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EVALUATING VALUES, MINDFULNESS, AND WORKING ALLIANCE: EXPLORING
THE EFFECTS OF SHORT, SPECIFIC TECHNIQUES

A Dissertation
presented in partial fulfillment of requirements
for the degree of Doctor of Philosophy
in the Department of Psychology
The University of Mississippi

by

REGAN M. SLATER

December 2014

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ABSTRACT

Common factors research indicates that there is a positive relationship between therapeutic relationship and improved client outcomes. However, little research has been done to examine the nature of this relationship. The current study examined the relationship among values, mindfulness, and working alliance. This study used different specific interventions and examined the interventions' impact on values and mindfulness. The study also examined whether changes in values and mindfulness led to differences in working alliance ratings. Participants were 66 undergraduate students and were randomly assigned to one of three conditions: mindfulness plus values, mindfulness, or control. The participants were then led in a short intervention exercise corresponding to assigned condition. Values connectedness, mindfulness, and positive affect increased in each of the three conditions from pre-intervention to post-intervention, but there were no statistically significant differences among conditions on these measures. Negative affect decreased in each of the three conditions from pre-intervention to post-intervention, but there were no statistically significant differences among conditions on this measure. No statistically significant group differences were found on the working alliance measures. Future research in the areas of values, mindfulness, and working alliance is discussed.

DEDICATION

This dissertation would not be a reality without the love, support, assistance, and encouragement of a community of lovely, caring humans. I cannot adequately express my unending gratitude to my family, friends, lab mates, colleagues, and countless others, without whom I would not be who and where I am today.

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INTRODUCTION

Common Factors

Saul Rosenzweig first used the term “dodo bird verdict” in 1936 (Rosenzweig, 1936). This term comes from the book *Alice’s Adventures in Wonderland* in which the Dodo bird says, “everyone has won, and all must have prizes” (Carroll, 1865). Rosenzweig discussed this verdict in terms of psychotherapy factors that contribute to client improvement. Rosenzweig’s use of this phrase suggested that any psychotherapy may produce client improvement, therefore, all such orientations had “won.” He suggested that client improvement arose from factors that were common among therapies. Rosenzweig (1936) stated, “besides the intentionally utilized methods and their consciously held theoretical foundations, there are inevitably certain unrecognized factors in any therapeutic situation – factors that may be even more important than those being purposely employed” (p. 412).

Imel and Wampold (2008) have suggested that 30% to 70% of therapy outcome is due to common factors. Researchers and theorists have identified various categories of common factors thought to be important to therapeutic outcomes (see Wampold, 2000, for a review). In a meta-analysis of 50 publications, Grenavage and Norcross (1990) identified five categories of common factors: client qualities and behaviors, therapist attributes, principles of change, treatment structure, and development of the therapeutic relationship. The therapeutic relationship was discussed in 56% of the included publications and was the most frequently identified category (Grenavage & Norcross,

1990, p. 376).

Therapeutic Relationship

Overall, one of the most frequently examined common factors is the therapeutic relationship (Lambert & Barley, 2002). Because of its presence in all theoretical orientations and types of treatment, Wolfe and Goldfried (1988) referred to the therapeutic relationship as the “quintessential integrative variable” (p. 449). Most of the systems of categorization of common factors address the interpersonal nature of therapy (i.e., therapeutic relationship), yet there is little consensus on what factors comprise this category. For example, Fiedler (1950) identified tolerance, empathy, understanding, and openness, while Lambert (1986) included trust, acceptance, respect and warmth.

Gelso and Carter (1994) identified three components of the therapeutic relationship: the working alliance, transference/countertransference, and the real relationship. Depending on the therapist’s theoretical orientation, differential importance may be placed on these three components. Gelso and Samstag (2008) stated that of the three components of therapeutic relationship, the “working alliance is the one that is most clearly operationalized and, consequently, has been studied most extensively” (p. 268). Gelso and Samstag (2008) used this description to illustrate the collaborative nature of therapy.

Bordin (1979) discussed the concept of the working alliance, and proposed that this alliance was made of three aspects: “agreement on goals, assignment of tasks, and development of bonds” (including trust and attachment) (p. 253). Agreement on goals describes the goals and purpose of therapy, agreed upon by the therapist and client, in order to address the client’s psychological difficulties. Assignment of tasks describes the

development of the specific behaviors that the client will engage in to work toward the outcome of addressing psychological difficulties. Development of bonds describes the connection that develops between the therapist and client during therapy, including trust, respect, and liking of one another. This concept of the working alliance is the definition that Gelso and Carter (1994) integrated into their three-part definition of the therapeutic relationship.

Throughout the literature, several different terms are used to refer to the relationship that develops between client and therapist: therapeutic relationship, helping alliance, therapeutic working alliance, working alliance, therapeutic alliance. Within this paper, the experimenters will refer to this as the working alliance. For the purposes of this research, the experimenters will use Bordin's (1979) definition of the working alliance, since it excludes some of the less clearly-defined aspects of the working relationship (e.g., personality variables, therapist/client attributes) and emphasizes more operationally defined aspects (i.e., goals, tasks, and bond).

Overview of findings. Measures of working alliance have been developed from a variety of perspectives, including psychodynamic, cognitive-behavioral, and experiential orientations. The nature of measuring client outcome also varies across studies, and includes several different types of outcomes: specific disorder scales, symptomatology, global assessment, specific outcome (i.e., drug use or target complaints), and therapy termination.

Horvath and Symonds (1991) conducted a meta-analysis in an attempt to determine the association between the quality of the therapeutic relationship and client outcome. The analysis included 24 studies (20 data sets) that examined individual therapy

with a clinical population. The highest correlation ($r = .31$) was from the client's rating of both the therapeutic alliance and therapy outcome (p. 144). Using both therapist and client ratings, the overall correlation between therapeutic alliance and therapy outcome was .26 (p. 146). Horvath and Symonds also reviewed studies rating the therapeutic relationship during different time points in therapy. Earlier ratings of therapeutic relationship (11 studies) were more predictive of client outcome (.30) than those ratings (8 studies) that were averaged over the course of treatment (.21) (p. 145).

Horvath, Gaston, and Luborsky (1993) conducted a review of the literature of the association between the therapeutic relationship and client outcome. The authors found differences in the correlations between the therapeutic relationship and client outcome depending on the measure of outcome (i.e., individual client complaints, overall symptoms, or global functioning). The correlation for studies using change in client complaints to measure outcome ($N = 8$) was .30 (p. 256). The correlation for studies using overall symptoms to measure outcome ($N = 6$) was .09 (p. 256).

Martin, Garske, and Davis (2000) conducted a meta-analysis in an attempt to "identify underlying patterns" (p. 438) within the therapeutic relationship literature. The analysis included 79 studies (21 unpublished) that examined individual therapy with a clinical population. Martin and colleagues found an overall correlation of .22 between therapeutic alliance and therapy outcome (p. 445), concluding that the therapeutic alliance was moderately and consistently correlated with outcome. Additionally, the authors sought to determine the utility of alliance measures used in the meta-analysis studies. Several measures of working alliance had been used, assessing alliance from the therapist, client, and observer perspectives. They found that based on the results of the

meta-analysis, the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989) “is likely to be appropriate for most research projects” (p. 447) due to its fit with a variety of theoretical orientations.

Researchers have also conducted experiments to examine the association between therapeutic relationship and client outcome over the course of therapy. Safran and Wallner (1991) conducted a study with nine therapists and 22 individual therapy clients with an Axis I depressive disorder and/or anxiety disorder. The clients rated therapeutic relationship using the WAI and the California Psychotherapy Alliance Scales (CALPAS; Gaston, 1990). While the WAI is based on Bordin’s operational definition of the working alliance, the CALPAS was designed to measure components of the therapeutic relationship, such as working capacity, commitment, disagreement, contribution, and understanding/involvement. Safran and Wallner used complaints, depression and anxiety scores, symptoms, and global success to measure client outcomes after 20 therapy sessions. Therapeutic relationship ratings in session three predicted client outcomes. The strongest correlations of working alliance and client outcome were between the WAI and global ratings of success. The correlation between client-rated WAI and client-rated global success was .64 ($p < .001$); the correlation between client-rated WAI and therapist-rated global success was .50 ($p < .05$); and the correlation between client-rated WAI and therapist-rated client complaints was .42 ($p < .05$) (p. 192). Client WAI ratings were not significantly correlated with client outcome measured by client-rated complaints, client-rated disorder scores, or client-rated symptoms.

Castonguay and colleagues (1996) compared psychopharmacological treatment to cognitive therapy for clients with depression. The clients completed depression symptom

measures at pre-treatment, six weeks, and 12 weeks. Independent assessors conducted interviews to measure client global functioning. Therapeutic relationship was measured by observers' ratings of audiotapes and transcripts. Significant correlations were found post-treatment between therapeutic relationship and client outcome of depression symptoms on the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) ($r = -.42$) and Hamilton Depression Rating Scale (Hamilton, 1960) ($r = -.59$), as well as global functioning ($r = .45$) (p. 500). The authors concluded that the observers' ratings of the therapeutic relationship were related to client outcome.

Crits-Cristoph and colleagues (2006) examined whether therapists could be trained to improve the therapeutic relationship using a manualized eclectic therapy to enhance alliance. The study consisted of five therapists (two cognitive-behavioral, two psychodynamic, and one family systems) conducting 16 weeks of individual therapy with 45 clients diagnosed with major depressive disorder. Each therapist saw three clients pre-treatment; three clients during alliance-fostering training with supervision; and three clients post-treatment using alliance-fostering therapy but without supervision. Therapeutic alliance was measured by two client-rated scales, and client outcome was measured by self-report assessments of depression symptoms and quality of life. There were no significant differences found in treatment outcome over the course of study. However, the ratings of the therapeutic relationship did increase over the course of the study. The therapeutic relationship therapy consisted of 12 specific techniques, and therapists were rated according to their adherence to the techniques. In measuring therapist compliance, the average number of techniques used during training was 7.81 out of 12 (p. 274). During the post-training phase, the average number of techniques used

was 7.26 (p. 274). This low rating of treatment compliance was one of several limitations that the authors discussed.

Difficulties with research. A major limitation of most studies in this area is that they did not use an experimental manipulation of the working alliance. The benefit of Crits-Cristoph and colleagues' (2006) study is that the authors may have produced a method of systematically manipulating the level of the working alliance. If we are to have an experimental analysis of the working alliance as a cause of clinical improvement, we need to be able to manipulate levels of the working alliance as an independent variable. However, this study is not without its limitations. The authors produced a manualized relationship-enhancing therapy, but the therapy was used as a stand-alone treatment. This new treatment may be viable on its own to improve client outcomes. This therapy could then be compared to treatments of known efficacy. However, to date, no studies have produced specific techniques that could be used within treatments of known efficacy to systematically manipulate the level of working alliance.

Testing a theoretically derived method for enhancing alliance. Henry and Strupp (1994) suggested that due to the association between the working alliance and client outcome, the alliance "should rightly be seen as a technique in and of itself" (p. 61). However, the research discussed in the above studies does not give us a clear picture of the nature of the relationship between these variables. It is possible, as some have asserted, that working alliance alone accounts for treatment improvement. It is also possible that most treatment procedures, with the exception of those that foster alliance, are inert. Further, it is possible that working alliance plays a causal role as a moderator of treatment outcome. That is, the interventions contain active ingredients; however, the

active ingredients are potentiated or strengthened by the presence of a good working alliance. We can isolate specific aspects of treatment that may make development of a strong working alliance more or less likely. Direct manipulation of alliance would allow for mediational and moderational analyses. However, to date, not a single study has 1) systematically manipulated level of working alliance, 2) assigned clients to high or low levels of that variable, and 3) examined the impact of that variable alone or in combination with an effective treatment. The first step in such a program would be to test brief alliance-enhancing interventions.

In order to study working alliance from an experimental standpoint, it may be possible to look within contemporary psychotherapy models for an analysis of factors that could enhance working alliance. This factor has been deemed as important in variants of treatment such as traditional cognitive-behavioral therapy (CBT; Beck, Rush, Shaw, & Emery, 1979) and third generation behavior therapies, such as acceptance & commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999; 2012). Some contemporary therapies such as ACT, have made direct assertions as to the elements that, theoretically, ought to foster good working alliance. Among these elements are components often identified with mindfulness.

Mindfulness and alliance. Kabat-Zinn (1994) described mindfulness as “paying attention in a particular way: on purpose, in the present moment, nonjudgmentally” (p. 4). Within therapy sessions, clients will often discuss difficult and painful content with regard to their experiences. In accordance with Kabat-Zinn’s definition of mindfulness, the therapist can adopt a purposeful, nonjudgmental, and accepting stance toward difficult content. The therapist is able to display empathy, openness and presence toward

the client and toward the difficult experiences, while also modeling this perspective for the client. In this way, clients may be shown a different pattern of responding toward their own experiences.

Marlatt and colleagues (2008) stated that “embodied in traditional mindfulness practice is a sense of interconnectedness and compassion, both for one’s own and for others’ experiences. The experience of attachment and suffering is seen as common to all beings” (p. 113-114). Marlatt and colleagues (2008) also state that the use of the word “we” rather than “you” within therapy reinforces the shared bond between therapist and client. It is this “stance of shared process, cooperation, nonjudgmental openness, and respect” (p. 115) that may then serve to strengthen the working alliance between therapist and client. Concerning the relationship between mindfulness and empathy, Block-Lerner and colleagues (2007) stated, “by introducing mindfulness practice as a means to suspend judgments and evaluations...this potentially crucial skill of empathic responding may be developed” (p. 509).

Breathing meditation. Within the larger scope of mindfulness meditation, *Full Catastrophe Living* (1990) was the original manual by which Kabat-Zinn disseminated the treatment known as mindfulness-based stress reduction (MBSR). In it, he described several types of mindfulness exercises that may be practiced while sitting, lying down, walking, or even eating. They may be done on one’s own, or with guided direction from another. In various types of mindfulness exercises, a meditator may be asked to bring attention to a particular stimulus: for example their own breath, sensations, particular stimuli in their surroundings, or a sound or mantra. Within a breathing meditation, the

main component is that attention is purposefully directed to the inflow and outflow of breath, enabling one to engage in the present moment.

Using Jon Kabat-Zinn's definition above, attention is given to the breath in a deliberate manner. However, shortly after bringing attention to breathing in this deliberate way, the meditator often finds that their mind starts to wander and become distracted by thoughts, perhaps about the past or the future. The second part of the definition clarifies what to do when this occurs: gently bring attention back to the breath on purpose, holding a nonjudgmental stance toward any thoughts that may arise when paying attention to the breath. Rather than thinking that a thought is "good" or "bad," a person would be instructed to just notice the thought, and come back to the breath. In this way, use of a breathing meditation is wholly sensible in the cultivation of mindfulness within a therapy session.

Wilson and DuFrene (2009) outline specific mindfulness exercises as well as how to implement them in therapy. One of these is an eyes-closed noticing exercise. The therapist and client engage in this exercise to practice noticing stimuli in the environment around them. This includes external sensory stimuli, as well as internal bodily states, thoughts, and feelings. Directing attention in this way may help clients to be more present in session, particularly when they are ruminating over the past and worrying about the future. It will likely also have the effect of helping the therapist to be more present to clients and their difficulties. And, likewise, this may help the client to become more engaged with the therapist.

Values and alliance. From an ACT perspective, explicit values work also plays an important part in the formation of working alliance. ACT involves the therapist and

client discussing values not only with regard to the client's presenting difficulties, but in the client's life overall. The concept of values in ACT corresponds with Bordin's tasks and goals aspects of working alliance. In ACT, values are distinguished from goals. Values differ from goals in the sense that goals are finite milestones to be accomplished, while values are similar to directions taken rather than milestones achieved (Hayes et al., 1999; 2012). Wilson and Sandoz (2008) asserted, "deliberate, mindful insertion of therapist's values and vulnerability into the interaction can produce a potent connection" (p. 95). Wilson and Sandoz described simple brief mindfulness interventions, as well as brief interventions that combine mindfulness and values. This convergence of shared mindfulness and values between therapist and client is thought to produce better working alliance (Hayes et al., 2012; Wilson & Sandoz, 2008).

ACT contains both simple brief mindfulness interventions, as well as brief interventions that combine mindfulness and values. If these brief interventions could be demonstrated to reliably enhance alliance, they have potential to serve as amendments to treatment that would allow for testing of the impact of alliance on treatment outcome. If these interventions then reliably altered levels of working alliance, the stage would be set for causal analyses of treatment outcome. For example, a next step might be to use a simple treatment, such as exposure for a small animal phobia. In the course of treatment for this phobia, components producing working alliance could be inserted within the established treatment to test the effects on working alliance. Ideally, a relatively simple treatment would be used initially, since it may be more difficult to separate the independent effects of alliance building within a more complex treatment protocol. This would enable researchers to use as structured and compact a treatment as possible, while

implementing processes that have been suggested as alliance-enhancing, rather than producing a stand-alone manualized relationship-enhancing therapy, as Crits-Cristoph and colleagues (2006) did.

The Sweet Spot. The Sweet Spot is an exercise described by Wilson and Sandoz (2008) that may be sufficiently brief and self-contained as to be useful in such an experimental protocol. The authors described using this exercise “as an example of how values work can target the mindfulness processes in ACT, and how doing so fosters a close working alliance” (Wilson & Sandoz, 2008, p. 99). The exercise involves a guided mindfulness meditation that contains elements of a client selected valued domain. In it, the therapist guides the client to recall a sweet moment in life and express it to the therapist. When guiding the client to recall this sweet moment, the therapist asks the client to mindfully engage in aspects of this moment, including sensory stimuli, bodily states, and emotions during that moment. It is a way for the client to become present to that sweet moment from the past and to be able to contact and experience it again in the present. In expressing and appreciating the sweetness of the moment, the therapist and client can discuss particular values important in the client’s life. In using this technique, the client is able to communicate to the therapist what is valued in the client’s life, which facilitates contact with these values in therapy. The therapist and client can then make use of values to strengthen the working alliance in addressing the client’s specific difficulties.

Pilot Research

The experimenters previously conducted pilot research comparing the effects of mindfulness and values on working alliance (Slater, 2012). This programmatic research

has shaped the course of the current study. The pilot study methods, results, and subsequent adaptations for the current study are explained here.

In the pilot study, participants were randomized to one of three conditions: mindfulness plus values, mindfulness, or no-intervention waitlist control. Participants in the active conditions listened to a 10-minute audio-recorded exercise, and participants in the no-intervention condition waited quietly in the experimental room for 10 minutes. Following the 10-minute intervention phase, each participant engaged in a conversation with an interviewer regarding an interpersonal conflict the participant had experienced. The conversations served as a proxy for a therapy session. Participants completed assessments at three time points: pre-intervention, post-intervention, and post-conversation. The assessments were measures of values connectedness, mindfulness, and working alliance.

In the pilot study, the principal investigator served as the interviewer for all participants and was blind to the experimental condition of each participant. This arrangement eliminated several potential confounds. By keeping the same interviewer for the participants, the study eliminated the potential confound of varying interpersonal characteristics and interviewing skills among different interviewers. By having the interviewer blind to condition, the study controlled for any allegiance bias. The pilot study also allowed the experimenters to examine the effect of the intervention independent of the potential effect on the interviewer.

The manipulation checks were assessed at pre-intervention and post-intervention to measure the effectiveness of the experimental interventions. We found few statistically significant differences on the variables of interest. The participants in the mindfulness

plus values conditions reported statistically significant higher values connectedness than the other conditions at post-intervention. Although the participants in the experimental conditions showed higher mindfulness than those in the control condition at post-intervention, the differences were not statistically significant. There were no differences among the groups for working alliance.

The values connectedness results were supportive of the hypothesis that values connectedness scores would increase in the mindfulness plus values condition. However, the increase in values connectedness did not predict changes on the dependent measures of working alliance. It is possible that the values aspect alone of the mindfulness plus values intervention was not potent enough to affect working alliance. It may be that there is no relationship between values connectedness and working alliance. The results of the pilot study are not sufficient to draw conclusions about the potential relationship among values, mindfulness, and working alliance.

The null findings for overall mindfulness scores are surprising, as other researchers have shown that brief recorded mindfulness interventions increase mindfulness (e.g., Alberts & Thewissen, 2011; Erisman & Roemer, 2010). Alberts and Thewissen (2011) compared the effects of 12-minute recorded mindfulness intervention to a no-intervention control condition on mindfulness scores, and found that TMS scores were higher for those participants in the mindfulness condition than for those in the control condition. Erisman and Roemer (2010) compared the effects of a 10-minute recorded mindfulness intervention to an education control on mindfulness, and found that the Decentering subscale scores on the TMS were higher for participants in the mindfulness condition than to those in the control condition.

In addition to measuring the effect of the experimental manipulations, the pilot study also examined the effect of the interventions on working alliance. The experimental conditions were expected to produce an increase in working alliance post-conversation. However, there were no differences in working alliance among the three conditions. These findings are interesting since mindfulness theorists have suggested that using values and mindfulness techniques improves working alliance (e.g., Block-Lerner, et al., 2007; Hayes et al., 2012; Wilson & DuFrene, 2009; Wilson & Sandoz, 2008).

It is possible that the working alliance measures used in the pilot study were insensitive to changes in working alliance during the short conversation with the interviewer. However, these measures have been used and validated in clinical research (e.g., Martin, Garske, & Davis, 2000; Safran & Wallner, 1991) and have been sensitive to changes in working alliance over multiple therapy sessions. It is also possible that the conversations were not long enough to establish differential working alliances, or that the dependent measures were insensitive to small differences among the conditions.

It is possible that during the conversation, the interviewer exhibited behaviors thought to increase working alliance (e.g., tolerance, empathy, understanding, acceptance, respect, warmth; see Fiedler, 1950; and Lambert, 1986). The exhibition of these behaviors could have potentially led to the development of a relatively strong working alliance across all conditions. It is possible that the working alliance that developed overrode the effects of the experimental manipulations, causing the participants to rate working alliance similarly among conditions. However, since measurement only occurs at a single time point in the pilot study, it is not possible to draw any conclusions about the development of working alliance over time.

Another limitation of the pilot research is the possibility that social desirability may have influenced the participant ratings of working alliance. This may have been a factor in the similar ratings of working alliance across conditions, since these assessments were done immediately following the conversation with the interviewer. It is also possible that social desirability was unequally distributed among the conditions.

CURRENT STUDY

The current study extended and further explored factors examined in the pilot study. The purpose of the current study was to determine if specific brief interventions led to increased values connectedness and mindfulness, and to determine if these increases led to differences in working alliance ratings among conditions. These specific interventions were sufficiently compact that they could be added to treatments of known efficacy without unduly extending the duration of treatment. As in the pilot study, participants were randomized to one of the three main conditions in the current study: the mindfulness plus values condition, the mindfulness condition, and the control condition. The participants were then led in an intervention exercise corresponding to assigned condition. Several important modifications to the methods in the pilot study were made and are discussed below. For the purposes of clarity, the experimenter who led the intervention exercises in the current study will be hereafter referred to as the facilitator.

Changes to the mindfulness plus values condition. Researchers have asserted that collaborative values work consists of mindful contact with values between therapist and client (Wilson & DuFrene, 2009; Wilson & Sandoz, 2008). The authors state that collaborative mindfulness and values exercises establish a therapy session that differs from ordinary values discussion (Wilson & Sandoz, 2008). Wilson and Sandoz (2008) describe “how values work can target the mindfulness processes in ACT, and how doing so fosters a close working alliance” (p. 99). In the pilot study, participants in the mindfulness plus values intervention listened to a recorded Sweet Spot exercise alone in

the experimental room. The participant may have been able to call to mind values-related content, but the collaborative aspect was missing. It was also difficult to assess the additive component of mindfulness from that intervention, since only increases in values connectedness were statistically significant. To address these points, the current study modified the mindfulness plus values intervention. The facilitator delivered the mindfulness plus values intervention live. This enabled the facilitator to encourage participant engagement in the task and incorporated the collaborative aspects of values work asserted by Wilson and colleagues (2008; 2009). Additionally, the facilitator began the mindfulness plus values exercise with a short description and explanation of mindfulness in order to enhance the mindfulness aspect of the intervention.

Changes to the mindfulness condition. The pilot study found changes in mindfulness scores in the hypothesized direction, although these changes were not statistically significant. In the current study, the experimenters made two modifications to the mindfulness intervention. In order to match the live exercise in the mindfulness plus values condition and to potentially increase task engagement, the mindfulness intervention was also conducted live. Within a therapy session, the facilitator typically leads the mindfulness exercise, so this methodological change provided a closer analog to mindfulness exercises done in therapy. Additionally, the facilitator began the mindfulness exercise with a short description and explanation of the mindfulness matched to the description mentioned above.

Changes to the control group. The current study employed a stronger control condition than in the pilot study. Rather than a no-intervention waitlist control, the facilitator led control condition participants in a 10-minute progressive muscle relaxation

exercise. Relaxation was included in the current study in order to provide a live, active exercise for comparison with the mindfulness plus values and mindfulness conditions and to potentially increase task engagement. This active control also allowed for matching of the time the facilitator spent interacting with each participant in a guided exercise.

Relaxation has largely been employed with clients who present with psychological difficulties that have physiological components, such as anxiety disorders or somatic disorders (Bernstein, Borkovec, & Hazlett-Stevens, 2000). As outlined by Bernstein and colleagues (2000), the client's role in learning progressive relaxation skills is to 1) bring focused attention to muscles of the body and the therapist's voice, and 2) to tense and release muscle groups in a sequential manner according to the therapist's guidance (Bernstein et al., 2000). The therapist directs the client to focus on various muscle groups in a sequential manner. Typically, the client is asked to purposefully tense a specific muscle group for 5-7 seconds, followed by relaxing the muscles.

Enhancing the impact of the interventions. Using live exercises may enable researchers to increase the potency of the experimental manipulations, which may in turn have the effect of increasing working alliance. The live exercises can be modified if it appears that the participants are not engaging in the task or are having difficulty with the task. Live exercises can also be modified to include environmental stimuli (e.g., noticing specific sounds occurring moment-by-moment during the exercise). The facilitator's presence delivering a live intervention could increase participant engagement and compliance in the task. Increased engagement and compliance may result in increased scores on the variables of interest. In addition to the increased time of interaction with the

facilitator and participant, engaging in a collaborative task such as a live exercise may foster increased working alliance.

Changes to the experimental phases. In the pilot study, a conversation about a difficult topic was included as an analog to a therapy session and to provide a period of time for working alliance to develop with the interviewer. In the current study, since the interventions were conducted by the facilitator and were similar to exercises done in therapy sessions, the conversation was not necessary. The experimenters assessed values connectedness, mindfulness, and affect before and after the intervention. The experimenters assessed working alliance after the intervention.

Additional measures. The current study added five measures to those used in the pilot study. The Positive and Negative Affect Scale (Watson et al., 1988) was added to the current study. With this measure, the experimenters were able to determine if there were changes in positive affect and negative affect from pre-intervention to post-intervention. To assess the participants' compliance with the interventions, a measure was constructed asking participants to rate their engagement during the exercise. To expand the assessment of working alliance, the Session Rating Scale (Duncan et al., 2003) was added to the current study. This measure allowed for an additional measurement of the goals aspect of working alliance. One limitation of the pilot study was the possibility that social desirability impacted the participant ratings of working alliance. To address this, the experimenters included the Social Desirability Scale (Reynolds, 1982). Additionally, the current study included a measure of participant demographic information.

Specific hypotheses. There were four hypotheses in the current study.

1. We predicted that values connectedness would increase for participants in the mindfulness plus values condition, but not the mindfulness condition or control condition. The mindfulness plus values intervention specifically targets values, asking participants to call to mind a sweet moment while the others do not specifically mention values.
2. We predicted that mindfulness would increase for participants in the experimental conditions, but not the control condition. The mindfulness plus values and mindfulness interventions specifically direct participants' attention to thoughts, feelings, and stimuli in the present moment, targeting mindfulness processes.
3. We predicted that negative affect would decrease for participants in the mindfulness and control conditions, but not necessarily for the mindfulness plus values condition. The mindfulness plus values condition could potentially decrease negative affect because it connects people with important values, but could also increase negative affect because these valued areas of living are often connected to significant vulnerabilities. Mindfulness and relaxation interventions appear less likely to be connected to vulnerabilities.
4. We predicted that ratings of working alliance would be higher in the mindfulness plus values and the mindfulness conditions than in the control condition. There are theoretical rationales in values and mindfulness traditions suggesting that these variables ought to increase working alliance, and no such theoretical assertions have been made for progressive muscle relaxation.

METHODS

Participants

Sixty-six undergraduate students at a large southeastern public university were recruited online and in psychology classes through classroom announcement to take part in the study. Participants received course credit or extra credit in psychology classes in exchange for participation. Participants were age 18 or older. There were no other inclusion or exclusion criteria.

Measures

Participants completed measures at two time points: pre-intervention and post-intervention. Table 1 describes the timing and content of the assessments (see Appendices D through M for measures).

Table 1

Timing and Content of Assessments

Pre-Intervention	Post-Intervention
Toronto Mindfulness Scale	Exercise Engagement Measure
Values Connectedness	Toronto Mindfulness Scale
Positive and Negative Affect Scale	Values Connectedness
Friendliness Subscale	Positive and Negative Affect Scale
Social Desirability Scale	
	Session Rating Scale
	Working Alliance Inventory
	Counselor Rating Form
	Demographic Measure

Mindfulness. The Toronto Mindfulness Scale (TMS; Lau et al., 2006) is a measure designed to assess state mindfulness, including attention, awareness, acceptance and openness (see Appendix D for measure). The TMS was used in this study as a manipulation check to assess whether the mindfulness plus values intervention and the mindfulness intervention increased mindfulness relative to the control condition. There are 13 items in the TMS, and the full-scale score was used for this study. Each of the 13 items (e.g., “I was receptive to observing unpleasant thoughts and feelings without interfering with them,” “I was aware of my thoughts and feelings without overidentifying with them”) was rated on a 5-point Likert-type scale ranging from 0 (*not at all*) to 4 (*very much*). The measure asked each participant to rate each item based on what they had just experienced. Cronbach’s alphas for the TMS at pre-intervention and post-intervention were .87 and .88, respectively.

Values connectedness. The experimenters constructed a one-item values process

measure specifically for use in the pilot and current studies (see Appendix E for measure). To date, there is not an established values process measure that assesses momentary connection to valued living. This single item asked participants to rate their general level of connectedness with values. It should be noted that this item was not designed to serve as a values measure. Rather, it was designed as a manipulation check to assess whether the values intervention increased a sense of values connectedness. The measure gave a short description of values, and then asked “In this moment, how connected do you feel with your values?” This item was rated on a 10-point Likert-type scale ranging from 1 (*completely disconnected from my values*) to 10 (*completely connected with my values*).

Affect. The Positive and Negative Affect Scale (PANAS; Watson et al., 1988) is a measure designed to assess affect (see Appendix F for measure). The PANAS is responsive to variations in mood and affect when used in short interventions (Watson et al., 1988). There are 20 items in the PANAS and two subscales: positive affect (PA) and negative affect (NA). The measure asked each participant to rate their experience of certain moods. The items are comprised of 20 adjectives, 10 positively valenced (“interested,” “enthusiastic”) and 10 negatively valenced (“hostile,” “irritable”). Each of the 20 items was rated on a 5-point Likert-type scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). The subscale scores (PA and NA) were calculated separately, and the full-scale score was not used. Cronbach’s alphas for the PA subscale at pre-intervention and post-intervention were each .90. Cronbach’s alphas for the NA subscale at pre-intervention and post-intervention were .89 and .64, respectively.

Friendliness. The Friendliness Subscale (FS, from the International Personality

Item Pool; <http://ipip.ori.org/>, n.d.; Goldberg et al, 2006) is a measure designed to assess trait friendliness, including the ability to make friends easily and warm up to others (see Appendix G for measure). The FS used in this study is based on Costa and McCrae's (1992) NEO Personality Inventory (NEO-PI-R). Costa and McCrae developed 30 personality facets, and the Friendliness subscale has been developed to measure a similar construct to the Warmth facet of the Extraversion domain (<http://ipip.ori.org/newNEOKey.htm#Friendliness>). The FS is thought to conceptually capture capacity for interpersonal connections like those endorsed in the working alliance measures. Pre-intervention differences in friendliness among conditions were a potential confound with relationship-enhancing interventions. There are 10 items in the FS, and the full-scale score was used for this study. Each of the 10 items (e.g., "Feel comfortable around people," "Am not really interested in others") was rated on a 5-point Likert-type scale ranging from 1 (*very inaccurate*) to 5 (*very accurate*). The measure asked each participant to rate themselves honestly on each item in relation to their same-gender and same-age peers. The FS was found to have good internal consistency ($\alpha = .86$) in this study.

Social desirability. The Reynolds MCSD Short Form (MCSDS-S; Reynolds, 1982) is a 13-item measure designed to assess social desirability. High ratings of social desirability or pre-intervention differences in social desirability were potential confounds with relationship-enhancing interventions. The MCSDS-S developed by Reynolds (1982) is a shortened version of the original 33-item Marlowe Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960) (see Appendix H for measure). Reynolds developed the shorter version of the measure in an effort to reduce assessment burden on

participants. There are 13 items in the MSCDS-S, and the full-scale score was used for this study. Each of the 13 items (e.g., “No matter who I’m talking to, I’m always a good listener,” “I’m always willing to admit it when I make a mistake”) asked the participant to indicate whether the statement is true or false. The MCSDS-S had fair internal consistency ($\alpha = .68$) in the current study.

Exercise engagement. The exercise engagement measure is a general form that was designed specifically for use in the current study (see Appendix I for measure). This measure was used as a self-report assessment of participant engagement in the exercise, asking the participant to indicate how often they did certain behaviors during the exercise. There are six items in the engagement measure, and the full-scale score was used for this study. Each of the six items (e.g., “Tell yourself to not feel unpleasant emotions or think negative thoughts,” “Do something to actively change what you were thinking and/or how you were feeling”) was rated on a 9-point Likert-type scale ranging from 0 (*never*) to 8 (*all of the time*). The EE had low internal consistency ($\alpha = .46$) in the current study, but the measure was designed to measure various engagement behaviors during the exercise, rather than be used as a process measure.

Session Rating Scale. The Session Rating Scale (SRS; Duncan et al., 2003) is a measure designed to assess working alliance (see Appendix J for measure). There are four items (Relationship, Goals and Topics, Approach or Method, and Overall) in the original SRS, reflecting Bordin’s (1979) concept of working alliance. The measure was adapted for use in the current study by removing the Goals and Topics item, as there was no discussion of these during the intervention. The response anchors for the “Approach or Method” and “Overall” items were adapted in order to be consistent with the purposes of

the current study, rather than focused on therapy. In the “Approach or Method” item, the words “*The therapist’s*” were replaced with the facilitator’s name, “*Regan’s*.” In the “Overall” item, the word “*session*” was replaced with “*exercise*.” Participants rated each of the three items on a 10-point Likert-type scale ranging from 1 (negative responses) to 10 (positive responses), and the sum of these three items was used for this study. The SRS had good internal consistency ($\alpha = .85$) in the current sample.

Working Alliance Inventory. The Working Alliance Inventory-Client, Short Form (WAI-C-SF; Tracey & Kokotovic, 1989) is a measure designed to assess Bordin’s three-part definition of the working alliance (see Appendix K for original measure and adapted measure). The WAI-C-SF developed by Tracey and Kokotovic (1989) is a shortened version of Horvath and Greenberg’s (1989) 36-item measure. There are 12 items in the WAI-C-SF, and three subscales: Task, Bond, and Goals. Each of the 12 items was rated on a 7-point Likert-type scale ranging from 1 (*never*) to 7 (*always*). Reliability estimates indicate high internal consistency for the overall WAI ($\alpha = .93$) and good internal consistency for the subscales ($\alpha = .85$ to $.88$; Tracey & Kokotovic, 1989, p. 208). The WAI-C-SF was adapted in order to be consistent with the 10-minute intervention, rather than focused on therapy, and is referred to as the WAI in this study. For example, the original item “What I am doing in *therapy* gives me new ways of looking at *my problem*” was adapted to “What I am doing in *the exercise* gives me new ways of looking at *problems*.” One item that asked about the client’s specific problems was removed from the exercise because it did not fit with the purposes of the study. The WAI was found to have good internal consistency ($\alpha = .89$) in the current sample.

Counselor Rating Form. The Counselor Rating Form-Short Version (CRF-S;

Corrigan & Schmidt, 1983) is a measure designed to assess client opinions of therapist characteristics (see Appendix L for measure). There are 12 items in the CRF-S, and three subscales: Attractiveness, Expertness, and Trustworthiness. Each of the 12 items (e.g., friendly, experienced, trustworthy) was rated on a 7-point Likert-type scale ranging from 1 (*not very*) to 7 (*very*). The CRF was found to have high internal consistency ($\alpha = .97$) in the current sample.

Demographics. Demographic information including age, gender, grade level, ethnicity, and prior history of meditation was collected (see Appendix M for measure). This information allowed for the examination of differences in diversity within the participant sample.

Procedure

Prior to the experiment, participants were randomized to one of the three conditions (described below). The chairs in the experimental room were placed facing each other at a 45-degree angle. The experimental room was equipped with a computer and a video camera. Following the consent procedures, the research assistant instructed the participant to complete the pre-intervention assessment (see Table 1 for assessments) using online software and to notify the research assistant when the participant was done. The facilitator then entered the experimental room and led the participant in a 10-minute exercise corresponding to the participant's assigned condition. Following the exercise, the facilitator left the room. The research assistant instructed the participant to complete the post-intervention assessments using online software and to notify the research assistant when the participant was done. At the conclusion of the study, the research

assistant debriefed the participant and provided opportunities for any questions. The participant was then given credit online or by notification to the course instructor.

Experimental Conditions

Mindfulness plus values. In the mindfulness plus values condition, the facilitator guided participants in a 10-minute Sweet Spot exercise. The facilitator began the exercise with a short description and explanation of the exercise (see Appendix A). Participants listened to and engaged in this exercise focused on mindfulness and values adapted from *Mindfulness for Two* (Wilson & DuFrene, 2009). Participants were instructed to engage in the exercise either with eyes closed, or with soft, fixed focus on a specific point in front of them. According to Wilson and DuFrene (2009), exercises involving values and mindfulness should enhance the participant's sense of interpersonal engagement.

Mindfulness. In the mindfulness condition, the facilitator guided participants in a 10-minute breathing meditation. The facilitator began the exercise with a short description and explanation of the exercise (see Appendix B). Participants were instructed to engage in this exercise either with eyes closed, or with soft, fixed focus on a specific point in front of them. The breathing meditation is an exercise in which participants were asked to purposefully and nonjudgmentally direct attention to their breath. Marlatt and colleagues (2008) have asserted that mindfulness alone ought to produce a greater sense of interpersonal connection. Additionally, inclusion of this condition allowed examination of potential additive effects of values over mindfulness alone.

Relaxation. In the control condition, the facilitator guided participants in a 10-minute progressive muscle relaxation exercise. The facilitator began the exercise with a

short description and explanation of the exercise (see Appendix C). Participants were instructed to engage in the exercise either with eyes closed, or with soft, fixed focus on a specific point in front of them. Progressive muscle relaxation is an exercise in which participants were asked to alternately tense and release muscle groups, in a sequential order.

RESULTS

Prior to analyses, the experimenters examined the data for missing data, procedural errors, and outliers. Demographic data were not collected from one participant due to laboratory power outage. However, for this participant, data were collected on the process and outcome variables, and as a result, this participant was not removed from the study. No other procedural errors were noted. Data were then screened for univariate and multivariate outliers. One case in the mindfulness plus values condition and one case in the mindfulness condition were identified as univariate outliers based on having a z-score greater than 3.29 on one or more variables ($p < .001$, two-tailed test). These cases were deleted from further analyses. No multivariate outliers with Mahalanobis distance exceeding the critical value of 34.528 ($p = .001$) were identified. All study variables were screened for normality, homoscedasticity, and independence of observations. Box's M test of equality of covariance matrices and Levene's tests of equality of error variances were not statistically significant, meeting the parametric tests assumption of homogeneity of variances. All variables met the parametric tests assumption of independence of observations. Three variables violated the parametric tests assumption of normality. To address this violation, Pillai's trace was used. Pillai's trace is robust when there are assumptions violations and unequal sample sizes (Tabachnick & Fidell, 2007, p. 269). Evaluations of test assumptions are discussed in the following sections as appropriate where there are violations.

The deletion of the two outlier cases left 21 participants in the mindfulness plus values condition, 21 participants in the mindfulness condition, and 22 participants in the control condition. Of these 64 participants, 43 (67%) identified themselves as Caucasian, 14 (22%) identified themselves as African American, four (6%) identified themselves as Asian American, and two (3%) identified themselves as mixed race. Forty-two (66%) of the participants were female. Thirty-six (56%) of the participants were freshmen, 16 (25%) were sophomores, nine (14%) were juniors, and two (3%) were seniors. The mean age of the participants was 19.62 years (range: 18-29).

Comparisons of demographic group differences were conducted. Fifty percent of the cells had an expected count of less than five, violating the Pearson chi-square test. To address this violation, Fisher’s exact test was used. No statistically significant group differences were found among conditions on the basis of gender ($p = .752$), ethnicity ($p = .791$), or grade classification ($p = .412$). Composite demographic data on participant gender, ethnicity, and grade classification are presented in Table 2.

Table 2

Participant Demographic Characteristics by Condition

	Mindfulness plus Values <i>n</i> (Percent)	Mindfulness <i>n</i> (Percent)*	Control <i>n</i> (Percent)
Gender			
Female	15 (71.4%)	12 (60.0%)	15 (68.2%)
Male	6 (28.6%)	8 (40.0%)	7 (31.8%)
Ethnicity			
Caucasian	15 (71.4%)	15 (75.0%)	13 (59.1%)
African American	4 (19.0%)	3 (15.0%)	7 (31.8%)
Asian American	2 (9.5%)	1 (5.0%)	1 (4.5%)
Mixed	0 (0.0%)	1 (5.0%)	1 (4.5%)

Grade			
Freshman	15 (71.4%)	10 (50.0%)	11 (50.0%)
Sophomore	2 (9.5%)	7 (35.0%)	7 (31.8%)
Junior	3 (14.3%)	3 (15.0%)	3 (13.6%)
Senior	1 (4.8%)	0 (0.0%)	1 (4.5%)

*Missing demographic data for one participant in mindfulness condition

Data Analysis

One-way analyses of variance (ANOVAs) were conducted to examine any pre-intervention differences among conditions on values connectedness, mindfulness, negative affect, positive affect, social desirability, and friendliness. Mixed-factors repeated measures ANOVAs were conducted to examine differences between the pre-intervention and post-intervention scores among conditions on values connectedness, mindfulness, negative affect, and positive affect. Multivariate analyses were conducted to examine the effects of the interventions on the working alliance measures. A one-way ANOVA was conducted to examine any post-intervention differences among conditions on exercise engagement.

Pre-intervention comparison of conditions. One-way ANOVAs were conducted to compare conditions on the pre-intervention measures of values connectedness, mindfulness, negative affect, positive affect, social desirability, and friendliness. No statistically significant group differences were found for values connectedness ($F(2, 61) = .040, p = .961, \text{partial } \eta^2 = .001$), mindfulness ($F(2, 61) = .265, p = .768, \text{partial } \eta^2 = .009$), negative affect ($F(2, 61) = .265, p = .768, \text{partial } \eta^2 = .009$), positive affect ($F(2, 61) = .793, p = .457, \text{partial } \eta^2 = .025$), or social desirability ($F(2, 61) = .251, p = .779, \text{partial } \eta^2 = .008$). A statistically significant difference was found for friendliness with the friendliness mean in the mindfulness condition statistically significantly higher than the friendliness means of the other two conditions ($F(2, 61) = 8.214, p = .001, \text{partial } \eta^2 =$

.212). The pre-intervention means and standard deviations are presented in Table 3.

Table 3

Mean Pre-intervention Scores by Condition (with Standard Deviations in Parentheses)

	Mindfulness plus Values	Mindfulness	Control
Values Connectedness	7.62 (1.60)	7.76 (1.87)	7.73 (1.67)
Mindfulness	23.43 (8.12)	21.48 (10.11)	21.82 (9.55)
Negative Affect	14.19 (5.31)	15.43 (5.55)	15.18 (6.57)
Positive Affect	27.71 (9.67)	31.05 (7.58)	29.23 (8.40)
Social Desirability	6.05 (3.03)	6.67 (2.69)	6.45 (2.91)
Friendliness	39.14 (7.34)	46.05 (4.27)	40.73 (5.37)

Post-intervention comparison of exercise engagement. A one-way ANOVA was run to determine if statistically significant post-intervention differences existed on the engagement ratings. No statistically significant group differences were found for exercise engagement ($F(2, 61) = .13, p = .88, \text{partial } \eta^2 = .004$). The post-intervention means and standard deviations are presented in Table 4.

Table 4

Mean Post-intervention Exercise Engagement Scores by Condition (with Standard Deviations in Parentheses)

	Mindfulness plus Values	Mindfulness	Control
Exercise Engagement	26.81 (5.68)	26.05 (7.56)	25.64 (8.93)

Analyses of manipulation checks. To examine the effects of the experimental manipulations on values connectedness, mindfulness, negative affect, and positive affect, four 3 (conditions) by 2 (time) repeated measures ANOVAs were conducted on the four

manipulation checks. Due to the number of ANOVAs, a Bonferroni correction was calculated to determine significance at $p = .0125$ ($0.05 / 4 = \text{original } p \text{ value} / \# \text{ of repeated measures ANOVAs}$). The post-intervention means and standard deviations are presented in Table 5.

Table 5

Mean Post-intervention Manipulation Check Scores by Condition (with Standard Deviations in Parentheses)

	Mindfulness plus Values	Mindfulness	Control
Values Connectedness	8.71 (1.27)	8.14 (2.03)	8.41 (1.37)
Mindfulness	29.90 (9.77)	30.29 (8.63)	27.27 (11.43)
Negative Affect	12.19 (2.96)	12.76 (2.74)	12.64 (3.20)
Positive Affect	30.19 (10.51)	34.19 (7.47)	31.68 (8.58)

Values connectedness. The first repeated measures ANOVA was conducted to assess the impact of the experimental manipulations on values connectedness. The researchers predicted that values connectedness would increase for participants in the mindfulness plus values condition but not in the mindfulness condition or control condition. Using Pillai's Trace as a criterion, there was a significant main effect for time, indicating an overall increase in values connectedness from pre-intervention to post-intervention ($F(1, 61) = 16.89, p < .001, \text{partial } \eta^2 = .22$). There was no significant interaction for time by condition ($F(2, 61) = 1.38, p = .26, \text{partial } \eta^2 = .043$). The non-significant time by condition interaction suggests that increases in values connectedness scores did not differ significantly by condition from pre-intervention to post-intervention. The pre-intervention and post-intervention scores are represented in Figure 1.

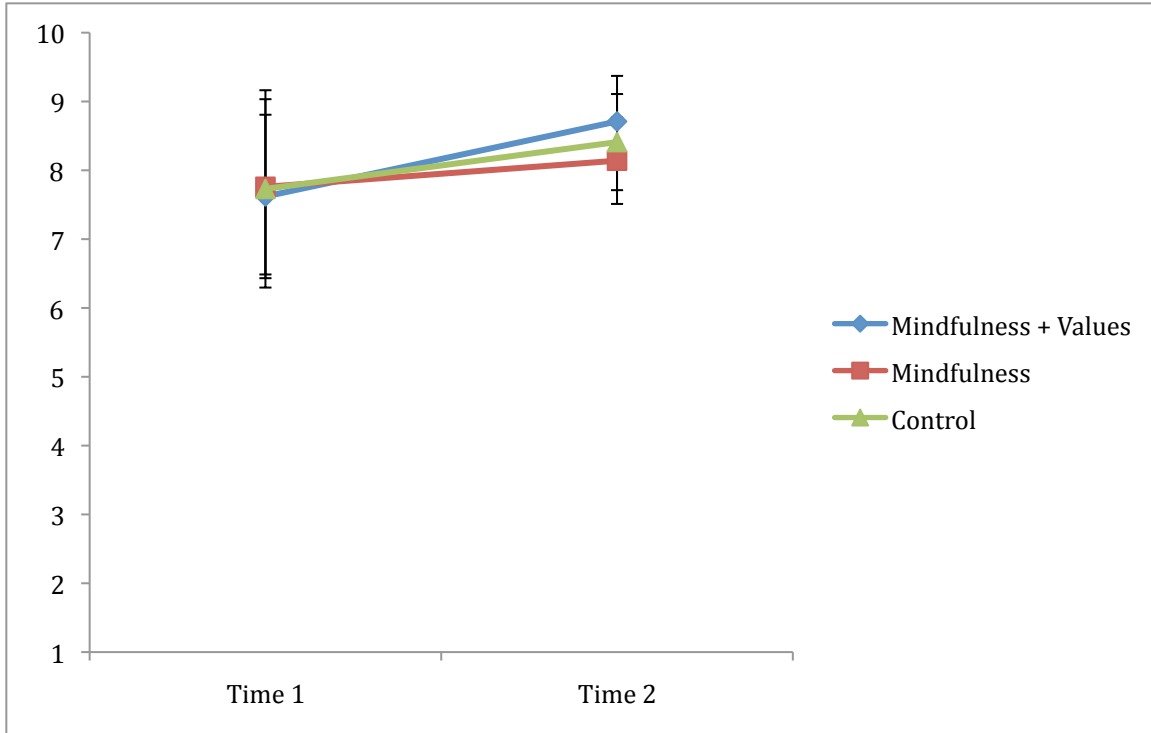


Figure 1. Pre-intervention to post-intervention values connectedness scores by condition. The error bars show the standard error of the mean.

Mindfulness. The second repeated measures ANOVA was conducted to determine differences among conditions on the mindfulness manipulation check. The researchers predicted that mindfulness would increase for participants in both of the experimental conditions, but not the control condition. Using Pillai's Trace as a criterion, there was a significant main effect for time, indicating an overall increase in mindfulness from pre-intervention to post-intervention ($F(1, 61) = 39.08, p < .001, \text{partial } \eta^2 = .39$). There was no significant interaction for time by condition ($F(2, 61) = .81, p = .45, \text{partial } \eta^2 = .026$). The non-significant time by condition interaction suggests that increases in mindfulness scores did not differ significantly by condition from pre-intervention to post-intervention. The pre-intervention to post-intervention scores are represented in Figure 2.

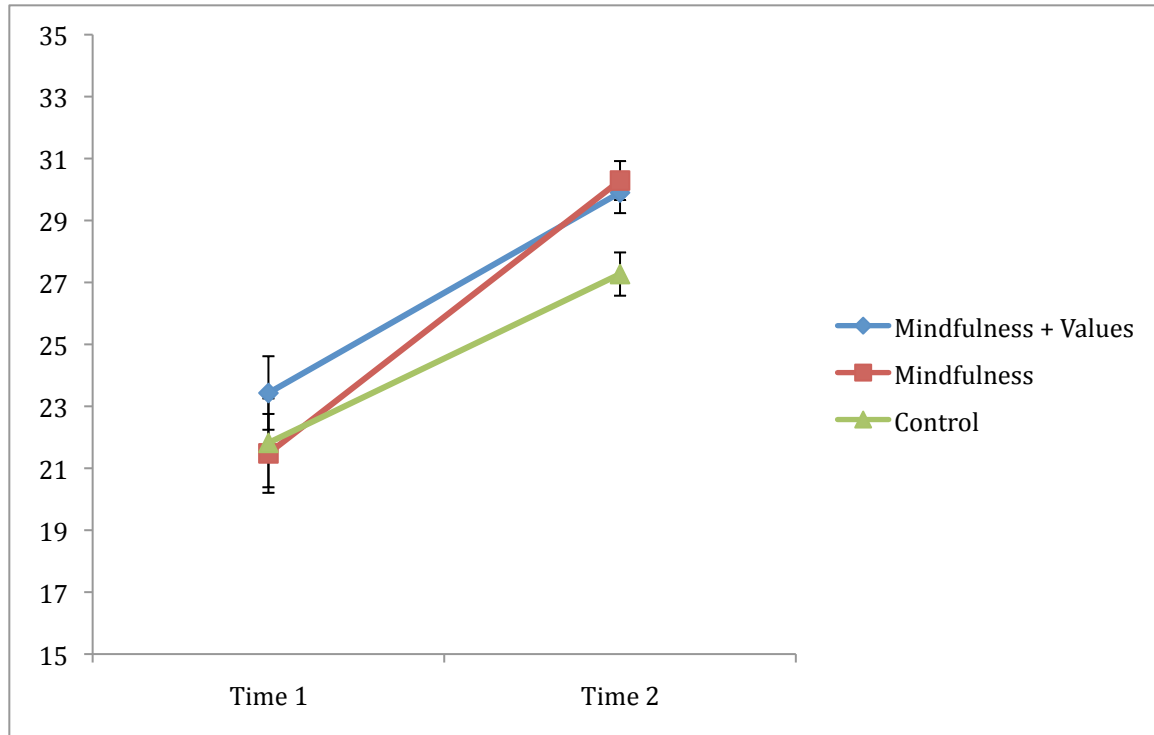


Figure 2. Pre-intervention to post-intervention mindfulness scores by condition. The error bars show the standard error of the mean.

Negative affect. The third repeated measures ANOVA was conducted to determine any differences among conditions on negative affect. The researchers predicted that negative affect would decrease for participants in the mindfulness and control conditions, but not necessarily the mindfulness plus values condition. Using Pillai's Trace as a criterion, there was a significant main effect for time, indicating an overall decrease in negative affect from pre-intervention to post-intervention ($F(1, 61) = 17.01, p < .001, \text{partial } \eta^2 = .22$). There was no significant interaction for time by condition ($F(2, 61) = .122, p = .89, \text{partial } \eta^2 = .004$). The non-significant time by condition interaction suggests that decreases in negative affect scores did not differ significantly by condition from pre-intervention to post-intervention. The pre-intervention to post-intervention scores are represented in Figure 3.

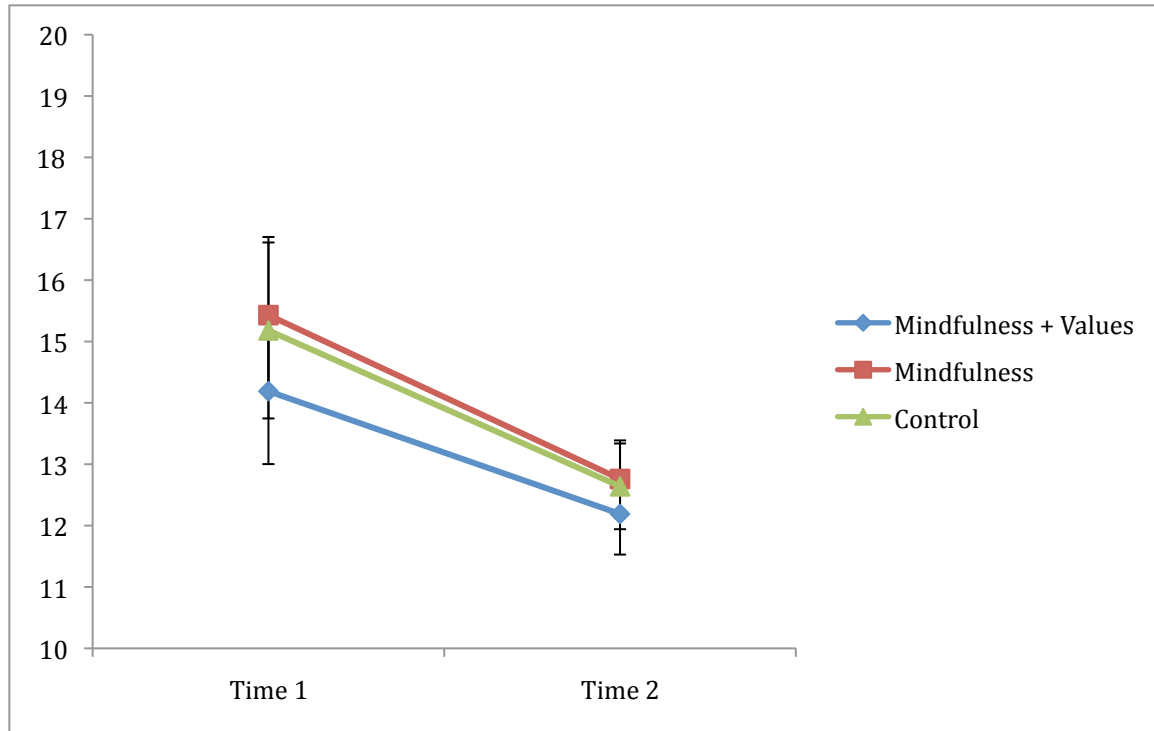


Figure 3. Pre-intervention to post-intervention negative affect scores by condition. The error bars show the standard error of the mean.

Positive affect. The fourth repeated measures ANOVA was conducted to determine any differences among conditions on positive affect. Using Pillai's Trace as a criterion, there was a significant main effect for time, indicating an overall increase in positive affect from pre-intervention to post-intervention ($F(1, 61) = 14.93, p < .001$, partial $\eta^2 = .20$). There was no significant interaction for time by condition ($F(2, 61) = .10, p = .90$, partial $\eta^2 = .003$). The non-significant time by condition interaction suggests that increases in positive affect scores did not differ significantly by condition from pre-intervention to post-intervention. The pre-intervention to post-intervention scores are represented in Figure 4.

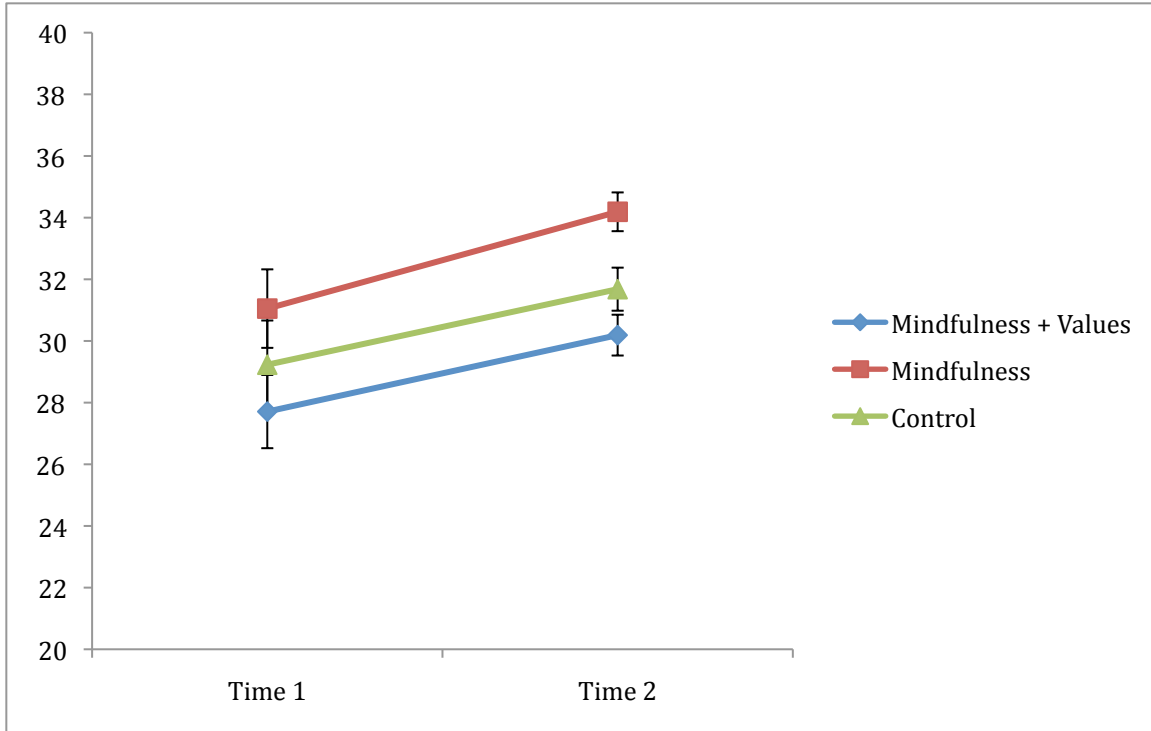


Figure 4. Pre-intervention to post-intervention positive affect scores by condition. The error bars show the standard error of the mean.

Primary analysis of working alliance measures. A between subjects multivariate analysis of covariance (MANCOVA) was used to examine the impact of the experimental manipulations on working alliance after controlling for friendliness. Using Pillai's Trace as a criterion, there were no significant differences among the conditions on the combined dependent variables ($F(6, 118) = 1.917, p = .084, \text{partial } \eta^2 = .089$). The covariate, friendliness, did not significantly influence the combined dependent variables ($F(3, 58) = 1.633, p = .192, \text{partial } \eta^2 = .078$). Thus, no further analyses were conducted on the working alliance measures. The adjusted means for the working alliance measures are presented in Table 6. The WAI, CRF, and SRS scores by condition are presented in Figures 5, 6, and 7, respectively.

Table 6

Adjusted Means of WAI, CRF, and SRS Scores by Condition (with Standard Error in Parentheses)

	Mindfulness plus Values	Mindfulness	Control
WAI	59.37 (2.73)	56.19 (2.85)	55.43 (2.59)
CRF	82.33 (1.83)	76.70 (1.91)	75.24 (1.73)
SRS	24.59 (1.10)	24.99 (1.14)	25.27 (1.04)

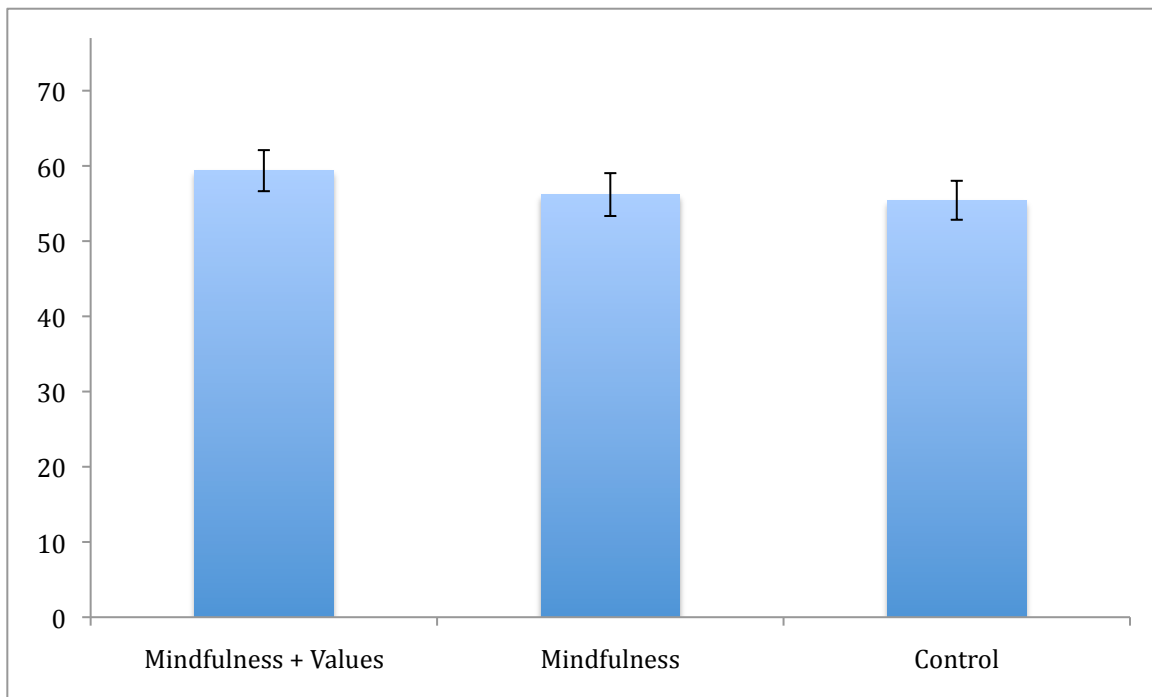


Figure 5. Working Alliance Inventory scores by condition. The error bars show the standard error of the mean.

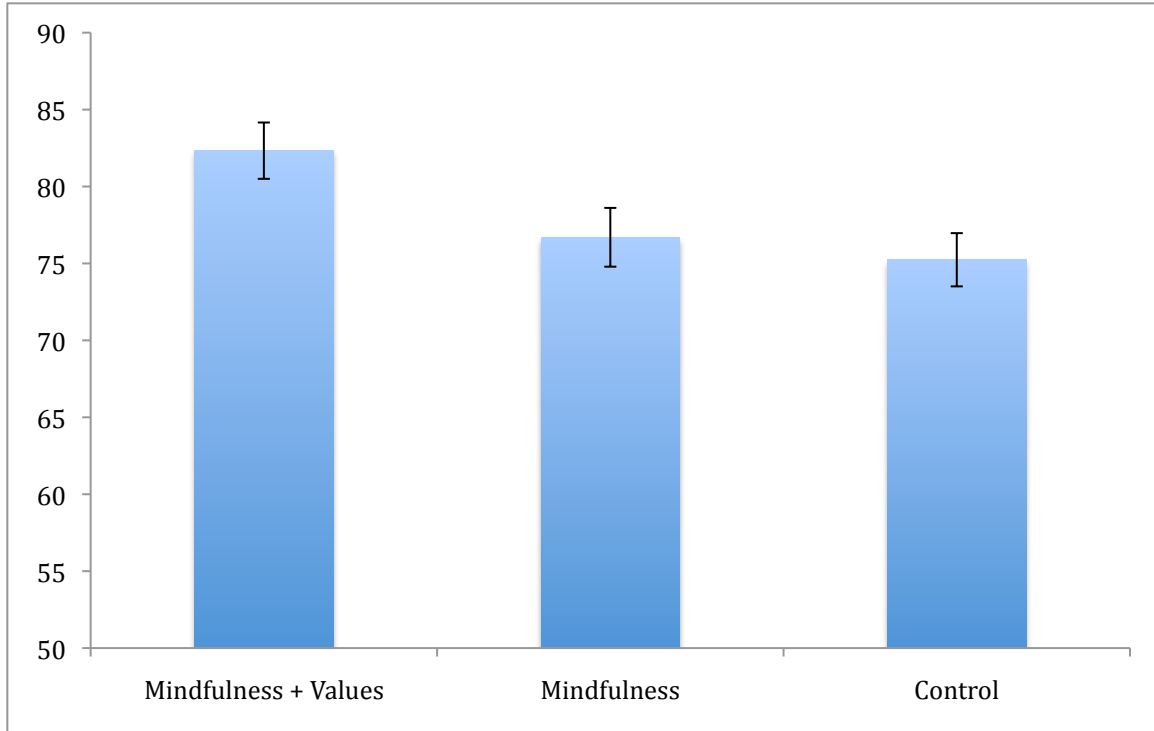


Figure 6. Counselor Rating Form scores by condition. The error bars show the standard error of the mean.

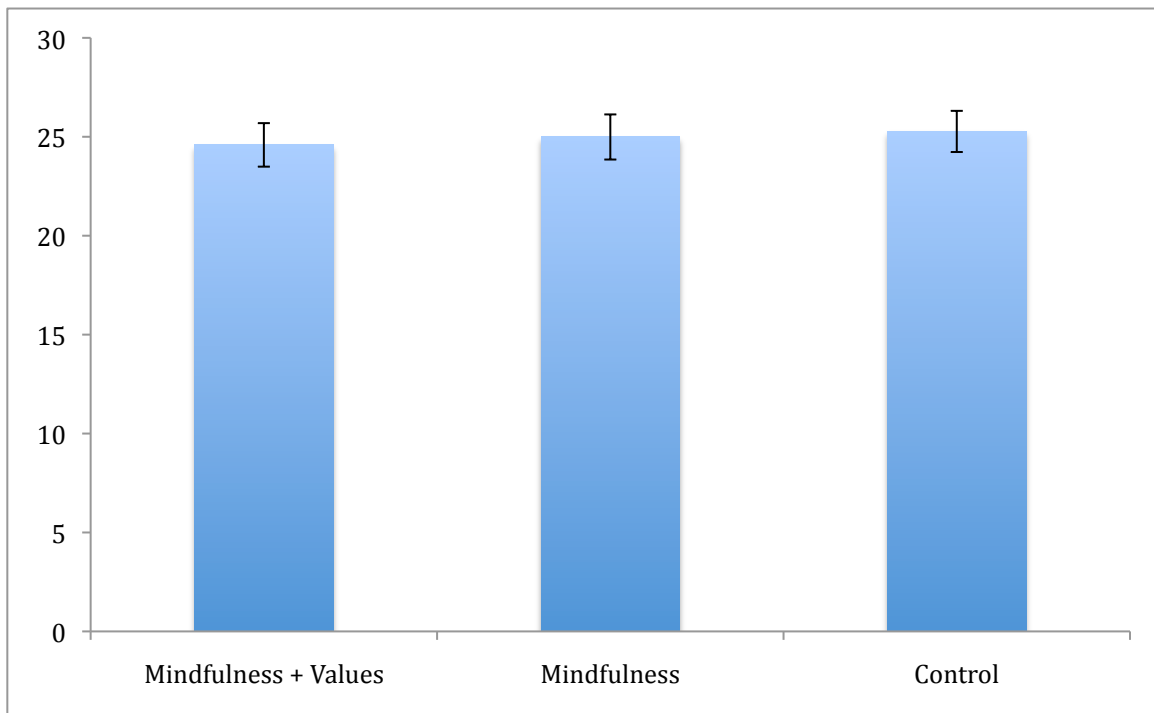


Figure 7. Session Rating Scale scores by condition. The error bars show the standard error of the mean.

DISCUSSION

Many researchers interested in necessary conditions for good therapeutic outcomes have proposed working alliance as one of the most critical mediators of clinical change (Horvath, Gaston, & Luborsky, 1993; Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000). Although working alliance has often been proposed as essential, there is a near complete absence of experiments in which working alliance was deliberately manipulated as an independent variable—none at all which show its additive impact. In order to understand the role of working alliance in clinical outcomes, we need direct experimental evidence. The purpose of the current study was to produce two relatively brief interventions that could potentially increase working alliance by increasing either mindfulness alone or mindfulness plus values connectedness in the context of a therapy-like interaction.

General Findings

The experimenters predicted that values connectedness would increase from pre-intervention to post-intervention in the mindfulness plus values condition, but not the mindfulness condition or control condition. We found increases in values connectedness mean scores in each of the conditions, but these increases did not differ significantly by condition. These findings suggest that the mindfulness plus values intervention was not successful in differentially improving values connectedness. Although there was an overall increase across conditions, the increase was relatively small.

The experimenters predicted an increase in mindfulness from pre-intervention to

post-intervention in the mindfulness plus values and mindfulness conditions, but not the control condition. We found increases in mindfulness mean scores in all of the conditions, but these increases did not differ significantly by condition. These findings suggest that although the mindfulness plus values and mindfulness interventions successfully increased mindfulness, the control condition also increased mindfulness. The two mindfulness conditions were not successful in differentially improving mindfulness.

The experimenters predicted that negative affect would decrease from pre-intervention to post-intervention in the mindfulness and control conditions, but not necessarily in the mindfulness plus values condition. We found decreases in negative affect in all of the conditions, but these decreases did not differ significantly by condition. It is possible that inducing mindfulness decreases negative affect. Arch & Craske found that after viewing emotionally evocative slides, participants in the focused breathing condition reported lower ratings of negative affect than those in the worry condition (2006). Because the control condition also increased mindfulness, it is possible that inducing mindfulness mediated lowering of negative affect, thus erasing potential differential impact on negative affect among conditions.

The experimenters had not explicitly stated a hypothesis about the interventions' effect on positive affect from pre-intervention to post-intervention. We found increases in positive affect in each of the conditions, but these increases did not differ significantly by condition. These findings suggest that the interventions did not have a differential effect on positive affect among conditions. Again, it is possible that the increases in mindfulness mediated these mood changes.

The experimenters predicted higher ratings of working alliance at post-

intervention in the mindfulness plus values and mindfulness conditions than the control condition. We found no statistically significant group differences on the WAI, CRF, or SRS. Because the interventions did not produce differential changes on the manipulation checks, there is no basis upon which to test mindfulness- and/or values-mediated changes in working alliance.

Refining the Interventions

The current study did not produce interventions that differentially impacted mindfulness or values connectedness. Therefore, in order to test the study hypothesis, there is a need to refine procedures that reliably both enhance and control for mindfulness and values. First, we need distinct interventions that produce substantial changes in mindfulness, but not values. Second, we need preparations that produce larger changes in values connectedness. And, third, and finally, we need to create a control condition that does not raise, or at least raises minimally, both mindfulness and values connectedness. Once effective interventions that reliably result in differential increases among conditions are tested, the current study's hypotheses could be reexamined so that conclusions could be drawn.

Refining the mindfulness intervention. The mindfulness intervention did not differentially impact mindfulness among conditions. Results from both the pilot study and the current study indicate that the interventions in the mindfulness conditions produced small increases in mindfulness. However, the control condition also produced mindfulness effects. The next step in this course of research is to pilot test mindfulness interventions in order to identify one that substantially increases levels of mindfulness. When a mindfulness intervention is identified that reliably and differentially increases

mindfulness, it can be used experimentally in a future iteration of the current study.

Refining the values intervention. As stated above, although there was an overall increase in values connectedness in all conditions, the effect was quite small. The mindfulness plus values intervention did not differentially impact values connectedness. Future research should focus on pilot testing to determine values interventions that would produce larger changes in values connectedness. Because of the failure of the current values exercise to substantially increase values connectedness, it may be useful to explore alternative methods.

Páez-Blarrina and colleagues used interviewing to ask clients to give examples of their experiences with persisting with short-term pain in the service of long-term valued actions. The authors found lower ratings of pain believability (i.e., persistence in painful task after having rated “very much pain”) in the values condition as compared to the pain control and no-values conditions. Additionally, participants exhibited higher pain tolerance in the values action condition than in the pain control and no-values conditions (2008). Values were a component of the intervention, and the presumed mechanism. However, Páez-Blarrina and colleagues did not specifically collect data on the extent to which the intervention increased values connectedness, so whether values connectedness changed is unknown.

Multiple studies have used values writing interventions. Cohen and colleagues (2007) conducted a brief intervention in which seventh grade students wrote for 15 minutes about either their most important or least important values. They found that writing about their most important values significantly increased the grades of African American students.

Crocker, Niiya, & Mischkowski (2008) conducted research in which participants either wrote about their most important value and why it is personally important, or wrote about their least important value and why it might be important to others (control condition). They found that those who wrote about personally important values had higher ratings of love for and connection to others than those participants in the control condition.

Hayes and Coyne used values cards with evocative images and values phrases (e.g., “seeking wisdom,” “embracing the moment”) in order to prompt discussion of personally relevant values in therapy (2010). Other clinicians have used measures in sessions as techniques to have clients rank values according to their current experience, prompting personal discussion of values (Blackledge, Ciarrochi, & Bailey, n.d.; Wilson & DuFrene, 2008).

Although a variety of methods have been used clinically and experimentally to increase values connectedness, none have collected direct evidence about the extent to which these interventions actually altered values connectedness. Hebert is conducting research on the most effective manner of generating personally relevant values stimuli (personal communication, May 10, 2014). The aforementioned interventions while apparently successful in changing dependent variables such as willingness to experience pain, did not directly measure changes in values connectedness. In order to establish that these outcomes were produced by changes in values connectedness, such measurement would be needed. Those techniques not yet examined experimentally can be assessed in future research to examine their utility in increasing values connectedness. Once pilot testing has been completed, we will then be able to combine these results with the

findings from mindfulness intervention research in order to develop a potent mindfulness plus values intervention.

Refining the control condition. In addition to the refinement of the experimental interventions, an effective control intervention must be identified. The current study's control intervention matched the experimental interventions for time and contact with the facilitator. However, the control condition results showed increases in mindfulness and to a lesser extent in values connectedness.

The biggest problem with the control condition in the current study was the fairly substantial increases in mindfulness. Although it has been suggested that mindfulness differs in important ways from progressive muscle relaxation, there are also aspects that likely overlap, as the results of the current study indicate. Roemer and Orsillo (2003) describe the need for further study into the mechanisms of action to determine the active components of mindfulness.

Jain and colleagues (2007) conducted a randomized controlled trial in which participants were assigned to a month-long mindfulness meditation, relaxation training, or no-treatment control. There were no significant differences between the mindfulness and relaxation conditions on distress or positive mood. However, those in the mindfulness condition reported lower distraction and rumination. In the current study, it is not clear what aspect of the experimental interventions accounted for the increase in mindfulness. It is possible that such a brief mindfulness exercise is indistinguishable from progressive muscle relaxation, but that a longer more sustained practice might be distinguishable. There are a few common aspects among the current study's interventions, namely focus on breathing, bringing deliberate awareness and attention to

environmental stimuli in mindfulness plus values and mindfulness exercises, and bringing deliberate awareness and attention to specific muscle groups during progressive muscle relaxation. Pilot testing interventions for each of the conditions will allow the identification of the most potent interventions. This may also lead to identification of the most potent mechanisms of action within the interventions, and may provide insight into the distinguishing characteristics of mindfulness and relaxation.

Research should identify a control intervention that includes contact with the facilitator while not increasing mindfulness and values connectedness. An example of this may be a brief interview on a topic (e.g., time management, progress in academic major) allowing for interaction with the facilitator, but on a topic that is less likely to increase mindfulness or values connectedness. Just as the experimental interventions should be tested, potential control interventions should also be pilot tested in order to identify one that demonstrates a lack of change in the variables of interest. Subsequently, the mindfulness intervention should be compared to the control intervention to demonstrate increases in mindfulness in the mindfulness intervention and not in the control condition.

Refining the population tested. Another possible concern is related to the population tested in this study. For example, the participants in the current study may have responded differently to the interventions than a clinical sample. Reactivity to the interventions might differ depending on levels of distress. The experimental interventions may more strongly impact distressed participants. To examine this hypothesis, future research should explore the impact of the interventions on different populations. The current study contained very few distressed subjects and so no meaningful analyses were

possible.

Impact on Working Alliance

Once we have identified mindfulness plus values and mindfulness interventions that reliably produce differential changes on mindfulness and values connectedness, we will be in a position to experimentally isolate these factors and examine their roles in influencing working alliance. In the current study, the interventions did not produce differences in values connectedness and mindfulness, so we are currently not able to address the research questions regarding working alliance.

Future research should focus on first identifying and testing these sufficiently compact working alliance-enhancing interventions that could be added to treatments of known efficacy without unduly extending the duration of treatment. Experimental manipulation would allow researchers to isolate specific aspects of treatment that make development of a strong working alliance more or less likely. Direct manipulation of working alliance would allow for direct experimental analyses of the potential meditational role of alliance in treatment outcome.

Mediator of Client Outcome

Given a replicable method of experimentally manipulating working alliance, we will be in a position to examine the degree to which working alliance is a mediator of clinical change. The relationship between working alliance and client outcome has been documented in several studies over many years (Castonguay, Goldfried, Wiser, Raue, & Hayes, 1996; Crits-Cristoph et al., 2006; Horvath et al., 1993; Horvath & Symonds, 1991; Martin et al., 2000; Safran & Wallner, 1991). However, the exact nature of this relationship is not clear. Examining this relationship is possible after the aforementioned

studies have been executed.

In the current study, the primary research focus was on the effects of mindfulness plus values and mindfulness interventions. However, the possibility that improvement in affect (specifically, decreased negative affect and increased positive affect) could drive working alliance ratings is a viable alternative hypothesis to our own. Therefore, any future studies need to collect data on affective change in order to leave open the possibility of analysis of affective change as a mediator of both working alliance, and ultimately of client outcome.

Conclusion

If working alliance is, as is often claimed, a centrally important mediator of client outcomes, we could begin to identify potent methods of directly enhancing these. If, in contrast, working alliance is a byproduct of successful therapy, we can concentrate our efforts on the effective mechanisms of action in an effort to continue to understand and improve effective interventions, remove ineffective therapy components, and improve the overall efficiency and effectiveness of therapy.

The aim of the current study was to identify interventions that increased values connectedness and mindfulness. However, it was not successful in finding differential increases in values connectedness and mindfulness across conditions. The current study remains a worthwhile research question, as a program of such research would allow for the examination of the nature of the relationship among values, mindfulness, and working alliance. However, the results of the current study indicate the need for identification of interventions that reliably produce differences in these proposed mediators. Determining

effective interventions is the next step in the program of research, which then allows the current study to be re-run and allows conclusions to be drawn from those results.

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LIST OF APPENDICES

APPENDIX A

Mindfulness plus values exercise briefing

At the beginning of the mindfulness plus values intervention, the facilitator will describe and explain the exercise, giving a brief explanation about what mindfulness is and is not. The facilitator will describe the concepts of noticing, acceptance, nonjudgment, and attention to the present moment. The participant will be asked to sit upright in the chair, with their feet flat on the floor, and either close their eyes or gaze with soft, fixed focus on a specific point in front of them. The facilitator will instruct the participant to focus on the inflow and outflow of breath. They will be told that when and if a random thought should arise, the participant should gently notice the thought, acknowledge it, and simply “let it go” by bringing attention back to the breath. The participant will be instructed to focus on the “full breath” (e.g., sensations in the nostrils, throat, chest, and abdomen). The facilitator will instruct the participant that acceptance and nonjudgment should be practiced toward any distractions and breaks in attention. The instructor will then inform the participant that she will be guiding them in a visualization exercise, and that they will be given instructions to follow. The participant is reminded that if they become distracted, the participant should simply notice the distraction and come back to the sensation of their breath and the sound of the facilitator’s voice.

APPENDIX B

Mindfulness exercise briefing

At the beginning of the mindfulness plus values intervention, the facilitator will describe and explain the exercise, giving a brief explanation about what mindfulness is and is not. The facilitator will describe the concepts of noticing, acceptance, nonjudgment, and attention to the present moment. The participant will be asked to sit upright in the chair, with their feet flat on the floor, and either close their eyes or gaze with soft, fixed focus on a specific point in front of them. The facilitator will instruct the participant to focus on the inflow and outflow of breath. They will be told that when and if a random thought should arise, the participant should gently notice the thought, acknowledge it, and simply “let it go” by bringing attention back to the breath. The participant will be instructed to focus on the “full breath” (e.g., sensations in the nostrils, throat, chest, and abdomen). The facilitator will instruct the participant that acceptance and nonjudgment should be practiced toward any distractions and breaks in attention. The participant is reminded that if they become distracted, the participant should simply notice the distraction and come back to the sensation of their breath and the sound of the facilitator’s voice.

APPENDIX C

Relaxation exercise briefing

At the beginning of the relaxation intervention, the facilitator will describe and explain the exercise, giving a brief explanation about what relaxation is and is not. The facilitator will describe the relaxation, tension, and attention to the breath. The participant will be asked to sit upright in the chair, with their feet flat on the floor, and either close their eyes or gaze with soft, fixed focus on a specific point in front of them. The facilitator will instruct the participant to focus on the inflow and outflow of breath. They will be told within the exercise, they will be instructed to relax and tense various muscle groups according to the facilitator's instructions. Between instructions to relax and tense the muscles, the participant will also be instructed to bring attention back to the breath. The participant will be instructed to focus on the "full breath" (e.g., sensations in the nostrils, throat, chest, and abdomen).

APPENDIX D

Toronto Mindfulness Scale

We are interested in what you just experienced. Below is a list of things that people sometimes experience. Please read each statement. After each statement are five choices: “Not at all,” “A little,” “Moderately,” “Quite a bit,” and “Very much.”

Please indicate the extent to which you agree with each statement. In other words, how well does the statement describe what you just experienced during the previous exercise?

1. I experienced myself as separate from my changing thoughts and feelings.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

2. I was more concerned with being open to my experiences than controlling or changing them.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

3. I was curious about what I might learn about myself by taking notice of how I react to certain thoughts, feelings, or sensations.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

4. I experienced my thoughts more as events in my mind than as a necessarily accurate reflection of the way things ‘really’ are.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

5. I was curious to see what my mind was up to from moment to moment.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

6. I was curious about each of the thoughts and feelings that I was having.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

7. I was receptive to observing unpleasant thoughts and feelings without interfering with them.

Not at all	A little	Moderately	Quite a bit	Very much
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0	1	2	3	4
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8. I was more invested in just watching my experiences as they arose, than in figuring out what they could mean.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

9. I approached each experience by trying to accept it, no matter whether it was pleasant or unpleasant.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

10. I remained curious about the nature of each experience as it arose.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

11. I was aware of my thoughts and feelings without overidentifying with them.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

12. I was curious about my reactions to things.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

13. I was curious about what I might learn about myself by just taking notice of what my attention gets drawn to.

Not at all	A little	Moderately	Quite a bit	Very much
0	1	2	3	4

Curiosity subscale: 3, 5, 6, 10, 12, 13

Decentering subscale: 1, 2, 4, 7, 8, 9, 11

APPENDIX E

Values Connectedness Measure

At times in life, we are significantly in touch with and connected to our values. Other times, we become busy with everyday tasks of life, paying less attention to and feeling more disconnected from those values.

Values are not specific goals, but broad areas of life that you find personally important. Some values may include: sense of family, social relationships, education, spirituality, and work.

In this moment, how connected do you feel with your values?

Completely disconnected from my values										Completely connected with my values
1	2	3	4	5	6	7	8	9	10	

APPENDIX F

Positive and Negative Affect Scale

This scale consists of a number of words that describe different feelings and emotions. Read each item and then click the circle indicating to what extent you feel this way right now.

	Very Slightly or Not at All	A Little	Moderately	Quite a Bit	Extremely
	1	2	3	4	5
Interested					
Distressed					
Excited					
Upset					
Strong					
Guilty					
Scared					
Hostile					
Enthusiastic					
Proud					
Irritable					
Alert					
Ashamed					
Inspired					
Nervous					
Determined					
Attentive					
Jittery					
Active					
Afraid					

Positive Affect subscale: Interested, Excited, Strong, Enthusiastic, Proud, Alert, Inspired, Determined, Attentive, Active

Negative Affect subscale: Distressed, Upset, Guilty, Scared, Hostile, Irritable, Ashamed, Nervous, Jittery, Afraid

APPENDIX G

Friendliness Subscale

The following phrases describe people's behaviors. Please use the rating scale next to each phrase to describe how accurately each statement describes you.

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence.

1. Make friends easily.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	2	3	4	5

2. Warm up quickly to others.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	2	3	4	5

3. Feel comfortable around people.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	2	3	4	5

4. Act comfortably with others.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	2	3	4	5

5. Cheer people up.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	2	3	4	5

6. Am hard to get to know.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	2	3	4	5

7. Often feel uncomfortable around others.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	2	3	4	5

8. Avoid contacts with others.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	2	3	4	5

9. Am not really interested in others.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	2	3	4	5

10. Keep others at a distance.

Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1	2	3	4	5

APPENDIX H

Social Desirability Scale

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you.

- | | | |
|---|---|---|
| T | F | 1. It is sometimes hard for me to go on with my work if I am not encouraged. |
| T | F | 2. I sometimes feel resentful when I don't get my way. |
| T | F | 3. On a few occasions, I have given up doing something because I thought I had too little ability. |
| T | F | 4. There have been times when I felt like rebelling against people in authority even though I knew they were right. |
| T | F | 5. No matter who I'm talking to, I'm always a good listener. |
| T | F | 6. There have been occasions when I took advantage of someone. |
| T | F | 7. I am always willing to admit it when I make a mistake. |
| T | F | 8. I sometimes try to get even, rather than forgive and forget. |
| T | F | 9. I am always courteous, even to people who are disagreeable. |
| T | F | 10. I have never been irked when people expressed ideas very different from my own. |
| T | F | 11. There have been times when I was quite jealous of the good fortune of others. |
| T | F | 12. I am sometimes irritated by people who ask favors of me. |
| T | F | 13. I have never deliberately said something that hurt someone's feelings. |

APPENDIX I

Exercise Engagement Measure

Using the scale below, please indicate how much you did each of the following behaviors during the exercise task. Please do not take into account how much you were asked to use each strategy, rather, record how much you actually did the following during the exercise.

0-----1-----2-----3-----4-----5-----6-----7-----8
Never Some of Frequently Most of All of
the time the time the time the time

During the exercise, how much did you:

1. Follow the instructions of the researcher during the exercise. _____
2. Tell yourself to not feel unpleasant emotions or think negative thoughts. _____
3. Observe your thoughts and feelings without trying to change them. _____
4. Do something to actively change what you were thinking and/or how you were feeling. _____
5. Allow yourself to experience whatever thoughts and feelings you had. _____
6. Try to control your thoughts and feelings during the exercise. _____

APPENDIX J

Session Rating Scale

Please rate the previous exercise by clicking a circle that best fits your experience.

Relationship

I did not feel heard,
understood,
and respected.

I felt heard,
understood,
and respected.

Approach or Method

Regan's approach
is not a good
fit for me.

Regan's approach
is a good
fit for me.

Overall

There was something
missing in the
exercise.

Overall, this
exercise was
right for me.

APPENDIX K

Working Alliance Inventory

The following are sentences that describe some of the different ways a person might think or feel about his or her experience in the exercise that was just completed.

Please indicate the extent to which you agree with each statement. In other words, how well does the statement describe what you just experienced *during the previous exercise*?

Note: The original item is listed first, and the adapted item is listed second and is in italics.

1. _____ and I agree about the things I will need to do in therapy to help improve my situation.

Regan and I agree about the things I need to do in the exercise.

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

What I did in the exercise gives me new ways of looking at problems.

3. I believe _____ likes me.

I believe Regan likes me.

4. _____ does not understand what I am trying to accomplish in therapy.

Regan does not understand what I am trying to accomplish in the exercise.

5. I am confident in _____'s ability to help me.

I am confident in Regan's ability to help me.

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

Regan and I mutually agree upon ways to resolve problems.

7. I feel that _____ appreciates me.

I feel that Regan appreciates me.

8. We agree on what is important for me to work on.

We agree on what is important to work on in the exercise.

9. _____ and I trust one another.

Regan and I trust one another.

10. _____ and I have different ideas on what my problems are.

Regan and I have different ideas on what the exercise was about.

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

I believe the way we were working on the exercise is correct.

APPENDIX L

Counselor Rating Form

Each characteristic is followed by a seven-point scale that ranges from “Not Very” to “Very.” Please indicate the point on the scale that best represents how you viewed Regan in the exercise that was just completed.

1. Sincere

not very _____ _____ _____ _____ _____ _____ very

2. Skillful

not very _____ _____ _____ _____ _____ _____ very

3. Honest

not very _____ _____ _____ _____ _____ _____ very

4. Expert

not very _____ _____ _____ _____ _____ _____ very

5. Likable

not very _____ _____ _____ _____ _____ _____ very

6. Sociable

not very _____ _____ _____ _____ _____ _____ very

7. Warm

not very _____ _____ _____ _____ _____ _____ very

8. Trustworthy

not very _____ _____ _____ _____ _____ _____ very

9. Experienced

not very _____ _____ _____ _____ _____ _____ very

10. Reliable

not very _____ _____ _____ _____ _____ _____ very

11. Prepared

not very _____ _____ _____ _____ _____ _____ very

12. Friendly

not very _____ _____ _____ _____ _____ _____ very

The subscales are comprised of the following items:

Attractiveness: Friendly, Likable, Sociable, Warm

Expertness: Experienced, Expert, Prepared, Skillful

Trustworthiness: Honest, Reliable, Sincere, Trustworthy

APPENDIX M

Demographics Measure

1. What is your age?

____ years

2. What is your gender?

3. What is your current grade level?

Freshman

Sophomore

Junior

Senior

Graduate

Other (please specify) _____

4. What is your ethnicity?

African American

Asian American

Caucasian

Hispanic/Latino/a

Native American

Pacific Islander

Other (please specify) _____

5. Have you practiced meditation before?

VITA

Education

- Doctor of Philosophy, Clinical Psychology* December 2014
University of Mississippi, Oxford, MS
Dissertation: Evaluating values, mindfulness, and working alliance: Exploring the effects of short, specific techniques
Dissertation Chair: Kelly G. Wilson, Ph.D.
- Clinical Psychology Predoctoral Internship* September 2013-August 2014
VA Sierra Nevada Health Care System, Reno, NV
Training Director: Cindy Barber, Ph.D.
- Master of Arts, Clinical Psychology* December 2012
University of Mississippi, Oxford, MS
Thesis: The relative effects of mindfulness and values on therapeutic relationship: Developing methods of manipulating alliance
Thesis Chair: Kelly G. Wilson, Ph.D.
- Bachelor of Arts, Psychology, Magna cum Laude* June 2005
University of Massachusetts, Boston, MA
Honors Thesis: *Rumination, dissociation, self-compassion, and acceptance as correlates of posttraumatic stress symptoms*
Thesis Chair: Lizabeth Roemer, Ph.D.
- Bachelor of Arts, General Studies* May 1996
Central College, Pella, IA

Clinical Experience

- Pre-Doctoral Intern* September 2013-Present
VA Sierra Nevada Healthcare System
Duties include providing intake, assessment, individual and group therapy, and interprofessional team consultation for individuals with a variety of psychological difficulties in outpatient mental health, general medical, intensive care, and transitional care units of medical center.
Training Director: Cindy Barber, Ph.D.
- Clinical Psychology Trainee* Fall 2007-Summer 2013
Psychological Services Center, University of Mississippi

Duties include providing individual, couples, family, and group psychotherapy for UM students, faculty, and staff, and members of the surrounding community.

Supervisors: Danielle J. Maack, Ph.D., Todd A. Smitherman, Ph.D., Kelly G. Wilson, Ph.D., Scott A. Gustafson, Ph.D., and Thomas Lombardo, Ph.D.

Assistant to the Director

Summer 2010-Summer 2011

Psychological Services Center, University of Mississippi

Duties included assisting Director with daily management of clinic, providing quality assurance reviews of clinic records, marketing and advertising clinic services, increasing community relations, organizing and monitoring clinic duties and emergency cell phone duty, organizing and tracking supervision teams' client flow, orienting and training graduate therapists on clinic protocol, and streamlining clinic procedures.

Supervisor: Scott A. Gustafson, Ph.D.

Behavioral Consultant

Spring 2009-Summer 2011

Behavior, Attention, and Developmental Disabilities Consultants, Sardis, MS

Duties included conducting intellectual and achievement assessments, functional behavior assessments, psychological/behavioral consultations, interviewing parents, school personnel and children, writing behavior plans and reports serving a population of school-age children.

Supervisor: Emily Thomas Johnson, Ph.D.

Behavioral Health Specialist

Summer 2009-Summer 2010

Oxford School District, Oxford, MS

Duties included conducting intellectual and achievement assessments, functional behavior assessments, psychological/behavioral consultations, interviewing parents, school personnel and children, writing behavior plans and reports serving a population of school-age children.

Supervisor: John N. Young, Ph.D.

Psychology Intern,

Summer 2008-Summer 2009

DeSoto County School District, DeSoto County, MS

Duties included conducting intellectual and achievement assessments, functional behavior assessments, psychological/behavioral consultations, conducting social skills groups, interviewing parents, school personnel and children, writing behavior plans and reports serving a population of school-age children.

Supervisors: Sheila Williamson, Ph.D. and Kathlene McGraw, M.Ed.

Extern

Summer 2007-Summer 2008

North Mississippi Regional Center, Oxford, MS

Duties included conducting functional behavior assessments, adaptive functioning evaluations, conducting social skills groups and community integration activities, writing behavior plans and reports serving a population of clients with intellectual disabilities.

Supervisors: Kimberly Sallis, Ph.D., Doug Buglewicz, M.A., and Kris Riddle, M.A.

Research Experience

Research Team Assistant Fall 2006-Present
Center for Contextual Psychology, University of Mississippi

Assisted in the development and activities of a research team. Duties include planning studies, writing research proposals, acquiring permission from the Institutional Review Board, peer review, conducting experiments, managing and analyzing data, mentoring undergraduate research assistants, and organizing conference presentations.
Supervisors: Kelly G. Wilson, Ph.D. and Karen Kate Kellum, Ph.D.

Research Team Assistant Fall 2008-Spring 2009
Psychophysiology Laboratory, University of Mississippi

Assisted in an experimental laboratory devoted to the study of stress, cardiovascular reactivity, and electrophysiology. Duties include conducting experiments, managing experiment participants, and collecting, entering, managing and verifying data.
Supervisor: Michael T. Allen, Ph.D.

Honors Research Project Fall 2004-Spring 2005
Emotions Research Laboratory, University of Massachusetts Boston

Thesis: *Rumination, dissociation, self-compassion and acceptance as correlates of posttraumatic stress symptoms*
Thesis Advisor: Lizabeth Roemer, Ph.D.

Research Team Assistant Fall 2002-Spring 2003, Fall 2004-Spring 2005
Emotions Research Laboratory, University of Massachusetts Boston

Assisted in an experimental laboratory devoted to the study of emotion and emotion regulation in various forms of psychopathology. Duties involved transcription, pilot testing, data collection, management, and entry.
Supervisor: Lizabeth Roemer, Ph.D.

Publications

Wilson, K. G., Bordieri, M., Whiteman, K., & **Slater, R. M.** (2012). The self and mindfulness. In L. McHugh & I. Stewart (Eds.) *The Self and Perspective Taking: Contributions and Applications from Modern Behavioral Science*. Oakland, CA: New Harbinger.

Wilson, K. G., Bordieri, M., Flynn, M. K., Lucas, N., & **Slater, R. M.** (2010). Understanding Acceptance and Commitment Therapy in context: A history of similarities and differences with other cognitive behavior therapies. In J. Herbert & E. Forman (Eds.), *Acceptance and Mindfulness in Cognitive Behavior Therapy*. Hoboken, NJ: Wiley.

Wilson, K. G., Sandoz, E. K., Flynn, M. K., **Slater, R. M.**, & DuFrene, T. (2010). Understanding, assessing, and treating values processes in mindfulness and acceptance-based therapies. In R. Baer (Ed.), *Assessing mindfulness and acceptance: Illuminating the processes of change*. Oakland, CA: New Harbinger.

Wilson, K. G., Sandoz, E. K., & **Slater, R. M.** (2008). Acceptance and Commitment Therapy. In A. R. Roberts (Ed.) *Social Workers' Desk Reference* (2nd ed.). New York: Oxford University Press.

Symposia and Paper Presentations

Slater, R. M., Kellum, K., & Wilson, K. G. (2013, May). Evaluating values, mindfulness, and the therapeutic relationship: Exploring the effect of teachable techniques. Paper presented at the 39th annual convention of the Association for Behavior Analysis International. Minneapolis, MN.

Slater, R. M., Kellum, K., & Wilson, K. G. (2013, May). Interteaching: The relationship between pre-class preparation guides and weekly test scores. Paper presented at the 39th annual convention of the Association for Behavior Analysis International. Minneapolis, MN.

Lucas, N., Kurz, S., Flynn, M. K., Schnetzer, L., **Slater, R. M.**, Wilson, K. G., & Kellum, K. (2012, May). Stress in the modern world: An Acceptance and Commitment Therapy-based approach to dealing with college stressors. Paper presented at the 38th annual convention of the Association for Behavior Analysis International. Seattle, WA.

Slater, R. M., Kellum, K., & Wilson, K. G. (2012, May). The relative effects of mindfulness and values on therapeutic relationship: Developing methods of manipulating alliance. Paper presented at the 38th annual convention of the Association for Behavior Analysis International. Seattle, WA.

Gentry, J. A., Bordieri, M., Flynn, M. K., **Slater, R. M.**, Sandoz, E. K., Kellum, K., & Wilson, K. G. (2011, May). Behavioral indices of presence. Paper presented at the 37th annual convention of the Association for Behavior Analysis International. Denver, CO.

Oliver, J., Foreman, A., **Slater, R. M.**, Flynn, M. K., Bordieri, M., Sandoz, E. K., Kellum, K., & Wilson, K. G. (2011, May). Behavioral indices of conversational engagement and content. Paper presented at the 37th annual convention of the Association for Behavior Analysis International. Denver, CO.

Rodriguez, A., Barnes, J., Flynn, M. K., **Slater, R. M.**, Bordieri, M., Sandoz, E. K., Kellum, K., & Wilson, K. G. (2011, May). Behavioral indices of core acceptance and commitment therapy processes in a values-based interview. Paper presented at the 37th annual convention of the Association for Behavior Analysis International. Denver, CO.

Slater, R. M., Lucas, N., Flynn, M. K., Kellum, K., & Wilson, K. G. (2011, May). Behaving while teaching: Measuring the effects of student feedback on new instructor behavior. Paper presented at the 37th annual convention of the Association for Behavior Analysis International. Denver, CO.

- Flynn, M. K., Wilson, K. G., Kellum, K., Nassar, S. L., & **Slater, R. M.** (2010, June). Exploring the use of the hexaflex functional dimensional experiential interview. Paper presented at the ACBS Annual World Conference VIII, Reno, NV.
- Slater, R. M.**, Kellum, K., & Wilson, K. G. (2010, June). Exploring values and present moment: An examination of the sweet spot exercise. Paper presented at the ACBS Annual World Conference VIII, Reno, NV.
- Ambrose, C., Peterson, C., Carstens, B. A., **Slater, R. M.**, Wilson, K. G., & Kellum, K. (2010, May). Mindfulness for two revisited: Manipulating the therapist. Paper presented at the 36th annual convention of the Association for Behavior Analysis International, San Antonio, TX.
- Flynn, M. K., Wilson, K. G., Kellum, K., Nassar, S. L., **Slater, R. M.**, Lucas, N., Bordieri, M., & Bethay, S. (2010, May). Exploring the use of the hexaflex functional dimensional experiential interview. Paper presented at the 36th annual convention of the Association for Behavior Analysis International, San Antonio, TX.
- Hamblin, R. J., Johnson, C., **Slater, R. M.**, & Young, J. (2010, May). Teacher perceptions of appropriate mental health practice. Paper presented at the 36th annual convention of the Association for Behavior Analysis International, San Antonio, TX.
- Jeane, N., Peterson, C., Carstens, B. A., **Slater, R. M.**, Wilson, K. G., & Kellum, K. (2010, May). Mindfulness for two revisited: Manipulating the conversation. Paper presented at the 36th annual convention of the Association for Behavior Analysis International, San Antonio, TX.
- King, S., Peterson, C., Carstens, B. A., **Slater, R. M.**, Wilson, K. G. (2010, May). Mindfulness for two revisited: Manipulating the room. Paper presented at the 36th annual convention of the Association for Behavior Analysis International, San Antonio, TX.
- Slater, R. M.**, Kellum, K., & Wilson, K. G. (2010, May). Exploring values and present moment: An examination of the sweet spot exercise. Paper presented at the 36th annual convention of the Association for Behavior Analysis International, San Antonio, TX.
- Slater, R. M.**, & Young, J. (2010, May). Exploring the collaborative impact between science and practice in a community behavioral health partnership. Paper presented at the 36th annual convention of the Association for Behavior Analysis International, San Antonio, TX.
- Flynn, M. K., **Slater, R. M.**, Nassar, S. L., Kellum, K. K., & Wilson, K. G. (2009, July). Values-centered exercises: Impact of values work on psychological well-being. Paper presented at the ACBS World Conference III, Enschede, Netherlands.

- Lucas, N. N., **Slater, R. M.**, Wilson, K. G., & Kellum, K. (2009, July). The effect of commitment and behavior change processes in ACT on public speaking anxiety. Paper presented at the ACBS World Conference III, Enschede, Netherlands.
- Nassar, S. L., Flynn, M. K., **Slater, R. M.**, Kellum, K. K., & Wilson, K. G. (2009, July). An improved measure of valued living: The Valued Living Questionnaire-II (VLQ-2). Paper presented at the ACBS World Conference III, Enschede, Netherlands.
- Slater, R. M.**, Lucas, N. N., Wilson, K. G., & Kellum, K. (2009, July). Mindfulness at the front of the room: An evaluation of ACT for public speaking anxiety. Paper presented at the ACBS World Conference III, Enschede, Netherlands.
- Slater, R. M.**, Nassar, S. L., Flynn, M. K., Kellum, K. K., & Wilson, K. G. (2009, July). What are values? Unpacking values as conceptualized in Acceptance and Commitment Therapy. Paper presented at the ACBS World Conference III, Enschede, Netherlands.
- Howard, R. C., Nassar, S. L., Martin, L., **Slater, R. M.**, Sandoz, E. K., Kellum, K., & Wilson, K. G. (2009, May). The permanent solution: Suicidal behavior and experiential avoidance. Paper presented at the 35th annual convention for the Association for Behavior Analysis International, Phoenix, AZ.
- Lucas, N. N., **Slater, R. M.**, Wilson, K. G., & Kellum, K. (2009, May). The effect of commitment and behavior change processes in ACT on public speaking anxiety. Paper presented at the 35th annual convention for the Association for Behavior Analysis International, Phoenix, AZ.
- Slater, R. M.**, Lucas, N. N., Wilson, K. G., & Kellum, K. (2009, May). Mindfulness at the front of the room: An evaluation of ACT for public speaking anxiety. Paper presented at the 35th annual convention for the Association for Behavior Analysis International, Phoenix, AZ.
- Slater, R. M.**, Wilson, K. G., Kellum, K., & Sandoz, E. K. (2009, May). Mindfulness for two (Part II): The effects of asking for permission. Paper presented at the 35th annual convention for the Association for Behavior Analysis International, Phoenix, AZ.
- Martin, R. C., **Slater, R. M.**, Lewis, R., Drake, C. E., Kellum, K. K., & Wilson, K. G. (2008, May). Modifying the IRAP: Exploration of the training potential of a testing procedure. Paper presented at the annual meeting for the Association for Behavior Analysis International, Chicago, IL.
- Moyer, K. H., Bethay, S., Drake, C. E., **Slater, R. M.**, Kellum, K. K., & Wilson, K. G. (2008, May). When red is a shape: Challenging the stability of stimulus classes with laboratory-based procedures. Paper presented at the annual meeting for the Association for Behavior Analysis International, Chicago, IL.

Slater, R. M., Sandoz, E. K., Ely, L., Kellum, K. K., & Wilson, K. G. (2008, May). Acceptance and commitment training (ACT) for academic success. Paper presented at the annual meeting for the Association for Behavior Analysis International, Chicago, IL.

Wilson, A. N., Armstrong, C. N., Ortkiese, C., Ball, G. A., **Slater, R. M.**, Drake, C. E., & Wilson, K. G. (2008, May). Variation of instructions and feedback on the IRAP. Paper presented at the annual meeting for the Association for Behavior Analysis International, Chicago, IL.

Slater, R. M., Smith, L., Figueroa, M., Drake, C. E., Kellum, K., Weinstein, J., & Wilson, K. G. (2007, May). A modified IRAP: Exploring the training potential of a testing procedure. Paper presented at the annual meeting for the Association for Behavior Analysis International, San Diego, CA.

Workshops

Slater, R. M. & Schnetzer, L. W. (2011, March). Stress management. Workshop presented at North Mississippi Regional Center, Oxford, MS.

Wilson, K. G. & **Slater, R. M.** (2010, June). Things might go terribly, horribly wrong. Workshop presented at the ACBS World Conference VIII, Reno, NV.

Wilson, K. G., Sandoz, E. K., **Slater, R. M.**, Flynn, M. K., & Lucas, N. N. (2009, June). Using the hexaflex functional dimensional experiential interview. Workshop presented at the ACBS World Conference III, Enschede, Netherlands.

Wilson, K. G., **Slater, R. M.**, & Flynn, M. K. (2009, June). Acceptance and Commitment Therapy combined introduction and skill building. Workshop presented at Kognitiv Terapi Center, Arhus, Denmark.

Slater, R. M. & Lucas, N. N. (2009, April). Acceptance and commitment training for public speaking. Workshop presented at the University of Mississippi, Oxford, MS.

Wilson, K. G., Sandoz, E. K., **Slater, R. M.**, Nassar, S., & Martin, L. (2008, May). Acceptance and commitment therapy case conceptualization. Workshop presented at the annual meeting of the Association for Contextual and Behavioral Science, Chicago, IL.

Wilson, K. G., Sandoz, E. K., Ely, L., **Slater, R. M.**, & Nassar, S. (2007, February). Acceptance and commitment training for academic success. Workshop presented at the University of Mississippi, in Oxford, MS.

Symposia Discussant and Chair Roles

Slater, R. M. (2012, July). Flexing our psychological muscles in the classroom. Panel discussant at the ACBS Annual World Conference X, Bethesda, MD.

Slater, R. M. (2012, May). Thinking big: Using behavioral principles to enact prosocial change. Symposium chair at the 38th annual convention of the Association for Behavior Analysis International. Seattle, WA.

Slater, R. M. (2009, July). Values in ACT: Conceptualization, clinical exercises, and assessment. Symposium chair at the ACBS World Conference III, Enschede, Netherlands.

Slater, R. M. (2008, May). ACT outside the clinic: Application of Acceptance and Commitment Therapy to non-clinical populations. Symposium chair at the annual meeting for the Association for Behavior Analysis International, Chicago, IL.

Slater, R. M. (2008, May). Extending the applications of the Implicit Relational Assessment Procedure (IRAP). Symposium chair at the annual meeting for the Association for Behavior Analysis International, Chicago, IL.

Poster Presentations

Williams, W., **Slater, R. M.**, & Kellum, K. (2013, November). Interactions of stress, social support, and academic success. Poster presented at the Annual Biomedical Research Conference for Minority Students, Nashville, TN.

Slater, R. M., Kellum, K., & Wilson, K. G. (2012, November). The relative effects of mindfulness and values on therapeutic relationship: Developing methods of manipulating alliance. Poster presented at the 46th annual convention of the Association for Behavioral and Cognitive Therapies, National Harbor, MD.

Howard, R. C., **Slater, R. M.**, Sandoz, E. K., Armstrong, C. N., & Wilson, K. G. (2008, May). The permanent solution: Parasuicidal and experiential avoidance. Poster presented at the annual meeting for the Association for Behavior Analysis International, Chicago.

Slater, R. M., Holowka, D. W., Roemer, L., & Schorr, Y. (2005, November). Rumination, dissociation, self-compassion, and acceptance as correlates of posttraumatic stress symptoms. Poster presented at the 39th annual convention of the Association for Behavioral and Cognitive Therapies, Washington, DC.

Slater, R. M., Holowka, D. W., Roemer, L., & Schorr, Y. (2005, April). Rumination, dissociation, self-compassion, and acceptance as correlates of posttraumatic stress symptoms. Poster presented at the Massachusetts Statewide 11th Annual Undergraduate Conference, Boston, MA.

Teaching Experience

Instructor, General Psychology
University of Mississippi

Fall 2012, Spring 2013

Instructor, Learning
University of Mississippi

Summer 2010, Spring 2011-2013, Fall 2011-2012

<i>Instructor, Developmental Psychology</i> University of Mississippi	Fall 2010-2011, Spring 2012
<i>Teaching Assistant, Learning</i> University of Mississippi	Spring 2008- 2009, Fall 2012
<i>Teaching Assistant, Stress in the Modern World</i> University of Mississippi	Fall 2011, Spring 2012
<i>Teaching Assistant, Theories of Learning (Graduate Level)</i> University of Mississippi	Fall 2009
<i>Teaching Assistant, Applied Behavior Analysis</i> University of Mississippi	Spring 2009
<i>Teaching Assistant, Abnormal Psychology</i> University of Mississippi	Fall 2006

Professional Activities

<i>Graduate Student Advisor</i> Center for Contextual Psychology, University of Mississippi Duties: Directly supervised research conducted by Ronald E. McNair student	Summer 2013
<i>Committee Member</i> University of Mississippi Information Literacy Committee	2011-2013
<i>Student Committee Member</i> Association for Contextual Behavioral Science	2012-2013
<i>Graduate Senator</i> University of Mississippi Graduate Student Council	2009-2010
<i>Social and Philanthropic Events Committee Member</i> University of Mississippi Graduate Student Council	2009-2010
<i>Student Program Representative</i> Association for Behavior Analysis International	2009-2010
<i>Student Committee Member</i> Association for Behavior Analysis International	2009-2010
<i>Student Events Sub-Committee Member</i> Association for Behavioral Analysis International	2009-2010
<i>Graduate Student Member</i> Executive Team, Psychological Services Center	2008-2009
<i>Graduate Student Representative</i> Psychology Dept Faculty Meetings	2007-2008

Volunteer Experience

Programs and Services Volunteer, Respond, Inc, Boston, MA, 2005-2006

Duties included assisting direct service staff's work with individuals and families, providing childcare, housekeeping, and serving the needs of those who had relocated to the shelter due to domestic violence.

Attended intensive 45-hour training on effects of domestic violence on individuals, families, and children.

Awards

University of Mississippi Graduate School Honors Fellowship, 2006-2010

SABA Student Presenter Grant, 2008-2009

University of Mississippi Summer Graduate Research Assistantship, 2008

University of Massachusetts Boston Honors Research Grant, 2004

Dean's List – University of Massachusetts Boston, 2003

Editorial Experience

Guest Reviewer, Journal of Applied Behavior Analysis

Guest Reviewer, Journal of Contextual Behavioral Science

Guest Reviewer, Behavior Analyst Today

Membership in Professional Associations

Association for Behavioral Analysis International

Association for Behavioral and Cognitive Therapies

Association for Contextual Behavioral Science

American Psychological Association