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EXAMINING CLIENT MOTIVATION AND COUNSELING OUTCOME

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EXAMINING CLIENT MOTIVATION AND COUNSELING
OUTCOME IN A UNIVERSITY MENTAL
HEALTH CLINIC

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Educational Leadership

by
Guy E. Ilagan
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Accepted by:
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ABSTRACT

University mental health clinics have experienced a marked increase in demand for services without an increase in resources to meet the rising demand. Consequently, university mental health centers need strategies to determine the best allocation of their limited resources. Transtheoretical Model, based on client motivation, may offer valuable insight into whether a university student is likely to benefit from campus mental health counseling.

The subjects included 331 university students at a liberal arts, public university in the Southeastern part of the United States. The subjects consisted of all students over age 18 who visited the research site campus mental health clinic 3 - 7 times during academic years 2007/2008 and 2008/2009. The majority of subjects were female ($n = 229$, 69.2%). Caucasians comprised 79.5% of subjects ($n = 263$). The next largest group was Asian Americans ($n = 24$, 7.3%), followed by African American students ($n = 14$, 4.2%), and Hispanic Americans ($n = 5$, 1.5%). The greatest percentage of subjects (55.6%) received counseling from a supervised graduate intern ($n = 184$), while 44.4% received counseling from professional staff ($n = 147$).

The investigator conducted a quantitative study that employed a five-group, pre-test-post-test design. The study included data from intake questionnaires gathered in the course of treatment at the research site. The study had one independent variable, client motivation as measured by a yet non-investigated "five-item stages of change scale". The investigator measured the primary dependent variable, counseling outcome, by

determining the difference in scores from pre- and post-test administrations of the *Outcome Questionnaire 45.2 (OQ45.2)*.

As assigned by the “five-item stages of change scale”, the five motivation groups differed significantly ($p = .004$; $\alpha < 0.05$) for counseling outcome. The groups also differed significantly ($p < .001$; $\alpha < 0.05$) for incidences of students attending compulsory counseling. The groups did not differ for percentage of appointments attended or having received treatment by a supervised intern.

The “five-item stages of change scale” may be a useful indicator of initial client motivation. With further study, the instrument may prove to be a useful strategy for allocating limited counseling sessions. For example, when low client motivation is identified, university mental health counselors can attempt to enhance low client motivation via pre-treatment motivational strategies and specialized counseling interventions, or referrals to off campus mental health providers.

DEDICATION

This dissertation is dedicated to Jill Crystal Payne Ilagan, my best friend and wife.

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I offer heartfelt thanks to my dissertation committee. Dr. Pamela Havice, my dissertation chair, has an assertive and trustworthy student-focus that inspires me to do a good job for college students. Dr. Tony Cawthon surprised me with the level of attention he gave to my dissertation drafts. It is heartening to see a leader with his work ethic and sense of humor. Dr. Julia Sharp's statistical mastery is exceeded only by her good nature and genuine interest in student success. Dr. Barbara Griffin recruited me for this program, was my first doctoral instructor, and my initial advisor. Throughout this program, I felt more secure knowing that Dr. Griffin cared about my success. A few fellow Clemson University students also helped me accomplish this huge endeavor. Dr. Daphne Holland and I began this program together and upheld our commitment to see each other through. Daphne is a valued friend and a motivated and tenacious individual.

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Two years into my doctoral studies, I suffered the painful loss of Khaki B. Ilagan. Khaki's support for this endeavor was monumental. I must also thank Rosie Ilagan for her enthusiasm and modeling of right priorities.

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CHAPTER ONE

INTRODUCTION

In the last two decades, universities have experienced an increase in demand for campus mental health services (Murphy & Martin, 2004; Uffelman & Hardin, 2002). In the 2008 National Survey of Counseling Center Directors, 60% of university mental health center directors indicated an increased demand for services without appropriate increases in resources (Gallagher, 2008). Of the 284 university mental health center directors who responded to the survey, 95% reported that the recent trend toward greater number of students with severe psychological problems continued to be true on their campuses. The pressure on university mental health clinics to manage the increasingly complex demands has led to multiple difficulties. For instance, 64.4% of university mental health center directors reported problems related to staff burnout, 64.2% reported appointment shortages during peak times, 62% reported a decreased focus on students with normal developmental concerns, and 36% reported a need to end cases prematurely due to session limits (Gallagher, 2008). This increased demand presents a challenge since university resources have not risen to meet the demand (DeStefano, Mellott, & Petersen, 2001; Jenks Kettmann, Schoen, Moel, Cochran, Greenberg, & Corkery, 2007; Lacour & Carter, 2002). Consequently, university mental health centers need strategies to determine the best allocation of their limited resources (Ghetie, 2007; Rochlen, Rude, & Baron, 2005).

Due to the increased demand for university mental health services, researchers have endeavored to understand and improve clinical service delivery. Some investigators

have focused on client factors that reveal the likelihood of clinical success including motivation to change (Derisley & Reynolds, 2000, 2002; Principe, Marci, Glick, & Ablon, 2006). The Transtheoretical Model, based on client motivation, is a description of specific stages of intentional behavior change (DiClemente, 2007; Prochaska & DiClemente, 1982, 1983, 1984; Prochaska & Norcross, 2006). This model offers valuable insight into whether a university student is likely to benefit from campus mental health counseling (Derisley & Reynolds, 2000; Petrocelli, 2002; Rochlen, Rude, & Baron, 2005; Smith, Subich, & Kalodner, 1995). Mental health therapists with knowledge of the relationship between client motivation and counseling outcome can improve counseling outcomes by early identification of clients with low motivation and implementation of strategies to increase those clients' motivation (DiClemente, 2007; Principe, Marci, Glick, & Ablon, 2006).

The purpose of the present study was to explore whether university mental health center clients' motivation, as measured by a "five-item stages of change scale", based on the Transtheoretical Model, was a significant variable in campus mental health counseling outcome. The items on the "five-item stages of change scale" corresponded to the Transtheoretical Model's five stages of change: precontemplation, contemplation, preparation, action, and maintenance (DiClemente, 2005; Prochaska & Norcross, 2006). Data for this quantitative study came from materials gathered in the course of treatment at a four-year liberal arts and sciences, public university in the Southeastern part of the United States, from academic years 2007/2008 and 2008/2009. The study subjects were 331 university students who attended 3-7 sessions in a university mental health clinic.

The investigator used a five-item pre- and post-test design to compare groups for one dependent variable, counseling outcome. The study had one independent variable, client motivation as measured by a yet non-investigated “five-item stages of change scale”. The “five-item stages of change scale” yielded five groups. The five groups represented the Transtheoretical Model’s five stages of change. The Transtheoretical Model’s stages of change were progressive levels of motivation known as precontemplation, contemplation, preparation, action and maintenance (DiClemente, 2005; Prochaska & DiClemente, 1986; Prochaska & Norcross, 2006). The investigator measured the dependent variable, counseling outcome, by determining the difference in scores from pre- and post-test administrations of the *Outcome Questionnaire 45.2 (OQ45.2)* (Draper, Jennings, Baron, Erdur, & Shankar, 2002; Lambert, et al., 1996; Vermeersch, et al., 2004; Whipple, et al., 2003). The *OQ45.2* is a progress tracking measure designed for repeated administration to assess ongoing therapeutic change, as well as change at termination of counseling (Mueller, Lambert, & Burlingame, 1998). The analysis required an Analysis of Covariance to compare the five client motivation groups, controlling for three covariates: percentage, compulsory, and intern.

Statement of the Problem

University mental health clinics have experienced a marked increase in demand for services (DeStefano, Mellott, & Petersen, 2001; Jenks Kettmann, et al., 2007; Lacour & Carter, 2002; Rudd, 2004). Nevertheless, 60% of university mental health clinic directors reported in the 2008 National Survey of Counseling Center Directors that

demands for services were up without a concurrent increase in resources (Gallagher, 2008). Reasons for the increased demand for services were unclear (Jenks Kettmann, et al., 2007; Murphy & Martin, 2004). However, the 2008 National College Health Assessment (ACHA, 2009) provided insight into the mental health concerns of university students. For example, according to the National College Health Assessment, 43% of the 80,121 student respondents, from among 113 participating universities, reported that over the last year they “felt so depressed it was difficult to function” (ACHA, 2009, p. 487).

The investigator addressed the research problem of increased university mental health center demand by exploring the relationship between client motivation and mental health counseling outcomes. The relationship of client motivation to counseling outcome offered insight into how university mental health clinics can cope with the increased demand (Dworkin & Lyddon, 1991; Lacour & Carter, 2002; Lawe, Penick, Raskin, & Raymond, 1999). Studies showed a predictive relationship between low client motivation and poor counseling outcomes (Derisley & Reynolds, 2000; Prochaska, DiClemente, & Norcross, 1992; Prochaska, Velicer, DiClemente, & Fava, 1988; Rochlen, Rude, & Baron, 2005; Smith, Subich, & Kalodner, 1995).

In past studies on client motivation, investigators measured motivation using the 32-item *Stages of Change Scale* (McConaughy, Prochaska, & Velicer, 1983). The 32-item *Stages of Change Scale* employs a 5-point Likert scale for each of the 32 items. A rating of 1 indicated strong disagreement and a rating of 5 endorses strong agreement. For each motivational stage sub-scale, there is a possible score range from 8 – 40. In the present study, the investigator utilized a “five-item stages of change scale” to measure

client motivation. The “five-item stages of change scale” uses check boxes for respondents to endorse the statement that characterizes their current level of motivation to change. The purpose of this study was to test the “five-item stages of change scale” in comparison to the 32-item *Stages of Change Scale* (McConaughy, Prochaska, & Velicer, 1983), for determining client motivation.

Presently, no studies exist for the “five-item stages of change scale” in identifying client motivation. The only available information on the origin of the “five-item stages of change scale” was circulated on the Association for University and College Counseling Center Directors (AUCCCD) Listserv. The research site began using the “five-item stages of change scale” in August 2007 as a way to gain information on clients’ initial stages of change readiness. Due to the demands and time constraints at the research site, administering and scoring the traditional 32-item *Stages of Change Questionnaire* was deemed time prohibitive, so the “five-item stages of change scale” was chosen as a brief alternative (M. Vinson, director of the research site mental health clinic, personal communication, March 2009). The 32-item Stages of Change Scale has been modified for other populations. For example, DiClemente, Prochaska, Fairhurst, Velicer, Velasquez, and Rossi (1991) created a brief staging algorithm to assess motivation for smoking cessation for smoking. DiClemente, a cofounder of the Transtheoretical Model and a leading expert on the stages of change, supported the use of the “five-item stages of change scale” in the present study. He stated that the “five-item stages of change scale” provided a way to classify people into the five stages of motivation to change (personal

communication, January 2008). Rollnick, Heather, Gold, and Hall (1992) further substantiated the use of abbreviated readiness to change questionnaires.

In light of the high demand for services at university mental health centers, and the accompanying time constraints, scoring the 32-item *Stages of Change Questionnaire*, in addition to the numerous mental health counseling forms, may not be feasible. However, adding a valid and reliable “five-item stages of change scale” to the standard intake paperwork would involve minimal administration and scoring time. In past studies on mental health outcomes, investigators measured counseling outcomes by comparing pre- and post-test administrations of the *OQ45.2* (Draper, Jennings, Baron, Erdur, & Shankar, 2002; Lambert, et al., 1996; Vermeersch, et al., 2004; Whipple, et al., 2003). The present study employed the *OQ45.2*. The *OQ45.2* is a 45-item self-report questionnaire that measures changes in mental health symptoms (Mueller, Lambert, & Burlingame, 1998). The investigator measured counseling outcome by calculating changes in mental health symptom severity via pre- and post-test administrations of the *OQ45.2*. The investigator then compared mean differences in pre- and post-test *OQ45.2* scores across the five groups. When used as a pre- and post-test, the *OQ45.2* is sensitive to changes in reported distress, functioning in interpersonal relationship, and functioning in important roles (Whipple, et al., 2003). According to Harmon, Hawkins, Lambert, Slade, and Whipple (2005), evaluation of patient progress throughout the course of therapy, by monitoring-mental health symptom changes via the *OQ45.2*, improved mental health service delivery.

Purpose of the Study

The purpose of this study was to explore whether university mental health center clients' motivation, as measured by a "five-item stages of change scale", was a significant variable in campus mental health counseling outcome. The primary counseling outcome of interest was symptom improvement, measured by the difference in pre- and post-test administrations of the *OQ45.2*. The "five-item stages of change scale", based on the Transtheoretical Model, existed on counseling intake forms at an unknown number of university mental health clinics. At the initial counseling session, students endorsed one of five statements on the scale. Each of the five-items corresponded to one of the Transtheoretical Model's five stages of change. The five stages of change represented a hierarchy of motivation to make intentional behavior changes (Principe, Marci, Glick, & Ablon, 2006; Prochaska & DiClemente, 1982, 1983, 1986). The potential usefulness of a five-item scale was demonstrated in the brief administration and scoring time required. Since the research problem reflected the increasing demand at university mental health clinics, use of a brief assessment, as opposed to one of the longer motivation questionnaires mentioned earlier in this chapter, would ease the burden on university mental health clinics and support the counseling needs of students.

Additionally, the investigator explored the relationships among three covariates and counseling outcome. The covariates were: (a) the percentage of mental counseling appointments attended, (b) whether the student received compulsory counseling due to a

campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff.

Hypotheses

The investigator posed the following question to guide the study: Are college student outcomes in a university mental health clinic different for at least one of five motivation groups? The primary hypothesis corresponded to the research question. The three secondary hypotheses explored the relationship between the five motivation groups and covariates for the primary hypothesis. See Figure 1.1 for conceptual framework.

- Primary Hypothesis

Null: All motivation groups are equal in counseling outcome (difference in pre- and post-test *OQ45.2* scores), controlling for the percentage of counseling appointments attended, students attending compulsory counseling due to campus judicial proceedings, and students receiving counseling from a supervised intern.

- Secondary hypothesis 1

Null: All motivation groups are equal in the percentage of counseling appointments attended, controlling for students attending compulsory counseling due to campus judicial proceedings and students receiving counseling from a supervised intern.

- Secondary hypothesis 2

Null: All motivation groups are equal in incidences of compulsory counseling due to campus judicial proceedings, controlling for the percentage of counseling appointments attended and students receiving counseling from a supervised intern.

- Secondary hypothesis 3

Null: All motivation groups are equal in having received treatment by a supervised intern, controlling for the percentage of counseling appointments attended and students attending compulsory counseling due to campus judicial proceedings.

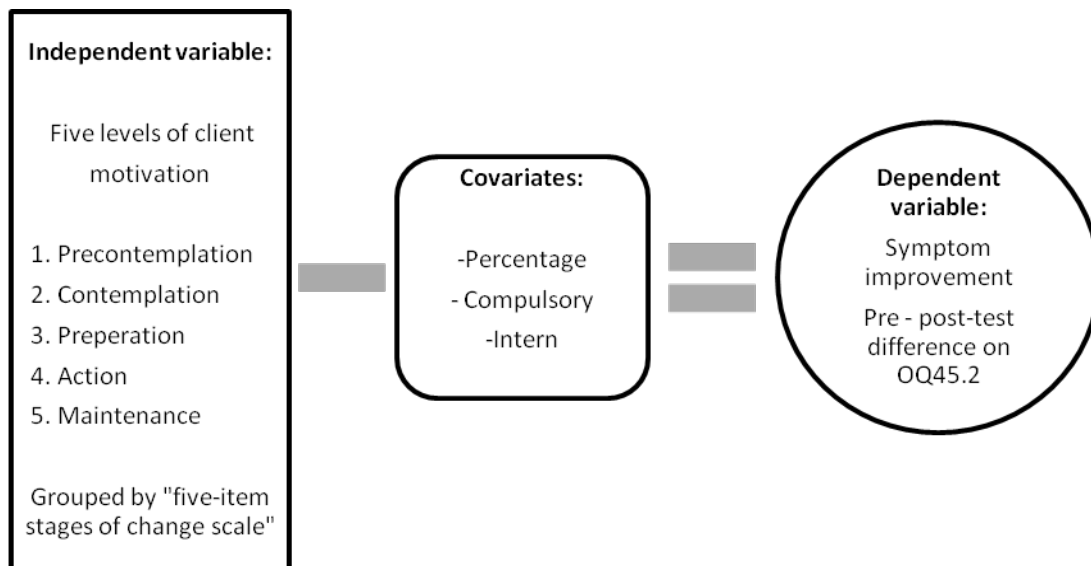


Figure 1.1

Conceptual Framework of the Study

The primary hypothesis, as depicted in Figure 1.1, stated that the client motivation groups were equal in symptom improvement. The “five-item stages of change scale” grouped subjects into one of the five levels. The dependent variable, counseling outcome as demonstrated by symptom improvement, was evidenced by pre- to post-test differences in *OQ45.2*. In an effort to isolate the influence of client motivation on symptom improvement, the investigator controlled for the influence of three covariates. The three covariates were: a) percentage of counseling appointments attended, b) students attending compulsory counseling due to campus judicial proceedings, and c) students receiving counseling from an intern.

Theoretical Framework

For the purpose of this study, the researcher chose the Transtheoretical Model for the theoretical framework. The Transtheoretical Model provides a way to measure, explain, and facilitate an individual’s motivation to make changes (DiClemente, 2007). Client motivation to make intentional behavior changes, as measured by the Transtheoretical Model’s stages of change, influences mental health counseling outcomes (DiClemente, Nidecker, & Bellack, 2008; Owen, Devdas, & Rodolfa, 2007; Prochaska & Norcross, 2006; Rochlen, Rude, & Baron, 2005). The Transtheoretical Model maintains that intentional behavior change is a process with strong motivational as well as behavioral dimensions (DiClemente, 2003; 2006; 2007). Motivation has an important role in human behavior change (Harmon, et al., 2005). Motivation in this context refers to mechanisms at the core of how and why people change problem behaviors (DiClemente,

Nidecker, & Bellack, 2008). DiClemente, Schlundt, and Gemmell (2004) explained that motivation included an individual's need for change, as well as their goals and intentions, sense of responsibility, and commitment to change. Additionally, the authors stated that an individual's concern about sustaining the behavior change and the presence of adequate incentives for change are a part of motivation.

Petrocelli (2002) synthesized the literature according to the stages of change readiness. He indicated that the Transtheoretical Model has theoretical and clinical potential, revealing a means to understand client change. As a therapeutic approach containing a balance of empiricism and theory, the Transtheoretical Model is an organized and empirically guided approach to therapy. Petrocelli (2002) reported that the effectiveness of the Transtheoretical Model is in the emphasis on the therapist matching mental health interventions to the client's stage of motivation.

Definition of Terms

The following definitions of terms describe the major concepts discussed throughout this study.

- *Action (See Stages of change readiness):* The plan devised in the preparation stage is implemented and revised so that the new behavior can be maintained for 3 to 6 months (DiClemente, 2007).
- *Client motivation:* Mechanisms at the core of how and why mental health clients engage in intentional behavior change (DiClemente, Nidecker, & Bellack, 2008).

- *Compulsory*: Mandatory counseling due to campus judicial proceedings.
- *Contemplation*: (See *Stages of change readiness*): Ambivalence about problems or a need for behavioral change. Awareness of a problem without decisive action to accomplish the desired change (Petrocelli, 2002).
- *Mental health counseling outcome*: A measurement of client changes following a course of therapy (Vermeersch, et al., 2004).
- *Supervised intern*: A graduate student who is completing a clinical practicum or internship and providing mental health counseling at the research site mental health clinic.
- *Maintenance*: (See *stages of change readiness*): Stabilization of the desired behaviors and integration of the new behavior into the individual's lifestyle (DiClemente, 2007).
- *Motivation*: Internal states or conditions that serve to activate or direct behavior (Kleinginna & Kleinginna, 1981).
- *Outcome Questionnaire 45.2 (OQ45.2)*: A progress tracking measure designed for repeated administration to assess ongoing therapeutic change, as well as change at termination of counseling (Mueller, Lambert, & Burlingame, 1998).
- *Percentage*: A study covariate representing the percentage of counseling appointments attended by a study participant.

- *Precontemplation (See Stages of change readiness)*: A lack of perceived need or intention to make an intentional behavior change (Brogan, Prochaska, & Prochaska, 1999).
- *Preparation (See Stages of change readiness)*: Goal setting. Motivation evidenced by small behavioral and mental actions necessary for change (Petrocelli, 2002).
- *Processes of change*: Interventions that increase an individual's motivation to make intentional behavior change (DiClemente, 2007).
- *Professional staff member*: A licensed mental health clinician who was employed by the research site at the time of the study.
- *Stages of change readiness*: A major component of the Transtheoretical Model, an outline that intentional human behavior change takes place in five distinct, ordered stages of client motivation. The stages of change are precontemplation, contemplation, preparation, action, and maintenance (DiClemente, 2005; Prochaska & DiClemente, 1986; Prochaska & Norcross, 2006).
- *Symptom improvement*: A measure of patient progress in mental health counseling. For this study, significant symptom improvement is evidenced by an *OQ45.2* post-test score of at least 14 points lower than the pre-test (Vermeersch, et al., 2004).
- *Transtheoretical Model*: A way of conceptualizing the processes of behavior change that an individual experiences when beginning new behaviors,

modifying existing behaviors, or discontinuing problematic behavior patterns (DiClemente, 2005).

- *University mental health counseling*: Psychotherapeutic services offered at university mental health centers. These services included individual and group therapy, crisis intervention, student outreach programs, and consultation to faculty and staff (Ghetie, 2007).

Limitations and Delimitations

The epistemology for this study was positivistic, which is in accordance with the research surrounding questions of client motivation, stages of change readiness, and mental health counseling outcomes that has traditionally been positivistic. Positivistic researchers attempt to apply the research methods of the natural sciences to social phenomena (Smith, 1983). Also, positivistic researchers assume that theories and principles could describe human experience across individuals and contexts (Wardlow, 1989). However, a risk in applying methods of the natural sciences to social phenomena is the potential to objectify mental health clients and their perspectives. Rather than focusing on the diversity of clients' experiences and backgrounds, the positivistic tradition explores commonalities and categories to maximize efficiency in data collection.

Several limitations were identified in this research study. A limitation of the instruments was that client motivation data came from a five-item self-report scale with high face validity. Subjects may have endorsed a motivation level based on image

management, versus indicating the most accurate reflection of motivation to change (McLeod, 2003). In addition, due to a phenomenon called pre-testing effect, the administration of a pre-test on motivation may have served to enhance subjects' motivation (Sprangers & Hoogstraten, 1989). Experimental mortality, especially considering high dropout rates among university students at campus mental health clinics, accounted for a sizable limit of eligible subjects. Additionally, administrative practices of the *OQ45.2* were not uniform across the numerous therapists at the research site. The non-uniform practices allowed that some therapists did not consistently offer clients an *OQ45.2* to measure outcomes. This non-uniformity of *OQ45.2* administration, led to the exclusion of 87 subjects.

Delimitations included participant selection that may not allow for generalizability, since the study examined one university mental health clinic serving a predominantly Caucasian, female, affluent student body. Additionally, the research site mental health clinic was part of a liberal arts, public university in the Southeastern part of the United States. Research subjects at this type of university, and in this region of the United States, may not be generalizable to other university students at different types of universities and in other geographical regions. Concerning ecological external validity, the study measured the dependent variable, differences in pre- and post-test administrations of the *OQ.45.2*, against the independent variable, motivation, regardless of the mental health therapists' treatment modalities and personal characteristics. Since the research site employed mental health professionals and interns with a variety of

specializations, experience levels, and theoretical preferences, the subjects experienced different styles of psychotherapeutic services.

Significance of the Study

The present study adds to the body of knowledge by reporting on client motivation and counseling outcome using a “five item stages of change scale”. The scale is based on the five stages of change outlined in the Transtheoretical Model.

Additionally, the study contributes to the body of knowledge on the Transtheoretical Model, university mental health clinic demand, and mental health counseling outcomes, reporting findings based on the percentage of counseling appointments a participant attended. The investigator also contributes to the knowledge base by exploring the relationship of motivation and mental health counseling outcomes for college students who received compulsory mental health counseling because of a campus judicial sanction. Finally, the investigator contributes to the knowledge base by reporting on relationships among motivation, mental health counseling outcomes, and whether or not the students received counseling from a graduate intern or professional staff member.

Investigators and practitioners increasingly reported that university mental health clinics are understaffed to meet the demand (Dworkin & Lyddon, 1991; Lacour & Carter, 2002; Lawe, Penick, Raskin, & Raymond, 1999; Uffelman & Hardin, 2002). This led to complications and risks in providing quality services (Brown, Parker & Godding, 2002; Ghetie, 2007; Levy, Thompson-Leonardelli, Smith, & Coleman, 2005; Rockland-Miller & Eells, 2006; Uffelman & Hardin, 2002). Thus, dealing with university mental health

clinic demand is an important issue for campus administrators involved in risk management as well as mental health treatment providers (Kitzrow, 2003; Stone & Archer, 1990; Stanley & Manthorpe, 2001).

If the “five-item stages of change scale” indicated a low motivation group that did not show significant treatment progress, university mental health clinicians may be able to assess quickly which clients would benefit from traditional time-limited therapy. When campus mental health clinicians found that clients’ motivation was low, the clinicians could refer those clients to community resources, offer pre-counseling interventions to bolster motivation, or apply specialized counseling techniques to enhance client motivation (Dworkin & Lyddon, 1991; Lawe, Penick, Raskin, & Raymond, 1999; Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005).

Therefore, if the investigator answered the research question positively, university mental health clinicians would have a time-efficient resource to assess client motivation (Petrocelli, 2002; Rochlen, Rude, & Baron, 2005). Assessing client motivation would allow campus mental health counselors to determine the appropriate treatment interventions for university students seeking mental health services (Derisley & Reynolds, 2000; Petrocelli, 2002; Rochlen, Rude, & Baron, 2005).

Organization of the Study

The study consists of five chapters. The first chapter includes an introduction to the demand for campus mental health counseling and an introduction to the Transtheoretical Model. The statement of the problem and the purpose of the study

follow the introduction. Next, the investigator provides the research question and hypotheses, conceptual framework, definition of terms and the research method. The first chapter concludes with limitations and delimitations as well as the significance of the study.

In the second chapter, the researcher reviews relevant studies on university mental health clinic demand, client motivation and counseling outcome. The literature review includes a description of the Transtheoretical Model. The literature reviewed on university mental health counseling demand and client motivation demonstrated a link between assessing client motivation and how university mental health clinics can cope with the high demand for services.

The third chapter consists of a discussion of the research design and methodology. This chapter includes an overview of the population and subjects, as well as instrumentation. The researcher concludes this chapter with a description of the data collection and data analysis procedures employed.

In the fourth chapter, the investigator presents the results of the statistical analyses. The chapter provides descriptive statistics including data from the weighted analyses of covariance (W-ANCOVA) for the primary hypotheses, Poisson regression for secondary hypothesis 1, and the logistic regression analyses for secondary hypotheses 2 and 3.

The fifth chapter consists of the summary of findings and the conclusions. The investigator presents implications for further research and implications for practice. The investigator makes specific research and practice recommendations concerning mental

health center demands for this type of institution, the role of client motivation, the efficacy of a “five-item stages of change scale”, and the measurement of mental health counseling outcomes.

CHAPTER TWO

REVIEW OF THE LITERATURE

The literature review was guided by the research question: Are college student outcomes in a university mental health clinic different for at least one of five motivation groups? The five groups corresponded to the Transtheoretical Model's five stages of change: precontemplation, contemplation, preparation, action and maintenance (DiClemente, 2005; Prochaska & Norcross, 2006). The literature reviewed includes a description of client motivation from the Transtheoretical Model. The literature review also focused on literature that examined the marked increase in demand for services at university mental health clinics'. In exploration of the research problem, the literature review included research on ways in which universities cope with increased student demand for campus mental health services. Finally, the literature reviewed includes a discussion of mental health outcomes assessment.

The Transtheoretical Model provides a way to understand and measure mental health clients' motivation to make intentional behavior changes. Given the high demand for on-campus university student mental health counseling, brief methods for ascertaining positive clinical outcomes are an important contribution. Specifically, when campus mental health treatment providers discover that clients' motivation is low, the clinicians can refer those clients to community resources, offer pre-counseling interventions to bolster motivation, or apply specialized counseling techniques to enhance client motivation (Dworkin & Lyddon, 1991; Lawe, Penick, Raskin, & Raymond, 1999; Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005).

The researcher reviewed relevant studies on university mental health clinic demand, client motivation and counseling outcome, and the Transtheoretical Model. The literature reviewed on university mental health counseling demand and client motivation demonstrated the link between assessing client motivation and coping with the high demand for services.

University Mental Health Clinic Demand

This section describes the problem of the increasingly high student demand for university mental health services and discusses how universities utilize a variety of strategies to deal with increased demands for campus mental health services. The present review outlines the effectiveness of the described strategies, detailing the positive aspects and the drawbacks of each. The literature review on university mental health clinic demand revealed that assessing client motivation is a valuable and accurate predictor of whether clients will respond to limited therapeutic services (Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005).

In the last two decades, universities have experienced an increase in demand for campus mental health services (Jenks Kettmann, et al., 2007; Lacour & Carter, 2002; DeStefano, Mellott, & Petersen, 2001; Ghetie, 2007). This presents a problem since university resources have not risen to meet the needs of the number of students seeking university mental health services (Murphy & Martin, 2004; Uffelman & Hardin, 2002). Rudd (2004) reported that increased demands will continue into the future. The National Survey of Counseling Center Directors, with responses from 284 university mental health

center directors, revealed that 60% of university mental health center directors indicated an increased demand for services without appropriate increases in resources (Gallagher, 2008). Ninety-five percent of the survey respondents reported that their clinics' demographics reflect the recent trend toward greater number of college students with severe psychological problems. Murphy and Martin (2004) recounted that universities cope with this demand by offering brief therapy modalities, seeing clients less frequently, utilizing waiting lists, allowing students to obtain immediate group counseling using open-entry groups, and organizing individual and team triage systems to determine urgency of need.

Reasons for Increased Demand

Significant literature reflected that there is indeed an increase in students seeking campus mental health services; however, there was some debate as to the reasons for the increase (Benton, Robertson, Tseng, Newton, & Benton, 2003; Jenks Kettmann, et al., 2007; Murphy & Martin, 2004; Dworkin & Lyddon, 1991). Jenks Kettmann, et al., (2007) asserted that university mental health clinic directors reported increases in students seeking services and that those students presented to university mental health clinics with distress levels beyond those of students in previous years. The university mental health clinic directors attributed the increased demand to increased student distress (Jenks Kettmann, et al., 2007). Jenks Kettmann et al. (2007) conducted a study that showed no significant increases in self-reported distress for students attending university mental health clinics. Erdur-Baker, Aberson, Barrow, and Draper (2006)

studied self-report data from university mental health clinic clients and found small but significant increases in clients' problem severity. However, Erdur -Baker, Aberson, Barrow, and Draper (2006) suggested that their results provided limited evidence that client severity has been increasing.

Concerning these different views, Benton, Robertson, Tseng, Newton, and Benton (2003) reported that university mental health clinic clients' reports of distress might not accurately reflect the nature or severity of those clients' mental health concerns. Additionally, these authors indicated that studies based on college mental health clinic director's observations were retrospective, gathered via an annual survey and that the resultant data may have led to inaccurate conclusions.

Benton, Robertson, Tseng, Newton, and Benton (2003) conducted a longitudinal study, from 1988 to 2001, utilizing 13,257 university student participants. The authors explored severity trends using university therapist assessments at client termination, employing an instrument developed on-site, to record client symptoms. These findings indicated that students seen in recent years experienced complex problems including depression, anxiety, suicidal ideation, personality disorders, and sexual assault. These were in addition to the more typical student concerns including relationship issues and developmental issues. Over the 13 years of the study, the number of clients presenting with depression doubled, suicidal students tripled, and students seen for sexual assault quadrupled, but Benton, Robertson, Tseng, Newton, and Benton found that the mean number of sessions decreased from 6.87 to 5.98. The authors reported that the clinicians at the research site university mental health clinic decreased the amount of time spent

providing psychotherapy relative to an increase in time writing reports, consulting with campus departments, off-campus referral sources, and clients' families. They also found that campus clinicians spent more time engaged in the management of suicidal students, diagnostic assessment, record keeping, and case management.

In response to a perception of limited literature on university mental health clinic clients' mental health symptom severity, Erdur-Baker, Aberson, Barrow, and Draper (2006) conducted three studies on university students' mental health symptom severity that included 32 university mental health clinics and 3,049 clients. The three studies focused on the severity of mental health symptoms for the students who visited the 32 university mental health clinics. The findings, covering seven years, confirmed that the mental health clinic directors do have perceptions of increased client severity. The study used client scores on a presenting problems inventory. The presenting problems reviewed indicated significant increases in severity of academic concerns, relationship issues, adjustment issues, and depression. The participants showed increases in problem severity and problem chronicity. Concerning possible explanations for the increased severity, the authors suggested that, reflecting societal attitudes, newer students were more comfortable seeking campus mental health services. Additionally, the researchers suggested that both the increase in the number of culturally diverse students attending mental health clinic services, as well as the number of those using psychotropic medications, that allow students to attend college who otherwise would not be able to, have contributed to increased problem severity and chronicity (Erdur-Baker, Aberson, Barrow, & Draper, 2006).

The Problem of Campus Counseling Demand

Investigators and practitioners increasingly reported that college mental health clinics were understaffed and struggled to meet the increased demand for services (Murphy & Martin, 2004; Uffelman & Hardin, 2002). The pressure on university mental health centers to manage this increasingly complex case load has led to staff burnout problems (64.4%), appointment shortages during peak times (64.2%), decreased focus on students with normal developmental concerns (62%), and a need to end cases prematurely (33.5%)(Gallagher, 2008). The increased demand presents a challenge to the university because resources have not increased to meet the demand (DeStefano, Mellott, & Petersen, 2001; Jenks Kettmann, et al., 2007; Lacour & Carter, 2002). With the rising demands, university mental health centers need strategies to determine the best allocation of their limited resources (Ghetie, 2007; Rochlen, Rude, & Baron, 2005).

The predicament of increased student demand and the stagnant flow of resources, has led to complications and risks in university mental health clinics providing quality services (Dworkin & Lyddon, 1991). Discussing increased demands on college mental health clinics, Benton, Robertson, Tseng, Newton, and Benton (2003) reported that if charged a comparable per-session fee, students can quickly end up paying, “dollar for dollar, more in psychological services than they paid in tuition and fees” (p. 71). They further noted that even if campus clinics did charge a per-session fee, it would still not be feasible for universities to offer the level of treatment needed. To complicate the picture further, Rudd (2004) reported that increased demand is expected to continue into the future.

Findings from the 2008 National College Health Assessment (ACHA, 2009) provided current insight into the prevalence of mental health concerns of some university students. According to the National College Health Assessment, 43% of the 80,121 respondents, from among 113 universities, reported that over the last year they “felt so depressed it was difficult to function” (p.487) (ACHA, 2009). The ACHA (2009) survey information showed the importance of managing the increased demand so that universities can adequately address student need.

Coping with University Mental Health Center Demand

The following subsections describe interventions that university mental health clinics use to cope with the high demand for services. Knowledge of the issues and strategies surrounding university mental health clinic demand can lead to planning efforts that will more effectively meet university students’ need (Erdur-Baker, Aberson, Barrow, & Draper, 2006). Each mental health clinic must consider its resources and mission to find efficient and effective ways to provide support to students in need. The strategies discussed here include waiting lists (Levy, Thompson-Leonardelli, Smith, & Coleman, 2005), triage systems (Rockland-Miller, & Eells, 2006), referral protocols (Lacour & Carter, 2002), time limited treatment/session limits (Lunardi, Webb, and Widseth, 2006), and assessment of client motivation (Owen, Devdas, & Rodolfa (2007).

Waiting Lists. One response to increased demand by university mental health clinics was the use of waiting lists (Levy, Thompson-Leonardelli, Smith, & Coleman, 2005; Gallagher, 2008; Uffelman & Hardin, 2002; Ghetie, 2007; Brown, Parker &

Godding, 2002). University mental health clinics employed waiting lists when demand for services exceeded capacity (Rockland-Miller & Eells, 2006). In a typical waiting list scenario, when a student approached a university mental health clinic and there were no available appointments, an admitting counselor assessed whether or not the student is in urgent need of care. If the admitting counselor determined that the student's need for care was not urgent, the counselor recorded the student's contact information and agreed to call the student when an appointment became available (Levy, Thompson-Leonardelli, Smith, & Coleman, 2005).

The use of waiting lists in university mental health clinics presented certain problems. Levy, Thompson-Leonardelli, Smith, and Coleman (2005) discussed the influence of race on waiting list attrition. In a six-year study of a university mental health clinic, the authors found that regardless of problem type, most students returned to counseling regardless of time on a waiting list. However, African-American students were less likely, compared to their Caucasian counterparts, to attend counseling after placement on a waiting list. The authors suggested that this effect could be a result of African-American students feeling unsupported by the university mental health clinic.

In the same study, Levy, Thompson-Leonardelli, Smith, and Coleman (2005) reported that students on a waiting list for 3 weeks or more were less likely to return compared to students waiting less than 3 weeks. Of the students waiting 3 weeks or more, the Caucasian students were more likely than other racial or ethnic groups to return for counseling. The study concluded that, when faced with waiting lists, university mental health clinics should offer additional resources at intake sessions including referral

information, therapy groups, telephone follow-up, encouragement to contact intake counselor as needed, discussion of clients feelings about wait time, psycho-educational materials/brochures, and initial problem solving.

Triage Systems. One other clear finding from the literature was that in order to manage the growing need for campus mental health services, some U.S. colleges and universities utilized triage systems (Rockland-Miller, & Eells, 2006). The authors indicated that triage is a 15-30 minute method of determining, upon a client's initial visit, the required level of care. Practitioners used this screening process to ensure the prompt treatment of mental health clients with acute disorders (Cristine, Hartford, Vingilis, & White, 2007). Without triage systems, the campus clinicians, when presented with students in crisis, are already scheduled with students whose concerns may not be immediate or critical.

Triage systems afforded more immediate interventions for students in urgent need of mental health care (Rockland-Miller & Eells, 2006). For example, if a student threatened to kill self or others, or was at risk for violence to others, he or she was seen by a mental health counselor immediately. The process allowed for effective and rapid response to the large numbers of students seeking campus mental health services. Concerning the components of a successful triage system, the authors proposed that university mental health clinics allow for same day triage appointments. One method was to utilize a walk-in-clinic where students do not have to schedule an appointment, but arrive at the campus mental health services during prescribed hours and were seen that day by a clinician. However, if students called the mental health clinic, identifying

themselves as “being in an emergency” (p. 45), they received immediate referral to a senior, on-call clinician. Rockland-Miller and Eells (2006) suggested that during the triage sessions, the clinician should gather demographic information and the nature of the student’s concern. The clinician inquired of previous or current treatment, history of psychiatric hospitalization, risk for suicide, substance abuse, eating concerns, known medical problems, and current medications. Finally, the student and clinician discussed follow-up treatment and the clinician assigned the level of care as emergency (seen immediately), urgent (seen within 2-3 days), or routine care.

Team-based triage usually included 3-4 clinicians consulting after an intake to decide appropriate dispensation and therapist assignment for the case (Murphy & Martin, 2004). Reporting on team-based triage in a large university mental health clinic, Murphy and Martin (2004) described that mental health clinic staff were “overwhelmingly positive” about the process. University mental health clinicians involved in the team triage reported a positive influence on their development as therapists, case conceptualization skills, heightened knowledge base, and awareness of current clinical issues. The mental health clinic staff responded that they experienced less stress because of the shared responsibility for clinical decision-making on issues such as referrals and placing students on waiting lists (Murphy & Martin, 2004).

The findings not only showed improvements for university therapists, but for clients as well. The team triage system led to shorter time between intake and assignment to a counselor. Additional positive effects included fewer students on waiting lists and better group and external referral processes. The authors noted, however that team triage,

though positive for both staff and clients, reflects a departure from traditional mental health practice, in that it requires multiple staff members to meet and come to a decision as opposed to the treating clinician making the decision without a staff meeting. The study authors concluded that the team triage effort leads to increased clinical service delivery, and improvement in counselor skill, morale, and attitude (Murphy & Martin, 2004).

An important component of triage systems was having established referral criteria and a list of community resources where the mental health client can be referred (Cristine, Hartford, Vingilis, & White, 2007). Referral criteria assisted in determining whether the best care for the student was the campus mental health clinic or a community mental health center (Rockland-Miller and Eells, 2006).

Referral Protocols. Lacour and Carter (2002) reported that referring some students to off-campus mental health treatment providers is a natural response to the increasing demand for services. Campus mental health centers' referral protocols involved decision-making concerning referrals to alternative treatment when students present with either chronic or severe disorders (Lacour & Carter, 2002). Additionally, the authors reported that some students in their sample, for a variety of reasons, exhibited a low ability to benefit from the brief therapy modalities embraced by many university mental health clinics. That being the case, Lacour and Carter (2002) reported that it may not be ethical to provide brief therapy modalities to clients with certain disorders or characteristics. In the decisions regarding how to serve clients, university mental health clinics must determine the specific criteria and methods for off-campus referrals.

Lacour and Carter (2002) reviewed studies that identified key factors in referral decisions. Lawe, Penick, Raskin, and Raymond (1999) reported that the most influential criteria included the client's request for referral, severity of the client's concerns, estimated length of therapy, staff ability to meet the client's needs, and expertise available to meet needs. Dworkin and Lyddon (1991) stated that university mental health centers base referral decisions on clinical diagnoses and certain action markers. The diagnoses indicating need for referral in Dworkin and Lyddon's (1991) work included affective disorders, anxiety disorders, impulse control disorders, psychosis, gender identity disorders, and obsessive-compulsive disorders. The indicators for not referring included:

...high motivation for change, ability to clearly identify focal conflict, desire for symptom improvement, evidence of previous coping ability, ability to introspect, self-monitor and experience feelings, ability to be open, trust, and relate to others, presence of a situational problem, positive use of prior therapy. (Dworkin & Lyddon, 1991, p. 404)

Among the benefits of off-campus treatment referrals, Lacour and Carter (2002) reported efforts to get students to the most appropriate mode and level of care. Additionally, the authors noted that referrals promote independence, self-care, and initiative in seeking treatment. The difficulties with referrals stemmed from students who might not follow through, or are otherwise "relationally fragile" (p.45), meaning that the students would not want to start again with a new clinician, and would feel rejected. Additionally, students may lack the financial resources to follow through with referrals, and students

using insurance, or requiring funds, may have to inform their parents of the need for otherwise confidential services.

There are problems with referring students for off-campus treatment. Pinkerton and Rockwell (1994) found that younger students often denied the severity of their mental health problems, resisted extended assistance, and became angry that a quick solution was not available. Furthermore, referral posed a challenge to clinician's relational style, especially if required to refer a student who is unlikely to attend the referral. Challenge to a clinician's relational style means that the referral may seem like a rejection that is emotionally painful for the client. That type of action would be contrary to the therapists' empathetic demeanor (Pinkerton and Rockwell, 1994). Another problem with referrals was that some universities were concerned that referrals detract from their image as a caring institution (Lacour & Carter, 2002). Owen, Devdas, and Rodolfa (2007) found that a problem with referring students for off-campus services was that students of color were less likely to follow through with off campus referrals compared to Caucasian students.

The success of referral processes was dependent on a number of variables (Lacour & Carter, 2002). The referral variables included having a list of local, affordable treatment options, using phrases such as "open-ended" versus "long-term treatment", using only 1/3 of a clinician's time managing referral follow-up, coaching students on follow-through, and understanding that it may take three sessions to facilitate the referral. Additionally, university mental health clinics must establish the limits concerning the types and extent of services provided by the university mental health clinic.

Referral decisions in a university mental health clinic are based on whether or not the student is likely to experience symptom improvement in that clinic. However, some university students, despite their need for services, are less likely than others to follow through with off-campus referrals. Client motivation is one of the factors that contribute to unsuccessful referrals (Owen, Devdas, & Rodolfa, 2007).

Client motivation and referrals. Owen, Devdas, and Rodolfa (2007) reported findings from a large university mental health clinic. The authors reported that 25% of the mental health clinic's clients received off-campus referrals. Of those referred students, 42% did not follow through with the referral. The authors discussed three major factors contributing to unsuccessful referrals: (a) students' low motivation, (b) low sense of need for therapy, and (c) lack of follow-up by mental health clinic staff. Considering these issues, the authors called for careful assessment of clients' motivation and perceived need for mental health treatment. Specifically, the investigators called for assessing students' readiness to change as an indicator of client motivation and noted that such an assessment is crucial to negotiating successful referrals.

In addition to low motivation, low perceived need for counseling, and low counselor follow-up, Owen, Devdas, and Rodolfa (2007) reported additional inhibitive factors to referral follow through. The authors discussed the inhibitory effect of finances and health insurance to cover the costs of off-campus treatment. The investigators proposed that university mental health counselors prepare clients for referrals by developing a network of off-campus providers, assisting with health insurance, and supplying information to the off campus provider as needed. Additionally, the authors

suggested assessing clients' readiness for change, processing students' feelings around transition to a new counselor, addressing the clients' concerns about the referral, discussing finances, and following up with the students to see if the referral was successful. Finally, Owen, Devdas, and Rodolfa, (2007) suggested that campus mental health clinic directors should establish clear and supportive procedures for clients in need of referral.

Time-limited Treatment/Session Limits. In efforts to cope with high services demand, many university mental health clinics offered time-limited treatment (Ghetie, 2007; Uffelman & Hardin, 2002). According to a nationwide survey of university mental health clinic directors (Gallagher, 2007), 46% of universities utilized time limits. Time limits typically occurred in the form of limiting the number of sessions available to students. Steenbarger (1992) reported that university clients prefer short-term treatment, desiring immediate symptom improvement, and that brief forms of counseling were conducive to college students' desire for independence and their academic calendar consisting of frequent breaks (Steenbarger, 1992).

The benefits of time-limited therapy at campus mental health clinics, according to Ghetie (2007), included cost-effectiveness, reducing the need for waiting lists, and providing clinicians with additional time for outreach and other activities. When universities impose session limits, clinicians must decide how to assist the students whose needs exceed the set number of sessions. According to Ghetie (2007), when counselors assess that a clients' mental needs exceed what can be accomplished within

the number of sessions allowed, college mental health clinics should use referrals to community mental health providers.

Uffelman and Hardin (2002) explored whether university mental health clinics' session limits deterred college students from seeking counseling. The study findings indicated that the number of available sessions did not influence students' likelihood of seeking campus mental health clinic services, regardless of problem types and severity of concerns. The authors suggested the controversy over session limits might reflect staff concerns versus problems for students. The findings also suggested that session limits might affect students who are currently in therapy more than prospective clients.

There is controversy surrounding the use of time-limited therapy as a means to coping with increasing demand on college mental health clinics. Michel, Drapeau, and Despland (2003) reported favorably on time-limited treatment when they compared the effects of short-term therapy in a college mental health clinic to those an outpatient psychiatric center. The study, exploring a four-session format termed "ultra-brief therapy" (p.11), explored commonly occurring mental health problems such as depression, anxiety, and social adjustment. The two groups, university clients and general outpatient clients, received the same symptom reduction measures. Both groups showed significant symptom reduction and less symptom distress, indicating that university clients responded similarly to general outpatient clients when treated within a brief therapy format. Despland, Drapeau, and de Roten (2005) conducted follow-up research showing that clients responded to four-session therapy formats, and they continued to improve as evidenced by one-year follow up assessments. Desplan, Drapeau, and de

Roten (2005) concluded that college students experienced significant symptom reduction with four-session formats.

Draper, Jennings, Baron, Erdur, and Shankar (2002) presented findings that cast doubt on the efficacy of time-limited treatment for university students. The authors discussed that while time-limited therapy has obvious benefits for clients and clinicians, they reported that not all clients responded to or appreciated the session limits. Draper, Jennings, Baron, Erdur, and Shankar conducted a nationwide study of 1,698 college students at 42 university mental health clinics using the OQ45. All university students in the study utilized 10 counseling sessions or fewer. The authors investigated differences between mental health symptom improvement and number of sessions attended with the average number of sessions being 3.3. The results showed the most rapid improvement occurred between intake and first session, with improvement diminishing by the tenth session. The authors reported that while brief, time-limited treatment is “moderately effective” (p. 33), all participant groups experienced some improvement, even the group that attended only one session. The authors concluded that the larger the number of sessions, the greater the overall improvement.

As a means of coping with university mental health center demand, session limits presented complicated issues. According to some researchers, session limits were unnecessary since, most college students chose to end therapy before they attain their goals (Hatchett, 2005; Lunardi, Webb, and Widseth, 2006). Widseth and Webb (1992) reported that session limits were not necessary because many college students were developmentally unable to participate in long-term psychotherapy. Ghetie (2007) noted

that since only 5% of college mental health clinic clients engaged in fifteen or more sessions, there was no need to present a session limit policy to all students. Lunardi, Webb, and Widseth (2006) found that college students often experienced the desired symptom improvement within a few sessions. Regardless, the authors continued, students “won’t stay forever”, even if no session limits existed (p.22). For universities wishing to forego session limits, Lunardi, Webb, and Widseth (2006) suggested that volunteer interns and trainees provide needed assistance to handle the demand.

Assessment of Client Motivation. DiClemente, Schlundt, and Gemmell (2004) stated that motivation encompasses an individual’s need for change, goals and intentions, sense of responsibility, and commitment to change. Current literature revealed that client motivation, or change readiness, is a key determinant in successful treatment outcome (Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005). Additionally, Owen, Devdas, and Rodolfa (2007) reported that client motivation determines whether university students follow through with referrals made from university mental health clinics to off-campus mental health providers. Lawe, Penick, Raskin, and Raymond (1999) and Dworkin and Lyddon (1991) discussed the importance of assessing client motivation during triage in deciding whether to accept a client or refer for open-ended or non-time limited therapy.

Researchers proposed the assessment of university mental health clinic clients’ readiness to make changes and pre-treatment interventions for students indicating low readiness to make changes (Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005). Ultimately, how universities cope with increasing mental health center

demands may depend on accurate and prompt assessment of clients' change readiness. Formalizing measures to assess client motivation will help to identify students who are more likely to engage in and utilize the therapy process effectively, as well as identifying students who are more likely to follow through on referrals (Dworkin & Lyddon, 1991; Principe, Marci, Glick, & Ablon, 2006).

The relevance of the client motivation to university mental health clinic demand is that when mental health clients' motivation is low, counseling outcome is poor (Derisley & Reynolds, 2000; Prochaska, DiClemente, & Norcross, 1992; Prochaska, Velicer, DiClemente, & Fava, 1988; Rochlen, Rude, & Baron, 2005; Smith, Subich, & Kalodner, 1995). When client motivation is low, rather than beginning counseling, clinicians can refer those clients to community resources, offer pre-counseling interventions to bolster motivation, or apply specialized counseling techniques to enhance client motivation (Dworkin & Lyddon, 1991; Lawe, Penick, Raskin, & Raymond, 1999; Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005). The Transtheoretical Model offers a means of assessing client motivation (DiClemente, 2007). Assessment of client motivation via the Transtheoretical Model allows campus mental health counselors to determine clients' readiness to change. The Transtheoretical Model also offers an understanding of how mental health counselors can provide treatment interventions that are appropriate for a clients' motivation level (Derisley & Reynolds, 2000; Petrocelli, 2002; Rochlen, Rude, & Baron, 2005).

The Transtheoretical Model

The Transtheoretical Model is a description of the stages and processes of intentional human behavior change (Prochaska & DiClemente, 1982, 1983, 1984; Prochaska & Norcross, 2006). The development of this model began in 1979 when Prochaska, seeking to understand how people change, completed a comparative analysis of major systems of behavior change and psychotherapy. From this transtheoretical analysis, Prochaska extracted the activities and experiences that facilitate intentional behavior change. In 1982, he began working with DiClemente to assist clients in smoking cessation. Prochaska and DiClemente identified that when addressing problem behaviors, intentional change takes place in five distinct stages of client motivation (Prochaska & DiClemente, 1982, 1983, 1984; Prochaska & Norcross, 2006). The stages of change they developed were: precontemplation, contemplation, preparation, action, and maintenance (DiClemente, 2007; Prochaska & DiClemente, 1986; Prochaska & Norcross, 2006).

According to DiClemente (2007), the objective of the Transtheoretical Model was to create an integrated model of behavior change, drawing from multiple modes of behavior change and psychotherapy. In mental health counseling, implementing the Transtheoretical Model requires therapists to know the best ways to get clients to do the activities that move them through the stages of change (DiClemente, 2007). DiClemente (2003) noted that knowledge of and sensitivity to clients' cultural and ethnic backgrounds and traditions are essential for creating effective change processes.

The stages of change are the fundamental organizing constructs of the Transtheoretical Model (Nidecker, DiClemente, Bennett, & Bellack, 2008). In each stage,

individuals must complete specific “tasks” before the individual progresses to the next stage (p. 1022). The processes of change are activities and experiences that allow individuals to move through the stages. According to Prochaska and DiClemente (1982), while the stages of change may appear to be a linear progression, individuals may actually experience the stages cyclically, perhaps revisiting stages before reaching sustained behavior change. Practitioners using the Transtheoretical Model determine the clients’ stage of change and employ the process of change to bolster clients’ motivation and assist them with progression through the remaining stages.

The Transtheoretical Model Stages of Change

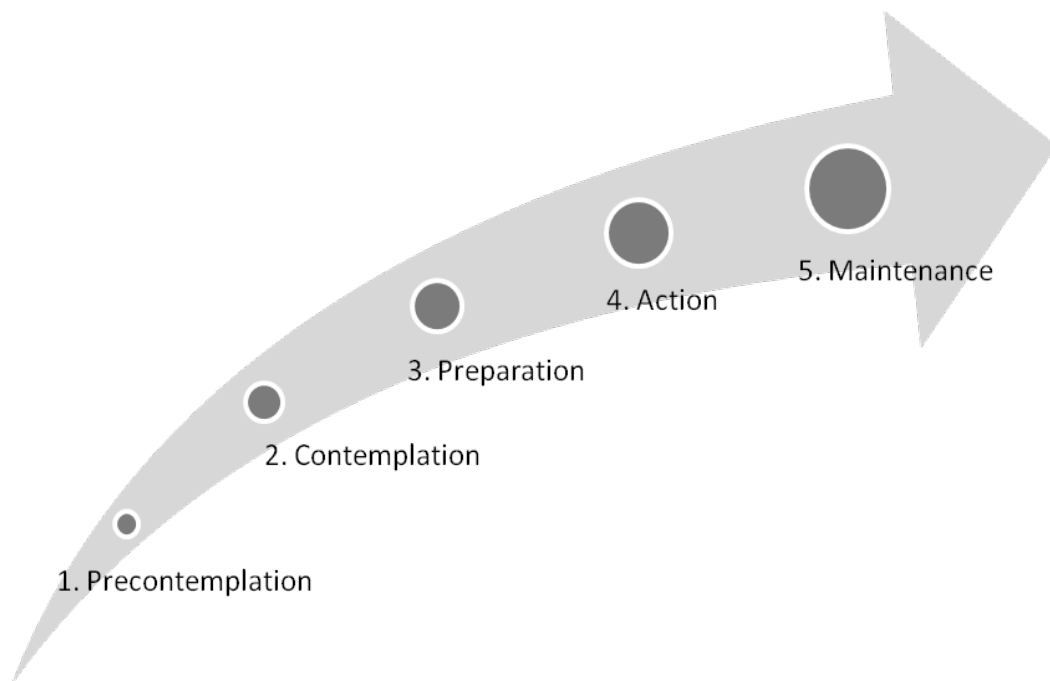


Figure 2.1

Stages of Change as Progressive Increases in Motivation

Figure 2.1 illustrates the stages of changes increasing in motivation from the first through fifth stage. The Transtheoretical Model's stages of change are (a) precontemplation, no acknowledgement of problems; (b) contemplation, ambivalence about problems or necessary changes; (c) preparation, goal setting; (d) action, behavior change; and (e) maintenance, stabilization of desired behaviors (Prochaska & DiClemente, 1986; Prochaska & Norcross, 2006). DiClemente (2007) stated that the concept of stages of behavior change contrasts with views of behavior change as events that happen quickly. DiClemente (2005) reported that intentional human behavior change is a result of motivation that occurs in stages. Rather than happening quickly, efforts towards intentional behavior change consist of failed attempts, false starts, and periods of minimal or no progress (DiClemente, 2005).

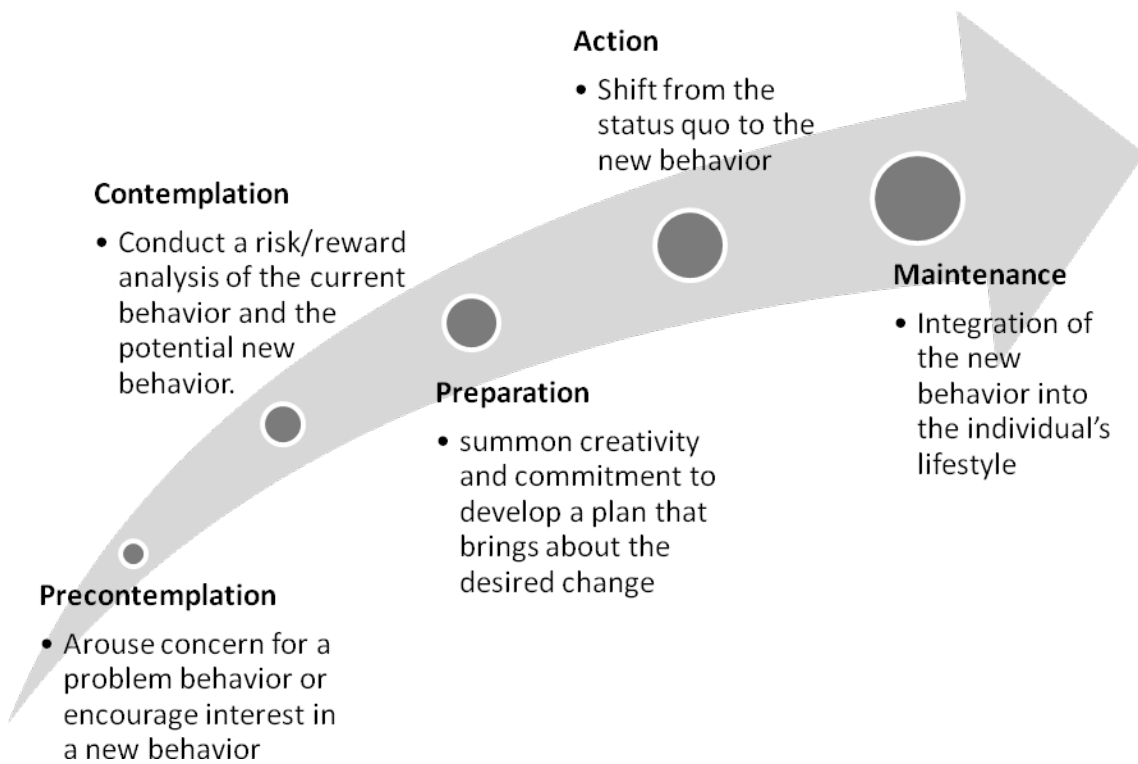


Figure 2.2

Necessary Tasks to Progress through the Stages of Change

Figure 2.2 depicts the stages of change and the tasks necessary to progress through each stage. The Transtheoretical model's stages of change and tasks for each stage are (a) precontemplation, arouse concern for a problem behavior or encourage interest in a new behavior; (b) contemplation, conduct a risk/reward analysis of the current behavior and the potential new behavior; (c) preparation, summon creativity and commitment to develop a plan that brings about the desired change; (d) action, shift from the status quo to the new behavior; and (e) maintenance, integration of the new behavior

into the individual's lifestyle (DiClemente, 2007; Prochaska & Norcross, 2006). The following sub-sections offer descriptions of each of the five stages.

Precontemplation. Investigators found that university clients in the first stage of change, precontemplation, lacked a perceived need or intention to make changes (Brogan, Prochaska, & Prochaska, 1999). These university students were often resistant to the idea of counseling and attended counseling under pressure from others (Brogan, Prochaska, & Prochaska, 1999). Additionally, clients in the first stage were more oriented towards changing the environment than changing themselves, and saw disadvantages rather than benefits to therapy (Brogan, Prochaska, & Prochaska, 1999). DiClemente (2007) described this stage as “status quo”, because people in this stage were not concerned with modifying the behavior in question (p.29). Harmon, Hawkins, Lambert, Slade, and Whipple (2005) stated that a common remark from therapy clients in the precontemplation stage is “As far as I'm concerned, I don't have any problems that need changing” (p. 180). Per DiClemente (2007), the therapeutic task in this stage was to arouse concern for a problem behavior or encourage interest in a new behavior. Individuals seeking to change behaviors may relapse into this stage when confronted with failure to change or an inability to maintain progress (Harmon, et al., 2005).

Rochlen, Rude, and Baron (2005) found that the precontemplation stage was associated with low symptom improvement, compared to all other stages. These investigators also found clients in the precontemplative stage experienced low scores on measures of working alliance with therapist, a measure of their relationship with the therapist. Additional findings for the precontemplation group included university mental

health clinic clients' low expectations for therapy (Satterfield, Buelow, Lyddon, & Johnson, 1995), and premature termination from counseling (Smith, Subich, & Kalodner, 1995; Brogan, Prochaska, & Prochaska, 1999).

Contemplation. Petrocelli (2002) described that clients in the contemplative stage have an awareness of a problem yet lacked the decisive action to accomplish the desired change. Persons in this stage experience concern, interest, or vision for addressing the status quo behavior (DiClemente, 2007). DiClemente (2007) stated that the necessary task in this stage is to conduct a risk/reward analysis of the current behavior and the potential new behavior. A favorable analysis for the new behavior leads the individual towards a decision to modify a problem behavior or begin a new behavior. Low contemplation scores predicted early termination and low therapeutic alliance (Derisely & Reynolds, 2000). Most individuals who seek mental health counseling are in this stage (McConnaughy, DiClemente, Prochaska, & Velicer, 1989).

Derisely and Reynolds (2000) studied a group of outpatient community mental health clients in the United Kingdom. Client scores in the lower range of contemplation predicted early termination from treatment and low therapeutic alliance (Derisely & Reynolds, 2000). McConnaughy, DiClemente, Prochaska, and Velicer (1989) conducted a study including 155 clients seen in a variety of outpatient clinic settings-and reported that most clients were in the contemplation stage. University mental health center clients in this stage, perhaps due to their ambivalence, had high scores on therapeutic alliance (Principe, Marci, Glick, & Ablon, 2006). Additionally, university mental health center

clients in this stage were more likely, compared to clients in other stages, to utilize more than 10 counseling sessions (Brogan, Prochaska, & Prochaska, 1999).

Preparation. Petrocelli (2002) allowed that mental health counseling clients in the third stage, preparation, have made decisions to change. Clients in this stage showed evidence of their motivation by small behavioral and mental actions necessary for change. DiClemente (2007) indicated that the task in the preparation stage was to summon the creativity and commitment to develop a plan that brings about the desired change. Studies on stages of change and mental health counseling outcome did not reveal significant findings for this group (Derisely & Reynolds, 2000; Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005; Smith, Subich, & Kalodner, 1995).

Action

The fourth stage, action, is marked by motivation to take action that is evidenced over time, effort, and commitment (Petrocelli, 2002). DiClemente (2007) stated those individuals in the action stage shift from the status quo to the new behavior. The change plan devised in the former stage, preparation, is implemented and revised so that the new behavior can be maintained for 3 to 6 months.

One study showed that mental health counseling clients in the action stage utilized more sessions than did clients in other stages (Brogan, Prochaska, & Prochaska, 1999). In a study involving university students, Smith, Subich, and Kalodner (1995) found students in this stage did not prematurely terminate from counseling, but the clients in this stage terminated quickly and appropriately meaning they accomplished their goals in a short amount of time (Brogan, Prochaska, & Prochaska, 1999).

Maintenance. The fifth and final Transtheoretical stage of change is maintenance. The final task for intentional behavior change was identified as the integration of the new behavior into the individual's lifestyle (DiClemente, 2007). In the maintenance stage, through continued commitment and practice, the new behavior becomes the new normative pattern of behavior. Prochaska, DiClemente, and Norcross (1992) commented that relapse prevention was a major focus for many individuals in the maintenance stage. The reviewed studies on stages of change and mental health counseling outcome did not reveal significant differences for clients in the maintenance stage (Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, and Baron, 2005; Smith, Subich, & Kalodner, 1995).

Processes of Change

Central components of Transtheoretical Model are the processes of change, extracted from varied psychotherapy theories, which move individuals through the stages of change (Prochaska, DiClemente, & Norcross, 1992). DiClemente (2007) described "processes of change" as interventions that increased an individual's motivation to make intentional behavior change, the "active ingredients or engines of change" (p. 30). The processes of change involved raising consciousness about a specific problem through risk-reward analyses, as well as reevaluation of the status quo behavior and the potential new behavior. Other processes of change involved decreasing the intensity of triggers and cues for unwanted behaviors, changing responses to old behavioral cues, creating rewards for new behaviors, and forming helpful relationships (DiClemente, 2005; Prochaska &

DiClemente, 1984; Prochaska, DiClemente, & Norcross, 1992). These processes of change have been identified, through research, by individuals in therapy who are seeking assistance with intentional behavior change, as well as by individuals from non-clinical populations (Prochaska, DiClemente, & Norcross, 1992; Smith, Subich, & Kalodner, 1995).

Assessing Stages of Change

The use of Transtheoretical Model typically begins with assessing the client's readiness, or motivation, to make behavioral changes (Petrocelli, 2002). Helping professionals can assess an individual's motivation to make intentional behavior changes via a variety of self-report methods (Levesque, Prochaska, & Prochaska, 1999).

According to DiClemente, Prochaska, Fairhurst, Velicer, Velasquez, and Rossi (1991), assessing an individual's motivation to change is typically done using an "algorithm" that scores a person's motivation for change and places them, based on their score, into one of the Transtheoretical Model stages of change (p 296). Stages of change scales categorize individuals into motivation stages based on responses to questions about their intentions to change as well as past and present behavior patterns (DiClemente, et al., 1991).

Understanding a client's perceptions concerning their need, desire, and ability, to change allows the clinician to tailor interventions to the clients' motivation level (DiClemente, Doyle, & Donovan, 2009). The following sub-section includes a brief description of six instruments that assess motivation according to the Transtheoretical Model stages of change.

The *Stages of Change Scale (SCS)/University of Rhode Island Change Assessment (URICA)* (McConaughy, Prochaska, & Velicer, 1983) is a 32-item measure of a client's motivation to change. While the Transtheoretical Model is used for populations with wide- ranging clinical mental health issues, the *SCS/URICA* is specifically designed to measure motivation to change for substance abuse treatment clients (DiClemente, Nidecker, & Bellack, 2008). The scale employs a Likert scale asking individuals to rate their level of agreement with each item. The *SCS/URICA* has eight items for each of the four subscales, corresponding to the four stages of change as conceptualized at that time by DiClemente and Prochaska (1998). The stage with the highest score determined the client's stage of change. Investigators established the instrument's internal consistency as sufficient, with Cronbach's Alpha ranging from .79 to .84 (McConaughy, Prochaska, & Velicer, 1983; McConaughy, DiClemente, Prochaska, & Velicer, 1989; Whipple, et al., 2003).

The *University of Rhode Island Change Assessment – Maryland (URICA-M)* (Kinnaman, Bellack, Brown, & Yang, 2007) is a 24-item instrument similar to the *URICA* scale described above. The *URICA-M* differs from the *URICA* in that it is shorter and tailored to clinical populations with severe mental illness.

The *Stage of Change Readiness and Treatment Eagerness Scale (SOCRATES)* (Miller & Tonigan, 1996) is a 19-item scales designed to assess readiness for change in alcohol abusers. There is also a version of *SOCRATES* to assess readiness for change in drug abusers. Clinicians use the *SOCRATES* with alcohol abusing treatment populations as well as alcohol and other drug abusing treatment populations because it is sensitive to various

types of intentions and attitudes beyond simple denial of a problem (DiClemente, Nidecker, & Bellack, 2008). Investigators normed the 19-item self-report SOCRATES scale on a sample of 1,672 participants in Project MATCH. Project MATCH was an 8-year multi-site study of how patients respond to different treatment approaches designed to help them recover from alcohol problems (Sutton, 1999). Respondents endorsed items according to a 1-5 Likert scale, with higher numbers indicating more agreement.

The *Readiness to Change Questionnaire (RTCQ)* (Rollnick, Heather, Gold, & Hall, 1992) is a 12-item self-report scale designed to measure stage of change with respect to reducing alcohol consumption among excessive drinkers. The scale was intended for clients with alcohol problems who might be unaware of having an alcohol problem (Rollnick, Heather, Gold, & Hall, 1992; Heather, Rollnick & Bell, 1993). Items were initially chosen to represent a specific stage of change according to the Prochaska and DiClemente model (Prochaska and DiClemente, 1986). The RTCQ assesses three of the stages of change: precontemplation, contemplation, and action.

The *Client Motivation to Change Scale (CMOT-S)* (Pelletier, Tuson, & Hadda, 1997) is a 24-item measure of an individual's general readiness to engage in therapy, versus assessing motivation to change a specific problem, as does the Stages of Change Scale (Harmon, Hawkins, Lambert, Slade, & Whipple, 2005). Such an instrument is highly pertinent to university mental health clinics and the generalist approach of clinicians treating students' mental health concerns.

DiClemente, Nidecker, and Bellack (2008), described methods to measure motivation to change and noted the existence of simpler and more efficient assessment

tools. One such measure is a short five-item algorithm often used to assess readiness to change, specific to tobacco smokers (DiClemente, Schlundt, Gemmell, 2004). The algorithm was specifically geared towards smoking cessation. An assessment by Carey, Purnine, Maisto, Carey, and Barnes (2002) demonstrated reliability, finding 75% agreement between the *Five-Item Algorithm for Smokers* and the 32-item *Stages of Change Scale*.

The Transtheoretical Model and the Complexities of Client Motivation

DiClemente and Scott (1997) and DiClemente and Velasquez (2002) stated that the Transtheoretical Model offers insight into the complexity of why some individuals do not change even when change is deemed best by outside observers and when offered treatment and other assistance. The model offers a view of where in the motivation process the individuals are “stuck” and where they are actively working against behavior change (p.32). Individuals seeking to change reported that the stages reflected their experience and helped pinpoint their difficulties (Prochaska, Norcross, & DiClemente, 1994).

The Transtheoretical Model’s stages of change allow the client and therapist a less judgmental view of a client’s behavior, which can alleviate a therapist’s frustration at times when clients do not agree about a need for change or are not ready to make a change (DiClemente, 2005). Also, individuals can view themselves as precontemplative or contemplative as opposed to resistant, unmotivated, or lacking in character (DiClemente, 2005). The less judgmental view is more positive and more conducive to a

productive change process (Miller & Rollnick, 2002). The Transtheoretical Model also offers a positive and productive framework for the mental health clinicians working with clients seeking change. Mental health clinicians often encounter individuals who are not ready to take action on a specific behavior. The Transtheoretical Model offers a way to help clients focus on the processes of change and to see where the clients are having trouble in making the desired changes (Connors, Donovan, & DiClemente, 2001).

Research Studies on the Transtheoretical Model

Rochlen, Rude, and Baron (2005)	Smith, Subick, and Kalodner (1995)	Brogan, Prochaska, and Prochaska (1999)	Petrocelli (2002)
<ul style="list-style-type: none"> •Precontemplators were lower than other stages in symptom improvement 	<ul style="list-style-type: none"> •Poor Counseling outcome for precontemplation stage 	<ul style="list-style-type: none"> •Precontemplation stage predicted premature termination from therapy •Action stage predicts appropriate termination from therapy 	<ul style="list-style-type: none"> •Transtheoretical Model facilitated symptom improvement through first two stages

Figure 2.3

Findings from Four Transtheoretical Model Research Studies

Figure 2.3 displays findings from four Transtheoretical Model research studies. Rochlen, Rude, and Baron (2005) found that precontemplators were lower than other stages in symptom improvement. Smith, Subick, and Kalodner (1995) reported poor counseling outcome for clients in the precontemplation stage. Brogan, Prochaska, and Prochaska (1999) found that the precontemplation stage predicted premature termination

from therapy and that the action stage predicts appropriate termination from therapy. Petrocelli (2002) allowed that Transtheoretical Model facilitated symptom improvement through the first two stages. A discussion of the four studies follows.

Rochlen, Rude, and Baron (2005) conducted a correlational study with 400 undergraduate and graduate college students from 46 public and private universities. The participants received counseling at their respective campus mental health clinics. The investigators measured client motivation via the 32-item *Stages of Change Scale*, and measured symptom improvement with the *Outcome Questionnaire 45 (OQ45)* (Lambert, Hansen, et al., 1996). The *OQ45* is an earlier version of the *Outcome Questionnaire*; the *OQ45.2* was used in the present study. Rochlen, Rude, and Baron (2005) showed that students who scored in the precontemplation stage, the lowest stage of motivation, experienced less symptom improvement than did students in other stages. Rochlen, Rude, and Baron (2005) found no differences in symptom improvement among the students in the other stages of change. There were no significant correlations between stage of change and an individual's age, gender, or ethnicity.

In a correlational study exploring college students who prematurely terminated from mental health counseling, Smith, Subich, and Kalodner (1995) studied 74 clients from a large Midwestern university. The investigators established stage of change using the *Stages of Change Scale*. The mental health counselors involved in the study indicated that a client prematurely terminated from treatment if the client discontinued therapy prior to what would have been mutually agreed upon by client and therapist. The independent variable was termination status, premature or non-premature termination.

The dependent variable was the stage of change. The study employed a 4 x 2 Chi-square goodness of fit test to examine the likelihood of premature termination across the stages. All nine of the participants in the precontemplation stage sample terminated prematurely, while none of the 15 participants who entered therapy in preparation and action stages terminated prematurely. The findings indicated poor outcome for clients in the precontemplation stage and reflect those of Prochaska, DiClemente, and Norcross (1992). Smith, Subich, and Kalodner (1995) found that knowing a client's stage of change at the onset of therapy might lead to an estimate of whether the client will terminate prematurely.

In another study reporting on stage of change and premature termination from psychotherapy, Brogan, Prochaska, and Prochaska (1999) studied 60 client-therapist pairs. The largest percentage (51.7%), of the sample came from university mental health centers. The second largest group came from a community mental health center (38.3%). The remainder of the sample came from a doctoral training clinic (10%). The investigator found that scoring in the precontemplation stage predicted premature termination over gender, age, symptom severity, or any other client variable. Also, the clients in the precontemplation stage were often resistant to the idea of counseling and usually attended counseling under pressure from others (Brogan, Prochaska, & Prochaska, 1999).

The precontemplators were more oriented towards changing their environment rather than changing themselves, and saw disadvantages rather than benefits to therapy (Brogan, Prochaska, & Prochaska, 1999). In contrast to the premature terminators, the appropriate terminators were in the action stage of change and entered therapy ready to

make personal changes. The third group, the therapy continuers, highly endorsed the contemplation stage. These participants were eager to talk about their problems but slower to take action until greater self-understanding was achieved. The authors suggested that predicting premature termination offers potential to control costly dropouts, and proposed stage-appropriate interventions to reduce premature termination among precontemplators.

Petrocelli (2002) provided a summary and analysis of the quantitative research findings on the Transtheoretical Model. He organized findings on the processes for influencing mental health client motivation according to the five stages of change readiness. Petrocelli (2002) discussed the contributions and limitations of the client motivation stages and the processes for influencing mental health client motivation. Petrocelli stated that while therapist's motivational interventions may prompt motivation for change through the first two motivation stages, further success was unlikely unless the client became intentional about change. Additionally, the effectiveness of therapy was dependent on the therapist's expertise in matching interventions to the stage of motivation. As to mental health counseling, the Transtheoretical Model has theoretical and clinical potential, revealing a means to understand client change. As a therapeutic approach containing a balance of empiricism and theory, the Transtheoretical Model is an organized and empirically guided approach to therapy (Petrocelli, 2002; Prochaska & Norcross, 2006).

Mental Health Counseling Outcomes and the Outcome Questionnaire 45.2

Mental health clinicians utilize counseling outcome measures to monitor clients' progress in therapy. Counseling outcome measures assess changes that occur during mental health counseling (Steenbarger & Smith, 1996). Most mental health counseling outcome measures focus on quantifiable changes in a client's behavior or attitudes from the beginning to the end of therapy (Rodgers, 2006). Leibert (2006) reported that there is no standard form of measurement for mental health outcomes and no consensus over which outcome indicators should be measured. However, recent interest in patient-focused research has created a clear trend towards the importance of routine and systematic evaluation of patient progress throughout the course of therapy (Harmon, Hawkins, Lambert, Slade, & Whipple, 2005).

Tracking patient outcomes throughout the course of therapy allows clinicians to improve mental health services through immediate feedback of clients' functioning or symptom severity (Harmon, Hawkins, Lambert, Slade, & Whipple, 2005). Feedback on clients' progress enables therapists to make assumptions about the effect of therapeutic interventions (Lambert, Burlingame, et al., 1996). Normed outcome measures enable therapists to compare a client's score with the scores of individuals who have received mental health treatment in the past or those who have not sought treatment (Steenbarger & Smith, 1996). Repeated administrations of normed outcome measures afford clinicians the opportunity to judge the severity of clients' initial mental health symptom severity, compare clients' symptom severity to that of other clients, and monitor ongoing symptom improvement.

Another benefit of measuring counseling outcomes is to document the effectiveness of agencies' efforts and justify requests for staffing and other budgetary needs (Steenbarger & Smith, 1996). Counselors in university mental health clinics face increasing demands for accountability with respect to the effectiveness of their services (Kitzrow, 2003). This is especially true as university mental health clinics experience increasing budgetary constraints at a time of rising demand for services work (Gallagher, 2008). In a climate of accountability and budget crises, university mental health counselors are asked to do more with less and to justify their positions by demonstrating the value of their work (Gallagher, 2008; Steenbarger & Smith, 1996).

Two major types of outcomes measures are global measures and specific measures. Clinicians use global measures to assess general mental health symptoms across diagnoses and problem types. Global measures rate outcomes irrespective of a particular psychotherapy approach. Unlike assessments that are specific to one group of diagnoses, or one counseling approach, a global measure can be more easily added to a clinic routine. This is true because the measure will be relevant to all clients and can be added to the counseling intake process for all clients. Specific measures of outcome are assessments that focus on a single area of concern, like depression or eating disorders. An example is the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Specific measures have 20 to 30 items and are designed for repeated administrations. They may be more sensitive to client change than a global measure but may exclude client symptoms that are unrelated to the specific measure being used (Leibert, 2006).

The two areas most frequently observed in mental health outcome assessments are client functioning level and client mental health symptoms. Client functioning refers to the degree to which a client's daily life is impaired by psychological problems. An example of a scale of functional assessment is the Global Assessment of Functioning (GAF) scale, included in the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000). The GAF rates mental health clients on a 100-point scale, with 100 representing "superior functioning" and 1 indicating "persistent danger of hurting self or others" (p. 34).

Unlike measures of client functioning status, assessments of client mental health symptoms rate the frequency or intensity level of specific complaints. An example of a commonly used symptom measure is the Brief Symptom Inventory (BSI), a 53-item short version of the Symptom Checklist-90 (Derogatis & Lazarus, 1994). The BSI assesses clinical problems including depression, anxiety, hostility, and loss of touch with reality. Another example of an assessment of clients' mental health symptom severity is *The Outcome Questionnaire 45.2 (OQ45.2)*. The *OQ45.2* is a 45-item progress tracking measure designed for repeated administration to assess ongoing therapeutic change, as well as change at termination of counseling (Mueller, Lambert, & Burlingame, 1998). When used as a pre- and post-test, the *OQ45.2* is sensitive to changes in reported distress, functioning in interpersonal relationship, and functioning in important roles (Whipple, et al., 2003).

The results of two studies confirm the *OQ45.2* as able to detect symptom changes (Lambert, et al., 2001; Whipple, et al., 2003). Whipple, et al. (2003), conducted a

correlation study examining the use of effects of routine outcome measures to improve mental health therapy effects. The authors found that providing early indication of treatment failure, via *OQ45.2*, resulted in clients achieving superior mental health counseling outcomes. This study along with investigations by Whipple, et al. (2003) and Lambert, et al. (2001), indicated that clients showed marked improvement when the therapist utilized progress feedback from outcome measures, compared to clients whose therapist was not provided with feedback. When therapists presented the poor response participants with feedback on their progress, those participants' recovery rates increased from 25% to 49%, and deterioration rates dropped from 19% to 8%. The investigators found that monitoring counseling outcome throughout the course of therapy leads to improved clinical outcomes (Whipple, et al., 2003; Lambert, et al., 2005).

A limitation of traditional outcome measures is that they focus on impairments and levels of psychological disorder rather than on growth and development. Also, administration and scoring of pencil-and-paper measures is time-consuming and frequently plagued with delays in processing results. According to Leibert (2006), the most effective mental health counseling outcome measure is one that reaches the most diverse clients and is normed. The rationale behind this statement is that it is more efficient and effective to offer one outcome measurement to all clients. Not only can the data from the outcome measure inform the therapist and client about symptom improvement, but also it can potentially help the clinic secure continued funding. Unlike measurements that include multiple raters and different measures, a standardized, normed, self-report instrument limits the bias to that of the client.

Summary

The reviewed studies pointed out the importance of the Transtheoretical Model to university mental health services. With increasing demands for campus mental health services, higher education leaders need tools and strategies for effectively allocating limited resources (Erder-Baker, Aberson, Barrow, & Draper, 2006; Lacour & Carter, 2002; Rudd 2004). Understanding indicators of treatment success or failure could lead to more effective treatment placement for students, and more efficient use of limited campus mental health services (Dworkin & Lyddon 1991; Lacour & Carter, 2002; Lawe, Penick, Raskin, & Raymond, 1999).

As demonstrated in the literature review, there is a relationship between low client motivation and poor counseling outcomes (Derisley & Reynolds, 2000; Prochaska, DiClemente, & Norcross, 1992; Principe, Marci, Glick, & Ablon, 2006; Prochaska, Velicer, DiClemente, & Fava, 1988; Rochlen, Rude, & Baron, 2005; Smith, Subich, & Kalodner, 1995). The present study explores the efficacy of a yet non-investigated, “five-item stages of change scale”, based on the Transtheoretical Model, to predict counseling outcome at a university.

CHAPTER THREE

RESEARCH DESIGN

The present chapter describes the research design and methods for exploring the research question, primary hypothesis, and secondary hypotheses. The research question was as follows: Are college student outcomes in a university mental health clinic different for at least one of five motivation groups? The primary hypothesis corresponded to the research question. The three secondary hypotheses explored the relationship between the five motivation groups and covariates for the primary hypothesis.

The primary hypothesis and three secondary hypotheses guided the study as follows:

- Primary hypothesis

Null: All motivation groups are equal in counseling outcome (difference in pre- and post-test *OQ45.2* scores), controlling for the percentage of counseling appointments attended, students attending compulsory counseling due to campus judicial proceedings, and students receiving counseling from a supervised intern.

- Secondary hypothesis 1

Null: All motivation groups are equal in the percentage of counseling appointments attended, controlling for students attending compulsory counseling due to campus judicial proceedings and students receiving counseling from a supervised intern.

- Secondary hypothesis 2

Null: All motivation groups are equal in incidences of compulsory counseling due to campus judicial proceedings, controlling for the percentage of counseling appointments attended and students receiving counseling from a supervised intern.

- Secondary hypothesis 3

Null: All motivation groups are equal in having received treatment by a supervised intern, controlling for the percentage of counseling appointment attended and students attending compulsory counseling due to campus judicial proceedings.

Overview of Research Design

The present quantitative study employed a five-group, pre-test post-test design. A pre-test post-test design compares groups on a pre-test measurement of a variable, a treatment, and a post-test measurement on the same variable measured in the pre-test (Cresswell, 2003). The present study used unobtrusive methods to gather the study data. Measures are unobtrusive when participants are not aware that they are being researched (Webb, Campbell, Schwartz, & Sechrest, 2000). Unobtrusive data gathering, such as the researcher's use of existing mental health counseling records, allowed data collection without altering the subjects' natural course of events. The study included data from intake questionnaires gathered in the course of treatment at a four-year liberal arts, public university in the Southeastern part of the United States, from academic years 2007/2008

and 2008/2009. The researcher did not report any identifying data for any subjects; only aggregate data was reported. The investigator reviewed counseling case file materials gathered in the course of students' treatment years by professional clinical staff and supervised interns.

The study used a single-stage stratified grouping to determine subjects. The single-stage sampling procedure was appropriate for this study because it required dividing the population into strata based on the researcher's pre-selected variables (McMillan & Schumacher, 2006). To follow this strategy, the population consisted of all students who visited the university mental health between June 2007 and May 2009. In this study, the subjects consisted of individuals who visited the mental health clinic between 3 and 7 sessions at the university mental health clinic during academic years 2007/2008 and 2008/2009. The reason for selecting a 3-7 sessions parameter was that the upper limit of the range captured the research sites' mean number of sessions. The mean number of counseling sessions at the research site was 6.1 (M. Vinson, director of the research site mental health clinic, personal communication, March 2009). The lower limit of 3 sessions allowed for outcome data that reflected a minimum treatment exposure of an initial triage session and two full-length sessions. The investigator collected data from the stated time parameters (2007/2008 and 2008/2009) because the research site began using the "five-item stages of change scale" at the beginning of the 2007/2008 academic year. The strata utilized in the single-stage stratified grouping were the five Transtheoretical Model stages of change: precontemplation, contemplation, preparation, action, and maintenance (DiClemente, 2007; Prochaska & DiClemente, 1986; Prochaska

& Norcross, 2006). These stages were used through the “five-item stages of change scale” to determine the five motivation groups.

The primary hypothesis included one primary independent variable, client motivation, with five motivation levels. The levels were grouped as: precontemplation, contemplation, preparation, action and maintenance. The dependent variable was counseling outcome as demonstrated by symptom improvement. The investigator measured symptom improvement via changes in pre- and post-test *OQ45.2* scores. The investigator used an analysis of covariance (ANCOVA), to determine whether college student outcomes differed for at least one of five motivation groups. The ANCOVA controlled for the influence of three covariates. The covariates were: (a) the percentage of mental health counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff.

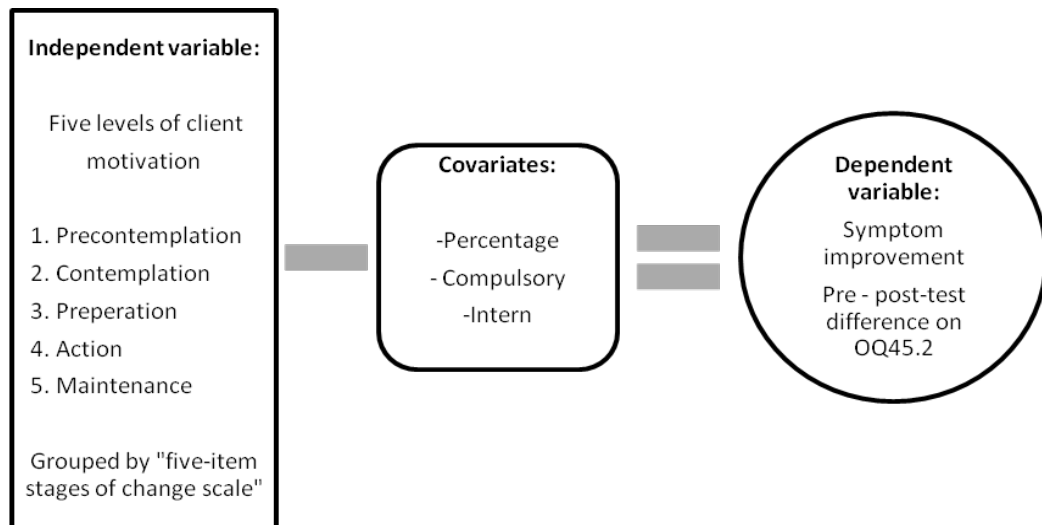


Figure 3.1

Conceptual Framework for the Primary Hypothesis

The primary hypothesis, as depicted in Figure 3.1, stated that the client motivation groups were equal in symptom improvement. The “five- item stages of change scale” grouped subjects into one of five motivation levels. The dependent variable, counseling outcome as demonstrated by symptom improvement, was evidenced by pre- and post-test differences in *OQ45.2* scores. In an effort to isolate the influence of client motivation on symptom improvement, the investigator controlled for the influence of three covariates. The three covariates were: percentage of counseling appointments attended, students attending compulsory counseling due to campus judicial proceedings, and students receiving counseling from an intern.

For secondary hypotheses 1, the investigator used a Poisson regression to compare the five motivation groups for the dependent variable: the percentage of mental

health counseling appointments attended. The model controlled (a) for whether the student received compulsory counseling due to a campus judicial sanction, and (b) whether the student received counseling from a supervised graduate intern versus professional staff.

For secondary hypothesis 2, the investigator employed a logistic regression to compare the five motivation groups for the dependent variable: whether the student received compulsory counseling due to campus judicial sanction. The covariates were (a) the percentage of counseling appointments attended, and (b) whether the student received counseling from a supervised graduate intern versus professional staff.

For secondary hypothesis 3, the investigator used a logistic regression to compare the five motivation groups for the dependent variable: whether the student received counseling from a supervised graduate intern versus professional staff. The covariates were (a) the percentage of counseling appointments attended, and (b) whether the student received compulsory counseling due to campus judicial sanction. Prior to data collection, the researcher obtained IRB approval from the research site university and the researcher's university of tuition (see appendices A and B).

Research Site

The research site was a university mental health clinic at a public liberal arts and sciences university located in the Southeastern part of the United States. During the academic year 2007/2008, the research site enrolled 11,316 students; graduate programs enrolled 1,393 of those students. The majority of the students (65.7%) were female, with

3,208 students living on campus. Annual full-time undergraduate in-state tuition costs were \$8,400. Annual full-time out-of-state tuition costs were \$20,418. The range of Scholastic Aptitude Test (SAT) scores for entering students was 1160–1280, with an average score of 1221 (Fact Book, 2008).

In academic year 2008/2009, the university enrolled 11,367; graduate programs enrolled 1,583 of those students; 66.2% of all students were female; and 3,202 of the students resided in on-campus housing. Annual full-time undergraduate in-state tuition costs were \$8,400. Annual full-time out-of-state tuition costs equaled \$20,418. The range of Scholastic Aptitude Test (SAT) scores for entering students was 1140–1300, with an average score of 1221 (Fact Book, 2009).

The university used the Cooperative Institutional Research Program's (CIRP) *Freshmen Survey* to collect demographic and academic information on incoming students. According to the 2008 CIRP survey, the majority of full-time freshmen entered the university at age 18 or 19. The university's students differed from similar university students in several ways. The university's percentage of students earning a B average in high school was higher than that of similar universities (73% versus 58%). Additionally, the research site had more entering students who planned to pursue graduate studies than do similar universities (83% versus 67%). Compared to other institutions, the research site university enrolled more Caucasian students (90% versus 75%). The 2008 freshman class was composed of 35.3% men and 64.7% women. Finally, fewer students at the university (49% versus 65%), compared to similar institutions, reported having financial concerns (CIRP, 2008).

Subjects

The investigator reviewed one university's existing mental health clinic data from academic years 2007/2008 and 2008/2009. This time period was used because it was during these years the research site utilized the "five-item stages of change scale" (see Appendix C), the grouping mechanism for the study. The university mental health clinic conducted over 5,600 counseling sessions per year, in academic years 2007/2008 and 2008/2009, yielding 1500 individual counseling case files. The demographics of all individuals seeking clinical services in academic years 2007/2008 and 2008/2009 are in Table 3.1.

Table 3.1

Mental Health Clinic Client Demographics for Research Site

Mean Age							
2007/2008	20.3						
2008/2009	20.7						

Gender % (n)	Male	Female	Did not Answer	N			
2007/2008	30% (283)	70% (670)	0% (0)	100% (953)			
2008/2009	30% (296)	69% (674)	1% (5)	100% (975)			

Class % (n)	Freshman	Sophomore	Junior	Senior	Graduate Student	Other or Did not Answer	N
2007/2008	29% (277)	27% (262)	22% (203)	17% (167)	3% (31)	2% (17)	100% (953)
2008/2009	25% (248)	25% (244)	24% (233)	20% (193)	4% (42)	2% (15)	100% (975)

Ethnicity/ Culture % (n)	Caucasian	Black/ African American	Hispanic American	Asian American	Native American	Other or Did not Answer	N
2007/2008	86% (820)	5% (47)	1% (11)	1% (11)	0% (0)	7% (68)	100% (953)
2008/2009	85% (828)	5% (45)	2% (19)	1% (12)	<1% (2)	7% (69)	100% (975)

The demographics in Table 3.1 reflect that the most common users of the clinics' services were Caucasians, females, and undergraduate students. Freshmen constituted the largest group of users. Students attended counseling sessions with a variety of presenting problems. According to the site clinic director, the most common issues included depression, anxiety, stress, adjustment problems, relationships, disordered eating, and

substance abuse concerns (M. Vinson, director of the research site mental health clinic, personal communication, March 24, 2009). The user demographics approximated demographics for the university's student body.

The investigator reviewed information gathered in the standard course of students' mental health treatment by professional staff members and supervised graduate interns. All of the required data existed in the counseling case files. The university mental health clinic office manager, the gatekeeper for the clinic's data, used a computer database to retrieve the case files of all clients over age 18 who attended 3-7 sessions during academic years 2007/2008 and 2008/2009. The process of using all subjects who visited a campus mental health within a specified number of sessions and from a certain period was also used by Erdur-Baker, Aberson, Barrow, and Draper, (2006) and Rochlen, Rude, and Baron, (2005).

There were 331 subjects who met the study criteria. Each case was assigned a case number for the purposes of this study. The counseling case files remained at the study site at all times. The subjects in the present study were stratified into five groups by the "five-item stages of change scale". The five groups corresponded to the Transtheoretical Model's five stages of change. The Transtheoretical Model's stages of change are precontemplation, contemplation, preparation, action and maintenance, (DiClemente, 2005; Prochaska & DiClemente, 1986; Prochaska & Norcross, 2006).

In academic year 2007/2008, the mean number of sessions at the research site mental health clinic was 6.1. The mean number of sessions in 2008/2009 was 5.9 (M. Vinson, director of the research site mental health clinic, personal communication, July 7,

2009). Benton, Robertson, Tseng, Newton, and Benton (2003) conducted a longitudinal study, from 1988 to 2001, utilizing 13,257 university student participants and found that the mean number of sessions was 5.98. Rockland-Miller and Eells (2006) reported that the median number was 4-5 sessions. The investigator sought counseling outcome data from the *OQ45.2* for at least 3 sessions in order to capture clinical contact beyond the brief triage session (initial contact), and subsequent intake session. Selecting a lower end cut-off of 2 sessions would have included a pre- and post-test with only one full-length therapy session. A lower limit of 3 sessions allowed the outcome data to reflect the initial triage session and 2 full-length sessions. The upper limit of 7 sessions was selected in order to include the research site's mean number of cases and to find cases representative of U.S. university mental health clinic norms.

The following section includes tables and descriptions of the 331 subjects' racial/ethnic and gender demographics. Table 3.2 shows racial and ethnic demographics for the subjects.

Table 3.2

Race/Ethnicity of Subjects

Race/Ethnicity	<i>n</i>	Percent
Caucasian	263	79.5
Asian American	24	7.3
African American	14	4.2
Hispanic American	5	1.5
Other	9	2.7
No response	16	4.8
<i>N</i> =	331	100

Caucasians were the largest group in the study and comprised 79.5% of subjects ($n = 263$). The next largest group was Asian Americans ($n = 24$, 7.3%). African American students made up 4.2% of the study subjects ($n = 14$). Hispanic Americans comprised 1.5% ($n = 5$) of subjects. Subjects indicating “other” represented 2.7% ($n = 9$) and 4.8% of subjects did not answer the race/ethnicity item ($n = 16$). Table 3.3 displays the number and percentage for subjects’ gender.

Table 3.3

Gender of Subjects

Gender	<i>n</i>	Percentage
Female	229	69.2
Male	102	30.8
<i>N</i> =	331	100.0

The data showed that the majority of subjects were female ($n = 229$, 69.2%). The male subjects comprised 30.8% of the subjects ($n = 102$). The investigator used the following processes to collect the study data.

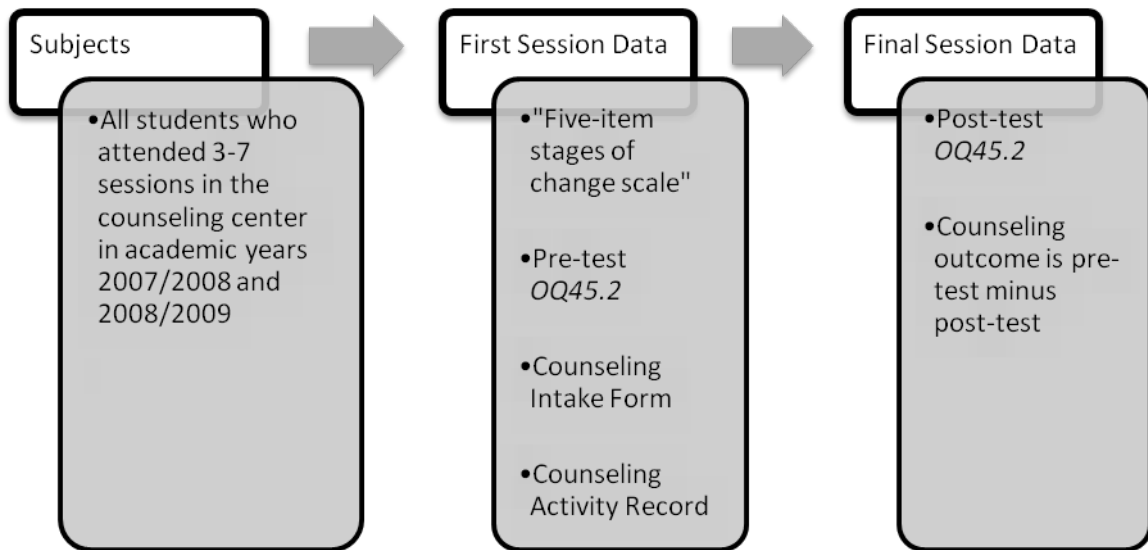


Figure 3.2

Subjects and Schedule of Instrument Administration

Figure 3.2 illustrates the procedures for the administration of the “five-item stages of change scale” (independent variable). The figure also shows the pre- and post-test administrations of the *OQ45.2*, the differences of which result in the dependent variable, counseling outcome. Subjects completed the “five-item stages of change scale” during their first visit to the university mental health clinic. At the first visit, via the center’s walk-in triage process, the subjects also completed the pre-test administration of the *OQ45.2*, and the Counseling Intake Form. The mental health counselor completed the counseling activity record. All clients at the research site completed the *OQ45.2* prior to each visit. The research site administered the *OQ45.2* prior to each counseling session in order to receive more immediate feedback on client progress. This process was conducted

so therapists did not have to wait until the next session to address significant changes in scores with clients (Lambert, Okiishi, Finch, & Johnson, 1998).

Instrumentation

The researcher collected all data from existing mental health counseling records at the research site. The data was collected from the “five-item stages of change scale”, the *Outcome Questionnaire 45.2 (OQ45.2)* (Lambert, et al., 1996) (see Appendix D), the Counseling Activity Record (see Appendix E), and the Counseling Intake Form (see Appendix F).

“Five-Item Stages of Change Scale”

The “five-item stages of change scale” (see appendix C) existed on the research site’s Counseling Intake Form (see Appendix F), a self report questionnaire that subjects completed prior to beginning mental health counseling at the research site. ”The investigator used the “five-item stages of change scale” to group subjects into the five Transtheoretical motivation groups. The “five-item stages of change scale” placed students into the ordered Transtheoretical Model stages of change categories: precontemplation, contemplation, preparation, action, and maintenance (DiClemente, 2007; Prochaska & DiClemente, 1983, 1986; Prochaska & Norcross, 2006).

Clients completed the scale by checking a box next to one of five statements that reflected their current motivation to change. The five items on the scale are: As far as I’m concerned, I do not have any problems that I need to change, I am aware of some

problems and am considering beginning to work on them, I have worked on problems unsuccessfully but intend to continue trying, I am currently taking steps to overcome the problems that have been bothering me, and I have already overcome some problems and want help now to avoid backsliding. The five statements existed from lowest motivation level to highest, corresponding to the Transtheoretical Model's stages of change, with the precontemplation stage indicating the lowest motivation to change and maintenance indicating the highest motivation to change. The potential usefulness of a five-item scale was in its brief administration and scoring time. Clinicians scored the scale by observing which one of the five motivation statements a student endorsed on the Counseling Intake Form (see Appendix F).

At the time of this study, there were no documented studies using the "five-item stages of change scale" to identify client motivation. Also, the authorship of the "five-item stages of change scale" was undocumented. The only available information on the origin of the "five-item stages of change scale" was circulated on the Association for University and College Counseling Center Directors (AUCCCD) Listserv. The researcher provided the identifying title of the scale as the "five-item stages of change scale". The research site began using the "five-item stages of change scale" for all clients in August 2007 as a way to gather information on clients' initial stages of change, i.e. motivation level. Because of therapists' time constraints at the research site, administering and scoring the traditional 32-item *Stages of Change Questionnaire* was deemed as time prohibitive. Therefore, the "five-item stages of change scale" was chosen as a brief

alternative (M. Vinson, director of the research site mental health clinic, personal communication, March 2009).

Since the “five–item stages of change scale” did not appear in published studies, there were no reports on the reliability of the instrument. In efforts to understand the origin of, and the extent to which the scale is used, the researcher communicated with Carlo C. DiClemente, a founding and leading Transtheoretical Model theorist (see Appendix G). DiClemente has published over 48 articles and books on the Transtheoretical Model from 2001 to 2009. DiClemente, a cofounder of the Transtheoretical Model and a leading expert on the stages of change, supported the use of the “five–item stages of change scale” in the present study. He stated that the “five–item stages of change scale” provided a way to classify people into the five stages of motivation to change (personal communication, January 2008). Rollnick, Heather, Gold, and Hall (1992) further substantiated the use of abbreviated readiness to change questionnaires.

Counseling Intake Form

The Counseling Intake Form (Appendix F) was the research site’s self-report questionnaire that included the subjects’ names, contact information, emergency contact information, and academic and demographic information. The Counseling Intake Forms also included items for psychological counseling and medical history, substance use history, suicide risk, current involvement in a campus judicial process, and the client’s account of why they are seeking mental health services. Additionally, The Counseling

Intake Form included the “five-item stages of change scale” (see Appendix C), which is the motivation grouping scale for this study. The Counseling Intake Form provided data for one covariate: whether the student received compulsory counseling due to campus judicial sanction. Subjects completed The Counseling Intake Form prior to the first counseling session.

Counseling Activity Record

The Counseling Activity Record (Appendix E) was the research site’s record of the contact dates and the services provided for each client. The Counseling Activity Record was the front sheet of the clients’ counseling case files and was updated throughout the subject’s participation in mental health. The Counseling Activity Record included the subjects’ names, the names and title of the supervised intern or professional staff member who provided counseling, a list of the subjects’ contacts with the research site and the corresponding dates for each contact. If a client did not attend a previously scheduled appointment, the intern or staff member indicated the non-attendance. The counseling Activity Record yielded the data for two covariates: (a) the percentage of mental counseling appointments attended and (b) whether the student received counseling from a supervised graduate intern versus professional staff.

The investigator determined the percentage of appointments attended by dividing the number of sessions attended by the total number of sessions scheduled. The investigator also established whether the subject received counseling from a supervised graduate intern versus professional staff by reviewing the name of the counselor

providing services on each Counseling Activity Record. The researcher was employed at the research site during the time of this study and knew which counselors were supervised interns versus professional staff members.

Outcome Questionnaire 45.2

Clinical outcome measures, for this study, came from the *Outcome Questionnaire 45.2 (OQ45.2)* (see Appendix D). Subjects completed the *OQ45.2* prior to the first counseling session. This instrument is a 45-item self-report questionnaire with three subscales. The instrument is a progress-tracking measure designed for repeated administration to assess ongoing therapeutic change, as well as change at termination (Mueller, Lambert, & Burlingame, 1998). The three subscales address individual, interpersonal, and social role functioning. The subscales are Subjective Discomfort, with items such as “I feel blue”; Interpersonal Relationships, offering ratings for items such as “I feel lonely”; and Social Role Performance, where clients can self-rate on statements such as “I feel stressed at work/school” (Whipple, et al., 2003, p. 61). The *OQ45.2* provides a total score based on all 45 items, as well as scores for three subscales. All items are on a five-point Likert scale, with higher scores indicating higher mental health symptom severity.

Since the development of outcomes measures such as the *OQ45.2*, observing mental health counseling progress has been improved (Lambert, Hansen, et al., 1996). Pre- and post-test administrations of the *OQ45.2* provide an effective measurement of mental health counseling outcome (Lambert, Burlingame, et al., 1996; Vermeersch, et al.,

2004; Whipple, et al., 2003). To establish pre- and post-test *OQ45.2* scores, mental health clients completed the questionnaire at each visit to the mental health clinic, or at the first and last counseling session (Draper, Jennings, Baron, Erdur, & Shankar, 2002; Lambert, et al., 1996; Lambert, et al., 2005; Whipple, et al., 2003). The reliable change index for the *OQ45.2* is 14 (Lambert, Burlingame, et al., 1996), meaning that significant symptom reduction is evidenced by a post-test score of at least 14 points lower than the pre-test score. Clients completed the *OQ45.2* at the beginning of each visit to the research site university mental health clinic.

Doerfler, Addis, and Moran (2002) characterized the *OQ45.2* as a well-designed measure of subjective distress with effective psychometric characteristics. Concerning the usefulness of the *OQ45.2* for measuring change in this study, previous researchers indicated that this instrument is sensitive to measuring therapeutic change in university mental health clinic settings (Lambert, Burlingame, et al., 1996; Lambert, Harmon, Slade, Whipple, & Hawkins, 2005; Vermeersch, et al., 2004). Harmon, Hawkins, Lambert, Slade, and Whipple (2005) stated that the *OQ45.2* filled an important gap in the current emphasis on quality assurance in mental health services. The authors described the value of the *OQ45.2*, noting the importance of tracking patient outcomes in order to improve psychological services in “real time” (p. 176). The authors discussed recent interest in patient-focused research that emphasized the importance of routine and systematic evaluation of patient progress throughout the course of therapy (Harmon, Hawkins, Lambert, Slade, & Whipple, 2005).

The *OQ45.2* has high internal consistency, Chronbach's alpha = .93, and test-retest reliability of .84 (Lambert, Burlingame, et al., 1996; Miller, Duncan, Brown, Sparks, & Claud, 2003). Lambert, Hansen, et al. (1996) and Whipple, et al. (2003) reported moderate to high validity coefficients between the *OQ45.2* and other well-established measures of depression, anxiety, and adjustment. For example, the *OQ45.2* demonstrated strong concurrent validity coefficients ranging from .55 to .88 ($p < .01$) on the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), Symptom Checklist 90 – Revised (Derogatis, 1992), Zung Depression Scale (Zung, 1965), Social Adjustment Scale (Weissman and Bothwell, 1976), Inventory of Personal Problems (Horowitz, 1988), and State-Trait Anxiety Inventory (Spielberger, 1983). Investigators found that changes in the subscale areas are valid indicators of successful treatment outcome (Kazdin, 1994; Lambert, Burlingame, et al., 1996; Mueller, Lambert, & Burlingame, 1998; Lambert & Hill, 1994; Whipple, et al., 2003).

Data Collection

The following section contains data collection procedures for the study. All students that visited the research site university mental health clinic completed intake questionnaires, the Counseling Intake Form (Appendix F), Counseling Activity Record (Appendix E), and *OQ45.2*. (Appendix D). The Counseling Intake Form (Appendix F) included the motivation grouping scale, which was the “five-item stages of change scale” (see Appendix C). Research site clients completed the “five-item stages of change scale” by checking a box next to one of five statements that reflected their current motivation to

change. The five statements existed in order from lowest motivation to highest, corresponding to the transtheoretical stages of change. Clients also completed the *OQ45.2* (Appendix D) pretest as part of the intake procedure. Returning clients completed the *OQ45.2* prior to each visit to the campus mental health clinic. The final *OQ45.2* administration was used as the post-test. Subjects completed the *OQ45.2* score before each visit. The pre- and post-test measures were the *OQ45.2* administrations completed prior to the first and final counseling sessions.

The research center clients' responses on the Counseling Intake Form (Appendix F) and the Counseling Activity Records (Appendix E) also revealed the covariate data. The covariates were: (a) the percentage of mental counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff members.

The first covariate was the percentage of appointments attended. The researcher calculated this ratio from data on the Counseling Activity Record (Appendix E). In each case file, the research site counselors recorded all missed appointments as cancellations, no-shows, or rescheduled appointments. To measure this variable, the investigator divided the number of attended sessions by the number of sessions scheduled.

The second covariate was whether the mental health clients received compulsory counseling (Appendix H). Some students who utilized the university mental health clinic do so to fulfill requirements following a campus sanction. Campus policies include a requirement for counseling when a student has a campus policy violation involving

substance abuse, or an off-campus legal altercation involving alcohol or violence. For the present study, the investigator reviewed case files and recorded whether the subjects indicated such a referral when asked on the standard intake questionnaire. Additionally, the investigator searched the case file for a referral letter from a judicial officer, or indications of whether the student sought a letter from counseling confirming mandated treatment.

The third covariate was whether the student received counseling from a supervised graduate intern versus a professional staff member. The name of the clinician providing services was noted on the Counseling Activity Record (see Appendix E) in each student's mental health counseling case file. The investigator determined from the Counseling Activity Record whether a supervised intern counseled the student. Some students, throughout their course of mental health treatment from the research site clinic, received treatment from more than one clinician. In cases where a student saw an intern and a professional staff member, the case was categorized as seen by a staff member if the staff member saw the student three or more times, out of the 3-7 sessions parameter. See Figure 3.3 for the data collection process.

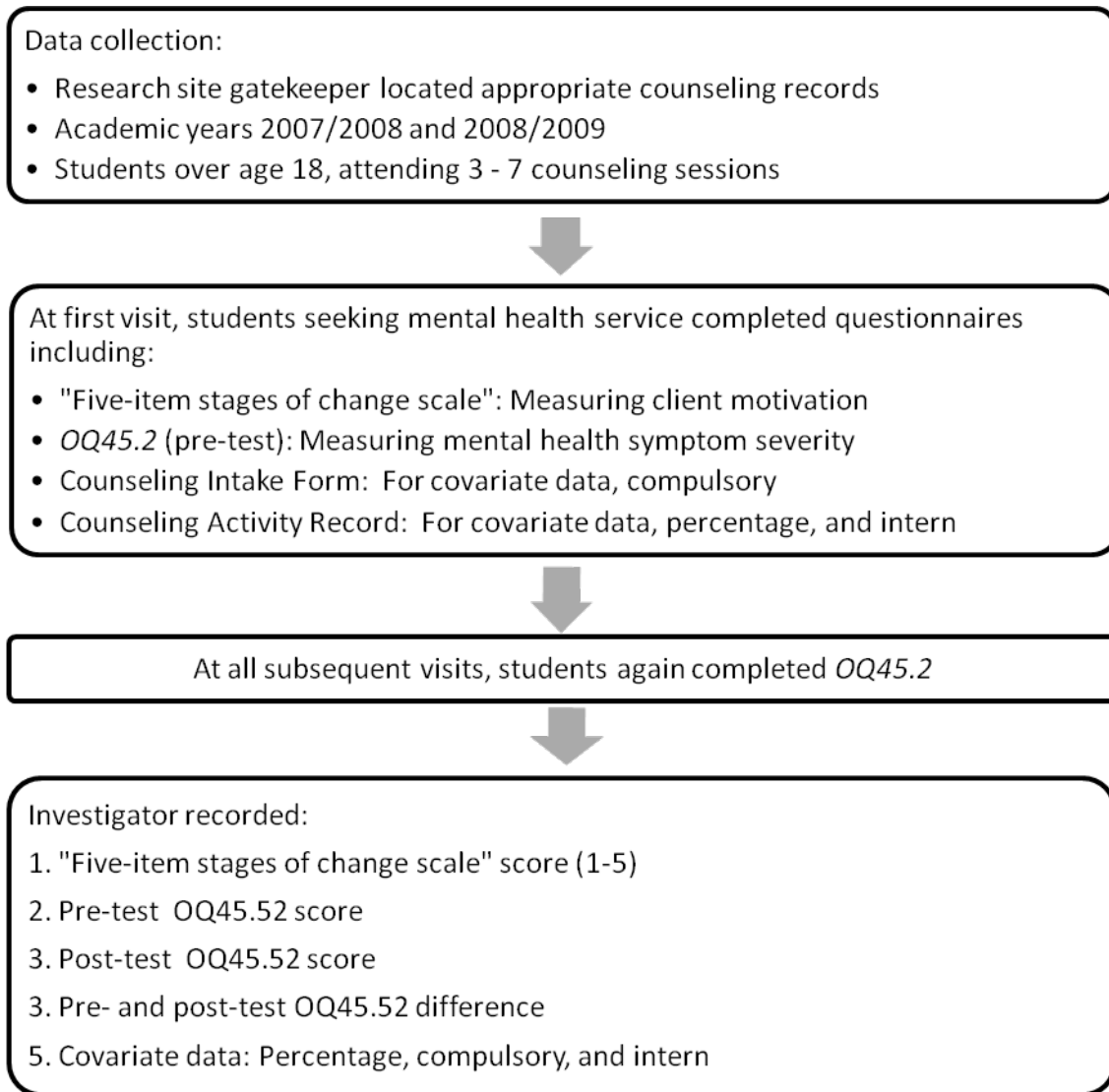


Figure 3.3

Data Collection Processes

Figure 3.3 depicts data collection processes. The research site gathered pertinent data according to their standard course of mental health counseling procedures. A research site gatekeeper identified mental health counseling files within the study criteria. The investigator recorded variables without identifiers.

The investigator recorded the data on a spreadsheet (see Figure 3.4). Subjects were grouped according to their endorsement of one of five statements on the “five-item stages of change scale” corresponding to the five Transtheoretical stages of change readiness. The investigator labeled the groups in order, according to the corresponding transtheoretical stages: Group 1: Precontemplation; Group 2: Contemplation; Group 3: Preparation, Group 4: Action, or Group 5: Maintenance.

Case #	Motivation Group	Pre-test <i>OQ45.2</i>	Post-test <i>OQ45.2</i>	Counseling Outcome pre- test minus post-test	Covariate: Compulsory No: 0 Yes: 1	Covariate: Intern No: 0 Yes: 1	Covariate: Percentage of appointments attended	Gender 1: Male 2: female 3: No answer	Race/ Ethnicity 1: Caucasian 2: Asian 3: Native American 4: African American 5: Hispanic 6: Other 7: No answer
Ex 001	3	80	65	15	0	1	75%	2	2

Figure 3.4

Example of Spreadsheet for Recording Data

The investigator recorded data on the spreadsheet noted in Figure 3.4. The notations included case number, motivation group, per “five-item stages of change scale”, and *OQ45.2* data including pre-test, post-test and pre-test post-test difference. The investigator indicated the initial *OQ45.2* score as pre-test, and the final *OQ45.2* score as post-test, with the difference between the pre-test and the post-test labeled as counseling outcome. The next three columns represent the covariates. The three covariates are: (a) the percentage of mental counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff member. The investigator labeled the covariates *Percentage*, *Compulsory*, and *Intern*. In addition, the investigator gathered data on race/ethnicity; this data is not being used for comparisons in this study.

Data Analysis

The investigator used a five-group pre- and post-test design to compare groups for one dependent variable, counseling outcome, determined by symptom improvement. The study had one independent variable, client motivation as measured by the “five-item stages of change scale”. The “five-item stages of change scale” yielded five motivation groups. The five groups represented the Transtheoretical Model’s five stages of change: precontemplation, contemplation, preparation, action and maintenance (DiClemente, 2005; Prochaska & DiClemente, 1986; Prochaska & Norcross, 2006).

Variables

The following subsection lists the variables for both primary and secondary hypotheses. The primary hypothesis was:

Null: All motivation groups are equal in counseling outcome (difference in pre- & post-test *OQ45.2* scores), controlling for the percentage of counseling appointments attended, students attending compulsory counseling due to campus judicial proceedings, and students receiving counseling from a supervised intern

Independent Variable

The independent variable, varying five ways, consisted of Prochaska's and DiClemente's (1985) five transtheoretical stages of change readiness, as grouped by a "five-item stages of change scale". The five-item grouping scale placed students into the ordered Transtheoretical stages of change motivation categories: precontemplation, contemplation, preparation, action, and maintenance (DiClemente, 2007; Prochaska & DiClemente, 1983, 1986; Prochaska & Norcross, 2006).

Dependent Variable

The dependent variable, counseling outcome, was the difference between pre- and post-test administrations on the *OQ45.2* (Lambert, Hansen, et al., 1996). The reliable change index for the *OQ45.2* was 14 (Lambert, Burlingame, et al., 1996), meaning that significant symptom reduction was evidenced by a post-test score at least 14 points lower than the pre-test score.

The first covariate was the percentage of mental health counseling appointments attended. The second covariate was whether the student received compulsory counseling due to campus judicial sanction. The third covariate was whether the student received counseling from a supervised graduate intern versus professional staff members. See Figure 3.5 for the variables addressed with the primary hypothesis.

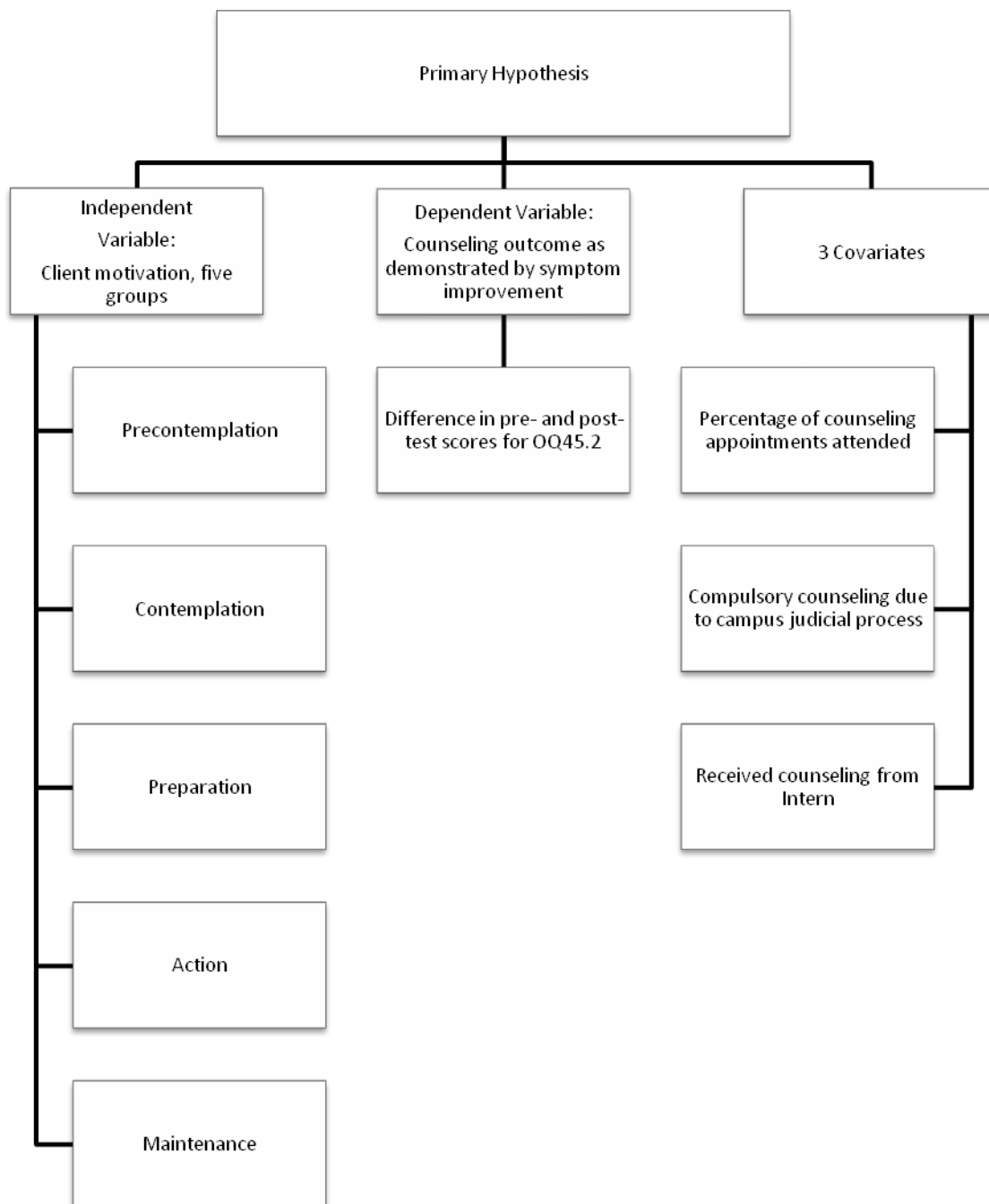


Figure 3.5

Variables for the Primary Hypothesis

Figure 3.5 shows the independent variable, the dependent variable, counseling outcome (difference in pre- & post-test *OQ45.2* scores), and the three covariates for the primary hypothesis. The three secondary hypotheses employed the same independent variable, client motivation, as the primary hypothesis. As listed below, each of the three covariates for the primary hypothesis became the dependent variables for the three secondary hypotheses.

Secondary Hypothesis 1

Null: All motivation groups are equal in the percentage of counseling appointments attended, controlling for students attending compulsory counseling due to campus judicial proceedings and students receiving counseling from a supervised intern.

Dependent Variable for Secondary Hypothesis 1. The percentage of mental health counseling appointments attended

Covariates for Secondary Hypothesis 1.

- Whether the student received compulsory counseling due to campus judicial sanction
- Whether the student received counseling from a supervised graduate intern versus professional staff. See Figure 3.6 for the variables addressed with the secondary hypothesis 1

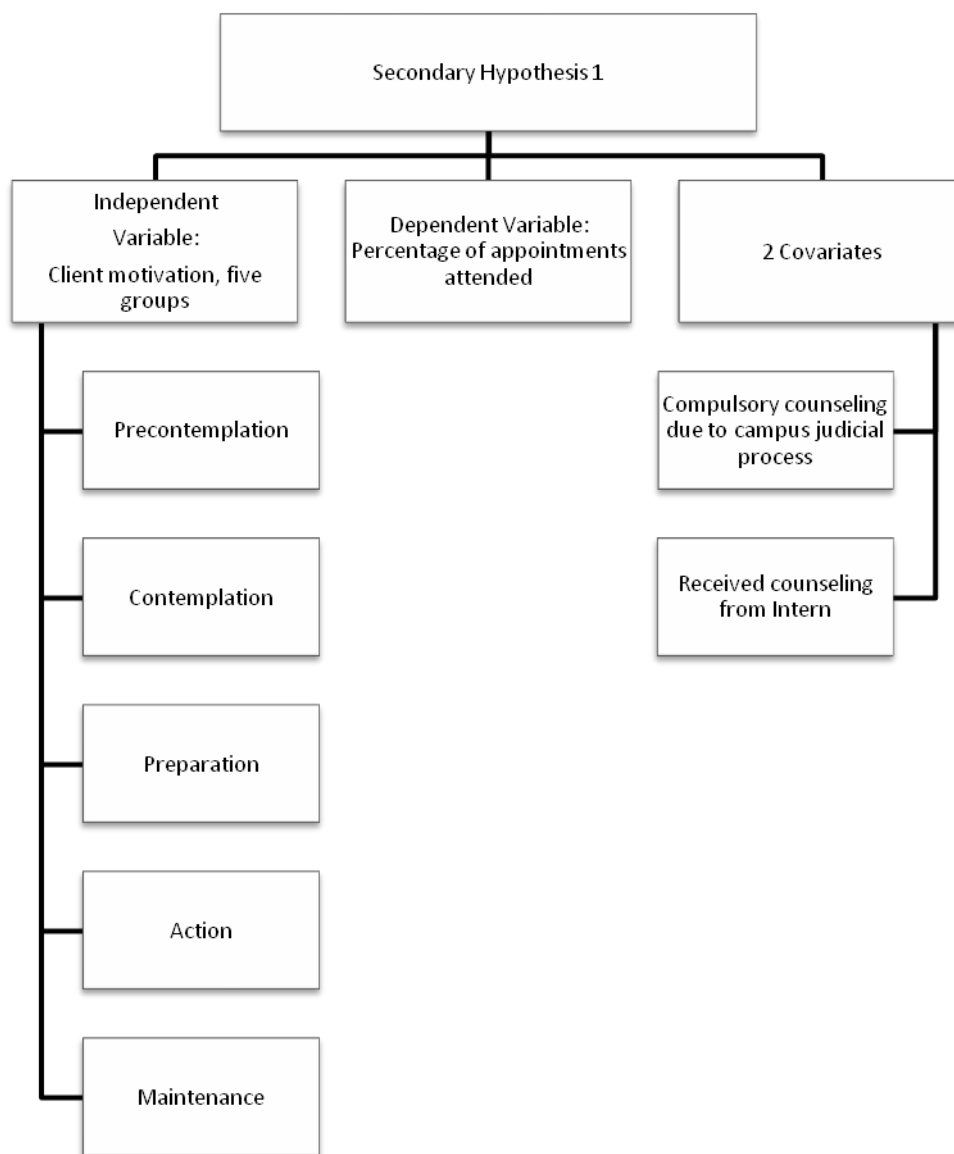


Figure 3.6

Variables for Secondary Hypothesis 1

Figure 3.6 shows the independent variable, the dependent variable, percentage of appointments attended, and the two covariates for the primary hypothesis.

Secondary Hypothesis 2

Null: All motivation groups are equal in incidences of compulsory counseling due to campus judicial proceedings, controlling for the percentage of counseling appointments attended and students receiving counseling from a supervised intern.

Dependent Variable for Secondary Hypothesis 2. Whether the student received compulsory counseling due to campus judicial sanction

Covariates for Secondary Hypothesis 2.

- The percentage of mental health counseling appointments attended
- Whether the student received counseling from a supervised graduate intern versus professional staff. See Figure 3.7 for the variables addressed with secondary hypothesis 3

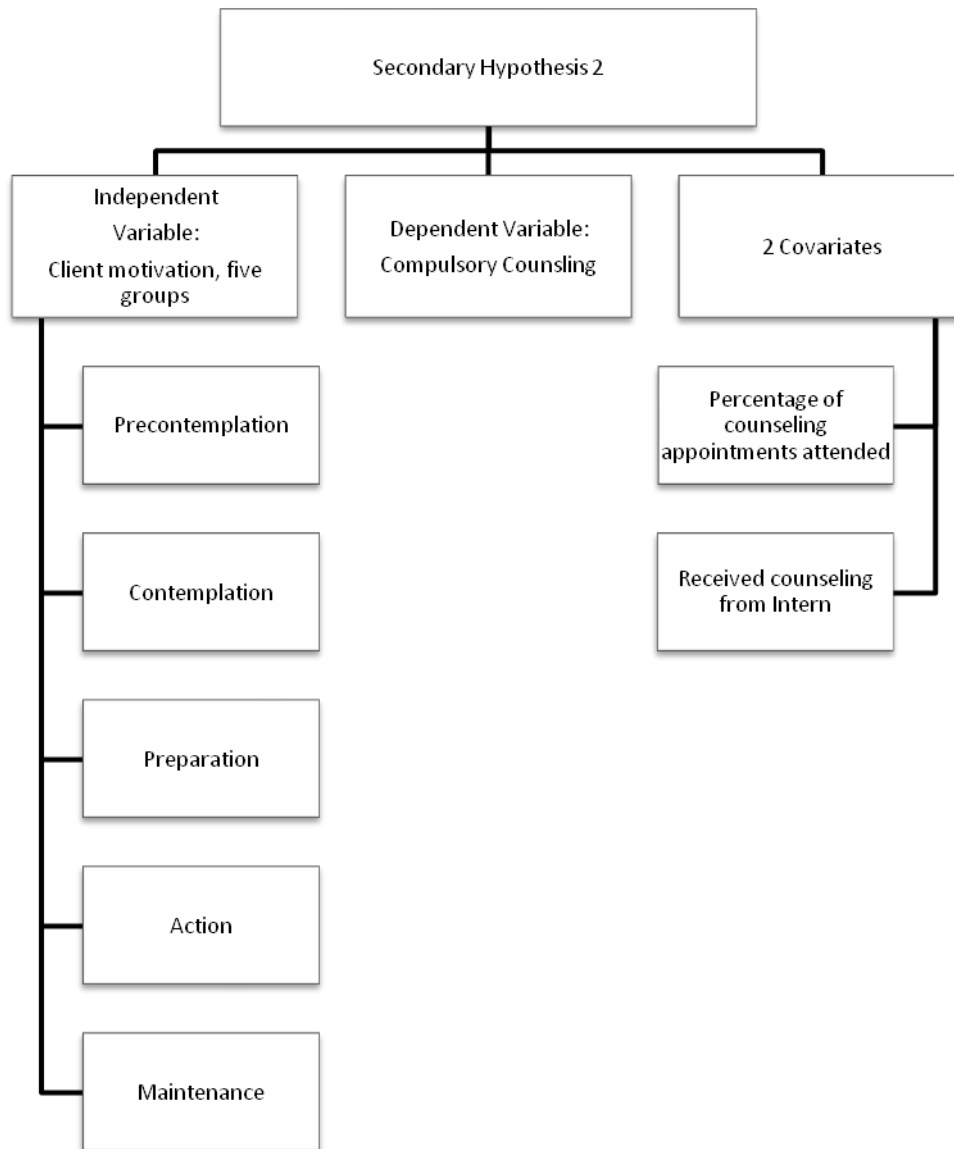


Figure 3.7

Variables for Secondary Hypothesis 2

Figure 3.7 shows the independent variable, the dependent variable, compulsory counseling, and the two covariates for the primary hypothesis.

Secondary Hypothesis 3

Null: All motivation groups are equal in having received treatment by a supervised intern, controlling for the percentage of counseling appointment attended and students attending compulsory counseling due to campus judicial proceedings.

Dependent Variable for Secondary Hypothesis 3. Whether the student received counseling from a supervised graduate intern versus professional staff

Covariates for Secondary Hypothesis 3.

- The percentage of mental health counseling appointments attended
- Whether the student received compulsory counseling due to campus judicial sanction. See Figure 3.8 for the variables addressed with secondary hypothesis 3.

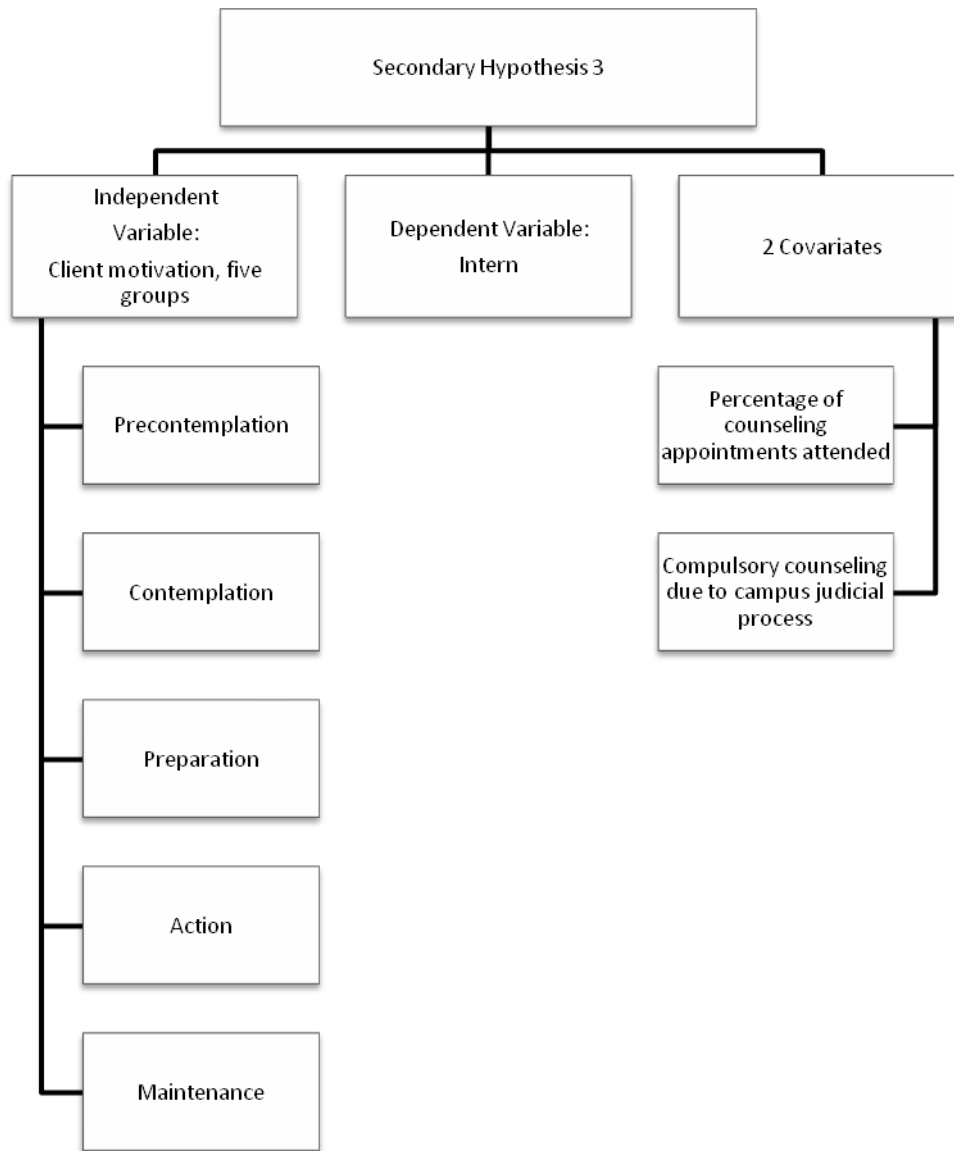


Figure 3.8

Variables for Secondary Hypothesis 3

Figure 3.8 shows the independent variable, the dependent variable, intern, and the two covariates for secondary hypothesis 3.

Primary Hypothesis

ANCOVA. The data analysis for the primary hypothesis required an analysis of covariance (ANCOVA). The purpose of the analysis was to determine whether college student outcomes in a university mental health clinic differed for at least one of five motivation groups. Based on subjects' endorsement of one of the five statements on the "five-item stages of change scale", the investigator assigned subjects to one of five motivation groups. For the dependent variable, the investigator used the changes in scores from pre- and post-test administrations of the *Outcome Questionnaire 45.2 (OQ45.2)* (see Appendix D) to determine symptom improvement, thereby measuring counseling outcome. The investigator compared the five groups for the dependent variable, counseling outcome, while controlling for the covariates. The three covariates were: (a) the percentage of mental health counseling appointments attended, (b) whether the student received compulsory counseling due to a campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff.

The investigator utilized the Statistical Package for the Social Sciences 16.0 (SPSS), a computer program used for statistical analysis, to conduct all analyses (SPSS, 2007). For the primary hypothesis, the investigator employed ANCOVA. ANCOVA is appropriate when comparing two or more groups on pre- and post-test differences to explore the relationship of one independent variable on dependent variables while controlling for covariates (Edwards, 1979). ANCOVA equalizes the influence of quantitative covariates across research groups (Keppel, 1991). According to Kirk (1982),

ANCOVA provides data as to whether, and to what extent, mean differences in pre- and post-test scores adjusted for covariates, differ across the group. The use of covariates reduced group variability not caused by the dependent variable (Kirk, 1982).

Additionally, ANCOVA adjusts initial group differences for quantitative covariates related to the dependent variable (McMillan & Schumacher, 2006).

The appropriate use of ANCOVA is based on the extent to which the data meet ANOCVA assumptions. If the analysis satisfies ANCOVA assumptions, ANCOVA adjusts the dependent variable scores for covariate differences among the five groups (Keppel, 1991). The assumptions underlying the use of ANCOVA are: (1) the dependent variable is normally distributed in the population for the independent variable and for any covariate and, (2) the variances of the dependent variable are equal across the research groups, (3) study subjects represent a random sample of the population, and each dependent variable score is independent from other dependent variable scores, and (4) for all groups, the covariate has the same amount of influence on the dependent variable (Green & Salkind, 2007).

The investigator conducted preliminary analyses to test the assumptions of ANCOVA. The investigator was unable to proceed with ANCOVA because the tests of the assumptions showed a violation of the homogeneity of variance assumption. Levene's Test of Equality of Error Variance Test ($\alpha < 0.05$) was significant ($p = .001$), indicating that the variance of counseling outcome, differences in pre- and post-test *OQ45.2* scores, was unequal across the motivation groups, particularly for the precontemplation group. Due to the violation of this assumption, the investigator employed a weighted ANCOVA

(W-ANCOVA), allowing up to five different group variances among the five motivation groups. W-ANCOVA accommodates heterogeneous variances by creating a model that uses weighted levels of variances for each group (Leech, Barrett, & Morgan, 2008).

Secondary Hypothesis One

Poisson Regression. Due to the non-normal distribution and the discrete dependent variable the investigator used a generalized linear model (GzLM) called a Poisson regression. The GzLM allowed the dependent variable to have a non-normal distribution (SPSS, 2008). Additionally, because the dependent variable was a percentage, i.e. percentage of appointments attended, the choice of Poisson regression was appropriate. Poisson regression is a model used when the analysis has a dichotomous dependent variable (Leech, Barrett, & Morgan, 2008). The dichotomous dependent variable for this hypothesis is the rate of attendance against appointments scheduled, the expectation of attendance. The Poisson regression models the rate of a variable against an expected rate for the same variable (Ott & Longnecker, 2001). The investigator utilized SPSS 16.0 to conduct the Poisson regression.

Secondary Hypothesis Two and Three

Logistic Regression. Secondary hypothesis 2 compared the five motivation groups for whether the student received compulsory counseling due to campus judicial sanction, controlling for the covariates: (a) the percentage of mental health counseling appointments attended and (b) whether the student received counseling from a supervised

graduate intern versus professional staff. Secondary hypothesis 3 compared the five motivation groups for whether the student received counseling from a supervised graduate intern versus professional staff, controlling for the covariates: (a) the percentage of mental health counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction.

The researcher required a logistic regression for secondary hypotheses 2 and 3 because the dependent variables required dichotomous, yes/no responses. A logistic regression is appropriate when comparing groups for one dependent variable that is dichotomous (McMillan & Schumacher, 2006). For secondary hypothesis 2, the dichotomous, yes/no response, dependent variable was whether the student received compulsory counseling due to campus judicial sanction. The binary response variable for secondary hypothesis 3 was whether the student received counseling from a supervised graduate intern versus professional staff. The logistic regression analysis uses an odds ratio to show the probability of the relationship between the independent variable and the dependent variable (McMillan & Schumacher, 2006).

Summary

The investigator posed the following question to guide the study: Are college student outcomes in a university mental health clinic different for at least one of five motivation groups? The primary hypothesis corresponded to the research question. The three secondary hypotheses explored the relationship between the five motivation groups and covariates for the primary hypothesis. Data for this quantitative study came from

materials gathered in the course of treatment at a four-year liberal arts and sciences, public university in the Southeastern part of the United States, from academic years 2007/2008 and 2008/2009. The study subjects were 331 university students, over age 18, who attended 3-7 sessions in a university mental health clinic.

The investigator used a five-group pre- and post-test design to compare five motivation groups for one dependent variable. The study employed a yet non-investigated “five-item stages of change scale” as the grouping mechanism. For the primary hypothesis, the dependent variable was counseling outcome. The investigator measured counseling outcome by determining the difference between pre- and post-test administrations of the *OQ45.2* (Draper, Jennings, Baron, Erdur, & Shankar, 2002; Lambert, et al., 1996; Vermeersch, et al., 2004; Whipple, et al., 2003). The investigator employed an ANCOVA to compare the five groups for counseling. The three secondary hypotheses compared the five groups for each of the three covariates of the primary hypothesis: (a) the percentage of mental health counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff. Secondary hypothesis one employed a Poisson regression while secondary hypothesis two and three utilized logistic regression for analysis.

CHAPTER FOUR

PRESENTATION OF FINDINGS

The purpose of this chapter is to present analyses of data collected regarding whether college student outcomes in a university mental health clinic are different for at least one of five motivation groups. The five motivation groups were assigned by responses on the “five-item stages of change scale” (see Appendix C). The groups corresponded to the Transtheoretical Model’s five stages of change: precontemplation, contemplation, preparation, action and maintenance (DiClemente, 2005; Prochaska & Norcross, 2006). The first section of the chapter includes a description of the data. The second section contains the analysis and findings for the primary hypothesis and three secondary hypotheses. The third section provides a summary of the findings.

The primary hypothesis stated that all motivation groups were equal in counseling outcome (difference in pre- and post-test *OQ45.2* scores), controlling for the percentage of counseling appointments attended, students attending compulsory counseling due to campus judicial proceedings, and students receiving counseling from a supervised intern. Secondary hypothesis 1 stated that all motivation groups were equal in the percentage of counseling appointments attended, controlling for students attending compulsory counseling due to campus judicial proceedings and students receiving counseling from a supervised intern. Secondary hypothesis 2 stated that all motivation groups were equal in incidences of compulsory counseling due to campus judicial proceedings, controlling for the percentage of counseling appointments attended and students receiving counseling from a supervised intern. Secondary hypothesis 3 stated that all motivation groups are

equal in having received treatment by a supervised intern, controlling for the percentage of counseling appointments attended and students attending compulsory counseling due to campus judicial proceedings.

Description of Data

Data for this quantitative research study came from intake questionnaires gathered during the course of treatment at a four-year liberal arts, public university in the Southeastern part of the United States, from academic years 2007/2008 and 2008/2009. The research study utilized data from 331 subjects. All university students over the age of 18 who visited the research site mental health clinic 3 - 7 times during academic years 2007/2008 and 2008/2009 were included in the study.

The researcher collected all data from existing mental health counseling records at the research site, as described in Chapter III. The data was collected from the “five-item stages of change scale”, the *Outcome Questionnaire 45.2 (OQ45.2)* (Lambert, et al., 1996) (see Appendix D), the Counseling Activity Record (see Appendix E), and the research site’s *Counseling Intake Form* (see Appendix F).

Five Motivation Groups

The independent variable for all hypotheses was client motivation. The subjects were stratified into five motivation groups by the “five-item stages of change scale”. The five motivation groups corresponded to the Transtheoretical Model stages of change: precontemplation, contemplation, preparation, action, and maintenance (DiClemente,

2005; Prochaska & Norcross, 2006). Subjects completed the “five-item stages of change scale” by checking a box next to one of five statements that reflected their current motivation to change. The five statements existed from lowest motivation level to highest, which corresponded with the Transtheoretical Model’s stages of change. Clinicians scored the scale by observing which one of the of the five motivation statements a student endorsed. Table 4.1 shows the number of subjects in each of the motivation groups.

Table 4.1

Distribution of Subjects among the Five Motivation Groups

Motivation Groups	<i>N</i>	Percent
Precontemplation	19	5.7%
Contemplation	122	36.9%
Preparation	82	24.7%
Action	83	25.1%
Maintenance	25	7.6%
<i>N</i> =	331	100

The “five-item stages of change scale” served as the grouping mechanism for the study. The group with the largest number of subjects was ‘contemplation’ ($n = 122$, 36.9%). The ‘action’ group consisted of 25.1% subjects ($n = 83$), the ‘preparation’ group had 24.7% ($n = 82$), the ‘maintenance’ group had 7.6% ($n = 25$), and the ‘precontemplation’ group consisted of 5.7 % of subjects ($n = 19$).

Counseling Outcome Demonstrated by Symptom Improvement

The dependent variable for the primary hypothesis was counseling outcome as demonstrated by symptom improvement. The investigator measured symptom improvement via changes in the groups' pre- and post-test *OQ45.2* scores. Clients completed the *OQ45.2* at the beginning of each visit to the research site campus mental health clinic. The *OQ45.2* is a 45-item self-report questionnaire of mental health symptom severity. The *OQ45.2* is a progress-tracking measure designed for repeated administration to assess ongoing therapeutic change, and change at termination of therapy (Mueller, Lambert, & Burlingame, 1998). The reliable change index, indicating significant pre-test and post-test score differences, for the *OQ45.2* is 14 (Lambert, Burlingame, et al., 1996). Tables 4.2, 4.3, and 4.5 present the five motivation groups' *OQ45.2* scores for minimum, maximum, median, and mean *OQ45.2* scores for pre-test, post-test, and the difference between pre- and post-test.

Table 4.2

OQ45.2 Pre-Test Scores for the Five Motivation Groups

Motivation Groups	<i>n</i>	Minimum	Maximum	Median	Mean
Precontemplation	19	5	49	24	26.71
Contemplation	122	19	139	75	74.38
Preparation	82	30	129	85	82.49
Action	83	12	120	69	69.19
Maintenance	25	14	131	61	61.14

The minimum *OQ45.2* pre-test score was 5, the maximum pre-test score was 139, and the median pre-test score was 73. The mean *OQ45.2* pre-test score was 71.35. The preparation group ($n = 82$) had the highest mean *OQ45.2* pre-test score (82.49). The precontemplation group ($n = 19$) had the lowest mean (26.71) *OQ45.2* pre-test score.

Table 4.3

OQ45.2 Post-Test Scores for the Five Motivation Groups

Motivation Groups	<i>n</i>	Minimum	Maximum	Median	Mean
Precontemplation	19	0	55	21	22.00
Contemplation	122	5	121	60.50	59.78
Preparation	82	14	126	62.50	65.24
Action	83	2	112	59	56.87
Maintenance	25	5	17	54	55.04

The minimum *OQ45.2* post-test score was 0, the maximum post-test score was 126, and the median post-test score was 58. The mean *OQ45.2* post-test was 57.88. The preparation group ($n = 82$) had the highest mean *OQ45.2* post-test score (65.24). The precontemplation group ($n = 19$) had the lowest mean (22.00) *OQ45.2* post-test score.

Table 4.4

Symptom Improvement as Demonstrated by Difference on Pre- and Post-Test OQ45.2 Scores for the Five Motivation Groups

Motivation Groups	<i>n</i>	Minimum	Maximum	Median	Mean
Precontemplation	19	-13	16	6	4.71
Contemplation	122	-18	65	13	14.39
Preparation	82	-22	70	16	17.24
Action	83	-14	51	12	12.33
Maintenance	25	-18	48	7	6.10

The minimum difference between pre- and post-test *OQ45.2* score was -22, the maximum difference was 70, and the median difference was 12. The mean difference between pre- and post-test score was 13.40. The precontemplation group ($n = 19$) had the lowest mean (4.71) *OQ45.2* difference score. The preparation group had the highest mean *OQ45.2* pre- post-test difference score (17.24).

Rochlen, Rude, and Baron (2005) conducted an outcome study that used the 32-*item Stages of Change Scale* and the *OQ45.2*. That study revealed that students in the precontemplation stage experienced less symptom improvement than did students in other stages. The research site data indicated that the “five-item stages of change scale” identified two groups with a mean score above 14. Lambert, Burlingame, et al. (1996) reported that significant symptom improvement is evidenced by a post-test score of at least 14 points lower than the pre-test score. Figure 4.1 depicts group means and standard errors of means for *OQ45.2* pre- and post-test differences.

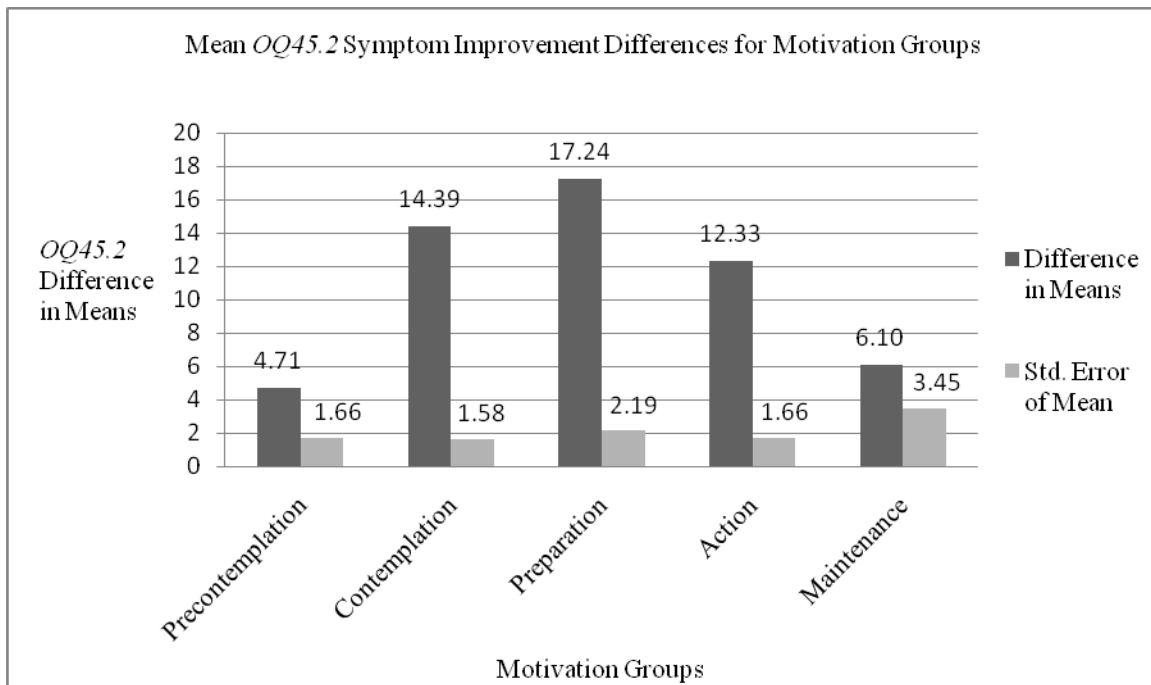


Figure 4.1

Mean Differences in OQ45.2 Scores

The data analysis showed that the mean *OQ45.2* difference scores were lowest for the precontemplation (4.71) and maintenance (6.10) groups. The preparation (17.24) and contemplation groups (14.39) had the highest mean difference scores.

Appointments Attended

An item of interest for this study was the percentage of counseling appointments students attended. The percentage of counseling appointments attended was a covariate for the primary hypothesis and secondary hypotheses 2 and 3, and the dependent variable for secondary hypothesis 1. The counseling appointments attended percentage is a ratio

of the number appointments attended over the number of appointments scheduled. The data was gathered from the Counseling Activity Record (see Appendix E). Table 4.5 displays the mean, minimum, and maximum percentage of counseling appointments attended for the five motivation groups.

Table 4.5

The Percentage of Appointments Attended for Motivation Groups

Motivation Groups	<i>n</i>	Mean	Minimum	Maximum
Precontemplation	19	87%	50%	100%
Contemplation	122	80%	43%	100%
Preparation	82	81%	44%	100%
Action	83	84%	43%	100%
Maintenance	25	81%	43%	100%

The data analysis revealed that subjects in the precontemplation group ($n = 19$) had the highest mean percentage (87%) of counseling appointments attended. The subjects in the precontemplation group also had the highest mean for the minimum percentage of appointments attended (50%). The higher mean percentage of appointments attended indicated fewer incidences of broken appointments and rescheduled appointments. On average, the 331 study subjects attended 83% of their scheduled appointments.

Compulsory Counseling

Subjects attending mental health counseling on a compulsory basis was a covariate for the primary hypothesis and secondary hypotheses 1 and 3, and the dependent variable for secondary hypothesis 2. Subjects who initiated compulsory counseling did so as a result of campus judicial proceedings. Table 4.6 displays the frequencies and percentages of compulsory counseling for the five motivation groups.

Table 4.6

Subjects Attending Compulsory Counseling

Motivation Groups	<i>n</i>	Number of Compulsory Cases in Motivation Groups	Percentage of Compulsory Cases in Motivation Groups
Precontemplation	19	12	63%
Contemplation	122	8	7%
Preparation	82	9	11%
Action	83	10	12%
Maintenance	25	4	16%

The data showed that 43 (13%) of the 311 subjects attended mental health counseling that was compulsory. The precontemplation group ($n = 19$) had the highest group percentage (63%) of subjects attending compulsory counseling. Figure 4.2 depicts the percentage of compulsory subjects in each group.

Counseling from an Intern

Subjects receiving counseling from an intern was a covariate for primary hypothesis 1 and secondary hypotheses 1 and 2, and the dependent variable for secondary

hypothesis 3. Table 4.7 displays the group frequencies and percentages of students who received counseling from a supervised graduate intern.

Table 4.7

Subjects Receiving Counseling from an Intern

Motivation Groups	<i>n</i>	Cases in Group	Percentage of Group
Precontemplation	19	10	53%
Contemplation	122	67	55%
Preparation	82	45	55%
Action	83	50	60%
Maintenance	25	12	48%

The data revealed that 184 (55.6%) of the 311 subjects received counseling from an intern versus a professional staff member. The motivation group with the highest percentage (60%) of subjects receiving treatment from an intern was the action group ($n = 83$). The motivation group with the lowest percentage (48%) of subjects receiving treatment from an intern was the maintenance group ($n = 25$).

Table 4.8 displays the frequencies and percentages of subjects who received counseling from a supervised graduate intern or professional staff and the subjects' status as compulsory or non-compulsory.

Table 4.8

Subjects Receiving Counseling from an Intern for Compulsory Counseling

Compulsory Status	Intern n (%)	Staff n (%)	Total n (%)
Compulsory	19 (5.7%)	24 (7.2%)	43 (13%)
Not Compulsory	165 (50%)	123 (37%)	288 (87%)

The data indicated that the greatest percentage of subjects (50%) received counseling from supervised graduate interns and did not attend counseling on a compulsory basis (n = 165). The next largest group of subjects (37%) received counseling from staff and were not compulsory (n = 123). Subjects who were seen by staff and attended compulsory counseling comprised 7.2% (n = 24) of the study. The smallest group (5.7%) was made up of students who received counseling from interns and attended counseling on a compulsory basis. The following section is a presentation of the analyses and findings for the research hypotheses.

Analysis of Research Hypotheses

The primary hypothesis corresponded to the research question: Are college student outcomes in a university mental health clinic different for at least one of five motivation groups? The three secondary hypotheses explored the relationships among the five motivation groups and the three covariates for the primary hypothesis. The covariates were: (a) the percentage of mental health counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction,

and (c) whether the student received counseling from a supervised graduate intern versus professional staff.

Primary Hypothesis

The primary null hypothesis was as follows:

All motivation groups are equal in counseling outcome (difference in pre- and post-test *OQ45.2* scores), controlling for the percentage of counseling appointments attended, students attending compulsory counseling due to campus judicial proceedings, and students receiving counseling from a supervised intern.

The primary null hypothesis was rejected. Analysis of covariance (ANCOVA) was conducted to test the primary null hypothesis. The independent variable, client motivation, included five motivation levels. The levels were grouped as: precontemplation, contemplation, preparation, action and maintenance. The dependent variable was counseling outcome as demonstrated by symptom improvement. The investigator measured symptom improvement via changes in pre- and post-test *OQ45.2* scores. The covariates were (a) the percentage of mental counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff.

Satisfying the Assumptions of ANCOVA. Central to the ANCOVA process was making sure that the data met the assumptions underlying the use of ANCOVA. The initial analysis revealed the extent to which the data met the assumptions of ANCOVA.

The investigator examined the data for extreme outliers to try to ensure satisfaction of the assumption of normality. The investigator removed one outlier because it involved a participant who was hospitalized and treated with medication between pre- and post-test. This case was removed and was not part of the 331 subjects.

The first assumption of ANCOVA is that the dependent variable is normally distributed in the population with respect to the levels of the independent variable and covariates (Green & Salkind, 2007). The dependent variable, counseling outcome (difference in pre- and post-test *OQ45.2* scores), was not normally distributed within the five motivation groups. The investigator assessed normality via the Shapiro-Wilk normality test. The Shapiro-Wilk normality test assesses the normality of the distribution of scores in small to medium samples (Shapiro & Wilk, 1965). A *p*-value greater than 0.05 indicates normality (Hatcher, 2003). Data showed that the contemplation group violated the assumption of normal distribution: Precontemplation ($p = .60$), contemplation ($p = .03$), preparation ($p = .76$), action ($p = .07$) and maintenance ($p = .33$). Tests for this assumption are necessary because non-normality reduces the power of ANCOVA tests (Green & Salkind, 2007).

The results from the Shapiro-Wilk normality test showed that the dependent variable, counseling outcome, difference in pre- and post-test *OQ45.2* scores, was not normally distributed within the contemplation group ($p = .03$). The other four motivation groups were normally distributed.

The second assumption of ANCOVA is that the variances of the dependent variable are constant across the motivation groups (Green & Salkind, 2007). The

investigator employed Levene's Test of Equality of Error Variance Test. Levene's Test of Equality of Error Variance evaluates the assumption that the population variances are equal for the research groups (Green & Salkind, 2007). If the test is significant ($\alpha < 0.05$), the equality of error variance assumption is violated (Pallant, 2007). Levene's Test of Equality of Error Variance Test was significant ($p = .001$), indicating a violation of the equality of error variance assumption.

The third assumption of ANCOVA is that study subjects represent a random sample of the population, and each dependent variable score was independent from other dependent variable scores (Green & Salkind, 2007). The investigator did not utilize a random sample for this study. The study design required analysis of a particular university mental health clinic's data. Therefore, the findings from this study are not generalizable to other universities. Inferences and relationships from the present study will only be considered for the university mental health clinic under consideration.

The fourth assumption was that the covariates were linearly related to the dependent variable, for all groups, and the slopes relating the covariates to the dependent variable were equal across all groups (Green & Salkind, 2007). The fourth assumption was met. The analysis evaluating the homogeneity of slopes assumption indicated that the interactions between the covariates and symptom improvement did not differ significantly at the $\alpha < 0.05$ level as a function of client motivation: Motivation group and percentage, $F(4, 311) = .294, p = .88$, partial $\eta^2 > .01$; Motivation group and compulsory, $F(4, 311) = 1.21, p = .31$, partial $\eta^2 > .02$; Motivation group and intern $F(4, 311) = .53, p = .71$, partial $\eta^2 > .01$. The non-significant interactions between the motivation groups and

the covariates suggested that the differences on percentage among motivation groups did not vary as a function of the covariates (Green & Salkind, 2007).

The investigator was unable to proceed with ANCOVA because the preliminary analysis showed a violation of the assumptions of normality and homogeneity of variance assumption. Levene's Test of Equality of Error Variance Test, which tests homogeneity of variance, was significant ($p = .001$), at the $\alpha < 0.05$ level, indicating that the variance of counseling outcome, differences in pre- and post-test *OQ45.2* scores, was unequal across the motivation groups, particularly for the precontemplation group. Due to the violation of this assumption, the investigator employed a weighted ANCOVA (W-ANCOVA), allowing up to five different group variances among the five motivation groups.

W-ANCOVA, via the mixed methods procedure, provides weighted averages of the variances (SPSS, 2005). W-ANCOVA accommodates heterogeneous variance by creating a model that uses the average levels of outcome variance for each group (Leech, Barrett, & Morgan, 2008). Results from the Shapiro-Wilk normality test indicated that the dependent variable counseling outcome, difference in pre- and post-test *OQ45.2* scores, was not normally distributed within the contemplation group ($p = .03$; $\alpha < 0.05$). However, the other four motivation groups were normally distributed and this group was only marginally significant, which did not change the analysis using a W-ANCOVA.

Findings for the Primary Hypothesis. The W-ANCOVA was significant at the $\alpha < 0.05$ level, $F(4, 60.19) = 4.24$, ($p = .004$). The group means of symptom improvement, adjusted for the covariates, differed across the five client motivation

groups. Table 4.9 presents the groups sizes as well as unadjusted and adjusted means and variability for the five groups. Adjusted means reflect the model controlling for three covariates: (a) the percentage of mental counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff. The mean score represented the dependent variable, mean differences in pre- and post-test *OQ45.2* scores.

Table 4.9

Unadjusted and Adjusted Group Means and Variability for OQ45.2 Difference Using Percentage, Compulsory, and Intern as Covariates

Motivation Groups	<i>Unadjusted</i>			<i>Adjusted</i>	
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SE</i>
Preparation	82	17.24	19.87	17.25	2.16
Contemplation	122	14.39	17.44	14.29	1.59
Action	83	12.33	15.13	12.09	1.63
Maintenance	25	6.10	17.26	6.43	3.54
Precontemplation	19	4.71	7.23	5.99	2.22
<i>N</i> =	331	13.40	17.39		

The data showed that the unadjusted mean differences in pre- and post-test *OQ45.2* score were as follows from highest to lowest: preparation ($M = 17.24$), contemplation ($M = 14.39$), action ($M = 12.33$), maintenance ($M = 6.10$), precontemplation and ($M = 4.71$). The unadjusted mean score for *OQ45.2* difference was 13.40 for the ($N = 331$) subjects. The adjusted mean scores, adjusted by the W-ANCOVA model with the three covariates, follow from highest to lowest: preparation ($M = 17.25$),

contemplation ($M = 14.29$), action ($M = 12.09$), maintenance ($M = 6.43$), and precontemplation ($M = 5.99$). According to data on the *OQ45.2*, significant symptom improvement is evidenced by a post-test score of at least 14 points lower than the pre-test score (Lambert, Burlingame, et al., 1996).

Follow-up tests were conducted to evaluate pair-wise differences among these adjusted means. Table 4.10 shows the pair-wise differences among the five motivation groups for counseling outcome as demonstrated by symptom improvement. The investigator measured symptom improvement via changes in pre- and post-test *OQ45.2* scores.

Table 4.10

Pair-wise Comparisons for Counseling Outcome among the Five Motivation Groups

(I) Motivation Groups	(J) Motivation Groups	Mean Difference (I-J)	S.E.	df	p	95% Confidence Interval for Difference	
						Lower Bound	Upper Bound
Precontemplation	Contemplation	-8.295*	2.804	48.674	.005	-13.931	-2.660
	Preparation	-11.256*	3.119	68.758	.001	-17.479	-5.034
	Action	-6.092*	2.755	48.725	.032	-11.629	-.556
	Maintenance	-.433	4.163	38.006	.918	-8.861	7.995
Contemplation	Precontemplation	8.295*	2.804	48.674	.005	2.660	13.931
	Preparation	-2.961	2.674	157.916	.270	-8.243	2.321
	Action	2.203	2.279	193.548	.335	-2.291	6.697
	Maintenance	7.862	3.885	34.158	.051	-.032	15.755
Preparation	Precontemplation	11.256*	3.119	68.758	.001	5.034	17.479
	Contemplation	2.961	2.674	157.916	.270	-2.321	8.243
	Action	5.164	2.708	148.286	.058	-.188	10.516
	Maintenance	10.823*	4.150	43.200	.012	2.455	19.191
Action	Precontemplation	6.092*	2.755	48.725	.032	.556	11.629
	Contemplation	-2.203	2.279	193.548	.335	-6.697	2.291
	Preparation	-5.164	2.708	148.286	.058	-10.516	.188
	Maintenance	5.659	3.906	34.787	.156	-2.272	13.590
Maintenance	Precontemplation	.433	4.163	38.006	.918	-7.995	8.861
	Contemplation	-7.862	3.885	34.158	.051	-15.755	.032
	Preparation	-10.823*	4.150	43.200	.012	-19.191	-2.455
	Action	-5.659	3.906	34.787	.156	-13.590	2.272

*The mean difference is significant at the 0.05 level

The data indicated that, based on Fisher's Least Significant Difference (LSD) procedure, the precontemplation group differed significantly ($\alpha < 0.05$) from the contemplation ($p = .005$), preparation ($p = .001$), and action ($p = .032$) motivation groups.

The contemplation group differed significantly from the precontemplation group ($p = .005$). The preparation group differed significantly from the precontemplation group ($p = .001$), and the maintenance group ($p = .012$). The action group differed significantly from the precontemplation group ($p = .032$). The maintenance group differed significantly from the preparation group ($p = .012$).

The analysis included a test of the covariates to evaluate the relationships among the covariates and the dependent variable, symptom improvement, within the motivation groups. The covariates were (a) the percentage of mental health counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff. Table 4.11 displays the results from the test of the covariates.

Table 4.11

Tests of the Covariates on the Dependent Variable of Symptom Improvement

Covariates	Numerator <i>df</i>	Denominator <i>df</i>	F	<i>p</i>
Percentage	1	202.027	.519	.47
Compulsory	1	81.878	1.289	.26
Intern	1	191.547	2.929	.09

*Significance level of $\alpha < 0.05$.

The analysis showed that the relationship between the percentage of mental health counseling appointments attended and symptom improvement was not significant, $\alpha < 0.05$, $F(1, 202.83) = .52$, $p = .47$. The relationship between whether the student received compulsory counseling due to campus judicial sanction and symptom improvement was not significant ($\alpha < 0.05$), $F(1, 81.89) = 1.29$, $p = .26$. The relationship between whether the student received counseling from a supervised graduate intern and symptom improvement was also not significant ($\alpha < 0.05$), $F(1, 191.55) = 2.93$, $p = .09$.

Secondary Hypotheses

Secondary Null Hypothesis 1

All motivation groups are equal in the percentage of counseling appointments attended, controlling for students attending compulsory counseling due to campus judicial proceedings and students receiving counseling from a supervised intern.

Secondary null hypothesis 1 was not rejected. Analysis of covariance (ANCOVA) was conducted. The independent variable, client motivation, included five motivation levels: Precontemplation, contemplation, preparation, action and maintenance. The dependent variable was the percentage of counseling appointments attended. The investigator measured the percentage of counseling appointments attended by dividing the number of appointments scheduled by the number of appointments attended. The covariates were (a) whether the student received compulsory counseling due to a campus judicial sanction, and (b) whether the student received counseling from a supervised graduate intern versus professional staff.

Satisfying the assumptions of ANCOVA. Central to the ANCOVA process was making sure that the data met the assumptions underlying the use of ANCOVA. The initial analysis revealed the extent to which the data met the assumptions of ANCOVA. The first assumption of ANCOVA is that the dependent variable is normally distributed in the population for the independent variable and for any covariate (Green & Salkind, 2007). The preliminary analysis showed that the dependent variable, the percentage of counseling appointments attended, was not normally distributed within the five motivation groups. The investigator conducted the Shapiro-Wilk normality test using a significance level of $\alpha < 0.05$. A p -value greater than 0.05 indicates normality for the Shapiro-Wilk normality test (Hatcher, 2003). The Shapiro-Wilk normality test showed that the contemplation group violated the assumption of normal distribution: Precontemplation ($p = .60$), contemplation ($p = .04$), preparation ($p = .76$), action ($p = .07$) and maintenance ($p = .33$).

The second assumption was that the variances of the dependent variable were equal across the research groups (Green & Salkind, 2007). Levene's Test of Equality of Error Variance Test ($\alpha < 0.05$) was not significant ($p = .165$), indicating that the assumption of equality of error variance assumption was met.

The third assumption of ANCOVA was that study subjects represented a random sample of the population, and each dependent variable score was independent from other dependent variable scores (Green & Salkind, 2007). As noted in the findings for the primary hypothesis, the investigator did not utilize a random sample for this study. The research design required analysis of one university mental health clinic's data. Therefore,

the findings from this study are not generalizable to other university mental health clinics. Inferences and relationships from the present study will only be considered for the university mental health clinic under consideration.

The fourth assumption was that the covariates were linearly related to the dependent variable, for all groups, and the slopes relating the covariates to the dependent variable are equal across all groups (Green & Salkind, 2007). This assumption was met. The analysis evaluating the homogeneity of slopes assumption indicated that the interactions between the covariates and the percentage of appointments attended did not differ significantly ($\alpha < 0.05$) as a function of client motivation: Motivation group and compulsory, $F(4, 316) = 1.16, p = .33$, partial $\eta^2 > .01$; Motivation group and intern $F(4, 316) = 2.25, p = .06$, partial $\eta^2 > .03$. The non-significant interactions between the motivation groups and the covariates suggested that the differences in percentage among motivation groups did not vary as a function of the covariates (Green & Salkind, 2007).

The preliminary analysis revealed a violation of the assumption of normality. The dependent variable, the percentage of counseling appointments attended, was not normally distributed within the contemplation group ($p = .04$). Since the data violated the assumption of normality, the investigator did not continue with ANCOVA but utilized generalized linear model (GzLM). The GzLM allows for the dependent variable to have a non-normal distribution (SPSS, 2008). Additionally, due to the analysis of an independent variable that is a percentage or a rate, the choice of GzLM was a Poisson regression. The Poisson regression is a model used when the analysis has a discrete dependent variable (Leech, Barrett, & Morgan, 2008). The discrete dependent variable

for secondary hypothesis 1 was the rate of attendance against appointments scheduled, the expectation of attendance. A Poisson regression models the rate of a variable against an expected rate for the same variable (Ott & Longnecker, 2001).

Findings for Secondary Hypothesis 1. The findings from the Poisson regression indicated that the motivation groups did not differ significantly ($\alpha < 0.05$) for percentage of appointments attended, $\chi^2(4, N = 331) = 1.31, p = .86$. Table 4.12 displays that there were no significant differences among the motivation groups for the percentage of counseling sessions attended.

Table 4.12

Motivation Group Differences in Percentage of Counseling Appointments Using Compulsory and Intern as Covariates

	Wald Chi-Square	Df	<i>p</i>
Motivation Group	1.305	4	.861
Compulsory	.218	1	.640
Intern	.093	1	.760
Motivation Group * Compulsory	1.018	4	.907
Motivation Group * Intern	1.025	4	.906

**p* is significant at the 0.05 level

The analysis showed that all significance scores were greater than 0.05, indicating non-significant interactions between the motivation groups and the percentage of appointments attended, controlling for compulsory status and counseling by an intern.

The analysis also showed non-significant findings for the influence of the covariates on the percentage of appointments attended.

Secondary Null Hypothesis 2

All motivation groups are equal in incidences of compulsory counseling due to campus judicial proceedings, controlling for the percentage of counseling appointments attended and students receiving counseling from a supervised intern.

Secondary null hypothesis 2 was rejected. The independent variable, client motivation, included five motivation levels: Precontemplation, contemplation, preparation, action and maintenance. The dependent variable was whether the student received compulsory counseling due to campus judicial sanction. The covariates were (a) the percentage of counseling appointments attended, and (b) whether the student received counseling from a supervised graduate intern versus professional staff.

Findings for Secondary Hypothesis 2. A logistic regression was performed to assess the impact of client motivation on the subjects attending compulsory counseling due to campus judicial proceedings. Secondary hypothesis 2 included one independent variable, client motivation; one dependent variable, compulsory counseling; and two covariates, the percentage of counseling appointments attended and students receiving counseling from a supervised intern. Findings from the logistic regression were statistically significant ($\alpha < 0.05$), $\chi^2 (6, N = 331) = 35.08, p < .001$, which indicated

motivation group differences for respondents who did and did not attend compulsory counseling due to campus judicial proceedings.

The logistic regression analysis included Cox and Snell R-squared and Nagelkerke R-squared values. These values provide data on the amount of variation in the dependent variable, as explained by the model (Pallant, 2007). Cox and Snell R-squared and Nagelkerke R-squared values indicate the percentage of group variability that is explained by a set of variables (Pallant, 2007). The influence of motivation group explained between 10.1% (Cox and Snell R-squared) and 18.7% (Nagelkerke R-squared) of the variance in incidences of compulsory counseling due to campus judicial proceedings. Table 4.13 displays the likelihood predictions, according to motivation group, that students attended compulsory counseling, while controlling for the covariates.

Table 4.13

Motivation Group Differences in Compulsory Counseling Using Percentage and Intern as Covariates

	B	S.E	Wald	df	p	Odds Ratio	95.0% C.I. for Odds Ratio	
							Lower	Upper
Motivation Group			30.73	4	.000*			
Precontemplation	2.33	.74	9.88	1	.002*	10.28	2.41	43.94
Contemplation	-.97	.66	2.15	1	.14	.38	.10	1.39
Preparation	-.40	.66	.38	1	.54	.67	.19	2.41
Action	-.23	.65	.13	1	.72	.79	.22	2.83
Percentage	-.01	.01	.61	1	.44	.99	.97	1.01
Compulsory	.59	.36	2.67	1	.10	1.797	.89	3.63
Constant	-1.31	1.04	1.58	1	.21	.27		

**p* is significant at the 0.05 level

The data showed that client motivation ($p = .000$), unlike covariates percentage ($p = .44$) and compulsory ($p = .10$), made a statistically significant contribution to the likelihood of students attending compulsory counseling ($p > .001$). The study subjects in the precontemplation group ($p = .002$) showed the highest incidence of compulsory counseling, recording an odds ratio of 10.28. These results indicated that subjects in the precontemplation group were over 10 times more likely to attend compulsory counseling due to campus judicial proceedings than those who were not in the precontemplation group, when controlling for the covariates.

Secondary Null Hypothesis 3

Secondary null hypothesis 3 is as follows:

All motivation groups are equal in having received treatment by a supervised intern, controlling for the percentage of counseling appointments attended and students attending compulsory counseling due to campus judicial proceedings.

Secondary null hypothesis 3 was not rejected. The independent variable, client motivation, included five motivation levels: Precontemplation, contemplation, preparation, action and maintenance. The dependent variable was whether the student received counseling from a supervised graduate intern versus professional staff. The covariates were (a) the percentage of counseling appointments attended, and (b) whether the student received compulsory counseling due to campus judicial sanction.

Findings for Secondary Hypothesis 3. A logistic regression was performed to assess the impact of client motivation on the likelihood of incidences of compulsory counseling due to campus judicial proceedings. Secondary hypothesis 3 included one independent variable, client motivation; one dependent variable, counseling from a supervised intern; and two covariates, the percentage of counseling appointments attended and whether the student received compulsory counseling due to campus judicial sanction. The logistic regression analysis showed non-significance ($\alpha < 0.05$), $\chi^2 (6, N = 331) = 4.93, p = .55$, which indicated that the motivation groups, according to the “five-item stages of change scale”, did not distinguish among respondents who did and did not receive counseling from a supervised intern. The influence of motivation group explained between 1.5% (Cox and Snell R squared) and 2% (Nagelkerke R squared) of the variance

in subjects receiving counseling from a supervised intern. Table 4.14 displays that there were no significant differences among the motivation groups for predicting the likelihood of students having received treatment by a supervised graduate intern.

Table 4.14

Motivation Group Differences in Students Having Received Treatment by a Supervised Intern Using Percentage and Compulsory as Covariates

	B	S.E	Wald	df	p	Odds Ratio	95.0% C.I. for Odds Ratio	
							<i>Lower</i>	<i>Upper</i>
Client Motivation			1.69	4	.79			
Precontemplation	.51	.64	.63	1	.43	1.67	.47	5.88
Contemplation	.22	.44	.24	1	.62	1.24	.52	2.97
Preparation	.25	.46	.28	1	.60	1.28	.52	3.15
Action	.49	.46	1.14	1	.29	1.64	.66	4.05
Percentage	-.01	.01	.85	1	.36	.99	.98	1.01
Compulsory	.60	.36	2.75	1	.10	1.81	.90	3.67
Constant	-.05	.75	.01	1	.94	.95		

**p* is significant at the 0.05 level

Data showed that client motivation ($p = .79$) did not predict the likelihood of students having received treatment by a supervised graduate intern. The covariates percentage ($p = .36$) and compulsory ($p = .10$) did not make a statistically significant contribution to the likelihood that students received counseling from an intern.

Summary

The investigator conducted analyses on a primary hypothesis and 3 secondary hypotheses. The primary hypothesis examined group differences for five motivation groups, with counseling outcome (difference in pre- and post-test *OQ45.2* scores) as the dependent variable. Secondary hypotheses 1 examined group differences for five motivation groups with the percentage of appointments attended as the dependent variable. Secondary hypotheses 2 examined group differences for five motivation groups with the incidences of compulsory counseling as the dependent variable. Secondary hypotheses 3 examined group differences for five motivation groups with having received treatment by a supervised intern as the dependent variable. The analyses for the primary hypothesis and secondary hypothesis 2 revealed significant differences for the client motivation groups.

The primary hypothesis examined group differences for counseling outcome as demonstrated by symptom improvement. The investigator measured symptom improvement via mean changes in pre- and post-test *OQ45.2* scores. The investigator rejected the null hypothesis that all motivation groups were equal for changes in pre- and post-test *OQ45.2* scores. The findings for the primary hypothesis showed that the motivation groups, assigned by “five item stages of change scale”, differed significantly in counseling outcome. The W-ANCOVA controlled for the percentage of counseling appointments attended, students attending compulsory counseling due to campus judicial proceedings, and students receiving counseling from a supervised intern.

The LSD procedure showed that the preparation motivation group had the highest mean for symptom improvement and differed significantly from the precontemplation group, which was lowest in symptom improvement. The preparation group also differed significantly from the maintenance group, which was the next lowest in symptom improvement. According to data on the *OQ45.2*, significant symptom improvement was evidenced by a post-test score of at least 14 points lower than the pre-test score (Lambert, Burlingame, et al., 1996). Of the five motivation groups, only the preparation and contemplation groups showed mean *OQ45.2* pre- and post-test difference scores greater than 14 points.

The analyses for secondary hypothesis 2 revealed significant differences for the client motivation groups. The investigator rejected the null hypothesis that all groups were equal for subjects attending compulsory counseling due to campus judicial proceedings. The analysis was significant, indicating that the “five item stages of change scale” was able to distinguish group differences for subjects who did and did not attend compulsory counseling, controlling for the percentage of counseling appointments attended and students receiving counseling from a supervised intern. The precontemplation motivation group differed significantly from the other groups. Subjects in the precontemplation group were over 10 times more likely to attend counseling on a compulsory basis, than those who were not in the precontemplation group.

CHAPTER FIVE

DISCUSSION

This chapter includes a summary of the study and a discussion of the findings. Specifically, this chapter contains an overview of relevant literature, the theoretical framework, the research hypotheses, subjects, data collection, results, a description of the data, and a summary and discussion of the findings. The investigator also provides implications for practice and implications for research concerning the role of the “five-item stages of change scale” in managing university mental health clinic demand. The chapter closes with a summary of the entire research study.

The purpose of this quantitative research study was to examine whether university mental health center clients’ motivation, as measured by a “five-item stages of change scale”, was a significant variable in determining campus mental health counseling outcomes. The study employed a five-group, pre-test-post-test design. The “five-item stages of change scale” (see Appendix C) placed students into one of the five ordered Transtheoretical Model stages of change: precontemplation, contemplation, preparation, action, and maintenance (DiClemente, 2007; Prochaska & Norcross, 2006). The counseling outcome of interest was symptom improvement, as measured by the difference in pre- and post-test administrations of the *Outcome Questionnaire 45.2 (OQ45.2)* (see Appendix D).

Overview of Relevant Literature

With increasing demands for campus mental health services, university mental health clinics need tools and strategies for allocating limited resources (Erder-Baker, Aberson, Barrow, & Draper, 2006; Lacour & Carter, 2002; Rudd 2004). University mental health clinics must consider their resources and find efficient ways to provide support to students in need. The reviewed studies suggested strategies including waiting lists (Levy, Thompson-Leonardelli, Smith, & Coleman, 2005), triage systems (Rockland-Miller, & Eells, 2006), referral protocols (Lacour & Carter, 2002), time limited treatment/session limits (Lunardi, Webb, and Widseth, 2006), and assessment of client motivation (Owen, Devdas, & Rodolfa, 2007). The literature identified potential problems associated with all of the aforementioned strategies except assessment of client motivation.

Client motivation is relevant to university mental health clinic demand because of the reported relationship between low client motivation and poor counseling outcomes for university students (Derisley & Reynolds, 2000; Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005; Smith, Subich, and Kalodner, 1995). When client motivation is low, rather than initiating counseling, clinicians may refer those clients to community resources, offer pre-counseling interventions to bolster motivation, or apply specialized counseling techniques to enhance client motivation (Dworkin & Lyddon, 1991; Lawe, Penick, Raskin, & Raymond, 1999; Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005).

The Transtheoretical Model offers a means of assessing client motivation (DiClemente, 2007). Assessment of client motivation via the Transtheoretical Model allows campus mental health counselors to determine clients' readiness to make intentional behavior change. The Transtheoretical Model also provides an understanding of how mental health counselors can allocate treatment interventions that are appropriate to the motivation level of each client (Derisley & Reynolds, 2000; Petrocelli, 2002; Rochlen, Rude, & Baron, 2005).

Previous researchers proposed the assessment of motivation in university mental health clinic clients and pre-treatment interventions for clients indicating low readiness to make changes (Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005). Ultimately, how universities cope with increasing mental health center demands may depend on accurate and prompt assessment of clients' change readiness. Formalizing measures to assess client motivation will help identify students who are more likely to engage in and utilize the therapy process effectively, as well as to identify students who are more likely to follow through on referrals (Dworkin & Lyddon, 1991; Principe, Marci, Glick, & Ablon, 2006).

Theoretical Framework

For the purpose of this study, the researcher chose the Transtheoretical Model as the theoretical framework. The Transtheoretical Model provides a way to measure, explain, and facilitate an individual's motivation to make intentional behavior change (DiClemente, 2007). Client motivation, as conceptualized by the Transtheoretical Model,

influences mental health counseling outcome (DiClemente, Nidecker, & Bellack, 2008; Owen, Devdas, & Rodolfa, 2007; Prochaska & Norcross, 2006; Rochlen, Rude, & Baron, 2005). The Transtheoretical Model maintains that intentional behavior change is a process with strong motivational and behavioral dimensions (DiClemente, 2003; 2006; 2007).

Motivation has an important role in human behavior change (Harmon, et al., 2005). Motivation in this context refers to mechanisms at the core of how and why people change problem behaviors (DiClemente, Nidecker, & Bellack, 2008). DiClemente, Schlundt, and Gemmell (2004) explained that motivation included an individual's need for change, as well as their goals and intentions, sense of responsibility, and commitment to change. Additionally, DiClemente, Schlundt, and Gemmell (2004) stated that an individual's concern about maintaining the behavior change and the presence of adequate incentives are a part of motivation.

Petrocelli (2002) synthesized the literature on the Transtheoretical Model, with emphasis on the stages of change readiness. He demonstrated that the Transtheoretical Model has theoretical and clinical potential, revealing a means to understand a client's readiness to change. As a therapeutic approach containing a balance of empiricism and theory, the Transtheoretical Model is an organized and empirically guided approach to therapy. Petrocelli (2002) reported that the primary contribution of the Transtheoretical Model is the emphasis on the therapist matching mental health interventions to the client's stage of motivation. The Transtheoretical Model offers an understanding of how

to provide mental health treatment interventions that are appropriate for a clients' motivation level (DiClemente, 2007).

Research Hypotheses

The investigator posed the following question to guide the study: Are college student outcomes in a university mental health clinic different for at least one of five motivation groups? The primary hypothesis corresponded to the research question. The three secondary hypotheses explored the relationships among the five motivation groups and the covariates for the primary hypothesis. The three covariates were: (a) the percentage of mental health counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff.

The primary hypothesis and three secondary hypotheses were as follows:

- Primary hypothesis

Null: All motivation groups are equal in counseling outcome (difference in pre- and post-test *OQ45.2* scores), controlling for the percentage of counseling appointments attended, students attending compulsory counseling due to campus judicial proceedings, and students receiving counseling from a supervised intern. (The investigator rejected the primary null hypothesis.)

- Secondary hypothesis 1

Null: All motivation groups are equal in the percentage of counseling appointments attended, controlling for students attending compulsory

counseling due to campus judicial proceedings and students receiving counseling from a supervised intern. (The investigator did not reject the secondary null hypothesis 1.)

- Secondary hypothesis 2

Null: All motivation groups are equal in incidences of compulsory counseling due to campus judicial proceedings, controlling for the percentage of counseling appointments attended and students receiving counseling from a supervised intern. (The investigator rejected secondary null hypothesis 2.)

- Secondary hypothesis 3

Null: All motivation groups are equal in having received treatment by a supervised intern, controlling for the percentage of counseling appointment attended and students attending compulsory counseling due to campus judicial proceedings. (The investigator did not reject the secondary null hypothesis 3.)

Subjects

The research site was a campus mental health clinic located at a four-year liberal arts, public university in the Southeastern United States. The research study utilized data from 331 college students who visited the research site mental health clinic between 3 and 7 times during academic years 2007/2008 and 2008/2009. The investigator used the 3 -7 sessions parameter in order to include the research sites' mean number of sessions

(6.1) as well as a minimum treatment exposure of one initial triage session and two full-length sessions. The subjects were stratified into five groups by the “five-item stages of change scale” (Rochlen, Rude, & Baron, 2005). The five groups corresponded to the Transtheoretical Model’s five stages of change: precontemplation, contemplation, preparation, action, and maintenance, (DiClemente, 2005; Prochaska & DiClemente, 1986; Prochaska & Norcross, 2006).

Caucasians were the largest racial/ethnic group and comprised 79.5% of the subjects ($n = 263$). The second largest group was Asian Americans ($n = 24$, 7.3%). Of the subjects, 4.8% did not answer the race/ethnicity item ($n = 16$). African American students made up 4.2% of the subjects ($n = 14$). Subjects indicating “other” represented 2.7% ($n = 9$), followed by Hispanic Americans at 1.5% ($n = 5$). The majority of subjects (69.2%) were female ($n = 229$). Males comprised 30.8% of subjects ($n = 102$).

Data Collection

The research data came from intake questionnaires gathered in the course of treatment at the research site for the academic years 2007/2008 and 2008/2009. At the first visit, via the center’s walk-in triage process, subjects completed the “five-item stages of change scale” (see Appendix C). During their first visit to the university mental health clinic, the subjects also completed the pre-test administration of the *OQ45.2* (see Appendix D). Subjects then completed the *OQ45.2* prior to each counseling session. The *OQ45.2* administration before the final session served as the post-test. The students’ responses on the Counseling Intake Form (see Appendix F) and the Counseling Activity

Record (see Appendix E) revealed the covariate data. The covariates were: (a) the percentage of mental health counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction (see Appendix H), and (c) whether the student received counseling from a supervised graduate intern versus professional staff.

Results

The “five-item stages of change scale” served as the grouping mechanism for the study. The group with the largest number of subjects was the contemplation group ($n = 122$, 36.9%). The action group consisted of 25.1% of the subjects ($n = 83$), followed by the preparation group at 24.8% ($n = 82$), the maintenance group at 7.6% ($n = 25$), and the precontemplation group at 5.7 % ($n = 19$).

Mean difference in pre- and post-test *OQ45.2* scores was the primary dependent variable for the study. Higher difference scores indicate greater levels of symptom improvement (Lambert, Hansen, et al., 1996). The data analysis revealed that the minimum difference between pre- and post-test was -22 and the maximum difference was 70. The mean difference between pre- and post-test scores was 13.40. The precontemplation group had the lowest mean difference in pre- and post-test *OQ45.2* scores. The preparation group had the highest mean *OQ45.2* difference score.

The percentage of counseling appointments attended was a covariate for the primary hypothesis, secondary hypotheses 2 and 3, and the dependent variable for

secondary hypothesis 1. The mean percentage of appointments attended for the 331 subjects was 68%.

Whether students attended counseling on a compulsory basis was a covariate for the primary hypothesis, secondary hypotheses 1 and 3, and the dependent variable for secondary hypothesis 2. The data showed that 87% of subjects attended mental health counseling on a non-compulsory basis, versus the 13% of subjects who attended compulsory counseling ($n = 43$).

Subjects receiving counseling from an intern was a covariate for primary hypothesis 1, secondary hypotheses 1 and 2, and the dependent variable for secondary hypothesis 3. The greatest percentage of students, 55.6% received counseling from an intern. Students who received counseling from staff comprised 44.4% of the subjects.

Discussion of Findings and Conclusions

The investigator conducted analyses on a primary hypothesis and 3 secondary hypotheses. The primary hypothesis examined group differences for five motivation groups, with counseling outcome (difference in pre- and post-test *OQ45.2* scores) as the dependent variable. The analysis for the primary hypothesis controlled for: (a) the percentage of mental health counseling appointments attended, (b) whether the student received compulsory counseling due to campus judicial sanction, and (c) whether the student received counseling from a supervised graduate intern versus professional staff.

Findings for the primary hypothesis showed that the motivation groups, assigned by “five item stages of change scale”, differed significantly in counseling outcome. This

finding suggests that a student's motivation to change does impact improvement in mental health symptoms. The investigator concluded that the "five-item stages of change scale" assigned the subjects into groups that differed significantly on counseling outcomes. The "five-item stages of change scale" identified that the precontemplation group was the lowest in symptom improvement and therefore least likely to benefit from the counseling sessions at the university's mental health clinic. The preparation and contemplation groups were the highest in symptom improvement and would therefore be most likely to benefit from the mental health counseling sessions at the research site. Additionally, the "five-item stages of change scale" identified 3 groups that did not achieve significant symptom improvement. The three groups were precontemplation, action, and maintenance.

The findings from this study support previous research, which showed the precontemplation group as lowest in symptom improvement. Rochlen, Rude, and Baron (2005) measured client motivation via the 32-item *Stages of Change Scale*, and measured symptom improvement with the *Outcome Questionnaire 45 (OQ45)* (Lambert, Hansen, et al., 1996). The *OQ45* is the earliest version of the *Outcome Questionnaire*; the *OQ45.2* is used in the present study. The findings by Rochlen, Rude, and Baron (2005) revealed that university mental health clients who scored in the precontemplation stage, the lowest stage of motivation, experienced less symptom improvement than did students in other stages. Rochlen, Rude, and Baron (2005) also found no significant differences in symptom improvement among the students in the other stages of change.

Secondary hypothesis 1 examined group differences for five motivation groups with the percentage of appointments attended as the dependent variable. The analysis controlled for: (a) whether the student received compulsory counseling due to campus judicial sanction, and (b) whether the student received counseling from a supervised graduate intern versus professional staff. The findings from the Poisson regression analysis for secondary hypothesis 1 did not reveal significant group differences. This means that student's motivation level as determined by the five-item stages of change scale did not significantly impact the percentage of appointments attended. Furthermore, the "five item stages of change scale" did not identify students who were more likely to break scheduled counseling appointments. Similarly, a previous study by Derisely and Reynolds (2000) found that clients' stage of change (motivation) did not reveal significant motivation group differences in mental health counseling attendance.

Secondary hypothesis 2 examined group differences for five motivation groups with the incidences of compulsory counseling as the dependent variable. The analysis controlled for (a) the percentage of mental health counseling appointments attended and (b) whether the student received counseling from a supervised graduate intern versus from a professional staff member. The findings for secondary hypothesis 2 revealed significant differences for the client motivation groups. With these findings, the investigator rejected the null hypothesis that all motivation groups were equal for subjects attending compulsory counseling. The "five item stages of change scale" was able to distinguish group differences for subjects who did and did not attend compulsory counseling, controlling for the percentage of counseling appointments attended and

students receiving counseling from a supervised intern. The precontemplation group differed significantly from all other groups. Subjects in the precontemplation motivation group were over 10 times more likely to attend counseling on a compulsory basis, than subjects who were not in the precontemplation group.

For secondary hypothesis 2, the investigator concluded that, per the “five-item stages of change scale”, there is a significantly higher likelihood of compulsory clients being in the precontemplation group. Findings from the primary hypothesis indicated that subjects in the precontemplation group showed the lowest symptom improvement scores. Therefore, it can be inferred that the “five-item stages of change scale” indicated a risk of low symptom improvement for students who attended compulsory counseling. The literature on client motivation supports the findings from Secondary hypothesis 2. Previous investigators found that university mental health clinic clients in the first stage of change, precontemplation, were often resistant to the idea of counseling and attended counseling under pressure from others, lacking a perceived need or intention to make changes (Brogan, Prochaska, & Prochaska, 1999; Harmon, Hawkins, Lambert, Slade, & Whipple, 2005).

Secondary hypothesis 3 examined group differences for five motivation groups with having received treatment by a supervised intern as the dependent variable. The analysis controlled for (a) the percentage of mental health counseling appointments attended and (b) whether the student received compulsory counseling due to campus judicial sanction. The findings for secondary hypothesis 3 did not reveal significant group

differences. Table 5.1 displays a summary of significant/non-significant findings for all hypotheses.

Table 5.1

Summary of Findings for the Hypotheses

Hypotheses	Dependent Variable	Significant Motivation Group Differences?
Primary Hypothesis	Counseling outcome (symptom improvement measured by pre- and post-test difference in <i>OQ45.2</i> score)	Yes
Secondary Hypothesis 1	Percentage of appointments attended	No
Secondary Hypothesis 2	Whether the student received compulsory counseling due to campus judicial sanction	Yes
Secondary Hypothesis 3	Whether the student received counseling from a supervised graduate intern versus professional staff	No

Implications for Practice

Before the present study, no studies existed for the “five-item stages of change scale”. This study demonstrated the ability of the “five-item stages of change scale” to indicate differences in counseling outcome in one university mental health clinic. The preparation group showed the greatest symptom improvement and, along with the contemplation group, showed significant mean symptom improvement scores. The present study also showed that the “five-item stages of change scale” was able to distinguish group differences for subjects who did and did not attend compulsory counseling. The precontemplation group differed significantly from all other groups in compulsory counseling subjects. Subjects in the precontemplation motivation group were over 10 times more likely to attend compulsory counseling than subjects who were not in

the precontemplation group. The following section includes implications for university mental health clinic practice.

A practice implication from the results of this study is that university mental health clinics provide clients with the “five-item stages of change scale”, as part of the intake process. Use of the easy to administer and score “five-item stages of change scale” incurs minimal impact on overstretched mental health clinic resources. Additionally, it may allow for early identification of clients with low probability of treatment success. Assessing client motivation at intake allows university mental health counselors to determine the appropriate treatment interventions for university students seeking mental health services (Derisley & Reynolds, 2000; Petrocelli, 2002; Rochlen, Rude, & Baron, 2005). When mental health clinicians identify low motivation, rather than offering traditional treatment modalities, the clinicians can provide the students with referrals to community mental health resources, offer pre-counseling interventions to bolster motivation, or apply specialized counseling techniques to enhance client motivation (Dworkin & Lyddon, 1991; Lawe, Penick, Raskin, & Raymond, 1999; Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005). Examples of pre-counseling interventions to bolster low client motivation include having the clients view videos on the importance of motivation in symptom improvement, and requiring clients with low motivation to attend a group session based on increasing motivation to change.

Higher education leaders with responsibilities related to students at risk of suicide or harm to others should understand that assessment of pre-treatment client motivation enables counselors to address students’ needs effectively and promptly. Higher education

leaders who are concerned with the effective appropriation of limited counseling sessions need to understand that client motivation influences symptom improvement. Those higher education leaders should provide leadership and accountability for implementing empirically sound pre-treatment motivation measures in campus mental health clinics.

Another practice implication from the results of this study is based on the differences in symptom improvement between the motivation groups. The precontemplation group is less likely to experience symptom improvement than the contemplation group. Therefore, therapeutic techniques that could move clients from the precontemplation motivation group to the contemplation motivation group would increase symptom improvement for that client. This implication is particularly relevant for university mental health clients who attend compulsory counseling. The results from this study indicated that students who attended compulsory counseling at the research site, on average, did not achieve significant symptom reduction. Brogan, Prochaska, and Prochaska (1999) found that students who attended compulsory counseling, or otherwise attended counseling under pressure from others, were more likely to be in the precontemplation stage. Geller (2006) reported that mandatory counseling outcomes are questionable and called for randomized and controlled studies to support the efficacy of compulsory psychotherapy. However, the information below highlights two therapeutic approaches that are beneficial for clients with low motivation to change. If university mental health clinics do not apply specialized counseling interventions to clients with low motivation, the efficacy of compulsory counseling is questionable.

The Transtheoretical Model describes the therapeutic processes for increasing client motivation (DiClemente, 2007). DiClemente (2007) described “processes of change” as interventions that increased an individual’s motivation to make intentional behavior change, the “active ingredients or engines of change” (p. 30). The processes of change are activities and experiences that enable individuals to move from one motivation stages to the next (DiClemente, 2007; Prochaska, DiClemente, & Norcross, 1992). The processes of change involve raising consciousness about a specific problem through risk-reward analyses, and reevaluation of the status quo behavior, and the potential new behavior. Other processes of change involve decreasing the intensity of triggers and cues for unwanted behaviors, changing responses to old behavioral cues, creating rewards for new behaviors, and forming helpful relationships (DiClemente, 2005; Prochaska & DiClemente, 1984; Prochaska, DiClemente, & Norcross, 1992).

Motivational Interviewing is another therapeutic approach aimed at bolstering low motivation (Miller & Rollnick, 2002). Motivational Interviewing uses the Transtheoretical Model’s stages of change but only focuses on how to move individuals from the precontemplation stage to the contemplation stage, and from the contemplation stage to the action stage (Miller & Rollnick, 2009). The success in Motivational Interviewing lies in the therapist’s collaboration with the client, acknowledgement of the clients’ autonomy to make or refrain from making changes, and eliciting and reinforcing clients’ verbalizations about the need for change (Miller & Rollnick, 1991, 2002; Rollnick & Miller, 1995). The Motivational Interviewing therapist strives to convey empathy, acceptance, genuineness, and egalitarianism (Moyers, Miller, & Hendrickson,

2005). Moyers, Miller, and Hendrickson (2005) concluded that the success of Motivational Interviewing might be in the therapist's interpersonal and clinical skills to enhance the clients' involvement in therapy.

Implications for Research

The results of the present study suggest that a “five-item stages of change scale” is useful in identifying students who, by identifying themselves as ‘precontemplative’ in motivation, are least likely to experience significant symptom improvement. However, the performance of the abbreviated scale needs to be examined via comparison with a valid and reliable measure of the same constructs. The 32-item *Stages of Change Scale* is an example of such an instrument.

The researcher recommends future studies to examine different versions of brief motivation scales to compare with the “five-item stages of change scale” used in this study. To ensure reliability, researchers can offer a “five-item stages of change scale” in conjunction with a longer motivation scale with established reliability. Investigators can address a potential limitation of the “five-item stages of change scale” by creating and studying a brief client motivation scale that has less face validity than the “five-item stages of change scale” used in this study. A scale with less face validity may decrease efforts at impression management on the part of the respondents. Future composition of a brief motivation scale can include items that allow clients with low motivation to indicate their low motivation without fear of stigma.

Future investigators also should use the “five-item stages of change scale” prior to each counseling session to allow tracking of motivation throughout the course of therapy. Therefore, investigators could monitor changes in the clients’ stage of motivation in relation to any changes in symptom improvement or other outcome variables of interest. For example, future investigators could explore whether the “five-item stages of change scale” predicts premature termination from therapy. Smith, Subich, and Kalodner (1995) found that knowing a client’s stage of change, or motivation, at the onset of therapy may lead to an estimate of whether the client will terminate prematurely.

Another future research recommendation is to explore whether problem type is a confounding variable when examining the relationship between stage of change and counseling outcomes. For example, investigators can explore the extent to which the “five-item stages of change scale” identifies low symptom improvement across an array of problem types such as personality disorders, substance misuse, depressive disorders, and relational problems. Investigator can also explore outcomes for problem type among university students attending compulsory counseling.

A final research recommendation is to conduct studies on the “five item stages of change scale” with a sample that is larger and more diverse than the subjects of the present study. Future investigators can include a sample of multiple university mental health clinics in order to increase sample size. Researchers can also select university research sites with greater representations of minority and male mental health clients than shown in the present study.

The implications for research and practice highlight the value of using pre-treatment client motivation data to improve mental health service delivery to university students. The problem of limited counseling sessions presents complications and risks for students in need of services and the university administrators who attempt to monitor and manage students' risks (Kitzrow, 2003). University leaders who are concerned with student mental health, and mental health clinic staff members, need to understand that insight into clients' pre-treatment readiness to make behavior changes, or motivation, enables university mental health counselors to address students' needs effectively and promptly. University administrators should provide leadership and accountability for campus mental health clinics to implement empirically sound pretreatment motivation measures.

Summary

The first four chapters introduced the study, discussed the literature, described the research methods, and presented the findings. Chapter One included an introduction to the research problem, the demand for campus mental health counseling, and an introduction to the Transtheoretical Model as the theoretical framework. Additionally, Chapter One offered the statement of the problem, purpose of the study, research question and hypotheses, conceptual framework, definition of terms and the research method. The first chapter concluded with limitations and delimitations as well as the significance of the study.

In Chapter Two, the researcher reviewed relevant studies on university mental health clinic demand, client motivation, and mental health counseling outcomes. The literature review included a description of the Transtheoretical Model. In this chapter, a discussion of university mental health counseling demand and client motivation demonstrated a link between assessing client motivation and coping with high demand for services within a university mental health clinic.

Chapter Three consisted of a discussion of the research design and methodology. The chapter included an overview of the population and study subjects, as well as instrumentation. The researcher concluded this chapter with a description of the data collection and data analysis procedures employed.

Chapter Four displayed the results of the statistical analyses. The investigator provided descriptive statistics and data from the weighted analyses of covariance (W-ANCOVA) for the primary hypothesis, Poisson regression for secondary hypothesis 1, and the logistic regression analyses for secondary hypotheses 2 and 3.

Chapter Five provided a summary of the study. Implications and recommendations for future research and practice concerning client motivation were also presented.

The results of this study add to the existing body of knowledge by reporting on client motivation and counseling outcome using a previously unstudied “five item stages of change scale”. The scale is based on the five stages of change outlined in the Transtheoretical Model: precontemplation, contemplation, preparation, action, and maintenance (DiClemente, 2007; Prochaska & Norcross, 2006). Additionally, the study

contributes to the body of evidence on university mental health clinic demand and mental health counseling outcomes. This study reported findings on the relationships among client motivation and the study covariates. The covariates were: a) the percentage of counseling appointments a participant attended, b) whether students received compulsory mental health counseling because of a campus judicial sanction, and c) whether or not students received counseling from a graduate intern or professional staff.

Investigators and practitioners reported that university mental health clinics are understaffed to meet the demand (Jenks Kettmann, et al., 2007, Lacour & Carter, 2002; Uffelman & Hardin, 2002). This has led to complications and risks in providing quality services (Brown, Parker & Godding, 2002; Ghetie, 2007; Levy, Thompson-Leonardelli, Smith, & Coleman, 2005; Rockland-Miller & Eells, 2006). Thus, dealing with university mental health clinic demand is an important issue for campus administrators involved in risk management, as well as for college mental health workers providing treatment to university students (Kitzrow, 2003; Stone & Archer, 1990; Stanley & Manthorpe, 2001).


Methods that identify university students' levels of motivation allow campus clinicians to provide mental health treatment interventions and referrals that match clients' motivation levels (Owen, Devdas, & Rodolfa, 2007; Principe, Marci, Glick, & Ablon, 2006; Rochlen, Rude, & Baron, 2005). The present study examined counseling outcomes in a university mental health clinic using a "five-item stages of change scale" that placed clients into five motivation groups. The findings for the primary hypothesis showed that the five motivation groups indeed differed on counseling outcome. Specifically, the "five-item stages of change scale" identified a group that was not only

the lowest in symptom improvement, but significantly lower than three of the remaining four groups. The results of this study provide additional information for administrators of university mental health clinics to use in making decisions to address increasing demands on limited resources

APPENDICES

Appendix A

IRB Approval from Research Site

Institutional Review Board FWA 00000772	College of Charleston 66 George Street Charleston, SC 29424
Letter of Approval Effective Date: 04/21/2009	
Guy E Ilagan M.Ed, PH.D. Candidate Counseling & Substance Abuse Services College of Charleston Charleston, SC 29424	04/21/2009
Re: IRB-2009-04-16-123201 - Protocol Exemption Examining Client Motivation and Counseling Outcome in a University Mental Health Clinic	
I am pleased to advise you that your protocol has been approved as exempt under category 4.	
If changes in the protocol are required, whether major or minor, a Protocol Modification eForm must be submitted and approved before the changes may be implemented. Changes in the protocol which affect confidentiality or risk level may void the exempt status and require a new protocol application requiring IRB review.	
Please do not hesitate to contact me by phone at 953-7421 or send an email to callahane@cofc.edu if you have any questions.	
 Eileen Callahan Research Compliance Coordinator Office of Research & Grants Administration	
cc: IRB Chair / Counseling & Substance Abuse Services Chair / IRB File	

Appendix B

IRB Approval from Investigator's University of Tuition

From: Rebecca Alley
Sent: Monday, May 04, 2009 8:45 AM
To: Pamela Havice; gilagan@clermson.edu
Subject: Validation of IRB protocol # IRB2009-131, entitled "Examining Client Motivation and Counseling Outcome in a University Mental Health Clinic"

Dear Dr. Havice and Mr. Ilagan,

The Chair of the Clemson University Institutional Review Board (IRB) validated the protocol identified above using Exempt review procedures and a determination was made on **May 4, 2009**, that the proposed activities involving human participants qualify as Exempt from continuing review under **Category B4**, based on the Federal Regulations (45 CFR 46). You may begin this study.

Please remember that no change in this research protocol can be initiated without prior review by the IRB. Any unanticipated problems involving risks to subjects, complications, and/or any adverse events must be reported to the Office of Research Compliance (ORC) immediately. You are requested to notify the ORC when your study is completed or terminated.

Attached are documents developed by Clemson University regarding the responsibilities of Principal Investigators and Research Team Members. Please be sure these are distributed to all appropriate parties.

Good luck with your study and please feel free to contact us if you have any questions. Please use the IRB number and title in all communications regarding this study.

Sincerely,
Becca

Rebecca L. Alley, J.D.

IRB Coordinator
Office of Research Compliance
Clemson University
223 Brackett Hall
Clemson, SC 29634-5704
ralley@clermson.edu
Office Phone: 864-656-0636 Fax: 864-656-4475

Appendix C

The “Five-Item Stages of Change Scales”

Which one of the following statements most accurately characterizes you?

- As far as I’m concerned, I do not have any problems that I need to change.
- I am aware of some problems and am considering beginning to work on them.
- I have worked on problems unsuccessfully but intend to continue trying.
- I am currently taking steps to overcome the problems that have been bothering me.
- I have already overcome some problems and want help now to avoid backsliding

Appendix D

Outcome Questionnaire 45.2

Outcome Questionnaire (OQ®-45.2)

Instructions: Looking back over the last week, including today, help us understand how you have been feeling. Read each item carefully and mark the box under the category which best describes your current situation. For this questionnaire, work is defined as employment, school, housework, volunteer work, and so forth. Please do not make any marks in the shaded areas.

Name: _____ Age: _____ yrs.
 Sex M F
 ID# **VOID**

Session # _____ Date / / _____

	Never	Rarely	Sometimes	Frequently	Almost Always	SD	IR	SR
	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	DO NOT MARK BELOW		
1. I get along well with others.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0			
2. I tire quickly.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
3. I feel no interest in things.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
4. I feel stressed at work/school.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
5. I blame myself for things.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
6. I feel irritated.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
7. I feel unhappy in my marriage/significant relationship.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
8. I have thoughts of ending my life.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
9. I feel weak.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
10. I feel fearful.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
11. After heavy drinking, I need a drink the next morning to get going. (If you do not drink, mark "never")	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
12. I find my work/school satisfying.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0			
13. I am a happy person.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0			
14. I work/study too much.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
15. I feel worthless.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
16. I am concerned about family troubles.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
17. I have an unfulfilling sex life.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
18. I feel lonely.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
19. I have frequent arguments.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
20. I feel loved and wanted.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0			
21. I enjoy my spare time.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0			
22. I have difficulty concentrating.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
23. I feel hopeless about the future.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
24. I like myself.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0			
25. Disturbing thoughts come into my mind that I cannot get rid of.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
26. I feel annoyed by people who criticize my drinking (or drug use). (If not applicable, mark "never")	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
27. I have an upset stomach.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
28. I am not working/studying as well as I used to.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
29. My heart pounds too much.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
30. I have trouble getting along with friends and close acquaintances.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
31. I am satisfied with my life.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0			
32. I have trouble at work/school because of drinking or drug use. (If not applicable, mark "never")	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
33. I feel that something bad is going to happen.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
34. I have sore muscles.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
35. I feel afraid of open spaces, of driving, or being on buses, subways, and so forth.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
36. I feel nervous.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
37. I feel my love relationships are full and complete.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0			
38. I feel that I am not doing well at work/school.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
39. I have too many disagreements at work/school.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
40. I feel something is wrong with my mind.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
41. I have trouble falling asleep or staying asleep.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
42. I feel blue.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
43. I am satisfied with my relationships with others.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0			
44. I feel angry enough at work/school to do something I might regret.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
45. I have headaches.	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			

VOID

Developed by Michael J. Lambert, Ph.D. and Gary M. Burlingame, Ph.D.
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Total=

Subscales: SD = Subjective Discomfort; IR= Interpersonal Relationships; SR= Social Role Performance

Appendix E

Counseling Activity Record

Record for obtaining covariate data for “Intern” and “Percentage”

CLIENT ACTIVITY RECORD					
Client Name SAMPLE			Opened 3/7/09		Closed
WIC/Intake Therapist KV			Assigned Therapist KV		
Assigned Therapist (2):			Opened		Closed
Assigned Therapist (3):			Opened		Closed
Date	Action/Therapist	Date	Action/Therapist	Date	Action/Therapist
3/7/09	WIC / KV	4/25/09	IS#4 / KV		
3/17/09	IS#1 / KV	4/14/09	IS#3 / KV		
4/1/09	NS				
4/7/09	IS#2 / KV				
ACTIVITY CODE					
E	- Emergency	NS	- No show		
WIC	- Walk in clinic	PA	- Psychiatric assessment		
I	- Intake (non-WIC)	PF	- Psychiatric follow-up		
IS	- Individual session (include #)	C	- Consultation		
CS	- Couple session (include #)	RS	- Reschedule		
GS	- Group session (include #)	Cx-C	- Appointment cancelled client		
AT	- Assessment LD/ADD	Cx-T	- Appointment cancelled therapist		
AOD	- Assessment chemical use	CM	- Case management (correspondence)		
R	- Referral	PH	- Phone contact		
T	- Terminated	PH/AH	- Phone contact after hours		

Appendix F

Counseling Intake Form

COUNSELING AND SUBSTANCE ABUSE SERVICES -- CONFIDENTIAL INTAKE INFORMATION							
I. IDENTIFYING INFORMATION							
Last name		First		MI	Preferred name (if different)		
Local address (Street #/CofC Box#)			City		State	Zip	
Permanent address			City		State	Zip	
<input type="checkbox"/> Edisto email	<input type="checkbox"/> Cell phone number		<input type="checkbox"/> Local phone number		<input checked="" type="checkbox"/> Indicate how we can best contact you. We will <u>not</u> identify this department or the reason we are calling.		
Student Number		Age	Birth Date	<input type="checkbox"/> Male <input type="checkbox"/> Female	Marital Status: <input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Living Together <input type="checkbox"/> Separated <input type="checkbox"/> Divorced <input type="checkbox"/> Widowed		
Race(Optional): <input type="checkbox"/> Caucasian <input type="checkbox"/> Asian American <input type="checkbox"/> Native American <input type="checkbox"/> African American <input type="checkbox"/> Hispanic American <input type="checkbox"/> Other:							
Residence: <input type="checkbox"/> Off Campus <input type="checkbox"/> Residence Hall <input type="checkbox"/> With Family <input type="checkbox"/> Greek House <input type="checkbox"/> Other:							
Class/year: <input type="checkbox"/> Freshman <input type="checkbox"/> Sophomore <input type="checkbox"/> Junior <input type="checkbox"/> Senior <input type="checkbox"/> Graduate <input type="checkbox"/> Other:							
Major:			<input type="checkbox"/> Full-time <input type="checkbox"/> Part-time		Hours enrolled	GPA	
Contacts In Case of Emergency* Name:		Relationship:		Phone:	Name of health insurance company:		
*NOTE: These persons will be contacted <u>only</u> with your permission, or in case of emergency, such as a threat of suicide or violence.							
II. MEDICAL HISTORY							
Have you ever had previous psychological counseling? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, with whom and when?							
Do you have any medical problems? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, describe:							
Other MD or therapist who is treating you (Name, profession, phone): <input type="checkbox"/> NA							
Do you consume alcohol? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, how many drinks daily?				How many weekly?			
Do you use recreational drugs? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, what?				How often daily?		How often weekly?	
Are you currently taking prescribed, over-the-counter, or herbal medications? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, describe?							
Do you have ADD/ADHD, a learning disorder, or other disability? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, describe:							
Are you currently involved in litigation, legal processes, or campus judicial proceedings? <input type="checkbox"/> No <input type="checkbox"/> Yes							
Have you experienced thoughts of suicide or violence now or within the past two weeks? <input type="checkbox"/> Yes <input type="checkbox"/> No							
Have you ever been hospitalized for a suicide attempt, drugs/alcohol, or an emotional/behavioral problem? <input type="checkbox"/> No <input type="checkbox"/> Yes							
III. SERVICES SOUGHT							
What type(s) of services are you seeking? <input type="checkbox"/> Individual counseling <input type="checkbox"/> Couples counseling <input type="checkbox"/> Counseling group <input type="checkbox"/> LD/ADD Testing <input type="checkbox"/> Alcohol/drug concern <input type="checkbox"/> Other:							
Please briefly describe the reason(s) you are here today?							
On a scale of one to ten, circle the number that best represents your level of distress during the past week. (1 would mean not at all, 10 would represent feeling extremely distressed and/or agitated all the time) 1 2 3 4 5 6 7 8 9 10							
To what extent would you estimate that your concerns have an effect on your attendance at the College of Charleston? <input type="checkbox"/> No Effect <input type="checkbox"/> I am considering withdrawing <input type="checkbox"/> I am considering not enrolling next semester <input type="checkbox"/> I am considering transferring to another College				Which one of the following statements most accurately characterizes you? <input type="checkbox"/> As far as I'm concerned, I do not have any problems that I need to change. <input type="checkbox"/> I am aware of some problems and am considering beginning to work on them. <input type="checkbox"/> I have worked on problems unsuccessfully but intend continue trying. <input type="checkbox"/> I am currently taking steps to overcome the problems that have been bothering me. <input type="checkbox"/> I have already overcome some problems and want help now to avoid backsliding.			
How did you find out about Counseling & Substance Abuse Services?							
Who referred you to us? (Check all that apply.) <input type="checkbox"/> Self <input type="checkbox"/> Friend <input type="checkbox"/> Family <input type="checkbox"/> Health Services <input type="checkbox"/> Judicial Sanction <input type="checkbox"/> SNAP <input type="checkbox"/> Undergraduate Studies <input type="checkbox"/> Residence Life <input type="checkbox"/> Faculty/staff member <input type="checkbox"/> Other:							
<input type="checkbox"/> Please notify this person that I came in (only the fact that you came in will be shared)							
Signature:						Date:	

Appendix G

Personal Correspondence with Leading Expert Concerning Abbreviated Scale

From: Carlo DiClemente [mailto:diclemen@umbc.edu]
Sent: Thu 1/10/2008 8:19 AM
To: Ilagan, Guy E.
Subject: Re: Stages of Change dissertation.

This algorithm provides a way to classify people into the 5 stages and thus gives some view of readiness to change but is not a continuous measure. It certainly can be used as there are many studies that use this type of staging algorithm. See our web site noted below for more info and references.

Carlo

Carlo C. DiClemente
Lipitz Professor of Arts, Humanities, & Social Sciences
Psychology Dept MP340
Director of MDQUIT Resource Center
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1000 Hilltop Circle
Baltimore, MD 21250
410-455-2811 Office
410-455-3121 Habits Lab SS (Sond) 501
410-455-3628 Tobacco Resource Center SS (sond) 509
410-455-1055 fax
diclemen@umbc.edu
www.umbc.edu/psych/habits
Tobacco Resource Center at
www.mdquit.org

----- Original Message -----

From: [Ilagan, Guy E.](mailto:ilagan.guy@umbc.edu)
To: diclemen@umbc.edu
Sent: Wednesday, January 09, 2008 1:08 PM
Subject: Stages of Change dissertation.

Hello Dr. DiClemente,

I am preparing a proposal for a dissertation. I want to explore the influence of change readiness variables on aspects of clinical outcome. In our counseling center (College of Charleston), at intake, we ask students to indicate

Which one of the following statements most accurately characterizes you?

- As far as I'm concerned, I do not have any problems that I need to change.
- I am aware of some problems and am considering beginning to work on them.
- I have worked on problems unsuccessfully but intend to continue trying.
- I am currently taking steps to overcome the problems that have been bothering me.
- I have already overcome some problems and want help now to avoid backsliding.

I understand that many colleges ask this question in this way, but I need to know if it holds up to research.

My question is, does this suffice as an acceptable method to capture change readiness?

I now have a stages of change scale per McConaughy, Prochaska, & Velicer, 1983. However, we have hundreds of intake forms with the 5 items above. Please advise as to whether I can use the data from the 5 items in a dissertation.

Thanks for your help! -Guy

Guy Ilagan, M.ED. LPC/S, NCC
Counseling and Substance Abuse Services
College of Charleston
Tel. 843.953.5640
Fax. 843-953-8283
<http://www.cofc.edu/betterthingstodo/>
<http://www.cofc.edu/~peercounseling/>

Students, clients, parents, and concerned others are reminded that while every reasonable precaution is taken to ensure privacy and confidentiality, email is not a guaranteed secure means of communication. If you received this message in error, do not use or reveal the information. Please notify me and delete the material from your computer.

Appendix H

Method for Obtaining Covariate Data “Compulsory”

Data for the covariate “Compulsory” comes from an item on the *Counseling Intake Form* (see Appendix F).

- **Are you currently involved in litigation, legal processes, or campus judicial proceedings? No Yes**

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