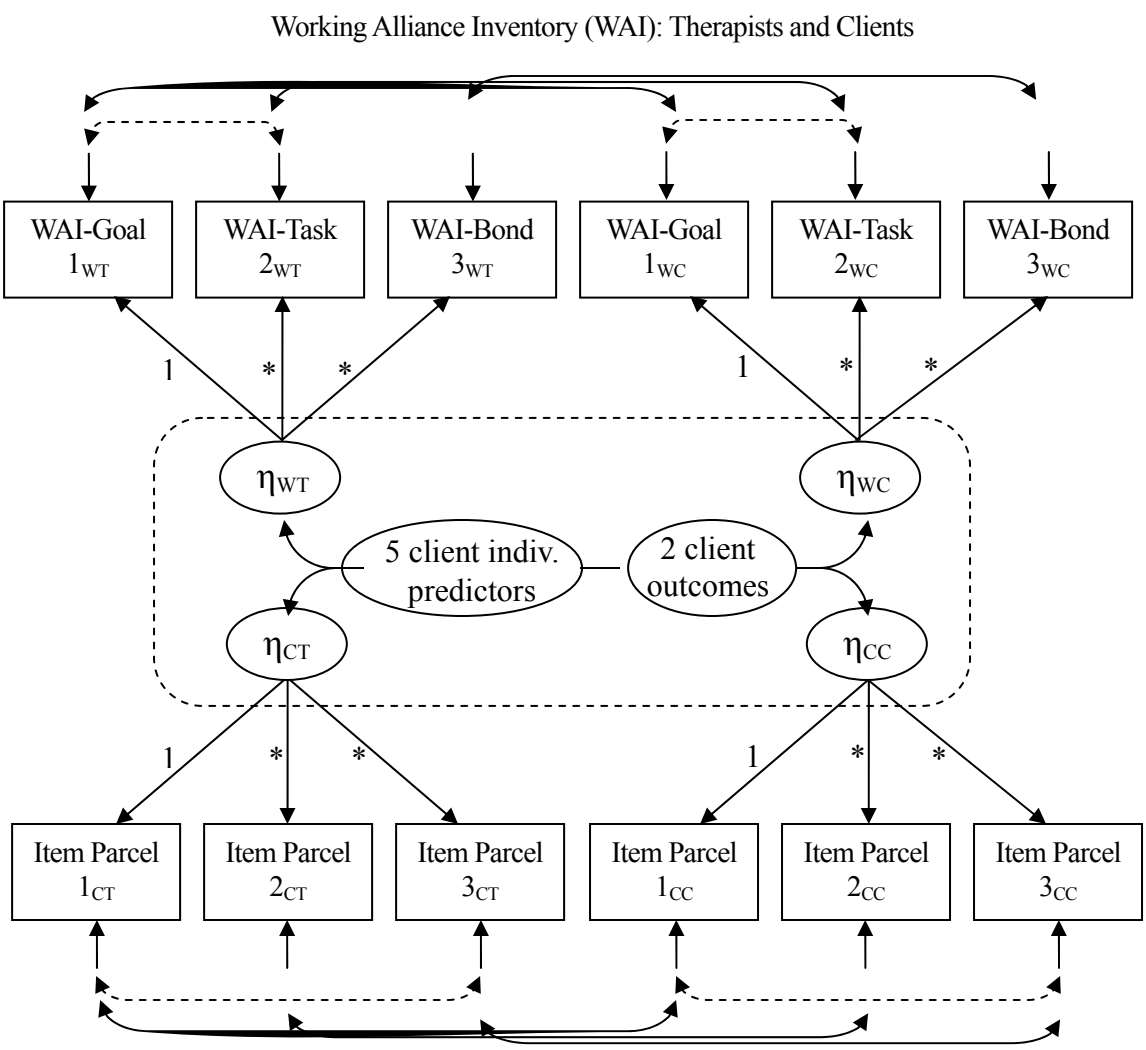

Figure 6. Testing of measurement model.

Note. Indicators/factors within the dotted box – five client individual-level observed predictors, four 1st-order therapist and client factors on WAI-SR and CCES, one client latent outcome (SEQ), and one client observed outcome (TP-Change) – were allowed to covary freely. Corresponding errors across therapists and clients on WAI-SR and CCES were allowed to covary. Dotted lines represent modifications made in the final measurement model. WT = Working alliance-therapist; WC = Working alliance-client. CT = Collective counseling efficacy-therapist; CC = Collective counseling efficacy-client.

* Factor loadings to be estimated.

Step 2: Testing of metric invariance of WAI-SR and CCES across therapists and clients.

Before integrating data from clients and therapists on the working alliance and collective counseling efficacy to form dyadic variables, it is essential to establish evidence for measurement equivalence for the WAI-SR and CCES across the two dyad members (Vandenberg & Lance, 2000). Initial support for configural invariance of the WAI-SR and CCES was offered in Step 1 in that the same factor structure was specified for both clients and therapists and the final measurement model supported data-model fit (hypothesis B-1 and B-2).

In Step 2, I went further to test metric invariance by examining the equivalence of the magnitude of factor loadings. This was done by imposing four constraints on corresponding factor loadings of the WAI-SR (i.e., loadings p and q) and CCES (i.e., loadings r and s) across clients and therapists. (see Figure 7). The results of an omnibus test on the final measurement model with the above four constraints were consistent with the presence of metric invariance because the model with constrained loadings was statistically equivalent to the model without ($\Delta\chi^2 = 3.744$, $\Delta df = 4$, n.s.). Neither did the LM test suggest releasing any of these constraints. This finding offered support for hypotheses B-3 and B-4 and suggested that factor loadings of the CCES and WAI-SR were statistically identical across clients and therapists. Thus, these factor loading constraints were present in all subsequent analyses. Fit indices of the final measurement model with these constrained factor loadings across dyad members remained acceptable: CFI = .945, SRMR = .062, RMSEA = .072 (90% CI = .041 - .098), $\chi^2 = 158.14$ with $df = 115$ ($p = .005$).

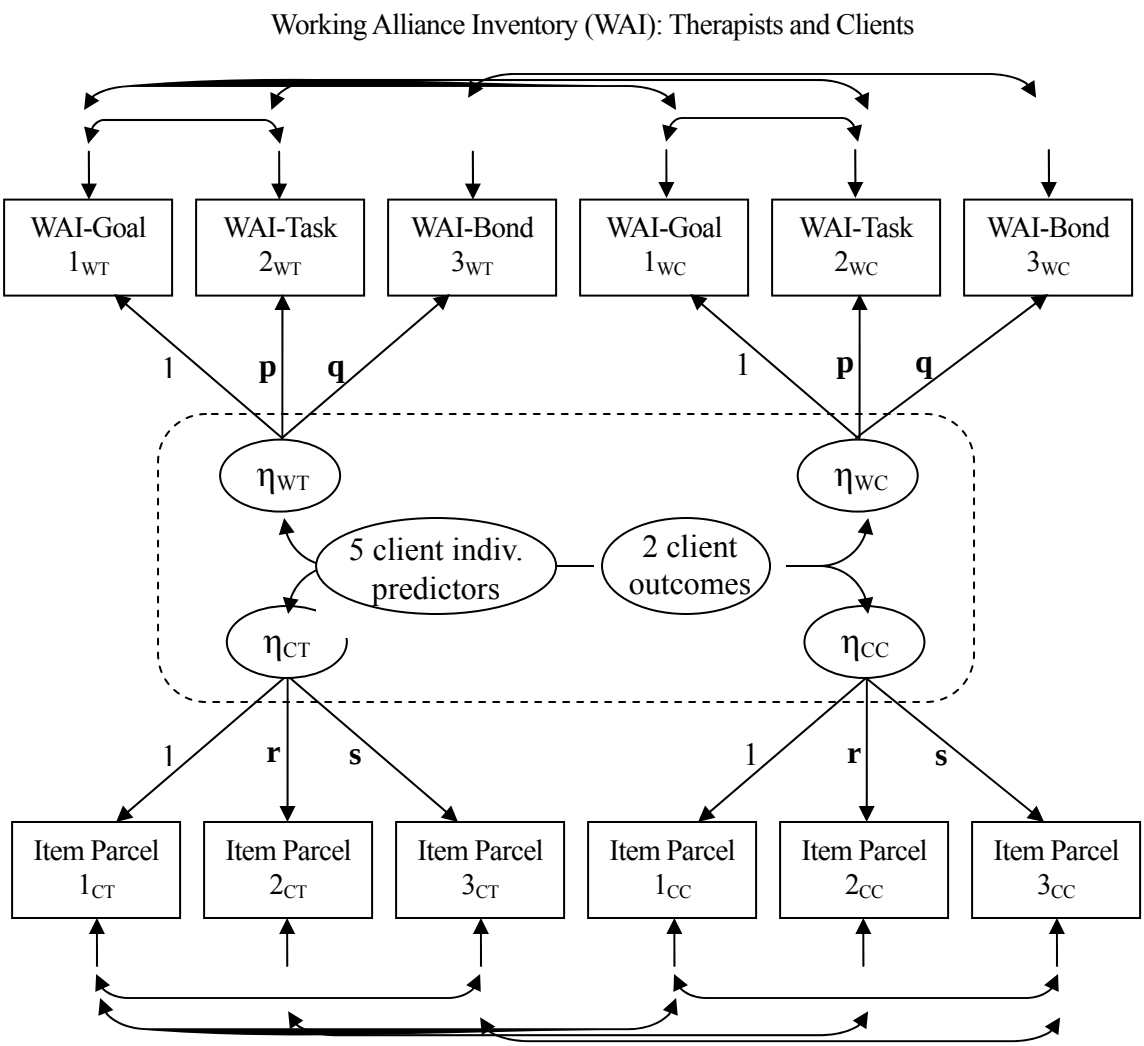

Figure 7. Testing of metric invariance of the WAI-SR and CCES across clients and therapists. *Note.* Factor loadings with the same values (i.e., 1, p, q, r, s) were set equal when testing metric invariance. Indicators/factors within the dotted box – five individual-level client observed predictors, four 1st-order therapist and client factors on WAI-SR and CCES, one client latent outcome (SEQ), and one client observed outcome (TP-Change) – were allowed to covary freely. Corresponding errors across therapists and clients on WAI-SR and CCES indicators were allowed to covary, and the model modifications from Step 1 were retained. WT = Working alliance-therapist; WC = Working alliance-client. CT = Collective counseling efficacy-therapist; CC = Collective counseling efficacy-client.

Step 3: Testing of intercept-only models and computation of intraclass correlations for WAI-SR and CCES.

The purpose of this step was to explore whether the working alliance and collective counseling efficacy could be modeled as dyadic factors in the current study. Based on the procedure suggested by Newsom (2002), the intercept-only model was tested separately for the WAI-SR and CCES, and data from both clients and therapists were used to calculate intraclass correlations (ICC). ICC has been used in multilevel analysis to indicate the percent of the total variability in the data that occurs at the dyad level versus at the individual level. See Figure 8 for the intercept-only model for the WAI-SR, in which the letter *a* represents within-dyad variance; the variance of η_{0W} represents between-dyad variance. The ICC for the alliance was computed using the following formula:

$$ICC = \sigma^2_{\eta 0W} / (a + \sigma^2_{\eta 0W}) = .222 / (.154 + .222) = .5904$$

An ICC of .5904 suggested that 59.04% of the total variability in the data occurred at the dyad level, whereas the other 40.96% occurred at the individual level (i.e., the client and therapist) for the data on WAI-SR.

Fit indices of the intercept-only model for the WAI-SR were: CFI = 1.000, SRMR = .039, RMSEA = 0.000, χ^2 = 3.64 with *df* = 6, n.s. The assumption of multivariate normality held for the data used to test this model: Mardia's normalized estimate = -1.276.

The same intercept-only model was also imposed on the data for the CCES. Because the assumption of multivariate normality was violated in this case (Mardia's normalized estimate = 6.717), robust estimation procedures were used. Fit indices of this model were:

Satorra-Bentler Scaled $\chi^2 = 3.2341$ with $df = 6$, n.s.; robust CFI = 1.000, and RMSEA = 0.000. In Figure 9, the letter *b* represents within-dyad variance while the variance of η_{0C} represents between-dyad variance for the CCES. The result of the following computation indicated that 33.72% of the total variability in the CCES data occurred at the dyad level, compared with the other 66.28% at the individual level.

$$ICC = \sigma^2_{\eta 0C} / (b + \sigma^2_{\eta 0C}) = .405 / (.796 + .405) = .3372$$

ICC values of .5904 and .3372 provided support for hypotheses C-1 and C-2 and suggested that there were sufficiently large amounts of variance in the WAI-SR and CCES data that should be modeled at the dyad level. These findings offered support for depicting the working alliance and collective counseling efficacy as latent dyadic predictors of client outcome in the full model (Step 4).

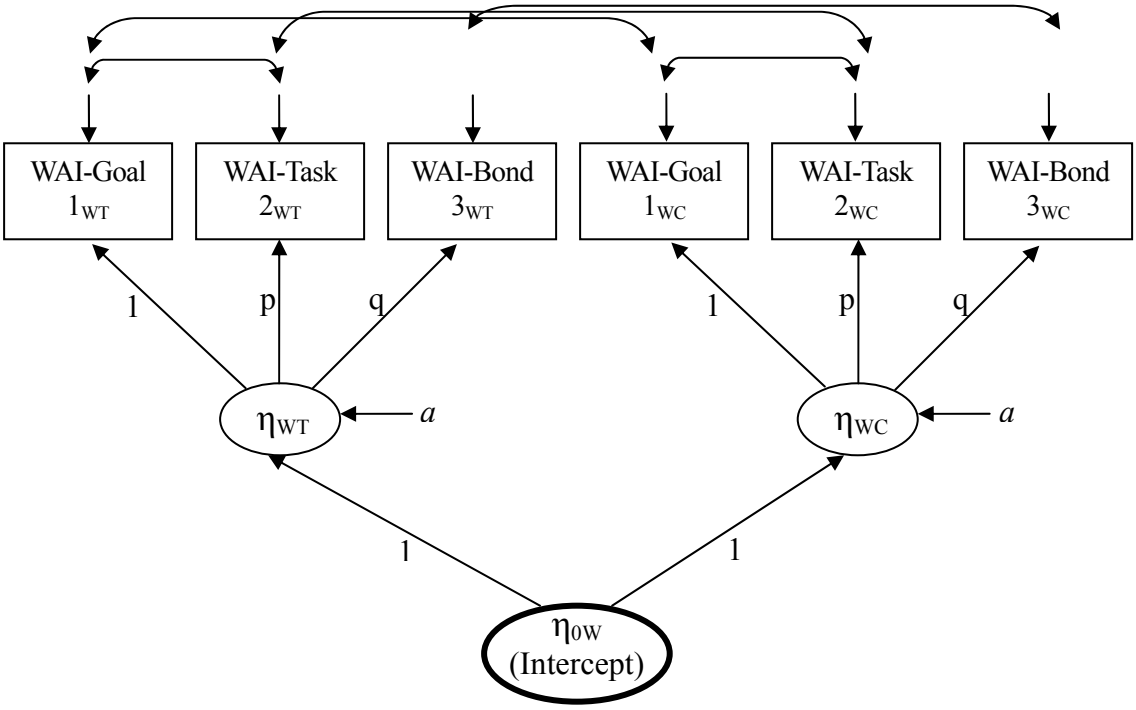

Figure 8. Testing of the Intercept-Only model for the WAI-SR.

Note. The letter *a* represents within-dyad variance, whereas the variance of η_0 represents between-dyad variance. WT = Working alliance-therapist; WC = Working alliance-client.

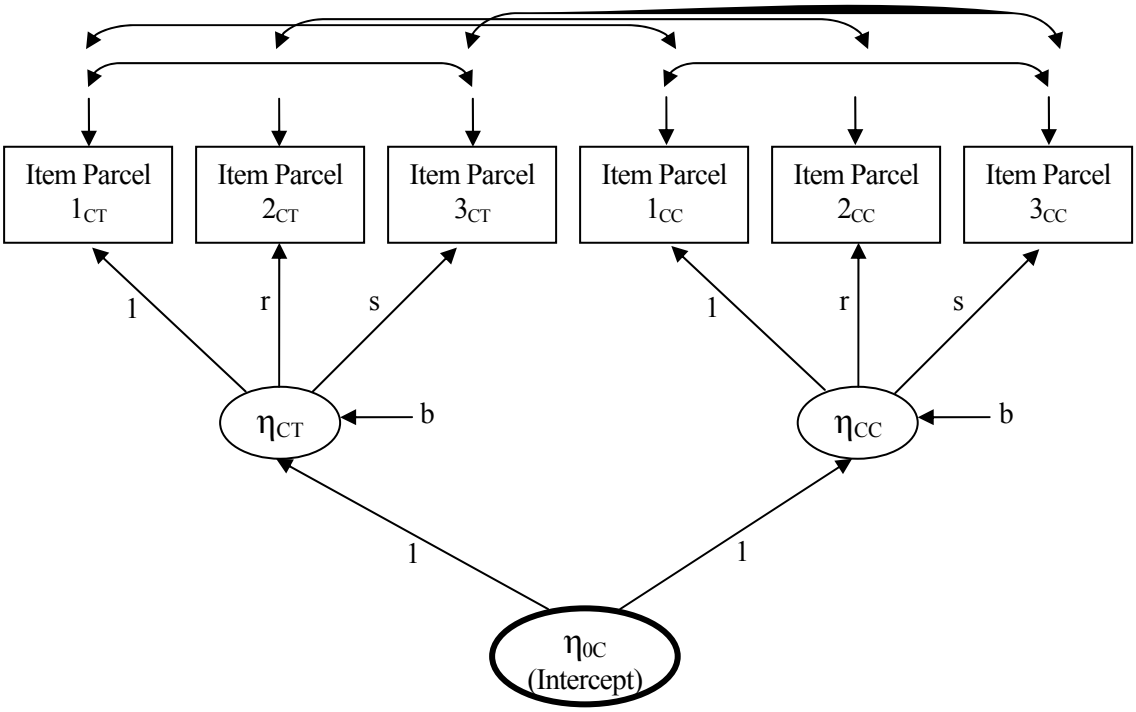

Figure 9. Testing of the Intercept-Only model for the CCES.

Note. The letter *b* represents within-dyad variance. The variance of η_{0C} represents between-dyad variance. CT = Collective counseling efficacy-therapist; CC = Collective counseling efficacy-client.

Step 4: Full model with client individual-level predictors, latent dyad-level predictors, and client-rated outcome variables (2nd-order and 3rd-order full models).

Incorporating the model modifications (i.e., covarying residuals) from Step 1, the factor loading constraints from Step 2, and the satisfactory ICCs from Step 3, the next step of the analysis was conducted: a second-order full model was specified to include five individual client predictors, two sets of dyadic predictors – intercepts and slopes (2nd-order dyadic factors) – and two client-rated outcome variables (see Figure 10 for details). To model dyadic predictors using data from both clients and therapists, two latent factors were created: a latent intercept, η_0, and a latent slope, η_1.

Following Newsom's (2002) recommendations, the latent intercept (η_{0W}) for the working alliance was defined by fixing loadings on each of the two latent working alliance factors (i.e., one from clients and the other from therapists) to 1. The same process was followed to define the latent intercept (η_{0C}) for collective counseling efficacy. By fixing the loadings to 1, the two latent intercepts (η_{0W} and η_{0C}) simply represent the midway point (i.e., the average) of the client's and the therapist's separate appraisals of working alliance and collective counseling efficacy at the latent level. Although the latent intercepts could be conceptualized as the dyad's average perceptions, it does not necessarily imply shared perceptions; in other words, the latent intercept does *not* reflect the level of agreement between dyad members. On the other hand, the latent slope (η_1) was defined by fixing loadings on the same two latent factors to .5 for clients and -.5 for therapists separately for the working alliance (η_{1W}) and collective counseling efficacy (η_{1C}). The latent slope (η_1) then represents the discrepancy or disagreement (i.e.,

subtracting the therapist's perception from the client's) between dyad members' perceptions of these two latent constructs.

Both the latent intercept and the latent slope are needed to fully describe how the client and therapist interact with each other as a dyad. Using the working alliance as an example, a medium average (the latent intercept, η_{0W}) of the alliance perceived by a dyad could be achieved by two members having similar appraisals (the latent slope, η_{1W} , low discrepancy) of the alliance or by one member giving a higher rating while the other reports a lower rating (the latent slope, η_{1W} , high discrepancy). A high or low average (the latent intercept, η_{0W}) of the alliance perceived by the dyad might be associated with smaller discrepancy (the latent slope, η_{1W}) between dyad members because members' ratings are limited by the upper or lower bound of the metric. Mathematically, the relationship between the intercept and the slope could be depicted as an inverted U shape with the intercept on the X-axis and the slope on the Y-axis simply because there would be more room for the therapist and the client to differ in their perceptions when the dyad has a medium intercept than when the dyad has a high or low intercept. At this point there are no existing theories proposed to predict the magnitude and direction of the correlation between the latent intercept and the latent slope in the context of individual therapy. In short, as dyadic predictors, the latent intercepts (η_{0W} and η_{0C}) were created, to represent the average working alliance and collective counseling efficacy for the dyad; and the latent slopes (η_{1W} and η_{1C}) were used to represent the discrepancy between dyad members. These two sets of latent intercepts and latent slopes were then hypothesized to partially mediate the relations of client individual-level predictors to client-rated therapy

outcomes, as shown in Figure 10.

Although data-model fit indices (χ^2 = 158.40 with *df* = 117, CFI = .947, SRMR = .062, RMSEA = .070) were acceptable for the second-order full model, difficulties in estimating several parameters were encountered (see Figure 10). For example, the correlation between the working alliance slope (η_{1W}) and the collective counseling efficacy slope (η_{1C}) was estimated as 1.20, which exceeded the upper bound of this parameter. The correlation (.94) between the working alliance intercept (η_{0W}) and the collective counseling efficacy intercept (η_{0C}) also approached its upper limit. Moreover, the structural paths from the collective counseling efficacy intercept (η_{0C}) and slope (η_{1C}) to client-perceived session quality (i.e., SEQ) were quite high (.94 and .93), but not statistically significant. These anomalies in parameter estimation suggested the possibility of collinearity among the second-order dyadic predictors – that is, the two latent intercepts (η_{0W} and η_{0C}) and the two latent slopes (η_{1W} and η_{1C}). These estimation difficulties also raised questions about the validity of the 2nd-order full model test.

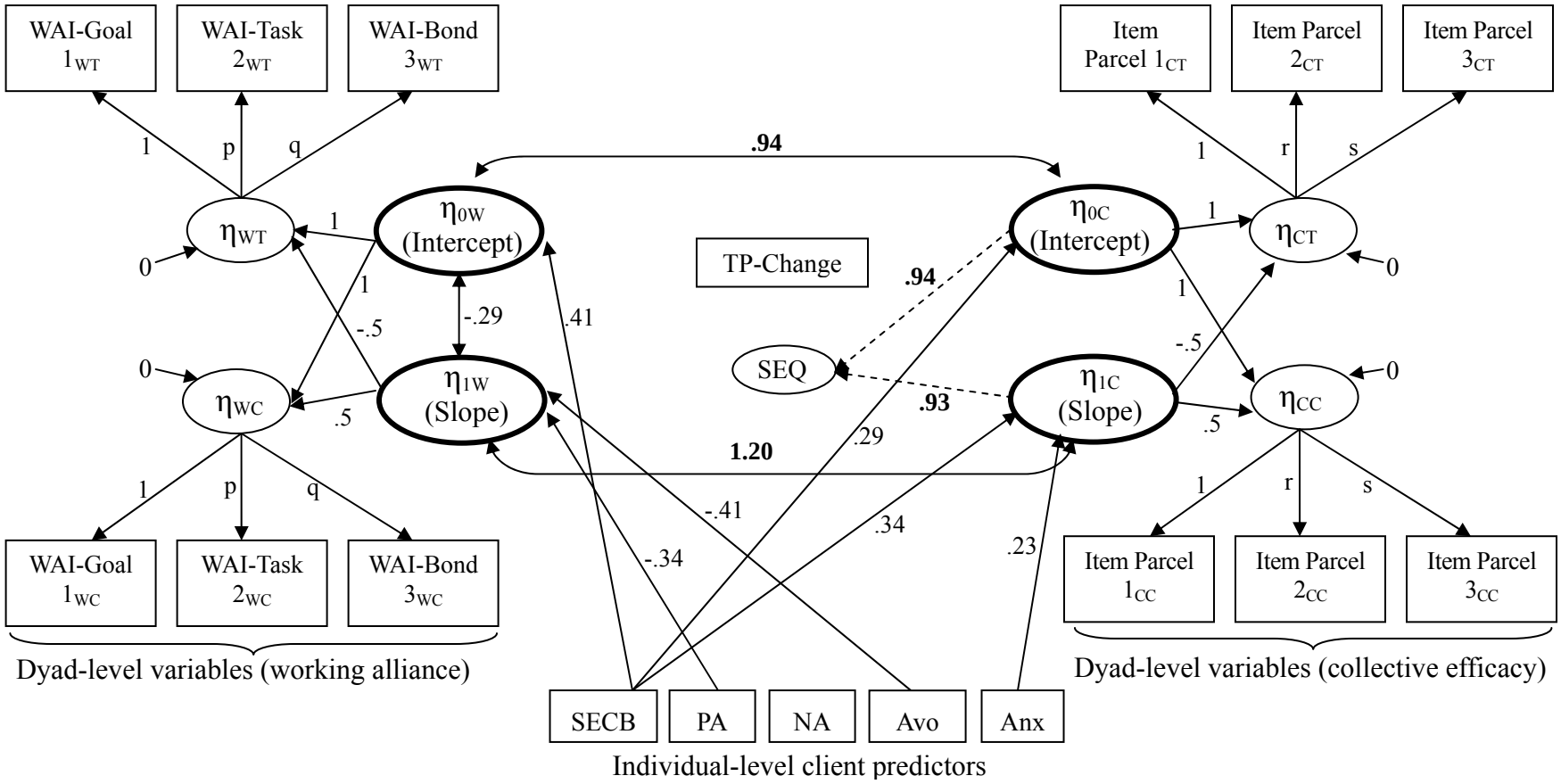

Figure 10. Results of testing the hypothesized second-order full model. Second-order dyad-level factors are represented by circle in bold. WT = Working alliance-therapist; WC = Working alliance-client. CT = Collective counseling efficacy-therapist; CC = Collective counseling efficacy-client. Client outcomes include the latent SEQ and the observed Target Problem-Change. To prevent visual clutter, the covariances among the 5 individual-level client predictors, the 6 sets of covariances across therapists and clients on corresponding residuals, and the 4 covarying errors for model modifications were omitted. Non-significant structural paths were omitted.

To solve the estimation difficulties from the second-order full model and tackle potential collinearity between two sets of second-order dyadic predictors (i.e., η_{0W} and η_{0C}, η_{1W} and η_{1C}), the factor-of-curves model proposed by McArdle (1988) was adopted. Specifically, (a) a third-order latent common intercept (η_0) was introduced to integrate the two highly correlated second-order latent intercepts from working alliance (η_{0W}) and collective counseling efficacy (η_{0C}), and (b) a third-order latent common slope (η_1) was used to integrate the two highly correlated second-order latent slopes (η_{1W} and η_{1C}) from these two constructs.

Similar to the second-order latent intercepts and slopes, the third-order latent intercept represented the mid-point of the client's and the therapist's perceptions, and the third-order latent slope represented the discrepancy between the two dyad members' perceptions. The difference is that the third-order latent intercept and slope also synthesized the two constructs – the working alliance and collective counseling efficacy, whereas two sets of the second-order intercepts and slopes were created for the two constructs separately. Because collective counseling efficacy had not been part of the conceptualization of therapeutic relationship in the literature, the third-order intercept and slope could, therefore, be deemed as two *relational factors* that might add to our understanding of the therapeutic relationship from the dyadic perspective. That is, the third-order intercept could be taken as indicating the quality of the relationship (i.e., combined perceptions regarding the alliance and efficacy of the therapeutic "team"), and the slope as representing the discrepancy between the dyad members' perceptions of the relationship. Similar to the intercept and slope hypothesized in the second-order full

model, the third-order intercept and slope could have an inverted U-shape relationship, and they might not necessarily correlate with each other. See Figure 11 for the hypothesized third-order full model and Figure 12 for the results.

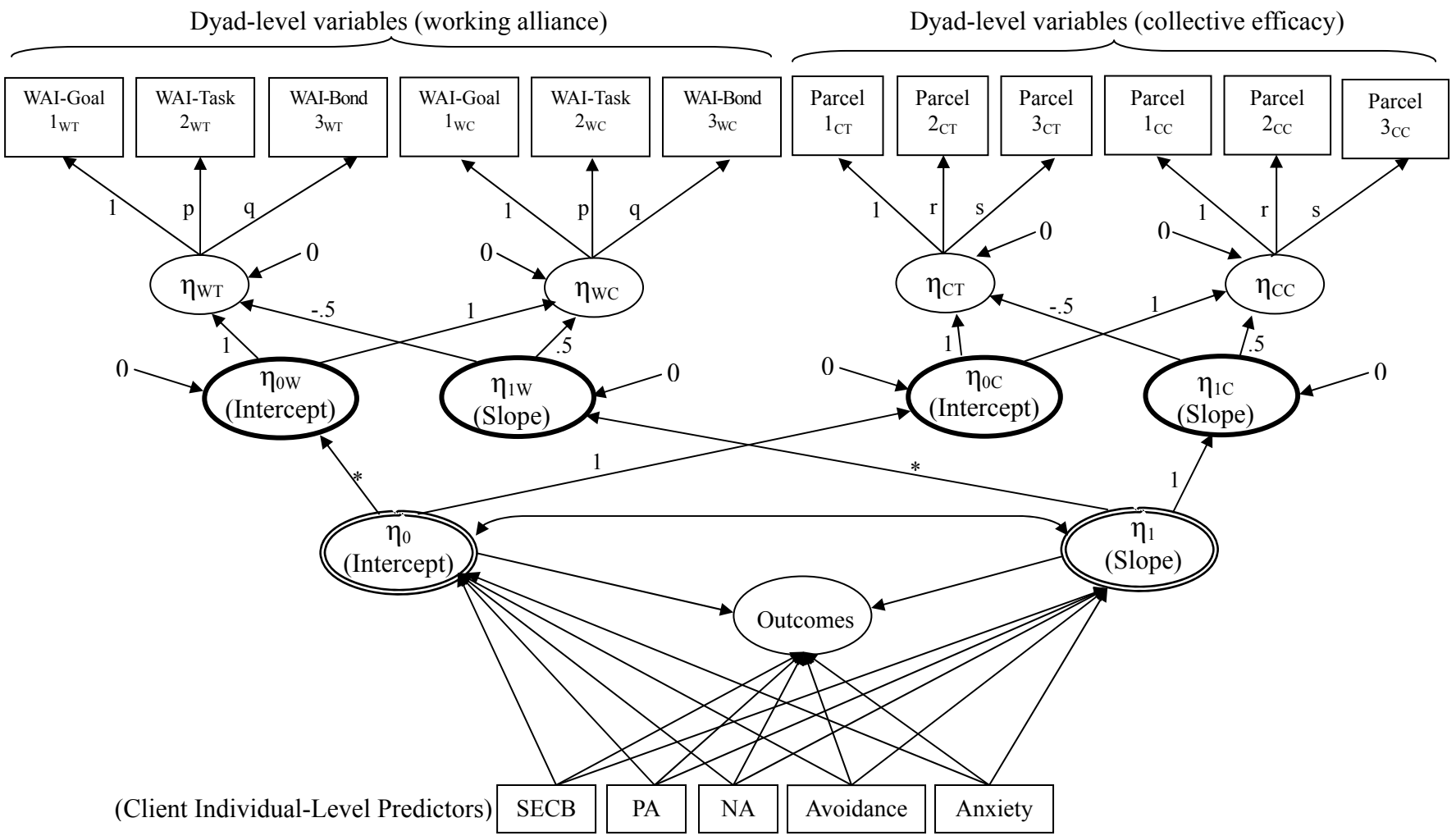

Figure 11. Hypothesized third-order full model. 1st-order individual latent factors were represented by regular circles. 2nd-order dyad-level factors are represented by circles in bold. 3rd-order dyad-level factors are represented by double circles. Covariances among client individual-level predictors and residual covariances retained from previous steps were omitted to avoid visual clutter.

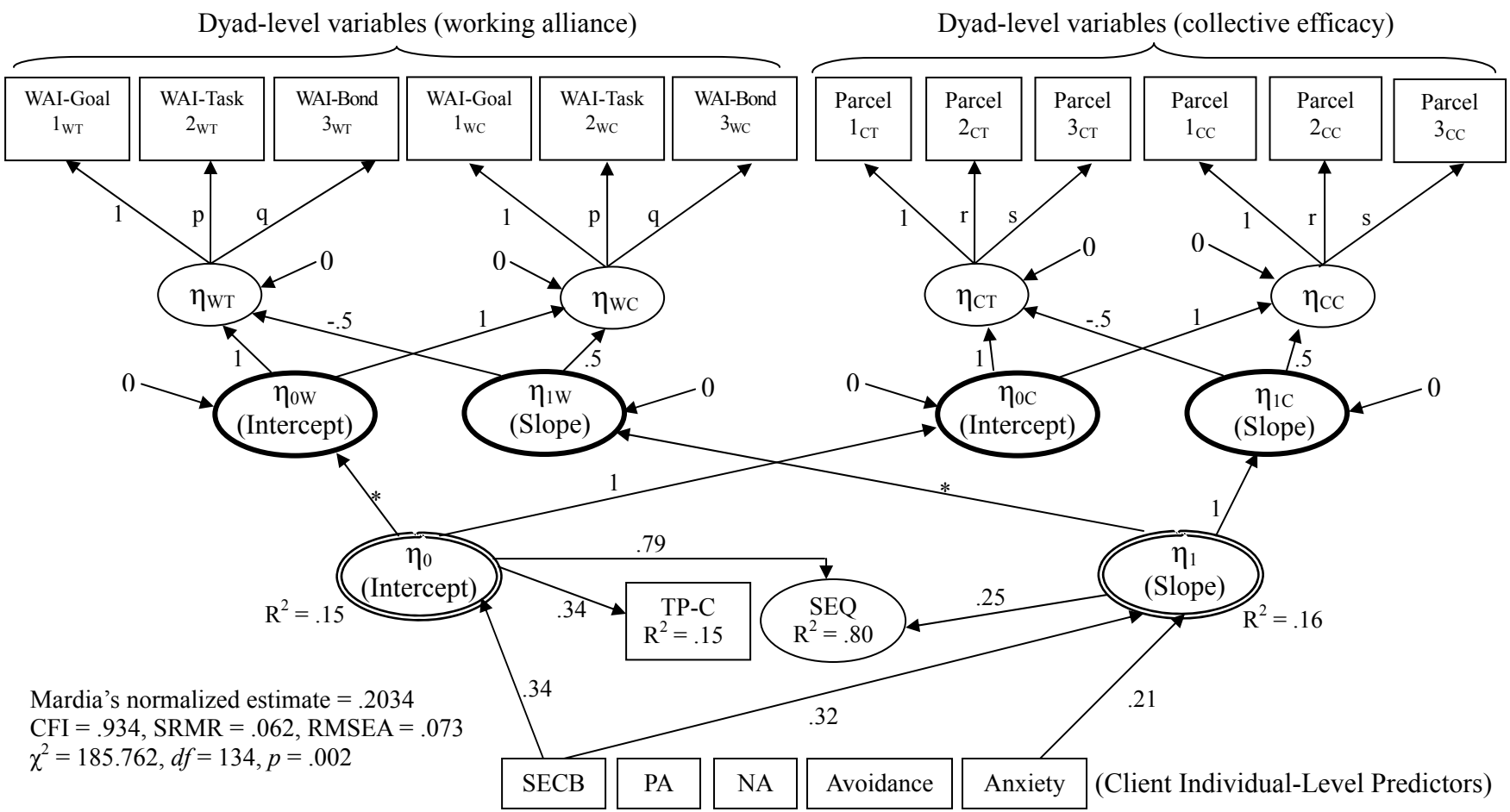

Figure 12. Results of testing the hypothesized third-order full model. 1st-order individual latent factors were represented by regular circles. 2nd-order dyadic factors are represented by circle in bold. 3rd-order dyadic factors are represented by double circles. Coefficients above the 2nd-order dyadic factors were unstandardized, whereas coefficients below the 2nd-order were standardized. Non-significant structural paths and residual covariances retained from previous steps were omitted.

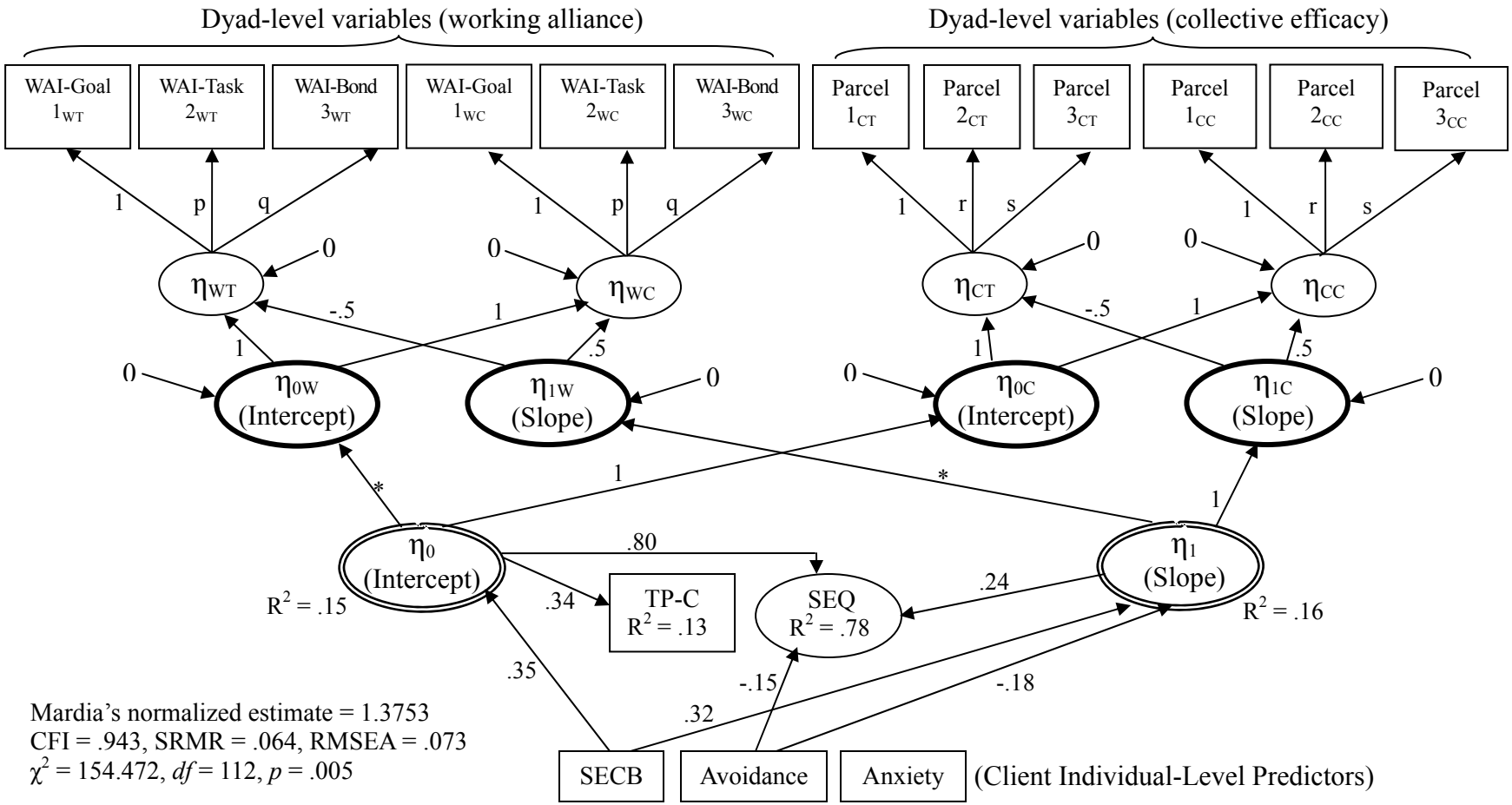

Figure 13. Results of testing the trimmed third-order full model. 1st-order individual latent factors were represented by regular circles. 2nd-order dyad-level factors are represented by circle in bold. 3rd-order dyad-level factors are represented by double circles. Coefficients above the 2nd-order dyadic factors were unstandardized, whereas coefficients below the 2nd-order were standardized. Non-significant structural paths were omitted.

The third-order full model showed acceptable data-model fit: χ^2 = 185.762 (*df* = 134, *p* = .002, CFI = .934, SRMR = .062, and RMSEA = .073. Because clients' positive and negative affect did not produce significant structural paths to the third-order intercepts or slopes (dyadic factors), or to the client-rated outcomes, they were removed from the trimmed third-order full model to ease the complexity of model testing and better accommodate the relatively small sample size (*N* = 73) in the current study. After eliminating clients' positive and negative affect, Mardia's Normalized estimate was 1.3753, which indicated that the data were still distributed normally. Fit indices (CFI = .943, SRMR = .064, RMSEA = .073, χ^2 = 154.472 with *df* = 112, *p* = .005) suggested that the trimmed model still yielded acceptable data-model fit.

Results of the trimmed third-order full model (see Figure 13) showed that clients' coping efficacy, as assessed before therapy, produced significant and moderate structural paths of .35 and .32, respectively, to the quality of the therapeutic relationship (3rd-order intercept, η_0) and the discrepancy between the client's and therapist's perceptions of the relationship (3rd-order slope, η_1). The higher the client's coping efficacy, the better the therapeutic relationship and the bigger the discrepancy between dyad member's perceptions. Clients' avoidant attachment style negatively predicted session quality (-.15) and the discrepancy between dyad member's perceptions on the therapeutic relationship (-.18). In other words, the more avoidant the client's attachment style was, the worse the session quality and the less the discrepancy.

Above and beyond the client individual predictors (i.e., coping efficacy and attachment styles), the quality (3rd-order intercept, η_0) of the therapeutic relationship as perceived by the dyad was moderately predictive of the client's perceived progress on

target problems (.34) and strongly predictive of session quality (.80). Also, the discrepancy between dyad members' perceptions of the relationship generated a small, positive structural path (.24) to session quality. In other words, the more the client's relationship perceptions differed from those of the therapist, the better the session quality was as perceived by the client. Also note that the correlation between the third-level intercept and slope was not significant ($r = .02$, $p = .125$).

Overall, findings derived from the trimmed 3rd-order full model offered evidence for the hypothesis that the therapeutic relationship, operationalized as dyadic relational factors (3rd-order intercept, η_0, and slope, η_1), partially mediate the relations of client individual predictors to client-rated therapy outcomes (hypotheses D-1 and D-2). Results also showed that 13% of the total variance in client-perceived progress and 78% of the total variance in client-rated session quality was accounted for by client individual-level predictors and dyadic relational factors included in the study. Further, 15% of the total variance in quality of the therapeutic relationship (3rd-order intercept, η_0) and 16% of the total variance in discrepancy between dyad members (3rd-order slope, η_1) could be explained by three client individual-level predictors (i.e., coping efficacy, avoidant attachment, and anxious attachment).

Findings of Post-Hoc Analyses

Results of the formal model testing shed light on how dyadic relational factors might mediate the relationship between client individual predictors and client-rated outcomes. Although the study did not use an experimental design, these findings suggested possible pathways from client individual predictors (assessed prior to therapy) to dyadic relational factors, and then to client outcomes (assessed after the 2nd therapy session). Nonetheless,

the findings derived from model testing may not be intuitively clear and interpretable for several reasons. First, in the model dyadic relational factors were tested at the latent level, which tends to be abstract. Second, while it might be easier to interpret findings associated with the third-order intercept (e.g., the higher the average of the client's and therapist's perceptions, the better the client-rated outcomes), the interpretations of the third-order slope might be less straightforward because it involves the disagreement between dyad members. Also, the direction of the discrepancy (i.e., client > therapist or client < therapist) could have important clinical implications, which would not be immediately clear by eyeballing the model. Finally, the third-order intercept and slope represented the integration of two constructs – the working alliance and collective counseling efficacy. Further analyses on each of the two constructs at the observed level could be helpful in understanding how they individually interacted with client pre-therapy variables in predicting therapy outcomes and exploring whether the alliance and collective counseling efficacy functioned differently as mediators. Therefore, post-hoc analyses were performed to provide more detailed information on these issues.

Two types of post-hoc analyses were conducted. First, before the second-order full model was tested, the means of the second-order latent intercept (η_{0W}) and of the second-order latent slope (η_{1W}) formed by dyad members on the working alliance were tested against 0 by imposing the mean structure on the data. The purpose of this analysis was to test whether the average (i.e., mid-point) and the discrepancy between clients' and therapists' perceptions of the alliance were significantly different from zero after removing measurement errors. Analysis on the second-order slope was of particular importance because it would indicate the direction of the discrepancy between clients and

therapists. Results showed that the means of the latent intercept, η_{0W} ($z = 41.376$, $p < .05$), and slope, η_{1W} ($z = 6.459$, $p < .05$) were significantly different from 0. While a non-zero latent intercept was less relevant to the current study, a non-zero latent slope with a positive *z* score indicated that clients perceived the working alliance as higher than therapists at the latent level. Using Cohen's (1988) procedure and criteria, the standardized effect size (*d*) of the slope was 1.468, which suggested that the discrepancy of the latent working alliance between clients and therapists was both statistically significant and practically meaningful. The same process was followed with the collective counseling efficacy data, and similar results of non-zero latent intercept, η_{0C} ($z = 57.856$, $p < .05$), and slope, η_{1C} ($z = 6.306$, $p < .05$) were found. In other words, the positive *z* score associated with the slope showed that clients had higher confidence in the dyad's conjoint capabilities to perform counseling tasks than therapists. The discrepancy between clients and therapists on latent collective counseling efficacy also reached a large standardized effect size (*d*) of 1.003. The findings were consistent with the results of a series of dependent *t*-tests that showed clients had higher scores than therapists on the observed indicators and the entire scales of the alliance and collective counseling efficacy (see page 62). However, these comparisons made at the latent level were presumably more accurate because measurement errors were removed. Subsequent post-hoc analyses could provide additional findings about whether clients consistently reported better alliance and higher collective counseling efficacy than therapists when they gave different ratings to outcome variables and their pre-therapy predictors.

Second, a series of descriptive post-hoc analyses were conducted to further depict the relations of the third-order intercept (η_0, the mid-point of clients' and therapists'

perceptions of the therapeutic relationship) and slope (η_1, the client-therapist discrepancy on their perceptions) to client-rated session quality and client individual predictors. Results of these analyses provide more details about how the average and disagreement between clients and therapists on the alliance and collective counseling efficacy covaried with client individual predictors and outcomes at the observed level. These analyses only involved variables connected by significant structural paths as shown in the trimmed third-order full model (Figure 13), and were performed using either observed indicator scores (i.e., SEQ-Depth, SEQ-Smoothness) or scale total scores (i.e., working alliance, collective counseling efficacy, self-efficacy for client behaviors, and avoidant attachment style). In order to visually show the relationship between client-rated session quality and the average of and the discrepancy between clients and therapists, therapy dyads were first categorized into three groups with low, medium, and high scores of SEQ-Depth and SEQ-Smoothness, and then client-therapist average and discrepancy, along with their individual scores, on the alliance and collective counseling efficacy were presented within each group.

Table 5.

Therapist, Client, and Difference Scores on the Working Alliance and Collective Counseling Efficacy by Low, Medium, and High Client-Rated Session Depth and Smoothness

Client-rated outcome	Working alliance				Collective counseling efficacy			
	Client	Therapist	*M*	C – T	Client	Therapist	*M*	C – T
Low: SEQ-D < 5.0 (n = 14)	3.14	2.96	3.05	.18	6.41	5.78	6.10	.63
Medium: 5.0 ≤ SEQ-D ≤ 6.0 (n = 29)	3.89	3.07	3.48	.82	7.69	6.83	7.26	.86
High: 6.0 < SEQ-D (n = 30)	4.25	3.45	3.85	.80	8.40	6.99	7.70	1.41
Low: SEQ-S < 5.0 (n = 22)	3.60	3.00	3.30	.60	7.37	6.33	6.85	1.04
Medium: 5.0 ≤ SEQ-S ≤ 6.0 (n = 25)	3.72	3.21	3.47	.51	7.46	6.82	7.14	.64
High: 6.0 < SEQ-S (n = 26)	4.30	3.40	3.85	.90	8.32	6.88	7.60	1.44

Note. SEQ-D = Session Evaluation Questionnaire – Depth Subscale; SEQ-S = Session Evaluation Questionnaire – Smoothness Subscale; *M* = The average of client scores and therapist scores; C – T = Client scores minus therapist scores.

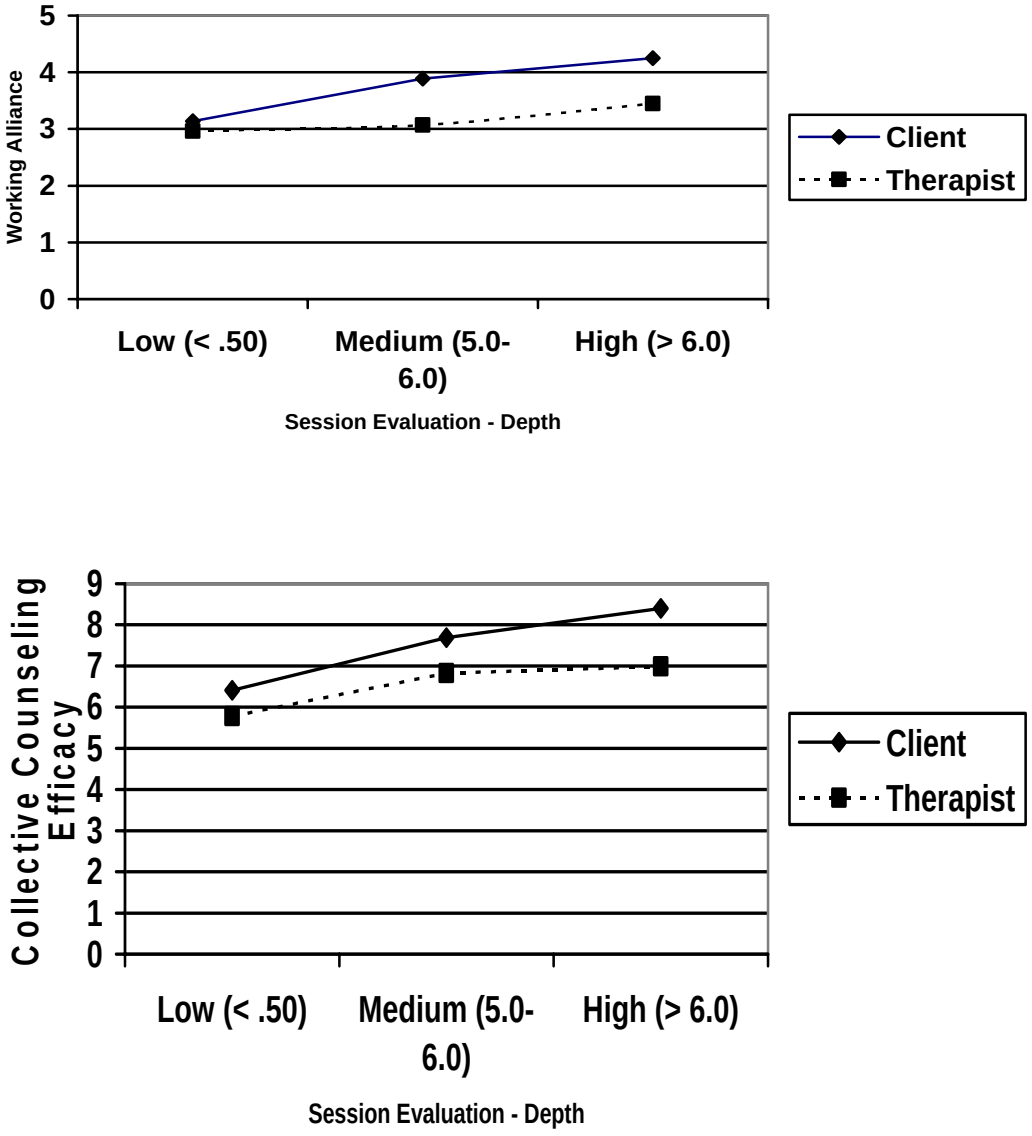

Figure 14. Client and therapist ratings of the working alliance and collective counseling efficacy for clients reporting low, medium, and high session depth.

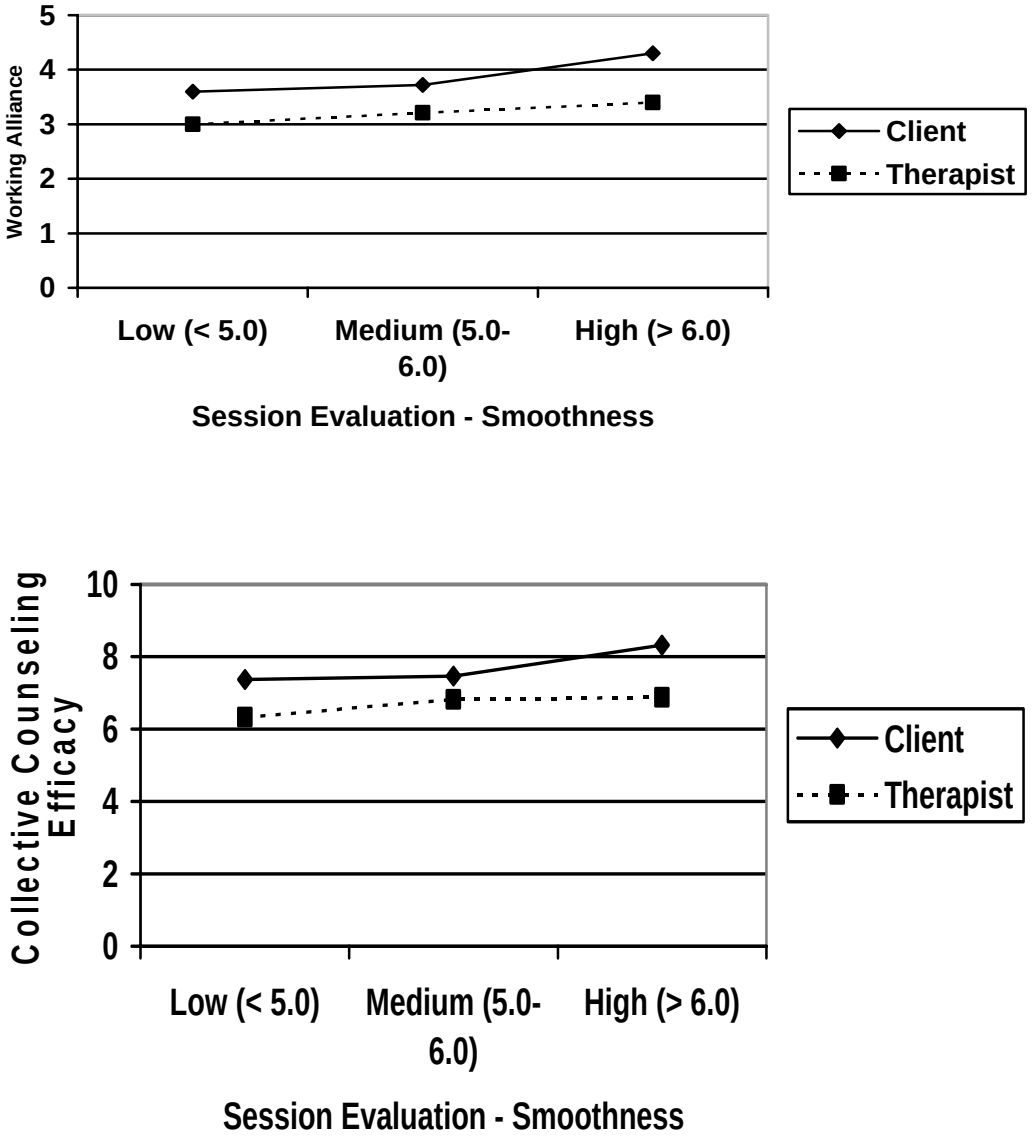

Figure 15. Client and therapist ratings of the working alliance and collective counseling efficacy for clients reporting low, medium, and high session smoothness.

Table 5 and Figure 14 and 15 showed that client-rated session quality tended to covary positively with both the average and the discrepancy between therapists and clients on their perceptions of the working alliance and collective counseling efficacy. For example, as client-rated SEQ-Depth scores increased from low to high, the average of client and therapist ratings of the alliance also went up from 3.05 to 3.85, and the average of client and therapist ratings of collective counseling efficacy went up from 6.10 to 7.70. Moreover, the discrepancy (.18) between clients and therapists on the working alliance was smaller when clients reported low SEQ-Depth scores. The client-therapist discrepancy (.82, .80) on the alliance widened as clients reported higher SEQ-Depth scores. The same trend seemed even more evident for collective counseling efficacy. The client-therapist discrepancy on collective counseling efficacy increased (.63 → .86 → 1.41) as clients reported low, medium, and high SEQ-Depth scores.

The same positive relationship between SEQ-Smoothness scores and the average of clients' and therapists' appraisals of the the alliance and collective counseling efficacy also emerged (see the second panel of Table 5). The mid-point of client and therapist ratings of the alliance (3.30 → 3.47 → 3.85) and collective efficacy (6.85 → 7.14 → 7.60) also increased as clients reported higher session smoothness. However, a somewhat different pattern emerged for the relationship between SEQ-Smoothness scores and the client-therapist discrepancy. Specifically, clients who reported low SEQ-Smoothness scores differed from their therapists on the alliance to the degree of .60 on the metric of the total score. The client-therapist discrepancy on the alliance dropped to .51 when clients reported medium SEQ-Smoothness scores, and went back up to .90 when client reported high SEQ-Smoothness scores. This V-shape pattern also applied to the

relationship between low, medium, and high SEQ-Smoothness scores and the client-therapist discrepancy on collective counseling efficacy (1.04 → .64 → 1.44).

Figure 14 and 15 showed that there was no interaction (i.e., no crossing lines) between client-rated session depth and smoothness and the direction of the discrepancy between clients and therapists. In other words, no matter what SEQ-Depth and SEQ-Smoothness scores clients reported, clients always gave higher ratings on the alliance and collective counseling efficacy than did their therapists. These post-hoc analyses also suggested that the relationships between client-rated session quality and the client-therapist discrepancy on the alliance and collective counseling efficacy might be different for session depth and smoothness. These differential findings warrant further empirical investigation.

Table 6.

Therapist, Client, and Difference Scores on the Working Alliance and Collective Counseling Efficacy by Low, Medium, and High Client Coping Efficacy and Avoidant Attachment Style

Client individual predictor	Working alliance				Collective counseling efficacy			
	Client	Therapist	*M*	C – T	Client	Therapist	*M*	C – T
Low: SECB < 6.0 (n = 20)	3.63	3.03	3.33	.60	7.07	6.51	6.79	.56
Medium: 6.0 ≤ SECB ≤ 7.0 (n = 26)	3.89	3.27	3.58	.62	7.81	6.85	7.33	.96
High: 7.0 < SECB (n = 27)	4.12	3.33	3.73	.79	8.16	6.75	7.46	1.41
Low: ECRS-Avo. < 2.0 (n = 29)	4.13	3.22	3.68	.91	8.05	6.67	7.36	1.38
Medium: 2.0 ≤ ECRS-Avo. ≤ 3.0 (n = 21)	3.85	3.24	3.55	.61	7.39	6.65	7.02	.74
High: 3.0 < ECRS-Avo. (n = 23)	3.67	3.20	3.44	.47	7.66	6.85	7.26	.81

Note. SECB = Self-Efficacy for Client Behaviors Scale; ECRS-Avo. = Experiences in Close Relationship – Avoidance Subscale; *M* = The average of client scores and therapist scores; C – T = Client scores minus therapist scores.

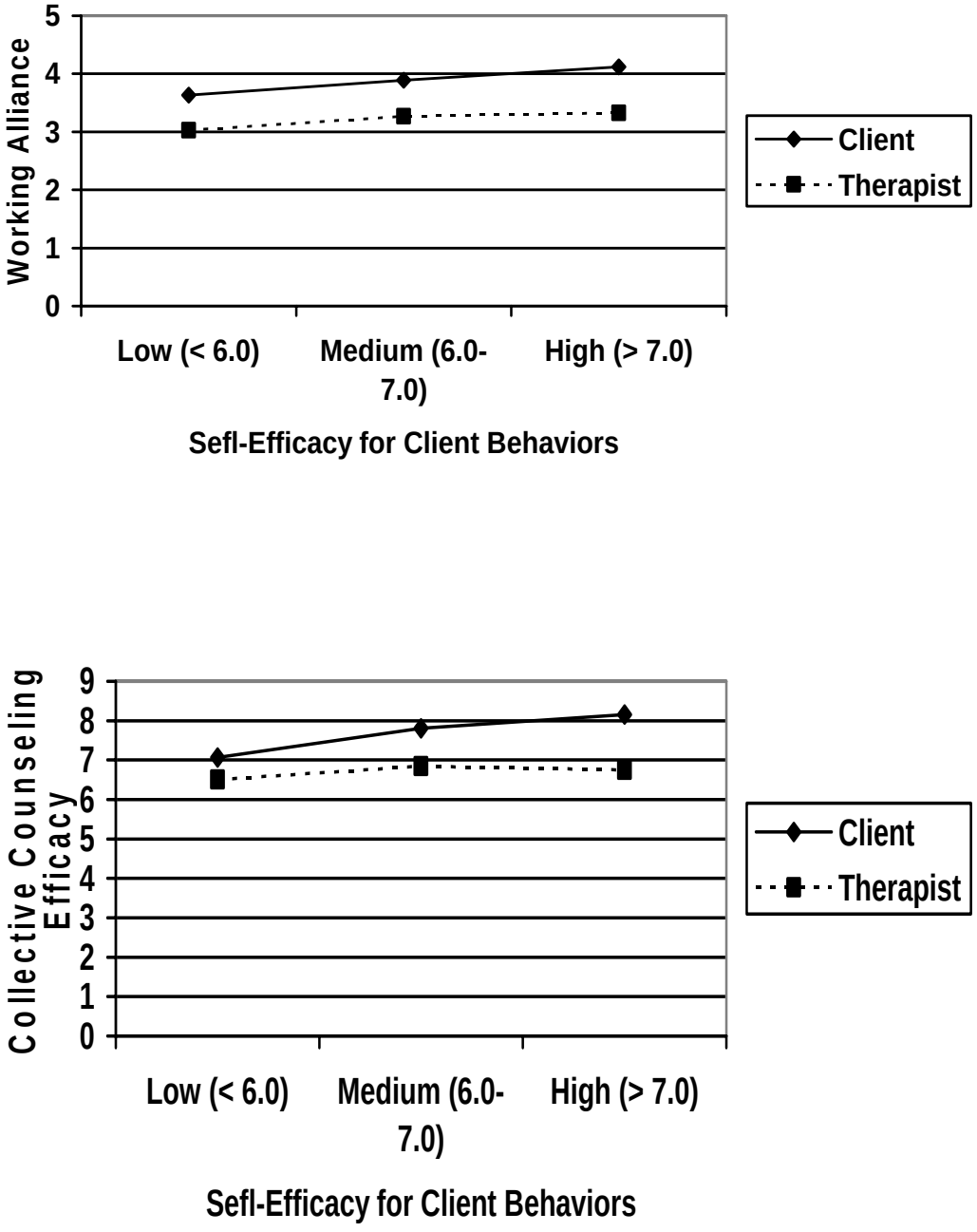

Figure 16. Client and therapist ratings of the working alliance and collective counseling efficacy for clients reporting low, medium, and high coping efficacy (Self-Efficacy for Client Behaviors)

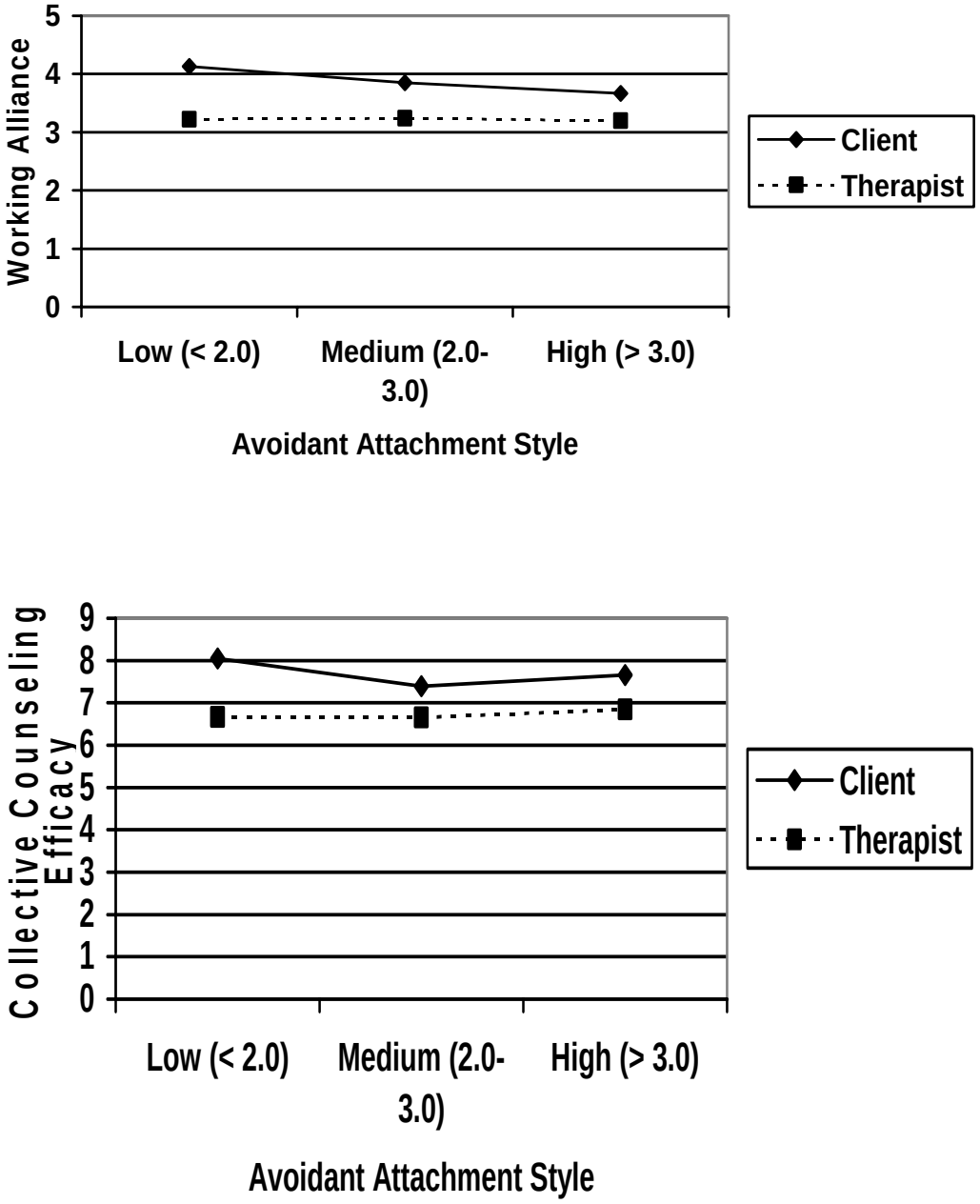

Figure 17. Client and therapist ratings of the working alliance and collective counseling efficacy for clients reporting low, medium, and high avoidant attachment style.

According to the trimmed third-order full model, one of the pre-therapy client individual predictors – coping efficacy (SECB) – was positively associated with the third-order intercept (η_0) and slope (η_1) while another client predictor, avoidant attachment style (ECRS-Avoidance), was negatively related only to the slope. Again, for the purpose of visually presenting the relationship between these two client individual predictors and the third-order slope, therapy dyads were first put into three groups based on their SECB and ECRS-Avoidance scores (low, medium, high), and then client-therapist discrepancies and their individual scores on the working alliance and collective counseling efficacy were presented within each group.

Table 6 (first panel) and Figure 16 showed that as clients reported low pre-therapy coping efficacy, the client-therapist average and discrepancy on the alliance tended to be smaller. However, when clients' coping efficacy improved, the average of and the gap between client and therapist ratings of the alliance seemed to increase as well (3.33 → 3.58 → 3.73 for the average; .60 → .62 → .79 for the discrepancy). The same pattern was also present for the relationship between client pre-therapy coping efficacy and the client-therapist average and discrepancy on collective counseling efficacy. The average of client and therapist ratings of collective counseling efficacy increased (6.79 → 7.33 → 7.46) and their discrepancy widened (.56 → .96 → 1.41) as clients reported higher pre-therapy coping efficacy. In short, the higher the client's individual coping efficacy was, the higher the client-therapy average and the bigger the client-therapist discrepancy on collective counseling efficacy.

A reversed pattern emerged for the relationship between client avoidant attachment style and the client-therapist average and discrepancy on the working alliance and

collective counseling efficacy (Table 6 [second panel], Figure 17). As clients were more avoidant-attached, the average of clients' and therapists' ratings of the alliance decreased (3.68 → 3.55 → 3.44), as did the discrepancy between dyad members (.91 → .61 → .47). On the other hand, as clients became more avoidant-attached, a V-pattern seemed present for the average (7.36 → 7.02 → 7.26) of and the discrepancy (1.38 → .74 → .81) between clients' and therapists' perceptions of collective counseling efficacy. It should be noted that, in the trimmed third-order model, client avoidant attachment style only produced a significant path to the discrepancy of clients' and therapists' perceptions (i.e., slope), but not to the average (i.e., intercept).

Finally, clients' individual predictors (i.e., coping efficacy and avoidant attachment style) did not interact with the direction of the discrepancy between clients and therapists on the alliance and collective counseling efficacy. Clients gave higher ratings to these two relational factors than did therapists regardless of the scores of their coping efficacy and avoidant attachment style.

In summary, results of the above post-hoc analyses suggested that clients perceived the therapy dyads as having better working alliance and higher collective counseling efficacy than did their therapists. Furthermore, the average and discrepancies between clients and therapists on the alliance and collective counseling efficacy were positively related to client-rated session quality and client pre-therapy coping efficacy, but negatively related to avoidant attachment style. Based on the trimmed third-order full model and host-hoc analyses, these findings suggested that higher client coping efficacy and lower client avoidant attachment style (assessed prior to therapy) might lead to higher appraisals of the alliance and collective counseling efficacy as perceived by the

dyad, and larger disagreement between dyad members (clients > therapists) on the two variables. The higher combined appraisals and larger disagreement between dyad members were, in turn, positively predictive of client-rated outcomes.

Chapter V: Discussion

Development and Initial Validation of the Collective Counseling Efficacy Scale

Since Bandura (1986) introduced the concept of collective efficacy, this variable has been researched in disciplines such as industrial/organizational psychology (e.g., Zellars, Hochwarter, Perrewe, Miles, & Kiewitz, 2001) and sport psychology (e.g., Greenlees, Graydon, & Maynard, 1999). In such applications, efficacy beliefs in a group or a team are often emphasized in addition to the individual member's confidence in his or her own abilities to perform given tasks. The variable of collective efficacy has also been introduced in studies of student work teams in engineering (Baker, 2001; Lent et al., 2006) and clinical supervision (Tagger, 2003). However, collective efficacy has received little empirical attention in psychotherapy process and outcome research. A novel measure, the Collective Counseling Efficacy Scale (CCES), was developed in the current study to assess this variable in the context of individual counseling. It was also a step taken to assess a precursor of the common factor of positive expectation and hope for improvement at the dyad level because, if the client is confident in working with his or her therapist as a team on counseling tasks, he or she might be more likely to develop positive expectations about therapy outcomes. Traditionally, efficacy beliefs and the common factor of expectancy has been studied from the client's perspective alone and treated as a client characteristic variable (Grencavage & Norcross, 1990; Longo et al., 1992). The current study was designed to not only incorporate coping efficacy as a client variable but also to include collective counseling efficacy (as assessed by the CCES) as a dyad level variable that takes both clients' and therapists' perspectives into account.

The 1-factor solution of the CCES was initially supported by four principal axis

factor analyses, using data from clients and therapists after the first and the second sessions. The single factor accounted for 62% to 65% of the total variance based on client data and 48% to 49% of the total variance based on therapist data, and all CCES items loaded highly on this single factor. These findings offered initial support for hypothesis A-1 and suggested that there was one construct underlying items designed to measure collective counseling efficacy for both clients and therapists. Nonetheless, the single factor seemed to have more explanatory power for clients than for therapists; similarly, each of the 15 CCES items tended to relate more strongly to the single factor for clients (loadings ranged from .63 to .89, median loading = .81) than for therapists (loadings ranged from .56 to .80, median loading = .71). A possible explanation for the somewhat lower factor loadings observed for therapists could be that, given their clinical training, therapists might be able to better differentiate CCES items than do clients. Therefore, therapists might perceive these items as tapping different parts of the counseling process rather than just one uniform task. This hypothesis warrants future empirical investigation.

The CCES's one-factor structure is similar to that of the collective efficacy measure developed for engineering student work teams (Lent et al., 2006), and both instruments implement the same approach to assess this construct: individual dyad members' (or team members') responses to identical items regarding the ***dyad's*** (team's) capabilities to perform given tasks. The two (client, therapist) versions of the CCES differ only in terms of slight wording changes in items and in the instructions to apply to either the client or therapist. Initial evidence derived from the current study and Lent et al.'s study supports the feasibility of tapping collective efficacy from dyad (or team) members' perceptions of the ***dyad's*** (or team's) capabilities. This approach is, however, slightly different from that

used by Tagger (2003) to assess collective efficacy as perceived by supervisors and supervisees in clinical supervision. In Tagger's study, a supervision dyad's collective efficacy was derived from summing responses of dyad members' perceptions of their own ***individual*** efficacy percepts. Although a recent study showed no difference between these measurement methods (Whiteoak, Chalip, & Hort, 2004), the procedure adopted in the current study and in Lent et al.'s study is arguably more consistent with Bandura's (1997) conception of collective efficacy, which focuses on the question of "can *we* do this?" rather than "can *I* do this?"

The common factor literature provides a context for including the collective counseling efficacy variable in psychotherapy research. Identified by Grencavage and Norcross (1990), the common factor of clients' positive expectation and hope for improvement is the faith that they will eventually get well. Arguably, if the client and the therapist were forming an effective therapy team, the client might be more likely to expect therapy to be helpful. In other words, collective counseling efficacy could be a predictor of this common factor. Now with initial psychometric evidence of the CCES, researchers can take a step further to predict this common factor from the social cognitive perspective at both the individual and the dyad levels.

Measurement Equivalence for CCES and WAI-SR across Therapists and Clients

Evidence for measurement equivalence is a prerequisite of comparing and integrating data from different groups (Byrne, Shavelson, & Muthén, 1989; Meredith, 1993; Widaman & Reise, 1997). This measurement issue had not received much empirical attention in the field of counseling psychology until recently (e.g., Mobley, Slaney, & Rice, 2005; Wei, Russell, Mallinckrodt, & Zakalik, 2004). As suggested by

Bandura (1993), individuals occupying different roles or serving different functions within the group may differ somewhat in how they view their group's collective efficacy. Therefore, measurement equivalence of the CCES and WAI-SR needs to be established in order to better justify the integration of client and therapist data in modeling the working alliance and collective counseling efficacy as dyadic variables.

Although different versions of the WAI and WAI-S have been developed for clients, therapists, or observers (e.g., Andrusyna et al., 2001; Tracey & Kokotovic, 1989), the issue of whether these different forms are equivalent to each other has received surprisingly little attention. Not much has been done beyond Tracey and Kokotovic's effort to test the invariance of correlation matrices from clients and therapists on the WAI-S. Instead of the WAI-S, the current study adopted the alternative WAI-SR (Hatcher & Gillaspy, 2006) because of its better psychometric properties, and tested the equivalence of this instrument across clients and therapists. Results showed that (a) the same factor structure (i.e., one latent factor underlying three subscale scores) was applicable to clients and therapists, and (b) the corresponding factor loadings were statistically identical across the two groups. These findings provide more evidence supporting the use of the WAI-SR for both dyad members and allow for the meaningful comparison and integration of data (hypotheses B-2 and B-4).

Measurement equivalence may be less a problem for collective efficacy measures administered to a group whose members typically assume the same or similar position, such as student work teams (e.g., Lent et al., 2006), sport teams (e.g., Watson, Chemers, & Preiser, 2001), or combat units (Chen & Bliese, 2002). Members in these groups tend to perceive the group's or the team's conjoint capabilities from the same perspective

because they share the same member status and serve the same function. However, the client and therapist belonging to a therapy dyad could view collective counseling efficacy in distinct ways because of their different knowledge about and experiences with psychotherapy. Therefore, the equivalence (i.e., the same 1-factor structure and statistically identical factor loadings) found for the CCES in the current study was essential (hypotheses B-1 and B-3). However, this finding should be interpreted with caution for a number of reasons. First, exploratory and confirmatory factor analyses were conducted using the same sample of clients and therapists. Second, the construct of collective efficacy in the context of psychotherapy is still very much in its infancy; thus, its conceptual and operational definitions require further scrutiny.

With initial evidence for measurement equivalence across clients and therapists on the WAI-SR and CCES, mean structures post-hoc analyses showed that after two therapy sessions clients rated the latent working alliance and collective counseling efficacy as higher than therapists. The difference between clients and therapists on the working alliance found in the current study was consistent with previous research showing that clients tend to report higher ratings than therapists and that there is little agreement between the two dyad members on the early alliance (e.g., Kivlighan & Shaughnessy, 1995; Mallinckrodt, 1993; Tryon & Kane, 1995). Findings derived from the current study were arguably more accurate because measurement errors were removed and measurement equivalence was established prior to this comparison. Causal explanations for the therapist-client differences on the alliance and collective counseling efficacy are unavailable at this point. However, it could be that clients' higher ratings were associated with their inexperience with therapy and positive responses from playing the role of help

receivers. On the other hand, therapists might have a more stable and realistic view of the therapeutic relationship because of their training and therapeutic experience. This speculation is, of course, subject to future research.

Evidence for Conceptualizing the Working Alliance and Collective Counseling Efficacy as Dyadic Variables

Although the therapeutic relationship has been described as a dyadic phenomenon (e.g., Barrett-Lennard, 1985), the key component of the relationship – the working alliance – has not been studied as a dyadic variable. Results of the multilevel analyses (Step 3) lend support to the idea that there are sufficient amounts of the total variability of the working alliance (59%) and collective counseling efficacy (34%) that occur at the dyad level as opposed to the individual level (hypotheses C-1 and C-2). To fully capture the data from both dyad members, two sets of second-level intercepts and slopes were created to characterize the working alliance and collective counseling efficacy as perceived by the dyad (i.e., the mid-point and the discrepancy between clients' and therapists' appraisals). This approach not only helps to shift the focus from the individual (either the client or the therapist) to the dyad, but also offers the opportunity to examine how the interaction between dyad members relates to therapy outcomes. In other words, the basic unit of analysis is no longer the individual; instead, it is the therapy dyad. Given the amount of the variance that occurred at the dyad level, the traditional analytic approach that relies on the individual perspective may not be the optimal way to utilize the information imbedded in the data from dyad members. For example, some researchers (e.g., Crits-Christoph, Gibbons, & Hearon, 2006) have criticized the low effect size, .22 to .26, between the alliance and treatment outcome. To the extent that this low effect size

is due to the mis-operationalization of the alliance as an individual-level variable, the dyadic analytic approach adopted in the current study may help to examine this connection from a more conceptually suitable viewpoint.

The ability to capture the interaction between dyad members is particularly valuable to psychotherapy process and outcome research. Psychotherapy is often described by clinicians who employ a relational approach as a dynamic process in which the client's and the therapist's experiences are intertwined with each other (Beebe, Knoblauch, Rustin, & Sorter, 2005; Mitchell, 2000). Although the dyadic analytic approach might not be able to fully describe the complexity of the client-therapist interaction, it at least represents an improvement over existing working alliance research that relies only on the individual's (i.e., the client, therapist, or observer) perspective.

On the other hand, the initial support for modeling collective counseling efficacy as a dyadic variable (with the intercept and slope) is compatible with its conceptual definition that emphasizes the dyad's shared belief in its conjoint capabilities to perform given tasks (Bandura, 1997). The introduction of this new construct to psychotherapy research may prove beneficial given its utility in predicting relevant outcome variables in the current study and other disciplines (e.g., Feltz & Lirgg, 1998).

The difference in the percentages of the variance attributed to the dyad (as opposed to the individual) between the working alliance (59%) and collective counseling efficacy (34%) is noticeable. A possible explanation for the differential percentages at the dyad level involves the idea that the alliance is typically identified as more important than efficacy beliefs in the common factors literature (e.g., Lambert, 1992). It could be that dyad members perceived the alliance as more relevant to the psychotherapy process than

collective counseling efficacy, which then led to more variability in the alliance shared by dyad members. Alternatively, therapy participants may be more quickly able to synchronize their perceptions of the affective than behavioral dimensions of the relationship. This finding, and its underlying reasons, should be examined in future research with different samples.

Inclusion of Collective Counseling Efficacy in Psychotherapy Research

Results of the second-order full model suggested high collinearity between two sets of second-order dyadic factors from the working alliance and collective counseling efficacy. This issue was later resolved in the third-order full model by creating the third-level common intercept and slope that further integrated data from these two constructs, in addition to combining data from clients and therapists. The zero-order correlations between the WAI-SR and CCES scores fell into the medium to large range for both clients (r = .47 to .62) and therapists (r = .48 to .65). This finding indicated the intimate relationship between observed indicators of the alliance and those of collective counseling efficacy.

The variable of collective efficacy has been excluded from the conceptualization of the therapeutic relationship (Gelso & Hayes, 1998). However, Lent et al. (1998) recommended that "an understanding of counseling and supervisory relationship processes might profit from inclusion of Bandura's (1986, 1997) notion of collective efficacy" (p. 302). Lent et al.'s suggestion was supported by the creation of the third-level common intercept and slope in the current study, which not only synthesized data from clients and therapists but also integrated information from the alliance and collective counseling efficacy. It might also be noted that one instrument used to assess the alliance,

the Agnew Relationship Measure (AMS; Agnew-Davies, Stiles, Hardy, Barkham, & Shapiro, 1998), includes a 7-item Confidence subscale, which assesses the client's and therapist's confidence in each other, along with other subscales similar to those of the WAI. It appears that in Agnew-Davies et al.'s conceptualization and operationalization, collective efficacy is a component of the alliance. Even though these constructs come from two different theoretical camps (i.e., the psychoanalysis approach and social cognitive theory), the connection between them could be explained by the idea that a positive working alliance is a vehicle to convey the dyad's shared confidence in carrying out counseling tasks, and vice versa. Of course, this hypothesis requires verification by future research.

A close look at the item content of the WAI-SR and CCES may also shed light on high correlations between dyadic factors (i.e., 2nd-order intercepts and slopes) derived from these two constructs. In particular, some CCES items seem to resemble those of the WAI-SR Goal and Task subscale items. For example, the item "____ and I collaborate on setting goals for my counseling" from the WAI-SR Goal subscale is similar to the item "How confident are you that you and your counselor could work together effectively, as a team, on setting mutually agreed-upon counseling goals" from the CCES. Moreover, the WAI-SR Task item "As a result of these sessions I am clearer as to how I might be able to change" resembles the CCES item "identify and practice specific skills to help me deal with the problem(s) that brought me into counseling." Despite the similarity in item content, CCES items are more behavior-oriented and place the focus on the dyad member's confidence in the dyad for performing specific counseling tasks. In contrast, WAI-SR items tend to be more general and to tap the alliance (i.e., tasks, bond, goals) by

focusing on the individual's perception of the self and the dyad. Future confirmatory factor analyses with independent samples may help to clarify the relation between these two instruments.

The Change Process and Interaction between Dyad Members

The mediating effect of relational factors in the client predictor-client outcome linkage was initially supported by the trimmed third-order full model. In the present study, relational factors involve a third-order intercept (i.e., the mid-point of clients' and therapists' appraisals of the working alliance and collective counseling efficacy) and a third-order slope (i.e., the discrepancy between client's and therapists' appraisals of the two variables). Because the intercept represents the average of clients' and therapists' perceptions, it could be used to characterize the quality of the relationship as perceived by the dyad. However, the intercept alone falls short of fully describing the interaction between dyad members. Hence, the slope is needed to depict the disagreement (i.e., discrepancy) between clients and therapists on their perceptions of therapeutic relationship. The slope also provides information on the pattern of the client-therapist discrepancy – that is, whether clients perceived the relationship as better than therapists (or vice versa) in relation to client individual predictors and client-rated outcomes.

Results of the third-order trimmed model showed that client individual variables and two third-order relational factors accounted for a significantly larger amount of variance in client-rated session quality (78%) than in client-perceived progress (13%). This finding could be the result of instruments selected to measure these two outcome variables. Specifically, while session quality was measured by 10 items, client-perceived progress was assessed only by two items, which might not be able to fully capture the variability

of this variable.

Because the third-order intercept and slope (i.e., relational factors) were tested as latent factors and represented the integration of client and therapist data on both the working alliance and collective counseling efficacy, these findings could be difficult to understand. Therefore, post-hoc analyses at the observed indicator level were performed to add to the interpretation. Also, I chose to focus post-hoc analyses on the slope because findings associated with the slope might be less intuitively clear. Based on the trimmed third-order full model, post-hoc analyses, and a review of relevant literatures, two possible change pathways deserve further discussion: (a) client coping efficacy to collective counseling efficacy, and then to client-rated outcomes, (b) client avoidant attachment style to the working alliance, and then to client-rated outcomes. To more effectively organize these complex findings, I will first discuss the mediating effect of relational factors, and then the above two pathways from client predictors to outcomes.

The mediating effect of relational factors. The mediating effect of relational factors (i.e., third-order intercept and slope) on the relation of pre-therapy client predictors to post-therapy client-rated outcomes was present in the current study (hypotheses D-1 and D-2). Although this mediating effect is partial rather than full, the findings are encouraging as they provide evidence supporting the merit of examining the therapeutic relationship from a dyadic perspective, as opposed to an individual perspective. Specifically, the third-order intercept (i.e., the mid-point of clients' and therapists' appraisals) mediated the relation of client coping efficacy to client-perceived progress and client-rated session quality. Moreover, the third-order slope also mediated the relations of client coping efficacy and avoidant attachment style to client-rated session

quality. The dyad's combined perception (i.e., intercept) was a stronger mediator because it produced a medium path to client-perceived progress and a large path to client-rated session quality. In contrast, the discrepancy between dyad members (i.e., slope) played a less dramatic mediating role as it only generated a small path to client-rated session quality.

The above findings echo Lambert and Barley's (2002) emphasis on the curative power of the therapy relationship, complementing interest in treatment methods and in therapist and client characteristics. Whereas treatment methods tend to account for modest amounts of outcome variance, and client and therapist characteristics may be difficult to modify, the therapeutic relationship is more immediate and relevant to the current change process. As Mahoney (1991) argued, human relationships provide the context for change to occur. Essentially, it is the quality of our relationships that ultimately influences the quality of our lives. This idea has significant implications for training programs, pointing to the importance of enabling future clinicians and supervisors to learn how to foster effective relationships with their clients and supervisees, with the help of various counseling techniques.

The positive relation of the dyad's combined perception of the relationship to client-rated therapy outcomes was consistent with the common factor literature that emphasizes the importance of the therapeutic relationship (Horvath & Symonds, 1991; Wampold, 2001). In other words, the more the dyad perceived that they had developed a better relationship, the more favorable were client-rated outcomes. Most studies included in the existing literature utilized individual-level analyses that focused on the client data, and did not take the client and therapist perspectives into account simultaneously. The

current study took a step farther by investigating the relationship as a dyadic phenomenon, which is presumably more consistent with how this variable is defined.

By operationalizing the therapeutic relationship as a dyadic phenomenon and taking both client and therapist data into account, this study also offers an opportunity to explore how the disagreement between the client and therapist, as well as the direction of the disagreement, might function as a mediator in the client predictor-outcome linkage. The study showed that larger discrepancy between clients and therapists was modestly associated with better client-rated session quality (structural path = .24). This finding seems counterintuitive as one might expect that the client's and the therapist's shared (less discrepant) perception of the relationship would lead to better therapy outcomes. Some researchers have investigated the relationship between client's and therapists' perspectives of the working alliance and how the two individual perceptions relate to therapy outcomes. For example, Tryon and Kane (1990) found that counselors' ratings of strength of the alliance were modestly related to clients' ratings and unrelated to type of client termination. Also, Long's (2001) study showed that client-therapist agreement on counseling goals was related to client-rated initial therapeutic change. On the other hand, another study (Fitzpatrick et al., 2005) revealed that divergences in clients' and therapists' perspectives of the working alliance were not associated with the clients' evaluations of the impact of their sessions. Fitzpatrick et al.'s study also showed that client- and therapist-rated alliance scores did not converge as therapy progressed.

Apparently, the literature on agreement or divergence of the clients' and therapists' perceptions of the alliance and how it might relate to outcomes is not conclusive. In the current study, clients consistently gave higher ratings of the alliance and collective

counseling efficacy than did therapists. This discrepancy was also positively and modestly predictive of session quality. Derived from post-hoc analyses, Figures 14 and 15 showed that therapists' ratings of the alliance and collective counseling efficacy were relatively stable in relation to client-rated session depth and smoothness. However, clients' appraisals of the alliance and collective counseling efficacy seemed to increase to a larger degree (hence, the larger discrepancy between the client and therapist) as they reported higher session depth and smoothness. These findings are intriguing and suggest that the interaction between clients and therapists may play an important role. But the current study does not provide an explanation as to why the discrepancy between the client's perspective and the therapist's perspective would predict positive session quality. The relationship between therapy outcomes and the client (high)-therapist (low) configuration on the alliance and collective efficacy warrants further empirical scrutiny. Nonetheless, there are several possible explanations for the linkage between the client-therapist discrepancy and client-rated session quality.

First, this finding could be the result of mono-source bias because clients provided ratings to the alliance, collective efficacy, and session quality. However, it is important to note that this relational factor (i.e., slope – the discrepancy) involved data from both clients and therapists. Therefore, it is the disagreement between clients and therapists, rather than clients' and therapists' individual and separate ratings, that predicted session quality. Another explanation is that therapists may have had relatively stable appraisals of the alliance and collective counseling efficacy because of their clinical training; therefore, they could have given ratings based on their experiences across the board rather than their experience with one particular client (although they were instructed to do so in the

present study). It is also likely that therapists could have given lower and more table ratings because they felt more responsible for the therapy process and outcomes. Due the helper role they played, therapists might focus their attention more on areas that needed improvement than on their accomplishments, which could then lead to more unsatisfying perceptions of the alliance and collective counseling efficacy. Moreover, given that 13 therapists saw more than one client, this client-nested-within-therapist data structure might have affected the stability of therapists' ratings because part of the data came from the same therapists. In contrast, clients recruited for the study might have had little or no previous counseling experience, felt less responsible for the outcomes, and might, therefore, have given unrealistically high appraisals to the alliance and collective counseling efficacy based on their positive experiences with therapists over only two therapy sessions.

In the current study, the relational factors were operationalized by the data on both the working alliance and collective counseling efficacy. Thus, the mediating effect lends support to the importance of the working alliance, a popular common factor, and collective counseling efficacy, a new variable with great potential in psychotherapy process and outcome research. While the value of the alliance has been vastly documented in the psychotherapy literature (see Castonguay, Constantino, & Holtforth, 2006, for a review), collective counseling efficacy provides another vehicle for fostering a positive relationship between the client and therapist. Therapy educators should also help trainees conceptualize the therapeutic relationship as a dyadic phenomenon as the relational factors of the alliance and collective counseling efficacy could be (and, conceptually, should be) operationalized as dyadic variables. Given that client coping

efficacy and avoidant attachment style generated two different pathways to therapy outcomes, each of them will be discussed further in the following sections.

Starting points of the change process: Coping efficacy and avoidant attachment. This study followed Lent et al.'s (1998) recommendation to include both percepts of self and dyadic efficacy as well as to take the perspective of both dyad participants into account. This was possible with the introduction of collective efficacy to psychotherapy research. Along with results of post-hoc analyses, the trimmed third-order full model provided support for a pathway from (a) clients' pre-therapy coping efficacy to (b) the dyad's combined perception of the relationship (i.e., 3rd-order intercept) and (c) the discrepancy between dyad members (i.e., 3rd-order slope), both of which then led to (d) client-rated post-therapy outcomes. Specifically, the client's higher coping efficacy prior to therapy was positively predictive of higher combined perceptions of the dyad and a wider gap between dyad members on the alliance and collective efficacy which, in turn, was positively predictive of client-rated therapy outcomes.

Table 4 (zero-order correlations) showed that, as the client reported higher individual coping efficacy, his or her percept of the dyad's collective efficacy increased ($r = .40$, $p < .01$); however, clients' coping efficacy was only weakly related to therapists' ratings of collective efficacy ($r = .10$, n.s.). These two correlation coefficients significantly differed from each other ($t = 2.32$, $p = .024$). This finding suggested that the client pre-therapy coping efficacy might have a positive impact, mostly through his or her own collective efficacy beliefs, on the dyad's collective efficacy. The positive connection between clients' individual coping efficacy and their collective efficacy percepts is consistent with Bandura's (1997) contention that collective efficacy is rooted in self-efficacy and that

both of them share the same experiential sources. It seems reasonable that the therapist's percept of collective counseling efficacy did not increase as much when his or her client reported higher pre-therapy coping efficacy because the two dyad members played different roles in the relationship and might have differential exposure to counseling-related experiences. Also, as clients reported higher individual coping efficacy prior to therapy, clients' percepts of collective efficacy seemed to increase when their therapists' percepts remained relatively stable (see Figure 16); hence, the discrepancy between dyad members on their collective efficacy percepts widened and appeared to correlate positively with client individual coping efficacy. The pattern of increasing client ratings-stable therapist ratings on collective efficacy was then associated with better session quality, which suggests that the disagreement between clients and therapists on their percepts of collective efficacy may not be counter-therapeutic as long as clients' ratings are higher than therapists' ratings.

The current study also provided an opportunity to examine how client pre-therapy coping efficacy might influence the development of the working alliance as perceived by the dyad. The same pattern that was evident for the relation between client coping efficacy and collective counseling efficacy emerged for the relation of client coping efficacy to the working alliance. Specifically, clients' coping efficacy was significantly associated with their own perceptions of the working alliance ($r = .31$, $p < .01$), but not with their therapists' perception of the alliance ($r = .22$, n.s.). However, these two correlation coefficients were not significantly different from each other ($t = .72$, $p = .473$). These relationships help to explain why clients' coping efficacy was positively predictive of dyad members' combined perceptions of the alliance because both correlation

coefficients were positive. But, client's coping efficacy was associated with the discrepancy between clients' and therapists' percepts of the alliance to a lesser degree because the non-significant difference between the above two correlation coefficients suggested that the client-therapist discrepancy did not increase significantly (see Figure 16). Although client coping efficacy, as a client characteristic, has been largely ignored in psychotherapy research, the above findings indicate that client coping efficacy might have important clinical implications for its potential impact on the development of the working alliance and collective counseling efficacy. More research is needed to explore the predictive utility of coping efficacy in psychotherapy.

Adult attachment has been identified as one of the client characteristics that is related to the process and outcome of psychotherapy (Clarkin & Levy, 2004). Findings from the current study revealed that clients' avoidant attachment style had direct and indirect effects on client-rated session quality. Assessed prior to therapy, client avoidant attachment was negatively predictive of post-therapy session quality. This result is compatible with empirical findings derived from patients with more severe psychological issues. Tasca et al. (2004) found that higher avoidant attachment predicted noncompletion of treatment in women with the binge-purge subtype of anorexia nervosa. Another study found that avoidant-fearful attachment was associated with negative treatment response among individuals with major depression (Reis & Grenyer, 2004). Larose et al. (1999) reported that college students with higher avoidant attachment were less likely to perceive benefits from help providers.

Collectively, such findings may suggest that it might be more difficult for clients with attachment avoidance to profit from therapy, especially at the beginning stage,

because of their tendency to devalue and escape from helping relationships. However, this hypothesis requires empirical testing. On the other hand, anxious attachment was found in the current study to have no relation, direct or indirect, to client-rated outcomes. The fact that the data were collected at the early counseling stage (i.e., the first 2 sessions) might shed light on these non-significant relations because anxious attachment, characterized by high preoccupation with relationships, might have greater impact on treatment outcome at a later time when the therapeutic relationship is more firmly established.

It has been suggested that attachment styles, though formed early in one's life, may affect treatment outcomes through proximal mechanisms, such as the therapeutic relationship (e.g., Meyer, Pilkonis, Proietti, Heape, & Egan, 2001). Moreover, other empirical investigations showed that those who report higher avoidant attachment tend to underestimate positive therapeutic interactions (Chen & Mallinckrodt, 2002) and are more likely to disengage from treatment (Dozier, 1990). These findings seem compatible with the indirect negative relation of client avoidant attachment style to session quality through its negative connection with one of the relational factors (i.e., 3rd-order slope) found in the current study.

Zero-order correlations showed that clients' avoidant attachment was negatively related to their own appraisals of the working alliance (r = -.26, p < .05), but not to therapists' appraisals of the alliance (r = -.02, n.s.). The difference between these two correlation coefficients was close to, but did not reach, the significance level (t = -1.89, p = .063). Post-hoc analyses (Table 6 and Figure 17) showed that as clients were more avoidant-attached, they tended to report a worse working alliance while therapists'

perceptions of the alliance remain relatively stable. In other words, the gap between clients' and therapists' perceptions of the alliance seemed to narrow when clients were more avoidant-attached; this decreased discrepancy then led to lower client-rated session quality (i.e., depth and smoothness). On the other hand, client avoidant attachment was not associated with both their own percepts (r = -.20, n.s.) and therapists' percepts (r = .02, n.s.) of the dyad's collective efficacy, nor did these two correlation coefficients significant differ from each other (t = -1.59, p = .116). The pattern involving client avoidant attachment and collective counseling efficacy did not show a clear trend (see Table 6 and Figure 17). Thus, these findings add to the existing psychotherapy literature by suggesting that client attachment avoidance may adversely affect session quality through its impact on narrowing the discrepancy between clients and therapists on the alliance. However, these comments are speculative; due to the cross-sectional nature of its research design, the current study does not offer explanations as to why and how this change process occurs.

Initial evidence was found in the trimmed third-order full model for the change pathway from client characteristics to relational factors, and then to therapy outcomes. Post-hoc analyses and zero-order correlations further suggested that clients' coping efficacy might have a greater impact on development of the therapeutic relationship because it was associated with both their own ratings of the alliance and collective counseling efficacy. On the other hand, the putative pathway from client avoidant attachment to outcome seemed to flow through the working alliance rather than collective efficacy. Because the differential predictive power of these two client characteristics – coping efficacy and avoidant attachment – was not directly tested in the model, this

descriptive finding requires future empirical scrutiny. Finally, given that most of the effects of client characteristics (i.e., coping efficacy, attachment styles) to therapy outcomes were mediated by the relational factors in the study, these findings seem to contradict with Lambert's (1992) contention that the common factor, extratherapeutic change, explains a larger percentage (40%) of the variance of therapy outcome than does therapeutic relationship (30%). More empirical investigations, which explore the relation of different common factors to therapy outcome, are needed to shed light on the differential explanatory power of the common factors.

Positive and negative affect, relational factors, and therapy outcomes. Due to their non-significant structural paths to the dyadic relational factors and client-rated outcome variables, positive affect (PA) and negative affect (NA) were removed from the trimmed third-order full model. These findings could have been due to the mismatch of specificity in measurement. In other words, PA and NA are general affective variables that are couched specifically in the domain of psychotherapy. Bandura (1997) argued that variables such as PA and NA should be related to general self-efficacy (i.e., the belief in one's competence to tackle novel tasks or cope with adversity in a broad range of settings), rather than to domain-specific self-efficacy. Initial evidence for the relationships of general self-efficacy to positive and negative affect has been reported (Luszczynska, Gutiérrez-Doña, & Schwarzer, 2005). Also, PA and NA might be more distal from the psychotherapy process, whereas client coping efficacy and attachment styles were theoretically more directly linked to indicators (i.e., the alliance and collective counseling efficacy) of the relational factors. The non-significant paths produced by PA and NA may actually be good news for practitioners because these two

variables, as personality traits, might be more difficult to modify via psychological treatment. Given the dearth of dyadic counseling research, the interactions between therapy process variables and other client and therapist characteristics (e.g., Big-Five personality factors) require further exploration using similar methodologies.

Utility of Multilevel SEM for Psychotherapy Process and Outcome Research

Multilevel analytic approaches have gained popularity in recent years in research that involves dyads, such as parent-child (Stoolmiller & Snyder, 2004) and husband-wife (Ferrer & Nesselroade, 2003). Different statistical procedures have been developed to analyze dyadic data (see Kenny, Kashy, & Cook, 2006, for a review). The current study took advantage of the multilevel SEM approach to integrate client characteristics, relational factors, and client-rated outcomes, to synthesize data from both clients and therapists, to test the mediating effects of relational factors, and to specify identical error structures of the relational factors across clients and therapists.

Our current knowledge of the process and outcome of psychotherapy is built mostly on findings derived from single-level analyses that focus only on one participant's perspective. As with other types of interpersonal relationships, given the complex nature of psychotherapy, multilevel SEM offers a powerful tool to overcome weaknesses of single-level analyses that may miss the forest (i.e., the dyad) for the trees (i.e., the client *or* therapist). Moreover, incorporating data from both clients and therapists allows one to better focus on the interaction between dyad members and its effects on therapy outcomes. With the development of new dyad and group-level quantitative methodologies, the psychotherapy literature would benefit from the greater use of research designs and data analytic approaches that are capable of uncovering the interactive nature of therapeutic

relationships and the explanatory contributions of multiple common factors (e.g., client characteristics, therapist variables).

Implications for Practice and Training

Findings of the current study provide several implications for clinical practice and training. First, coupled with previous empirical research, this study supported the value of assessing clients' attachment styles prior to psychotherapy. Special attention might be paid to client attachment avoidance, given its relation to session quality both directly and indirectly through relational factors (i.e., the integration of the working alliance and collective counseling efficacy). Because avoidant-attached clients may have more difficulty at the early stage of counseling in establishing a therapeutic relationship, therapists might focus primarily on creating a safe environment that would allow such clients to address fear of intimacy and dependence.

Second, the CCES presents the first tool to assess the concept of collective efficacy in the context of individual counseling from both the client's and the therapist's perspectives. The clinical utility of collective efficacy and the CCES need verification. Pending further support for the validity of this construct, trainers and supervisors may wish to consider activities to promote the collective efficacy percepts of counseling dyads, as well as the client's personal efficacy at negotiating the challenges of counseling. It is possible that both forms of efficacy help clients to remain in (e.g., Longo et al., 1992) and profit from therapy, albeit via somewhat different pathways.

Third, the shift in focus from the individual to the dyad in data analysis sheds light on the importance of shifting from a unidirectional to a bidirectional understanding of therapeutic processes. In other words, the therapist should not be considered as the sole

expert who unilaterally delivers *the* effect of counseling; neither should the client only be considered the receiver of this effect. The current study suggests that significant amounts of variability were explained at the dyad level as opposed to the individual level. Therefore, our training should help counseling students increase their understanding of how they and their clients jointly contribute to the relationship, their awareness of the interactive nature of the relationship, and their ability to utilize the therapeutic relationship in a way that would improve therapy outcomes.

Finally, the non-significant paths produced by PA and NA in the study suggest that therapists-in-training and clinicians may want to focus on more proximal and dynamic client variables (e.g., self-efficacy) that are more directly related to the process and outcome of psychotherapy, especially in short-term therapy. At the same time, it may also be valuable to examine other types of global client personality variables that may influence the process of counseling or clients' capacity to profit from it (e.g., conscientiousness, emotional intelligence).

Limitations and Directions for Future Research

Despite the potential contributions of this study to the psychotherapy literature, it is important to address its limitations and point out future research directions. First, external validity and estimation stability of findings derived from the study is limited by the small sample size (i.e., 73 dyads), the emphasis on the beginning stage of psychotherapy (i.e., first 2 sessions), and the use of volunteer clients and therapists-in-training. The findings need to be replicated with separate and larger samples, ideally in diverse settings that involve real clients, seasoned clinicians, and longer-term treatment. Also, the outcome variables included in the current study focused on client's satisfaction with the session

and their self-perceived progress. Therefore, it might not be appropriate to generalize the findings to other outcome variables such as client symptomology, return rate, or premature termination.

Second, as a new instrument, the factor structure of the CCES requires replication using both client and therapist data. Especially, the covarying errors between item parcels 1 and 3 could be the result of random assignment of items to different parcels. Therefore, further investigation on this model modification is clearly warranted. Similarly, measurement equivalence across dyad members also needs further exploration. Moreover, there are at least three different approaches to gauging collective efficacy. Bandura (1997) recommends one of these approaches – the aggregation of members' ratings of the group's or dyad's conjoint efficacy – in settings, like psychotherapy, that involve high member interdependence (e.g., close coordination of roles and strategies, effective communication, cooperative goals, mutual adjustments to one another's performance). This was the approach adopted in the present study because psychotherapy involves interdependent action. However, other measurement methods (e.g., aggregating dyad members' appraisals of their *personal* vs. conjoint efficacy percepts or having dyad members judge their joint efficacy through a consensus approach) merit empirical investigation in psychotherapy research as well.

Third, the high correlations between the WAI-SR and CCES scores found in this study warrant more empirical scrutiny. The strong relationship between the alliance and collective counseling efficacy could be an artifact of temporal proximity in measurement (i.e., both were assessment after the 2nd session) and self-report biases from the same sources (i.e., clients and therapists). Alternatively, there could be substantive reasons for

their strong interrelation (e.g., high collective efficacy could promote an affective bond between the two participants, or vice versa).

Fourth, the client-nested-within-therapist data structure is a common issue in psychotherapy process and outcome research due to the difficulty of recruiting a sufficient number of therapists. Because thirteen out of fifty-four therapists in this study saw more than one client (i.e., formed more than one dyad), client data were somewhat confounded with therapists in the current study. The impact of this type of data structure on multilevel analyses is unclear; therefore, the findings should be interpreted with caution. Parenthetically, this issue prevented examination of therapist characteristics, even though data had been gathered on therapist positive and negative affect, attachment styles, and counseling self-efficacy. A recent re-analysis of the NIHM Treatment of Depression Collaborative Research Program data showed that therapist effects accounted for 8% of the variance in outcomes, while type of treatment was not related to outcome (Kim, Wampold, & Bolt, 2006). To test therapist effects along with client characteristics and relational factors, future research would benefit from negotiating this nested-data challenge by recruiting enough therapists or implementing statistical procedures that can handle data with complex structure (e.g., where the client and therapist are nested within the dyad which, in turn, is nested within the therapist who sees multiple clients).

Finally, although the study sheds new light on the pathways among certain client characteristics, relational factors, and therapy outcomes, the findings did not explain how the change process happens and what can be done to facilitate this process intentionally. Experimental designs and longitudinal studies are needed to further scrutinize possible change mechanisms and how they may promote development of the therapeutic

relationship and therapy outcomes. Also, other analytical approaches, such as the actor-partner interdependence model (Kenny, 1996), may help to untangle the intricate interaction between the client and therapist, although these approaches may require special research designs and data structures and an even greater level of statistical complexity.

Appendix A
Therapist Informed Consent Form

Project title: Counseling process

Project Director: Hung-Bin Sheu, Doctoral candidate, University of Maryland, 301-3147692, hbsheu@hotmail.com

Faculty Supervisor: Dr. Robert Lent, Ph.D., Professor, University of Maryland 301-4052878, boblent@wam.umd.edu

Purpose of study: This study is designed to investigate variables related to counseling outcomes.

Procedures: You will be involved in a 1-hour orientation session and in conducting counseling sessions with volunteer clients. Before the training, you will be asked to complete a demographic form, the Positive/Negative Affect Schedule (with items such as "In the past weeks you feel interested"), the Experiences in Close Relationship Scale (with items such as "I worry about being alone"), and Counselor Activity Self-Efficacy Scale (with items such as "how confident you are that you can keep sessions on track and focused").

After each therapy session that you conduct, you will complete (a) Working Alliance Inventory-Short with questions such as "My client and I agree about the things he or she will need to do in counseling to help improve his or her situation;" and (b) Session Evaluation Questionnaire that asks you to rate how you feel on the continuum anchored by two adjectives such as *comfortable* versus *uncomfortable*. In terms of supervision, you will receive feedback for each session from an assigned clinical supervisor. The minimum commitment for this project is to conduct 10 counseling sessions.

Confidentiality: All information will be kept completely confidential at all times, and you will be assigned a code number to protect your anonymity. Only those people approved by the project director will have access to the questionnaires and audiotapes, which will be kept in locked filing cabinets under the responsibility of the project director. Only the project director and carefully selected research assistants will have access to the questionnaires and audiotapes. The ethical guidelines proposed by the American Psychological Association will be followed in handling all the data. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.

Risk/Benefit Statement: There are no known risks associated with participation in the research. The investigators seek to learn more about the training process and psychotherapy outcome. Although you will probably gain knowledge and skills about working with clients, you may also experience some challenges in utilizing new skills. You may contact your clinical supervisor for supervision.

Please check to indicate your consent for the following:

- ☐ I am over 18 years of age and willing to participate in the research project under the direction of Mr. Hung-Bin Sheu and Dr. Robert Lent. My participation is completely voluntary. I may withdraw participation and consent at any point within the study without consequence. I may ask questions at any time without penalty.

- ☐ I consent to being audiotaped and videotaped during the session.

_____	_____	_____
(Participant's Signature)	(Participant's Printed Name)	(Date of Participation)

If you have any questions about your rights as a research participant or wish to report a research-related injury, you may contact: Dr. Harold Sigall, Chair of Human Subjects Committee in the Department of Psychology at the University of Maryland; phone: 301-405-5920, or the Institutional Review Board Office at the University of Maryland, College Park, Maryland, 20742; email: irb@deans.umd.edu; phone: 301-402-0678.

Please keep a copy of the Consent Form for your records.

Appendix B
Client Informed Consent Form

Project title: Counseling process

Project Director: Hung-Bin Sheu, Doctoral candidate, University of Maryland, 301-3147692, hbsheu@hotmail.com

Faculty Supervisor: Dr. Robert Lent, Ph.D., Professor, University of Maryland 301-4052878, boblent@wam.umd.edu

Purpose of study: This study is designed to investigate variables related to counseling outcomes.

Procedures: Participation in this project will include speaking to a counselor-in-training about personal problems and that this may potentially cause discomfort. Participation is not appropriate if you are currently suicidal, planning harm to others, or are diagnosed with a serious mental disorder. The study is not designed to benefit you directly, but your participation may contribute to a greater understanding of the counseling process. You will participate in one to four 45-minute audiotaped and/or videotaped counseling sessions. No credits will be granted after the fourth session. However, you could continue working with the same counselor-in-training if you so desire.

Your participation in this study will involve completing a demographic form and measures regarding positive/negative affect, experiences in close relationships, and coping self-efficacy prior to the first counseling session. The Positive/Negative Affect Schedule includes items like "In the past weeks you feel interested." A sample item in the Experiences in Close Relationship Scale is "I worry about being alone." The Self-Efficacy for Client Behaviors Scale includes items like "How confident you are that you could solve the problems that brought you to the counseling." After each session, you will be asked to complete measures on perceptions of working alliance in therapy, confidence in working with the therapist, quality of the sessions, and therapy outcomes. An example item of the Working Alliance Inventory-Short is "My counselor and I agree on what is important for me to work on." The Session Evaluation Questionnaire asks you to rate how you feel on the continuum anchored by two adjectives such as *comfortable* versus *uncomfortable*. Finally, the Outcome Questionnaire consists of items like "I feel blue."

Confidentiality: All information collected in the study is confidential, and you will not be identified at any time. A randomly assigned code will be the only identifier on all the research questionnaires. All questionnaires and tapes will be kept in a secure facility with access only by the project director or carefully selected research assistants. Tapes will be erased after all the data have been analyzed (approximately one year after data collection). The ethical guidelines

proposed by the American Psychological Association will be followed in handling all the data. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.

Risk/benefit statement: The research is not designed to help you personally, but the investigators hope to learn more about counseling process and outcome to enhance counselor training. Although you may experience personal growth from this session, there is a small possibility for deterioration in any counseling activity (estimates in the research are about 5%). You are free to withdraw participation at any time with no prejudice or penalty (credit will still be awarded if you are participating for a course). In addition, if the counselor or researcher judge that the study is having a harmful effect, it will be stopped and you will be referred to Mr. Sheu or Dr. Lent, who will determine the best course of action. If neither of them is immediately available, you will be referred to the Counseling Center or Mental Health Services of the Health Center. As long as you maintain the student status, you can seek help at no charge at the Counseling Center at any time. You may receive extra credits as compensation for your participation.

Please check to indicate your consent for the following:

- ☐ I am over 18 years of age and willing to participate in the research project under the direction of Mr. Hung-Bin Sheu and Dr. Robert Lent. My participation is completely voluntary. I may withdraw participation and consent at any point within the study without consequence. I may ask questions at any time without penalty.

- ☐ I consent to being audiotaped and/or videotaped during the session.

_____	_____	_____
(Participant's Signature)	(Participant's Printed Nam	(Date of Participation)

If you have any questions about your rights as a research participant or wish to report a research-related injury, you may contact: Dr. Harold Sigall, Chair of Human Subjects Committee in the Department of Psychology at the University of Maryland; phone: 301-405-5920, or the Institutional Review Board Office at the University of Maryland, College Park, Maryland, 20742; email: irb@deans.umd.edu; phone: 301-402-0678.

Please keep a copy of the Consent Form for your records.

Appendix C
Therapist Demographic Sheet

1. Date: _____ Code (internal use only): _____

2. Age:_____ years

3. Sex: □ Male □ Female

4. Ethnic background:
- □ White American
- □ African American
- □ Asian American/Pacific Islander
- □ Hispanic American
- □ Native American/Alaskan Native
- □ Middle Eastern
- □ Multiethnic (please specify: _____)
- □ International (pleasespecify: _____)
- □ Other (please specify: _____)

5. Highest educational degree achieved: □ Bachelor's □ Master's □ Doctorate

6. Currently in the specialty area of (check one):

□ College Student Personnel	□ Rehabilitation Counseling	□ Counseling Psychology
□ Community Counseling	□ Counselor Education	□ Clinical Psychology
□ School Counseling	□ School Psychology	□ Other (specify:_____)

7. Approximately how many clients have you counseled? _____ clients

8. Approximately how many hours have you counseled? _____ hours

9. In your own words, please briefly describe your <u>current</u> theoretical orientation:

10. How much do you currently believe in each of the following theoretical framework? Please circle the most appropriate answer for each framework.

	Do not believe in or follow				Believe in and follow
Psychoanalytic/psychodynamic	1	2	3	4	5
Cognitive/behavioral	1	2	3	4	5
Humanistic/experiential	1	2	3	4	5
Feminist/multicultural	1	2	3	4	5

Appendix D
Client Demographic Sheet

1. Date: _____ Code (internal use only): _____

2. Age:_____ years

3. Sex: □ Male □ Female

4. Ethnic background:
- □ White American
- □ African American
- □ Asian American/Pacific Islander
- □ Hispanic American
- □ Native American/Alaskan Native
- □ Middle Eastern
- □ Multiethnic (please specify: _____)
- □ International (please specify: _____)
- □ Other (please specify: _____)

5. Year in school: □ Freshman □ Sophomore □ Junior □ Senior

□ Graduate student □ Other

6. I have had counseling in the past: □ No □ Yes

7. Briefly describe the issue(s) that you plan to discuss in sessions:

Appendix E

Experiences in Close Relationship Scale (ECRS)

Instructions: The following statements concern how you feel in ***romantic relationships***. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Please circle the number that best shows how much you agree or disagree with each item according to the 1-7 scale below.

	Disagree Strongly			Neutral/ Mixed			Agree Strongly
	1	2	3	4	5	6	7
1. I prefer not to show a partner how I feel deep down.	1	2	3	4	5	6	7
2. I worry about being abandoned.	1	2	3	4	5	6	7
*3. I am very comfortable being close to romantic partners.	1	2	3	4	5	6	7
4. I worry a lot about my relationships.	1	2	3	4	5	6	7
5. Just when my partner starts to get close to me, I find myself pulling away.	1	2	3	4	5	6	7
6. I worry that romantic partners won't care about me as much as I care about them.	1	2	3	4	5	6	7
7. I get uncomfortable when a romantic partner wants to be very close.	1	2	3	4	5	6	7
8. I worry a fair amount about losing my partner.	1	2	3	4	5	6	7
9. I don't feel comfortable opening up to romantic partners.	1	2	3	4	5	6	7
10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.	1	2	3	4	5	6	7
11. I want to get close to my partner, but I keep pulling back.	1	2	3	4	5	6	7
12. I often want to merge completely with romantic partners, and this sometimes scares them away.	1	2	3	4	5	6	7
13. I am nervous when partners get too close to me.	1	2	3	4	5	6	7
14. I worry about being alone.	1	2	3	4	5	6	7
*15. I feel comfortable sharing my private thoughts and feelings with my partner.	1	2	3	4	5	6	7
16. My desire to be very close sometimes scares people away.	1	2	3	4	5	6	7
17. I try to avoid getting too close to my partner.	1	2	3	4	5	6	7
18. I need a lot of reassurance that I am loved by my partner.	1	2	3	4	5	6	7

	Disagree Strongly			Neutral/ Mixed			Agree Strongly
	1	2	3	4	5	6	7
*19. I find it relatively easy to get close to my partner.	1	2	3	4	5	6	7
20. Sometimes I feel that I force my partners to show more feeling, more commitment.	1	2	3	4	5	6	7
21. I find it difficult to allow myself to depend on romantic partners.	1	2	3	4	5	6	7
*22. I do not often worry about being abandoned.	1	2	3	4	5	6	7
23. I prefer not to be too close to romantic partners.	1	2	3	4	5	6	7
24. If I can't get my partner to show interest in me, I get upset or angry.	1	2	3	4	5	6	7
*25. I tell my partner just about everything.	1	2	3	4	5	6	7
26. I find that my partner(s) don't want to get as close as I would like.	1	2	3	4	5	6	7
*27. I usually discuss my problems and concerns with my partner.	1	2	3	4	5	6	7
28. When I'm not involved in a relationship, I feel somewhat anxious and insecure.	1	2	3	4	5	6	7
*29. I feel comfortable depending on romantic partners.	1	2	3	4	5	6	7
30. I get frustrated when my partner is not around as much as I would like.	1	2	3	4	5	6	7
*31. I don't mind asking romantic partners for comfort, advice, or help.	1	2	3	4	5	6	7
32. I get frustrated if romantic partners are not available when I need them.	1	2	3	4	5	6	7
*33. It helps to turn to my romantic partner in times of need.	1	2	3	4	5	6	7
34. When romantic partners disapprove of me, I feel really bad about myself.	1	2	3	4	5	6	7
*35. I turn to my partner for many things, including comfort and reassurance.	1	2	3	4	5	6	7
36. I resent it when my partner spends time away from me.	1	2	3	4	5	6	7

Note. * Items that are reverse-coded when scoring the scale. The Avoidance subscale contains all odd numbered items; the Anxiety subscale contains all even numbered items.

Appendix F

Positive and Negative Affect Schedule (PANAS)

Instructions: The following questions consist of a number of words that describe different feelings and emotions. Read each item and then circle the most appropriate number to indicate to what extent you felt this way during the past few weeks.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
	1	2	3	4	5
In the past few weeks, you felt …					
1. … interested	1	2	3	4	5
2. … distressed	1	2	3	4	5
3. … excited	1	2	3	4	5
4. … upset	1	2	3	4	5
5. … strong	1	2	3	4	5
6. … guilty	1	2	3	4	5
7. … scared	1	2	3	4	5
8. … hostile	1	2	3	4	5
9. … enthusiastic	1	2	3	4	5
10. … proud	1	2	3	4	5
11. … irritable	1	2	3	4	5
12. … alert	1	2	3	4	5
13. … ashamed	1	2	3	4	5
14. … inspired	1	2	3	4	5
15. … nervous	1	2	3	4	5
16. … determined	1	2	3	4	5
17. … attentive	1	2	3	4	5
18. … jittery	1	2	3	4	5
19. … active	1	2	3	4	5
20. … afraid	1	2	3	4	5

Appendix G

Counselor Activity Self-Efficacy Scales (CASES)

General Instructions: The following questionnaire consists of three parts. Each part asks about your beliefs about your ability to perform various counselor behaviors or to deal with particular issues in counseling. We are looking for your honest, candid responses that reflect your beliefs about your current capabilities, rather than how you would like to be seen or how you might look in the future. There are no right or wrong answers to the following questions. Please circle the number that best reflects your response to each question.

Part I. Instructions: Please indicate how confident you are in your ability to use each of the following helping skills effectively, over the next week, in counseling **most** clients.

	No Confidence at all				Some Confidence					Complete Confidence
	0	1	2	3	4	5	6	7	8	9
How confident are you that you could use these general skills effectively with most clients over the next week?										
1. **Attending** (orient yourself physically towa client).	0	1	2	3	4	5	6	7	8	9
2. **Listening** (capture and understand the messages that clients communicate).	0	1	2	3	4	5	6	7	8	9
3. **Restatements** (repeat or rephrase what the client has said, in a way that is succinct, concrete, and clear).	0	1	2	3	4	5	6	7	8	9
4. **Open questions** (ask questions that help clients to clarify or explore their thoughts or feelings).	0	1	2	3	4	5	6	7	8	9
5. **Reflection of feelings** (repeat or rephrase the client's statements with an emphasis on his or her feelings).	0	1	2	3	4	5	6	7	8	9
6. **Self-disclosure for exploration** (reveal personal information about your history, credentials, or feelings).	0	1	2	3	4	5	6	7	8	9
7. **Intentional silence** (use silence to allow clients to get in touch with their thoughts or feelings).	0	1	2	3	4	5	6	7	8	9
8. **Challenges** (point out discrepancies, contradictions, defenses, or irrational beliefs of which the client is unaware or that he or she is unwilling or unable to change).	0	1	2	3	4	5	6	7	8	9
9. **Interpretations** (make statements that go beyond what the client has overtly stated and that give the client a new way of seeing his or her behavior, thoughts, or feelings).	0	1	2	3	4	5	6	7	8	9
10. **Self-disclosures for insight** (disclose *past* experiences in which you gained some personal insight).	0	1	2	3	4	5	6	7	8	9
11. **Immediacy** (disclose *immediate*	0	1	2	3	4	5	6	7	8	9

feelings you have about the client, the therapeutic relationship, or yourself in relation to the client).										
12. **Information-giving** (teach or provide the client with data, opinions, facts, resources, or answers to questions).	0	1	2	3	4	5	6	7	8	9
13. **Direct guidance** (give the client suggestions, directives, or advice that imply actions for the client to take).	0	1	2	3	4	5	6	7	8	9
14. **Role play and behavior rehearsal** (assist the client to role-play or rehearse behaviors in-session).	0	1	2	3	4	5	6	7	8	9
15. **Homework** (develop and prescribe therapeutic assignments for clients to try out between sessions).	0	1	2	3	4	5	6	7	8	9

Part II. Instructions: Please indicate how confident you are in your ability to do each of the following tasks effectively, over the next week, in counseling **most** clients.

	No Confidence at all				Some Confidence				Complete Confidence	
	0	1	2	3	4	5	6	7	8	9
How confident are you that you could do these specific tasks effectively with most clients over the next week?										
1. Keep sessions “on track” and focused.	0	1	2	3	4	5	6	7	8	9
2. Respond with the best helping skill, depending on what your client needs at a given moment.	0	1	2	3	4	5	6	7	8	9
3. Help your client to explore his or her thoughts, feelings, and actions.	0	1	2	3	4	5	6	7	8	9
4. Help your client to talk about his or her concerns at a “deep” level.	0	1	2	3	4	5	6	7	8	9
5. Know what to do or say next after your client talks.	0	1	2	3	4	5	6	7	8	9
6. Help your client to set realistic counseling goals.	0	1	2	3	4	5	6	7	8	9
7. Help your client to understand his or her thoughts, feelings, and actions.	0	1	2	3	4	5	6	7	8	9
8. Build a clear conceptualization of your client and his or her counseling issues.	0	1	2	3	4	5	6	7	8	9
9. Remain aware of your intentions (i.e., the purposes of your interventions) during sessions.	0	1	2	3	4	5	6	7	8	9
10. Help your client to decide what actions to take regarding his or her problems.	0	1	2	3	4	5	6	7	8	9

Appendix H

Self-Efficacy for Clients Behaviors Scale (SECB)

Instructions: This questionnaire asks about some tasks that people often face in counseling. Give you answer by circling the number that best describes how confident you are that you could do each task.

	No Confidence at all				Some Confidence				Complete Confidence	
	0	1	2	3	4	5	6	7	8	9
How confident are you that you could do these specific tasks effectively over the next week?										
1. Solve the problems that brought you to the counseling.	0	1	2	3	4	5	6	7	8	9
2. Discuss your innermost feelings with a counselor.	0	1	2	3	4	5	6	7	8	9
3. Remove any obstacles (e.g., schedule conflict) to attending future counseling sessions.	0	1	2	3	4	5	6	7	8	9
4. Cope with unpleasant feelings (e.g., fear or sadness) that might arise during counseling.	0	1	2	3	4	5	6	7	8	9
5. Try out difficult new behaviors between counseling sessions that your counselor may recommend.	0	1	2	3	4	5	6	7	8	9
6. Tell your counselor when you feel you no longer need counseling.	0	1	2	3	4	5	6	7	8	9
7. Adjust your schedule in order to attend future counseling sessions.	0	1	2	3	4	5	6	7	8	9
8. Discuss things with your counselor that might be embarrassing or painful.	0	1	2	3	4	5	6	7	8	9
9. Find ways to work out difficult “everyday problems”.	0	1	2	3	4	5	6	7	8	9
10. Tell your counselor when you don’t understand something he or she said.	0	1	2	3	4	5	6	7	8	9
11. Attend all scheduled counseling sessions.	0	1	2	3	4	5	6	7	8	9
12. Describe your problems clearly to your counselor, even when you are upset.	0	1	2	3	4	5	6	7	8	9
13. Change current behaviors that are troubling you.	0	1	2	3	4	5	6	7	8	9
14. Talk about yourself during the counseling sessions.	0	1	2	3	4	5	6	7	8	9
15. Get to the scheduled counseling sessions on time.	0	1	2	3	4	5	6	7	8	9
16. Tell your counselor when you are	0	1	2	3	4	5	6	7	8	9

upset or uncomfortable with him or her.										
17. Persist with efforts to resolve your problems despite set-backs.	0	1	2	3	4	5	6	7	8	9
18. Discuss thoughts that are bothering you with your counselor.	0	1	2	3	4	5	6	7	8	9
19. Keep all your appointments with your counselor.	0	1	2	3	4	5	6	7	8	9
20. Discuss with your counselor when you are feeling discouraged about solving your problems.	0	1	2	3	4	5	6	7	8	9

Appendix I

Working Alliance Inventory – Short Revised (WAI-SR) – **Client Form**

Instructions: Below is a list of statements and questions about experiences people might have with their counseling or counselor. Some items refer directly to your counselor with an underlined space -- as you read the sentences, mentally insert the name of your counselor in place of _____ in the text. Think about your experience in counseling, and decide which category best describes your own experience by checking the corresponding number.

IMPORTANT!!! Please take your time to consider each question carefully.

1. As a result of these sessions I am clearer as to how I might be able to change.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

2. What I am doing in counseling gives me new ways of looking at my problem.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

3. I believe _____ likes me.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

4. _____ and I collaborate on setting goals for my counseling.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

5. _____ and I respect each other.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

6. _____ and I are working towards mutually agreed upon goals.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

7. I feel that _____ appreciates me.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

8. _____ and I agree on what is important for me to work on.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

9. I feel _____ cares about me even when I do things that he/she does not approve of.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

10. I feel that the things I do in counseling will help me to accomplish the changes that I want.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

11. _____ and I have established a good understanding of the kind of changes that would be good for me.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

12. I believe the way we are working with my problem is correct.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

Appendix J

Working Alliance Inventory – Short Revised (WAI-SR) – **Therapist Form**

Instructions: Below is a list of statements and questions about experiences counselors might have with their clients. Some items refer directly to your client with an underlined space -- as you read the sentences, mentally insert the name of your client in place of _____ in the text. Think about your experience in counseling, and decide which category best describes your own experience by checking the corresponding number.

IMPORTANT!!! Please take your time to consider each question carefully.

1. As a result of these sessions I am clearer as to how my client might be able to change.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

2. What I am doing in counseling gives my client new ways of looking at his or her problem.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

3. I believe _____ likes me.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

4. _____ and I collaborate on setting goals for counseling.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

5. _____ and I respect each other.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

6. _____ and I are working towards mutually agreed upon goals.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

7. I feel that _____ appreciates me.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

8. _____ and I agree on what is important for her or him to work on.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

9. I feel _____ cares about me even when I do things that he or she does not approve of.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

10. I feel that the things I do in counseling will help my client to accomplish the changes that she or he wants.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

11. _____ and I have established a good understanding of the kind of changes that would be good for him or her.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

12. I believe the way we are working with my client's problem is correct.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

Appendix K

Collective Counseling Efficacy Scale – Client Form

Instructions: Based on your experiences so far with this counselor whom you just saw, indicate how confident you are that you and your counselor could work effectively *together* on each of the following tasks over the next week. Respond to each item according to your confidence in ***the team*** formed by yourself and your counselor – rather than your confidence in yourself as an individual. Please do not skip any items.

	No Confidence at all				Some Confidence					Complete Confidence
	0	1	2	3	4	5	6	7	8	9
How confident are you that you and your counselor (whom you just saw) could work together effectively, *as a team*, on these specific tasks over the next week?										
1. Explore my feelings at a deeper level.	0	1	2	3	4	5	6	7	8	9
2. Explore my thoughts or ideas.	0	1	2	3	4	5	6	7	8	9
3. Become more aware of different factors that might be related to my problems.	0	1	2	3	4	5	6	7	8	9
4. Become more aware of how the problem(s) that brought me into counseling might have developed.	0	1	2	3	4	5	6	7	8	9
5. Develop a new perspective on the problem(s) that brought me into counseling.	0	1	2	3	4	5	6	7	8	9
6. Discuss differences in opinions or ideas between the two of us.	0	1	2	3	4	5	6	7	8	9
7. Set mutually agreed-upon counseling goals.	0	1	2	3	4	5	6	7	8	9
8. Develop mutually agreed-upon action plans.	0	1	2	3	4	5	6	7	8	9
9. Practice new behaviors in sessions.	0	1	2	3	4	5	6	7	8	9
10. Identify and practice specific skills to help me deal with the problem(s) that brought me into counseling.	0	1	2	3	4	5	6	7	8	9
11. Create an atmosphere in which I feel safe to share my	0	1	2	3	4	5	6	7	8	9

inner thoughts and feelings.										
12. Resolve misunderstandings or conflicts between the two of us.	0	1	2	3	4	5	6	7	8	9
13. Develop a positive counseling relationship.	0	1	2	3	4	5	6	7	8	9
14. Remain focused on the issue(s) that brought me into counseling.	0	1	2	3	4	5	6	7	8	9
15. Use our time productively in sessions.	0	1	2	3	4	5	6	7	8	9

Appendix L

Collective Counseling Efficacy Scale – Therapist Form

Instructions: Based on your experiences so far with this client whom you just saw, indicate how confident you are that you and your client could work effectively *together* on each of the following tasks over the next week. Respond to each item according to your confidence in ***the team*** formed by yourself and your client – rather than your confidence in yourself as an individual. Please do not skip any items.

	No Confidence at all				Some Confidence					Complete Confidence
	0	1	2	3	4	5	6	7	8	9
How confident are you that you and your client (whom you just saw) could work together effectively, *as a team*, on these specific tasks over the next week?										
1. Explore the client's feelings at a deeper level.	0	1	2	3	4	5	6	7	8	9
2. Explore the client's thoughts or ideas.	0	1	2	3	4	5	6	7	8	9
3. Become more aware of different factors that might be related to the client's problems.	0	1	2	3	4	5	6	7	8	9
4. Become more aware of how the problem(s) that brought the client into counseling might have developed.	0	1	2	3	4	5	6	7	8	9
5. Develop a new perspective on the problem(s) that brought the client into counseling.	0	1	2	3	4	5	6	7	8	9
6. Discuss differences in opinions or ideas between the two of us.	0	1	2	3	4	5	6	7	8	9
7. Set mutually agreed-upon counseling goals.	0	1	2	3	4	5	6	7	8	9
8. Develop mutually agreed-upon action plans.	0	1	2	3	4	5	6	7	8	9
9. Practice new behaviors in sessions.	0	1	2	3	4	5	6	7	8	9
10. Identify and practice specific skills to help the client deal with the problem(s) that brought him or her into counseling.	0	1	2	3	4	5	6	7	8	9

11. Create an atmosphere in which the client feels safe to share her or his inner thoughts and feelings.	0	1	2	3	4	5	6	7	8	9
12. Resolve misunderstandings or conflicts between the two of us.	0	1	2	3	4	5	6	7	8	9
13. Develop a positive counseling relationship	0	1	2	3	4	5	6	7	8	9
14. Remain focused on the issue(s) that brought the client into counseling	0	1	2	3	4	5	6	7	8	9
15. Use our time productively in sessions.	0	1	2	3	4	5	6	7	8	9

Appendix M

Session Evaluation Questionnaire – Depth and Smooth

Instructions: Please be as honest as possible in your answers. For each item, please check the circle that most closely indicates how you feel about the session you have just completed.

1.	bad	○	○	○	○	○	○	○	good
2*.	safe	○	○	○	○	○	○	○	dangerous
3.	difficult	○	○	○	○	○	○	○	easy
4*.	valuable	○	○	○	○	○	○	○	worthless
5.	shallow	○	○	○	○	○	○	○	deep
6*.	relaxed	○	○	○	○	○	○	○	tense
7.	unpleasant	○	○	○	○	○	○	○	pleasant
8*.	full	○	○	○	○	○	○	○	empty
9.	weak	○	○	○	○	○	○	○	powerful
10*.	special	○	○	○	○	○	○	○	ordinary
11.	rough	○	○	○	○	○	○	○	smooth
12*.	comfortable	○	○	○	○	○	○	○	uncomfortable

Note. * Items that are reverse-coded when scoring the scale. The Depth subscale contains items 4, 5, 8, 9, and 10. The Smoothness subscale contains items 2, 3, 6, 11, and 12.

Appendix N

Target Problem

Please write here the primary problem, issue, or concern that brought you into counseling:

Please check the box that best describes your current functioning on this problem **right now after the session**:

- ❑ 1 Worst possible functioning
- ❑ 2
- ❑ 3
- ❑ 4
- ❑ 5
- ❑ 6
- ❑ 7
- ❑ 8
- ❑ 9
- ❑ 10
- ❑ 11
- ❑ 12
- ❑ 13 Best possible functioning

Now please think back and check the box that best describes how you were functioning on this problem immediately **before** the session:

- ❑ 1 Worst possible functioning
- ❑ 2
- ❑ 3
- ❑ 4
- ❑ 5
- ❑ 6
- ❑ 7
- ❑ 8
- ❑ 9
- ❑ 10
- ❑ 11
- ❑ 12
- ❑ 13 Best possible functioning

Appendix O
Debriefing Form for Volunteer Clients

Project Title: Counseling process

Project Director: Hung-Bin Sheu, Doctoral candidate, University of Maryland, 301-3147692,
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Faculty Supervisor: Dr. Robert Lent, Ph.D., Professor, University of Maryland 301-4052878,
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The study in which you just participated is an investigation of potentially important variables involved in effective counseling. As background, Hubble, Duncan, and Miller's (1999) review showed that client characteristics, therapist characteristics, the counseling relationship, and sense of hope are common factors that contribute to positive counseling outcomes. Therefore, we designed this study to investigate how these variables may predict therapy session quality and psychological symptoms.

We hope that completing the measures and participating in counseling sessions was helpful to you in gaining some insight into your concerns, current conflicts, or aspects of your personality. We also hope that you will be able to use what you learned about yourself to improve some aspects of your life.

We realize that a session like this may have raised some issues for you that might be confusing, unexpected, or even unpleasant. If you wish to continue to work on what you have learned about yourself in counseling, we encourage you to contact the Counseling Center or the Help Center. Counseling services are provided free of charge to all UM students. Records kept are confidential and are not part of the educational records kept by the university. The Counseling Center is located in Shoemaker Building and can be reached at 301-314-7651. The Help Center is a telephone hotline and can be reached at 4-HELP (301-314-4357).

If you would like a copy of an article based on this study (expected in about two years) or if you have any questions or comments regarding the study, please contact Mr. Hung-Bin, 301-3147692, hbsheu@wam.umd.edu

Thank you for participating in this study. We appreciate your time and effort and hope you benefited from your experience.

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