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AN INVESTIGATION OF CLINICALLY SIGNIFICANT CHANGE AMONG

CLIENTS OF A DOCTORAL PSYCHOLOGY TRAINING CLINIC

by

Kerry K. Prout

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Psychology

Approved:

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UTAH STATE UNIVERSITY
Logan, Utah

2013

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ABSTRACT

An Investigation of Clinically Significant Change Among Clients of a Doctoral Psychology Training Clinic

by

Kerry K. Prout, Master of Science

Utah State University, 2013

Major Professor: M. Scott DeBerard, Ph.D.
Department: Psychology

The current study sought to examine client outcome data for clients seen for outpatient psychotherapy services by graduate-level student therapists in doctoral psychology training clinics in order to better understand the change process occurring in such settings and to examine whether services being offered are meaningful for clients. One hundred ninety-nine clients seen by graduate-level therapists at a training clinic setting were assessed on a session-by-session basis using the Outcome Questionnaire-45 in order to identify the percentage of clients who met criteria for clinically significant change, reliable improvement, no change, or deterioration in outcomes across the course of treatment. Approximately 28% of clients seen for treatment met criteria for clinically significant change at the termination of treatment and 23% reliably improved. Survival analysis indicated that the median time required to attain clinically significant change was six sessions. Current findings are compared to earlier investigations in both training and

nontraining settings. The implications of these findings for education and training, client care and clinical services, and policy are discussed.

(80 pages)

PUBLIC ABSTRACT

An Investigation of Clinically Significant Change Among Clients of a

Doctoral Psychology Training Clinic

by

Kerry K. Prout, Master of Science

Utah State University, 2013

The current study examined client-reported outcomes after being seen for psychotherapy services on a self-report measure of symptoms of distress (Outcome Questionnaire-45). All clients were seen for psychotherapy services by graduate-level student therapists who were currently in training at a psychology training clinic. Clients completed a self-report questionnaire to assess symptoms of distress at each psychotherapy visit and the study sought to define the process of change that clients experience throughout treatment. Specifically, the study aimed to determine to what degree was change in outcomes statistically significant and meaningful for the client and on average, how many sessions were needed for the majority of clients to demonstrate a significant change in scores. One hundred ninety-nine clients were included in the study. Approximately 28% of clients seen for treatment demonstrated clinically significant change, or a change in outcomes that was statistically significant and meaningful for the client. The average time required for 50% of clients to demonstrate clinically significant change was six sessions. The current findings are discussed in relation to other studies conducted in other settings, including both training and nontraining. The implications of these findings for student therapist training, service delivery, and clinic procedure are discussed.

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Kerry K. Prout

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CHAPTER I

INTRODUCTION TO THE PROBLEM

Approximately 26.2% of adults in the United States meet criteria for a psychological disorder in a given year (Kessler, Chiu, Demler, & Walters, 2005). Furthermore, 22.3% of adults who meet criteria for a psychological disorder are classified as "serious," meaning severe impairments in functioning were observed (Kessler et al., 2005). In addition to prevalence rates of psychological disorders in the adult general population, research on university students indicates that approximately 12-18% of students have a diagnosable psychiatric disorder (National Institute of Mental Health, 2012). University students often must cope with multiple stressors, such as financial stress, academic performance, and greater responsibility and independence in daily tasks (DeBerard, Spielmans, & Julka, 2004). Given the high prevalence rate of mental illness in the general and university populations, the accessibility of psychological services for these populations is critical. A university psychology training clinic is an available treatment option for such populations.

University psychology training clinics typically provide outpatient psychological services to university students and individuals in the community as well as serve as training facilities for future mental health professionals. Training clinics are most commonly associated with graduate training programs in professional psychology at regionally accredited universities. The therapists who staff such clinics are graduate student trainees who are supervised by licensed psychologists. The Association of Psychology Training Clinics (APTC) is the national organization for directors of

psychology training clinics. The APTC website identifies 131 psychology training clinics in the U.S. (APTC, 2012). According to a survey conducted by the APTC, populations served by such clinics include the general adult population (45.3%), the general child population (28.7%), and university students (21.5%; Heffer, Cellucci, Lassiter, Pantesco, & Vollmer, 2006). In addition, 90.9% of child and adolescent populations and 95.5% of adult populations met criteria for a mental illness (Heffer et al., 2006). Training clinics provide necessary mental health services to adults, children, and college students often at affordable prices and in areas with limited access to other psychological services (e.g., in rural areas; Heffer et al., 2006).

The importance of psychology training clinics in serving student and community-area populations has been established. It is critical to understand whether or not services provided by trainees in such sites are having a beneficial impact on clients. However, there has been limited investigation into the outcomes of treatment and the process of change that occurs in clients served in university training clinics. Research on the process of change in psychotherapy outcomes often attempts to measure statistically significant and reliable change in outcomes as well as the extent to which change is clinically meaningful for clients (Karpenko, Owens, Evangelista, & Dodds, 2009).

Clinically significant change (CS change) is a measure of the change in treatment that is meaningful and observable to the client. CS change occurs when a client's assessment score at intake is in the dysfunctional range and when the client's score has improved to meet the threshold for reliable change (Jacobson, Follete, & Revenstorf, 1984; Jacobson & Truax, 1991). Reliable change (RC) is a measure of statistical

significance for change in scores before and after an intervention which accounts for assessment standard error. RC is said to occur when a client's scores have improved significantly beyond the amount of change expected due to measurement error or chance. In order to achieve RC, the reliable change index on a certain measure must be met or exceeded (Jacobson & Truax, 1991). Developing an understanding of the change process at university training clinics supplies information regarding the extent to which clinically significant and reliable change occurs for clients. Obtaining such information can serve to guide clinic services (e.g., establish minimum number of sessions needed), and anticipate supervision and treatment planning.

Despite the need to document client change in doctoral training clinics, there have been only two studies published in this area. Anderson and Lambert (2001) conducted a study on clinically significant change in clients seen at a university doctoral training clinic. The authors found that 50% of the clients met the criteria for CS change after 11 sessions. Furthermore, it was found that 38% of clients in the sample attained clinically significant change before leaving therapy. Another study on CS change in a doctoral training outpatient clinic found that 33% of patients met criteria for CS change and 8 sessions were required for 43% of clients to meet criteria and 13 sessions were required for 76% to meet criteria (Kadera, Lambert, & Andrews, 1996). A common metric reported across studies in various settings is the total number of sessions required for 50% of clients to demonstrate CS change.

Several studies have examined the change process in college counseling centers in order to determine the number of sessions needed for 50% of clients to attain CS change

(Wolgast et al., 2005). Overall, approximately 14 sessions were needed for 50% of clients to meet the criteria of CS (Wolgast, Lambert, & Puschner, 2003; Wolgast et al., 2005). In addition, for clients who presented with more severe distress, 20 sessions were needed for CS change in 50% of clients to be observed (Wolgast et al., 2005). Additional research by Snell, Mallinckrodt, Hill, and Lambert (2001) on CS change in college counseling center clients at a 1-year follow up found 16 sessions were needed for 50% of clients to meet criteria for CS change and that 31% of clients maintained CS change at the 1-year follow up.

In addition to research in training settings, there are a number of studies that have examined CS change in nontraining environments. For example, Lambert, Hansen, and Finch (2001) conducted a study examining CS improvement in clients of managed care organizations and found that 50% of patients showed reliable change improvement after seven treatment sessions and that 21 sessions were required for 50% of clinically significant patients to achieve CS change. Another study by Kopta, Howard, Lowry, and Beutler (1994) looked at symptom recovery in mental health center clients. Results were that 50% of clients attained CS change by 11 sessions. Additional research on clinical outcomes and the process of change has been conducted in primary care and nontraining outpatient psychotherapy settings (Hansen, Lambert, & Forman, 2002; Mullin, Barkham, Mothersole, Bewick, & Kinder, 2006). Overall, findings on the number of sessions required for 50% of clients to attain CS change vary across training and nontraining settings, with some studies reporting similar findings in psychology training clinics and nontraining settings (Anderson & Lambert, 2001; Kopta et al., 1994), and others

reporting less sessions were required in university-based doctoral training settings compared to nontraining settings (Anderson & Lambert, 2001; Kadera et al. 1996; Lambert et al., 2001).

While a few studies have examined CS change rates in training settings, no studies have examined contextual, client or therapist factors that could potentially account for such changes. Gaining an understanding of such factors may be an important pathway to optimize treatment outcomes for clients. No published studies have investigated factors associated with change in psychology training clinics and currently only a small number of studies have investigated therapist-specific factors relating to clinically significant change in other training settings. Okiishi, Lambert, Nielsen, and Ogles (2003) investigated the variability in client treatment outcome as a function of individual therapist variables at a college counseling center. No significant differences were found based in terms of therapist gender, level of training, type of training, or theoretical orientation. Therapists' rankings were determined through hierarchical linear modeling growth curves that were generated for each therapist in order to compare each therapist to the general growth curve and other therapists. Results reported client outcomes varied across therapists and found that clients who met with one of the top three therapists (as determined HLM analysis of change in OQ scores based on therapist seen) demonstrated a reduced average length of treatment compared to other therapists. In an additional study, Okiishi and colleagues (2006) observed significant differences on client rate of improvement throughout treatment based on which therapist the client met with.

Overall, research in this area has largely focused on therapist-specific factors relative to client CS change in college counseling centers. Therefore, more investigation is needed to identify possible patient and contextual factors related to change and CS change in psychology training clinics. This information will be important to determine if previous research with college counseling center clients may be generalizable to other training environments. Differences might exist between the two training environments in theoretical orientation of student therapists, treatment interventions implemented, populations served, and client diagnosis at intake.

Given the high prevalence of mental health concerns in the general and university populations and the importance of psychology training clinics in serving these populations across the country, documenting the clinically significant change process in clients served in psychology training clinics is important. It is also important to examine patient, therapist, and contextual factors that might influence this change process. The purpose of the current study is threefold: (a) Determine to what degree clients at a university training clinic meet criteria for clinically significant and reliable change at the termination of therapy; (b) Determine the number of sessions for 50% of clients to meet criteria for clinically significant change; and (c) determine factors that are associated with clinically significant and reliable change, in a university training clinic.

CHAPTER II

REVIEW OF THE LITERATURE

Scope and Magnitude of Mental Health Concerns

The occurrence of psychological disorders and mental health concerns in the United States is sizeable. Prevalence research on the general population has found that approximately 26.2% of adults in the U.S. meet criteria for a psychological disorder in a given year (Kessler et al., 2005). Furthermore, Kessler and colleagues outlined a classification scale to categorize disorder severity level. They reported that 22.3% of the 26.2% of adults who meet criteria of a psychological disorder are classified as "serious" on a scale of disorder severity. The lifetime prevalence of a psychological disorder is 52.4% for ages 18-29 years, 55.0% for ages 30-44 years, 46.5% for ages 45-59 years, and 26.1% for ages 60 and over (National Institute of Mental Health, 2012).

Mental health issues are also pervasive in university populations. Approximately 12-18% of university students in the United States have a diagnosable psychiatric disorder (National Institute of Mental Health, 2012). Furthermore, university students often cope with multiple stressors (e.g., financial, academic performance, establishing independence from family; DeBerard et al., 2004). This population often faces multiple stressors and might be at an increased risk for mental health problems. Given the high incidence rate of mental illness in the general and university populations, the accessibility of psychological services to treat mental health concerns in these populations is critical. A university psychology training clinic is a treatment service option that is available to

both the general and university populations.

Doctoral Training Clinics

A university psychology training clinic provides outpatient psychological services to individuals in the community as well as university students. The primary objectives of a psychology training clinic are twofold: (a) to provide psychological treatment to community individuals and (b) to serve as a training facility for future mental health professionals as part of a scientist-practitioner framework (Mueller, 2010). Training clinics are often associated with professional psychology graduate training programs at regionally accredited universities. A national organization for directors of psychology training clinics, known as the APTC has been developed. The APTC website currently identifies 131 psychology training clinics in the U.S. (APTC, 2012). The APTC has conducted research on psychology training clinic services and procedures through the distribution of a survey to psychology training clinics. Results from research found that, 45.3% of clients served by university training clinics were nonstudent adults, 28.7% were children, and 21.5% were university students (Heffer et al., 2006). In addition, 90.9% of child and adolescent populations and 95.5% of adult populations served in such settings criteria for a mental illness (Heffer et al., 2006). Overall, psychology training clinics provide critical mental health services to adults, children, and college students (Heffer et al., 2006).

The need for psychology training clinics as a treatment facility to serve university and general populations is evident. These clinics serve as training grounds for future

psychologists and it is critical to determine whether or not the services provided at university psychology training clinics are beneficial for clients. There has been limited research on the outcomes of treatment and the process of change that occurs in university training clinic settings, despite the importance of understanding the impact of services on clients in such settings.

Clinically Significant Change

Understanding the process of change in outpatient psychotherapy involves eliciting client feedback on change across treatment in order to determine if services offered in training settings are beneficial, neutral, or harmful. This information is critical to preventing harmful or neutral services, assuring that client feedback on outcomes is being evaluated (instead of solely relying of clinician opinion regarding change in outcomes), and examining whether change in outcomes observed is commensurate with clients seen for outpatient psychotherapy at other nontraining settings (Anderson & Lambert, 2001; Lambert et al., 2001). Investigation into the process of change in psychotherapy often attempts to assess statistically significant and reliable change in treatment outcomes as well as the extent to which change is clinically meaningful for clients (Karpenko et al., 2009). The term clinically significant change (CS change) is used to refer to a client's change in outcomes across treatment that is significant and recognizable to the client. Definitions of CS change vary but a commonly utilized definition in the literature states that CS change occurs when a client's assessment score at intake is in the dysfunctional range and when the client's score has improved to meet

the threshold for reliable change as well as falls in the functional range (score that is indistinguishable from am asymptomatic population) of scores (Jacobson et al., 1984; Jacobson & Truax, 1991).

RC is a measure of statistical significance for change in scores before and after an intervention, which accounts for assessment of standard error. A change in scores is considered to be reliable when a client's scores have improved beyond what would be expected due to measurement error or chance. In order to meet the criteria for RC, the reliable change index on a certain measure must be met or exceeded (Jacobson & Truax, 1991). It is also possible for a client to achieve reliable change without achieving the criteria for clinical significance. Determining the extent to which reliable and CS change occurs for clients of university training clinics is principal to developing an understanding of the change process at university training clinics and providing informative feedback on consequences of treatment. For example, information on the change process and the occurrence of CS change in such settings could further therapist development and training by informing treatment planning (e.g., number of sessions, therapeutic goals) and supervision practices (e.g., how to interpret change in outcomes) in order to promote better services overall.

Clinical Outcomes in Training Clinic Settings

Few studies have examined the client change process in a university training clinic, despite the clear need for such information. Anderson and Lambert (2001) conducted a study on clinically significant change in 75 clients seen at a university

training clinic. Researchers examined change in outcomes on the Outcome Questionniare-45 (OQ-45; Lambert et al., 1996) and sought to define the number of sessions required for CS change to be attained. At the end of treatment 38% of clients seen met criteria for CS change. Additionally, 11 sessions were required for 50% of clients to meet criteria for CS change. The study examined to what degree clients met criteria for CS change; however, factors associated with CS change in training clinics were not examined in this study.

In another study, Kadera and colleagues (1996) investigated the dose-effect relationship in psychotherapy for 45 clients seen at a university outpatient clinic staffed by doctoral clinical psychology and social work students. The study aimed to determine client's performance in outpatient psychotherapy as measured by the OQ-45 to determine how much therapy was needed to produce CS change. Results reflected that 33% of patients met criteria for CS change, 25% met criteria for reliable improvement, 37% demonstrated no change, and 5% deteriorated. Of the clients who met criteria for CS change, 14% did so by 4 sessions, 43% by 8 sessions, and 76% by 13 sessions. Thus, there is some variability in terms of CS change in training clinic settings. Overall, investigations into the change process in psychology training clinics are scarce; however, initial research suggested that CS change has been observed in these settings for a little over a third of clients seen.

Clinical Outcomes in College Counseling Centers

While the literature on the process of change in university psychology training

clinics is limited, several studies have examined the change process in college counseling centers in order to determine the number of sessions needed for 50% of clients to attain CS change (Wolgast et al., 2003, 2005). It is notable that studies on college counseling center outcomes do not afford direct comparisons to psychology training clinic outcomes due to possible discrepancies in clinical procedures and professional disciplines; however, they do provide an appropriate benchmark for comparison purposes. One noteworthy distinction between university training clinics and college counseling centers is that often college counseling centers provide services solely to university students and not the general population. In addition, providers at college counseling centers might consist of training professionals in social work or other helping professions, outside of psychology.

Wolgast and colleagues (2003) conducted a study on the speed of recovery in psychotherapy outcomes of 788 clients at a university counseling center. Client outcomes were measured across time on the OQ-45 and the researchers found that 29.7% of clients achieved CS change. Additionally, 14 sessions were required for 51% of clients to meet criteria for CS change and 51% of clients met criteria for reliable improvement by 10 sessions. In addition, Wolgast and colleagues (2005) investigated the number of sessions required for 914 college counseling center clients to attain CS change. The researchers were interested in examining differences in outcomes and CS change based on client distress level. Clients were categorized into functional, less dysfunctional, or more dysfunctional based on scores on the OQ-45 at intake. Results found that 14 sessions were required for 51% of clients in the less dysfunctional range to achieve CS change,

whereas 20 sessions were required for 54% of clients in the more dysfunctional range to achieve CS change.

A study conducted by Snell and colleagues (2001) investigated 158 university counseling center clients to determine the number of clients who met criteria for CS change at a 1-year follow up based on scores on a computerized intake assessment. Researchers examined the predictive qualities of a computerized assessment in clients' scores at follow up. At 1 year posttreatment, 32% of clients' demonstrated reliable improvement in scores and 31% demonstrated CS change. Additionally, 25% of clients who achieved CS change did so after receiving eight sessions and 50% did so after 16 sessions. Furthermore, Draper, Jennings, Baron, Erdur, and Shankar (2002) conducted a study of 1,698 college counseling center clients and change in scores on the OQ-45. Change in scores was based on intake score and score at termination session (up to the 10th session). Results showed clients who terminated at the 10th session had the highest percentage of CS change compared to termination at any other session.

Overall, research on CS change and college counseling center clients is useful in developing an understanding of the change process in treatment outcomes in various training settings. Research in this area indicates that CS change can occur for clients seen for treatment at college counseling centers with graduate training-level psychologists and social workers as service providers.

Clinical Outcomes in Nontraining Settings

In addition to studies on the change process in counseling center populations,

research on CS change in nontraining settings provides an indication of whether notable discrepancies exist between training and nontraining service providers in psychotherapy outcomes. Lambert and colleagues (2001) conducted a study examining the association between the number of sessions and CS improvement in over 10,000 clients of managed care organizations. In addition, clients were classified into varying levels of disturbance to assess change in outcomes based on severity. Results found that 50% of patients showed reliable change improvement after 7 treatment sessions and that 21 sessions were required for 50% of clinically significant patients to achieve CS change.

In addition, a study conducted by Kopta and colleagues (1994) examined patterns of recovery for various psychological symptoms in 854 clients of five mental health centers. Sixty-two symptoms, taken from on the SLC-90-R items, were grouped to create three different classes (chronic distress, characterological, and acute distress). Results found that 50% achieved CS change by the 11th session and 75% achieved CS change by the 58th session.

Mullin and colleagues (2006) conducted a study on counseling and psychotherapy outcomes in primary care settings to determine appropriate benchmarks for recovery and CS change. Data from over 11,000 clients from 32 primary care services were included and patients completed the CORE-OM at intake and treatment termination. Only five to six clients out of every 10 met criteria for CS change.

Another study, conducted by Hansen and colleagues (2002) investigated outcomes in psychotherapy in naturalistic outpatient settings compared to outcomes found in randomized clinical trials. A national database of over 6,000 clients was

employed and scores on the OQ-45 were used to assess change across treatment. Results found that median number of sessions was three and that 6.5% of clients achieved CS change at three sessions and 16.6% of clients demonstrated reliable improvement at three sessions.

While the research on CS change in psychotherapy outcomes has been established for a variety of nontraining settings, including mental health centers and primary care, the investigation of the change process and CS change in clients of university psychology training clinics is limited. Currently, the literature on CS change report somewhat mixed findings, with some results suggesting similar findings for training and nontraining settings (Anderson & Lambert, 2001; Kopta et al., 1994), while other findings report a greater number of sessions are required for 50% CS change to occur in nontraining settings compared to training settings (Lambert et al., 2001). Further research into CS change in outcomes in training clinics is needed to determine whether or not clients are benefiting from treatment and whether CS change is occurring at a rate that is analogous to other settings (both training and nontraining).

Contextual Factors Associated with Client CS Change

Research on the process of change in psychology training clinics has largely failed to investigate various patient and contextual factors associated with change. Demographic, preexisting, therapeutic, and therapist-specific factors might serve as potential modifiers of change and therefore investigation into these possible correlates of

CS change is critical to informing better clinical practice and improving client outcomes across treatment.

Factors Associated with CS Change at Training Clinic Settings

Few studies have examined factors associated with CS change in psychology training clinics (see Table 1 for brief review of research on factors associated with CS change). Research by Anderson and Lambert (2001) examined specific preexisting factors and the association between these factors and CS change in a psychology training setting. Specifically, researchers examined CS change and client presenting distress level as measured on the OQ-45. They found that the mean time required to obtain CS change was approximately 11 sessions. However, when data were examined to clarify the impact

Table 1

Articles on Factors Relating to CS Change by Setting and Variable Type

Authors (years)	Type of setting	Type of variables	Outcome
Anderson & Lambert (2001)	Psychology training clinic	Preexisting	Higher severity level required more sessions to 50% recovery.
Bentley (2009)	College counseling center	Demographic; preexisting	Clinical and demographic factors influenced referral patterns and outcomes.
Jennings & Skovholt (1999)	Nontraining	Therapist-specific factors	Specific characteristics of master therapists were identified.
Okiishi et al. (2003)	College counseling center	Demographic; preexisting; therapeutic; therapist-specific	Found specific therapists were associated with speed of improvement. Significant outcomes not found for certain factors.
Okiishi et al. (2006)	College counseling center	Demographic; preexisting; therapeutic; therapist-specific	Specific therapists associated with speed of improvement. No significant impact on outcomes observed for certain factors
Shepherd et al. (2005)	Primary care nontraining	Demographic; preexisting; therapeutic	Several factors were associated with CS change.
Wolgast et al. (2003)	College counseling center	Preexisting	Higher severity level required more sessions for 50% recovery.
Wolgast et al. (2005)	College counseling center	Preexisting	Higher severity level on OQ-45 required more sessions for 50% recovery.

of distress level, they found that when higher levels of distress were present, approximately eight additional treatment sessions were needed to obtain 50% of clients who met criteria for CS change. Findings indicate that distress level, as measured on the OQ-45, can significantly influence the change process in clients of a psychology-training clinic.

Factors Associated with CS Change in Other Training Settings

While the research on factors associated with CS change in psychology training clinics is limited, there have been multiple studies investigating correlates of change in other training settings. Bentley (2009) conducted a study of 203 clients of a college counseling center, which investigated a variety of factors associated with referral to various therapeutic treatment groups and treatment outcomes. Demographic factors examined included client age and gender. Preexisting clinical variables were also investigated including clinical diagnosis, global assessment of functioning (GAF) scores, scores on the OQ-45 and the College Adjustment Scale. Results found that clinical characteristics had a significant impact on which group clients were referred to. Specifically, clients in the DBT skills training group presented with higher levels of impairment than those in the other two therapy groups. Additionally, previous counseling experience was related to treatment referral in that the DBT group consisted of more clients with no previous experience than the other two groups. Results found that there were no statistically significant differences in outcomes across the various treatment groups, and significant change on the OQ-45 was observed over the course of treatment

for all groups. Findings suggest that contextual and clinical factors should be examined in the context of psychology training clinic settings to determine if associations exist between factors and change in client outcomes in such a setting.

In addition, research by Wolgast and colleagues (2003, 2005) on clients of college counseling centers investigated client symptom severity on the OQ-45 as it related to CS change across the course of treatment. Overall, results found that client distress level was significantly related to change in outcomes. Specifically, results found that more treatment sessions were needed for 50% of clients to achieve CS change for clients with greater symptom severity and distress level on the OQ-45. Findings indicate that research on preexisting factors, such as symptom severity, are associated with client outcomes across treatment.

Furthermore, research by Okiishi and colleagues (2003, 2006) examined the relationship between a variety of factors and CS change in college counseling center clients. Specifically, the researchers examined demographic characteristics (e.g., gender), preexisting data (e.g., diagnosis, symptom severity), therapeutic variables (e.g., theoretical orientation), and therapist-specific factors (e.g., therapist demographics, therapist experience level). Overall, results found that therapist-specific demographic variables, including gender, level of training, and theoretical orientation, did not significantly influence client outcomes. Furthermore, results found certain therapists influenced outcomes significantly in terms of speed of improvement, with the fastest client improvement occurring in clients whose therapists' had a higher mean rate of change than the mean for the sample. Overall, research on college counseling centers and

factors associated with CS change report several factors which have been found to be associated with change in outcomes; however, research on these factors with psychology training clinics specifically is needed to determine if these factors serve as correlates of change with populations seen at psychology training clinics and in training clinic settings.

Factors Associated with CS Change in Nontraining Settings

In addition to research on potential modifiers of change at training settings, multiple studies have investigated factors relating to CS change in a myriad of nontraining settings. Jennings and Skovholt (1999) conducted a study examining an array of therapist-specific factors, including cognitive, emotional, and relational characteristics of 10 peer-nominated master therapists. Qualitative research methods were employed to identify characteristics of master therapists. Results stated that characteristics such as strong relationship skills and awareness of the impact of emotional health on clinical work were evident in the identified master therapists. Findings indicate that therapist-specific factors can impact client outcomes in outpatient psychotherapy treatment.

In addition, research by Shepherd and colleagues (2005) investigated correlates of CS change in patients who received psychological interventions in a primary care setting. Data were collected for 458 patients using the Clinical Outcomes in Routine Evaluation Outcome Measure to assess demographic variables (e.g., age, gender, employment status), preexisting variables (e.g., global distress scores, presenting problem), and therapeutic variables (referral source). Results found that 45% of patients demonstrated CS change after psychological intervention and that women and employed clients were

more likely to display improvement. Findings suggest that various patient and contextual factors are significantly related to CS change in a nontraining, primary care setting.

The need for examination of potential modifiers of CS change in a psychology training clinic setting is well defined. Research investigating factors associated with the change process in training settings is limited; however, findings in these settings indicate that demographic, preexisting, therapeutic, and therapist-specific factors are related to CS change. It is critical to investigate factors examined previously (e.g., client sex, client age, therapeutic orientation, referral type, presenting problem/diagnosis, therapist level of training, GAF, treatment used, and therapist demographics) in order to examine whether these factors are related to CS change in a psychology training clinic setting. Additional variables which have not been investigated in a psychology training clinic setting but which might impact client outcomes and the change process should be investigated as well. For the purposes of this study, these additional variables include demographic (e.g., current use of psychoactive medication, past sexual or physical abuse, and previous mental health services) and therapeutic (e.g., termination of treatment and supervisor orientation) factors. These variables have not previously been investigated in a psychology training clinic setting and examination of these potential correlates will serve to inform clinical practice and clinical training.

Each of the included additional variables has the potential to significantly impact a client's experience of psychotherapy and therefore could possibly influence any change in outcomes observed or could be related to a client's experience of change across treatment. Specifically, a client's use of prescription medication, prior experience with

psychotherapy services, past trauma or abuse history, or early versus planned termination of services all could perhaps relate to how that client engages in and experiences outpatient psychotherapy services and therefore could influence a client's outcomes of therapy services. For example, the current study seeks to investigate client psychoactive medication usage and clinical outcomes across treatment in order to identify and define whether a significant relationship exists between these two variables and to seek to better understand the nature of such a relationship (e.g., is client prescribed anti-depressant use associated with greater change in psychotherapy outcomes?). It is critical for the current study to investigate all conceivable relationships between factors affecting a client's change in outcomes across therapy to begin to develop an understanding of the change process throughout treatment. Furthermore, previous research in college counseling center clients have found modifiers of change that can impact client outcomes across treatment and it is necessary to understand this process specific to psychology training clinics.

Purpose of the Study

The current study was designed to evaluate CS change in psychotherapy outcomes for clients of an outpatient doctoral psychology training clinic. The purpose of the current study is to characterize the change process and identify factors associated with CS change in a university psychology training clinic. The current project sought to answer the following specific empirical questions.

1. Determine to what degree clients at a university training clinic meet criteria

for clinically significant change and/or reliable change at the termination of therapy and examine preexisting characteristics of clients in each change outcome subgroup.

a. Client outcome data on the OQ-45 will be analyzed to determine the percentage of clients who met criteria for CS change, reliable improvement, no change, and deterioration. Additionally, frequency and descriptive analyses will be conducted to characterize the sample for each of the change groups (e.g., CS Change, Reliable Improvement, No Change, and Deterioration).

2. How many sessions are necessary for 50% of clients to meet criteria for clinically significant change?

a. Survival analysis on client outcome data on the OQ-45 will be conducted to determine the number of sessions required for 50% of clients in the sample to demonstrate CS change.

3. What factors are associated with clinically significant change, or improved reliable change, in a university training clinic?

a. Various factors (e.g., therapeutic, therapist-oriented, preexisting, and demographic) will be coded for each client. Data analysis will include examination of statistically significant correlations of CS change and reliable improvement in outcomes across treatment.

CHAPTER III

METHODS

Participants

The current study utilized archival data from between 100 to 200 outpatient psychotherapy clients seen at a doctoral psychology community clinic staffed by graduate-level therapists beginning in January 2005 until December 2012. The study required a minimum of 100 participants in order to maintain adequate power for detecting medium correlations (0.3) between modifiers and CS outcomes. In order to be included in the study, clients needed to be: (a) 18 years or older at the time of intake; (b) seen for outpatient treatment at a graduate level psychology training clinic by a student therapist; (c) have attended a minimum of two sessions (including intake); and (d) have completed at least two OQ-45 questionnaires. The following clients were excluded from the study: clients seeking psychological services for assessment or evaluation purposes, clients seen at a graduate level psychology training clinic by a licensed psychologist, clients who only attended an intake session, and clients who did not complete at least two OQ-45 questionnaires. The current study targeted the general adult population and the sample consisted of adults ranging from young adulthood to middle-aged who demonstrated a variety of presentations of employment status, marital status, and income.

Sample Characteristics

Among the 401 clinical case files reviewed by student therapists at a graduate level psychology training clinic between January 2005 and December 2012, 199 met full

inclusion criteria for the study; 202 were excluded from the study due to the following: client was seen for an evaluation (64 cases), client was seen for intake only (43 cases), client completed one or less OQ-45 questionnaires throughout the course of treatment (63 cases), client file could not be readily found (17 cases), client was seen as part of a couples case (10 cases), or client file did not have intake or disposition report required to gather contextual factor information (5 cases). The mean number of OQ-45 questionnaires completed throughout treatment was 7.31 (*SD* = 6.36) and the mean number of treatment sessions clients attended was 8.17 (*SD* = 9.16; range from 1 to 71 sessions). The mean score on the OQ-45 Total score at the start of treatment was 77.48 (*SD* = 21.18) and the mean scores on the subscales at the start of treatment were as follows: symptom distress mean of 45.97 (*SD* = 14.16), interpersonal relations mean of 17.51 (*SD* = 6.40), and social role performance mean of 13.93 (*SD* = 4.15).The mean score on the OQ-45 total score at the termination of treatment was 62.37 (*SD* = 26.31) and the mean scores on the subscales at the termination of treatment were as follows: symptom distress mean of 36.94 (*SD* = 17.08), interpersonal relations mean of 14.90 (*SD* = 7.19), and social role performance mean of 11.45 (*SD* = 4.70).

The sample consisted of 120 female clients (60.3%) with the mean age of clients being 30.21 years (*SD* = 10.09). The sample consisted of primarily white clients (82.9%) with over half of the clients employed at the time of intake (55.8%). Approximately 42.2% (*n* = 84)) reported taking psychoactive medication at the time of intake and 133 clients (66.8%) reported previous mental health services. A full review of demographic characteristics for the sample is listed in Table 2.

Table 2

Demographic Sample Characteristics

Variable	*n*	%	*M*	*SD*	Variable	*n*	%
Gender					Religion		
Female	120	60.3			LDS	68	34.2
Male	79	39.7			Catholic	3	1.5
Age			30.2	10.09	Protestant Christian	5	2.5
Race					Buddhist	3	1.5
White	165	82.9			Wiccan	1	.5
Black	2	1			Agnostic or Atheist	2	1
Asian	5	2.5			Baha'i	1	.5
Latino	4	2			Not reported	116	58.3
Other	2	1			Medication at intake	84	42.2
Not reported	21	10.6			Antidepressant	80	60.2
Employment status					Antipsychotic	8	6.0
Employed	111	55.8			Sleep	6	4.5
Unemployed	24	12.1			Benzodiazepine	25	18.8
On disability	5	2.5			Anticonvulsant	3	2.3
Full-time student	50	25.1			Stimulant	5	3.8
Retired	2	1			Not reported	6	4.5
Not reported	7	3.5			Prior mental health services	133	66.8
Session cost			$21.13	$9.65	Hospitalized	16	7.1
Range of cost			$10-$60		Community health	8	3.6
Monthly income			$189-$4,500		University setting	57	25.3
Past abuse	44	22.1			Private agency	45	20
Sexual abuse	23	51.1			Family counseling	23	10.2
Physical abuse	18	40			Rehabilitation clinic	1	.4
Not specified	4	8.9			Court ordered services	5	2.2
Marital status					Religious organization	17	7.6
Married	83	41.7			Vocational rehabilitation	3	1.3
Divorced	21	10.6			School	2	.9
Single	87	43.7			Not specified	48	21.3
Engaged	7	3.5			Living alone at intake	10	5
Not reported	1	.5			Using substances at intake	45	22.6
					Suicidal ideation at intake	28	14.1

Note. The range is provided for income and range of session cost.

In terms of preexisting characteristics of the sample at intake, 42.2% (*n* = 84) clients reported anxiety as a primary presenting problem and 33.2% (*n* = 66) reported depression as a primary presenting problem. A wide variety of primary and secondary presenting problems were reported, including relationship concerns, psychosis or manic symptomatology, previous abuse or trauma, pornography addiction, and body image concerns among others. The length of the primary presenting problem was also coded, with 72 clients who reported experiencing the problem for 5 years or longer (36.2%). A full review of preexisting variables is listed in Table 3.

Table 3

Preexisting Sample Characteristics

Variable	*n*	%	Variable	*n*	%
Primary presenting problem			Secondary presenting problem		27.4
Depression	66	33.2	Depression	37	27.4
Anxiety	84	42.2	Anxiety	43	31.9
Relationship	26	13.1	Relationship	30	22.2
Anger	6	3	Anger	7	5.2
Substance use	3	1.5	Sleep concerns	2	1.5
Psychosis/mania	2	1	Substance use	2	1.5
Abuse/trauma	7	3.5	Psychosis/mania	4	3
Eating behavior	1	.5	Abuse/trauma	5	3.7
Body image	1	.5	Eating behavior	1	.7
Pornography addiction	1	.5	Body image	1	.7
Significant academic concerns	1	.5	Gender identity	1	.7
Compulsive lying	1	.5	Pornography addiction	1	.7
			Self-harm behavior	1	.7
			Length of presenting problem		
			Onset in last 6 months	39	19.6
			Onset in last year	19	9.5
			Onset in last 5 years	42	21.1
			Onset over 5 years	72	36.2
			Not reported	27	13.6

Finally, the frequency of various therapeutic characteristics was also calculated. Findings indicated that 31.2% (*n* = 62) of clients participated in treatment for less than a month and 20.6% (*n* = 41) participated in treatment for between 1 to 2 months. Around 1% (*n* = 2) of clients were seen for over 2 years. At termination, 36.4% (*n* = 72) of clients ended treatment as planned with the student therapist. Interventions used throughout treatment ranged from 16.52% (*n* = 75) of interventions being general support and 15.85% (*n* = 72) being problem-solving interventions to 0.22% (*n* = 1) of interventions being parent training and 0.88% (*n* = 4) being habit reversal interventions. A full review of therapeutic characteristics is listed in Table 4.

Table 4

Therapeutic Sample Characteristics

Variable	*n*	%	Variable	*n*	%
Referral type			Interventions used		
Self-referred	38	19.1	Support	75	16.2
Physician	29	14.6	Parent training	1	.22
Friend/family	37	18.6	Problem-solving	72	15.86
Voc. rehab office	1	.5	Relaxation	49	10.79
University counseling center	16	8	Behavior activation	58	12.78
Disability resource center	2	1	Cognitive restructuring	72	15.86
Mental health provider	13	6.5	ACT-based	41	9.03
Head start	1	.5	Psychoeducation	17	3.74
Center for Persons with Disabilities	1	.5	Emotion identification	20	4.41
Probation officer	1	.5	Sleep hygiene	6	1.32
Not reported	60	30.2	Communication	24	5.29
Length of treatment			Exposure	7	1.54
Less than 1 month	62	31.2	DBT-based	4	.88
One to 2 months	41	20.6	Imagery	4	.88
Two to 3 months	32	16.1	Habit reversal	4	.88
Three to 6 months	37	18.5	Termination type		
Six months to 1 year	17	8.2	Failure to reschedule	77	38.9
One year to 2 years	8	4	Planned termination	72	36.4
Over 2 years	2	1	Client cancelled, not planned	49	24.7

Procedures

Participants were seen as outpatient psychotherapy clients at a graduate level psychology training clinic from January 2009 to December 2012. The OQ-45 was administered at intake and additional psychotherapy sessions. All participants had terminated treatment and case files were stored in a graduate level psychology training clinic until purge date. Data were obtained through case file review. This process consisted of checking out each file with a graduate level psychology training clinic. Each client was assigned a de-identified number, which was documented in the actual clinic file to ensure that all data entered were accurate. The data from the file was entered into a de-identified database. Entered data included client age at intake, client sex, and all OQ-45 scores. In addition, charts were coded for a variety of variables possibly relating to CS change. These variables and coding criteria are outlined in Appendix B.

Measures

Outcome Questionnaire-45

Assessment of the change process requires two components: repeated measurement that is sensitive to change and an operationalized definition of CS change. The Outcome Questionnaire-45 (Lambert et al., 1996) is a paper-and-pencil instrument designed to assess symptoms distress across three primary areas: symptom distress, interpersonal relationships, and social role performance (Appendix A). The clinical cutoffs and RCI values for the OQ-45 Total Score and subscale scores are listed in Appendix B.

The OQ-45 has been found to evidence adequate internal consistency (*r* = 0.93) and 3-week test-retest reliability (*r* = 0.84; Ellsworth, Lambert, & Johnson, 2006; Lambert et al., 1996). In addition, results have found the OQ-45 displays convergent and divergent validity with the Behavior and Symptom Identification Scales (BASIS-32), demonstrating a correlation of 0.64 between total scores on the two scales (Doerfler, Addis, & Moran, 2002). Furthermore, the OQ-45 has been investigated as a measure to assess change in university counseling center clients and has been found to meet criteria in detecting change sensitivity in such settings (Vermeersch et al., 2004).

In addition, a standardized explanation of CS change is needed to determine whether changes in outcomes are clinically significant for clients. An operationalized definition of CS change for the OQ-45 was set forth by Anderson and Lambert (2001) and requires a client begin treatment in the clinical range and end treatment in the functional range. In addition, the change in score is determined to be a reliable change if a difference of 14 points is observed (Anderson & Lambert, 2001). The OQ-45 is designed to track change across treatment sessions and can be operationalized to determine CS change in outcomes. Therefore, the OQ-45 is an appropriate measure to use in determining change in psychotherapy outcomes.

Clinical File Review

Clinical records for each client were reviewed systematically using an outlined coding sheet (see Appendix C). The coding sheet was designed by study investigators in order to obtain the necessary information on OQ-45 score and variables related to CS change. The coding sheet examined data across a variety of areas, including demographic

information, therapeutic information, preexisting information, and therapist-specific information. These areas of information are of interest to the current study in identifying and developing an understanding of correlates of CS change in a psychology training clinic setting.

Each clinical file was coded for the following client demographic variables: sex, age, ethnicity, religion, employment status, session cost, marital status, use of substances, living alone, use of psychoactive medication, previous psychological services, suicidal ideation at intake, and previous abuse. This information was obtained from the intake report. Preexisting data included a coded presenting problem and length of problem. This information was obtained from review of the intake report. The therapeutic data collected included the type of referral, intervention type, language of treatment, length of treatment, and type of termination. Data were obtained from the intake report and disposition note. Finally, therapist-specific data included student therapist sex, ethnicity, and level of training. This information was obtained by examining student therapist date entering the program and date client was seen. Level of training was determined based on the number of years of training since starting the program (e.g., second year of training) and accounted for student therapists who entered the program with a clinical master's degree. The coding of 25 clinical case files was completed independently by two of the graduate student investigators using a double-blind coding procedure in which 25 files were randomly selected and coded according to the coding sheet (Appendix B). Reliability checks were conducted on several of the key coded variables by calculating a Kappa statistic to yield a measure of agreement between the two coders. Interrater

reliability was very good overall with Kappa coefficients ranging from 0.91 for agreement between coders on past abuse to 1.0 for agreement between coders on race, session cost, presenting problem, and OQ-45 Total Score at intake each individually. Table 5 provides the interrater reliability data for the included key variables.

Experimental Design

The current study employed a quasi-experimental design using archival data to examine the occurrence of CS change from the start of treatment to the final treatment session for outpatient clients. Hard copies of client clinical records were coded and data were used to evaluate any possible correlation between the occurrence of CS change and various contextual factors.

Table 5

Interrater Reliability Data Among Two Independent Coders

Variable	Kappa coefficient
Race	1
Employment status	0.93
Session cost	1
Substance use at intake	0.94
Medication use at intake	0.94
Previous psych services	0.93
Past abuse	0.91
Presenting problem area	1
Length of problem	0.95
No. of sessions attended	0.96
Termination type	0.94
OQ-45 total at intake	1

Data Analyses

Multiple variables were examined in order to address the three research questions proposed in the current study. To address research question 1, outcome data from the OQ-45 was analyzed to determine the percentage of clients who met criteria for CS change, reliable improvement, no change, and deterioration. No change was said to occur when a client's change in scores on the OQ-45 did not meet or exceed the reliable change index. Deterioration occurred when a client's scores met or exceeded the reliable change index, but the change in scores occurred in the dysfunctional direction, indicating an increase in symptoms of distress. Research question 2 was addressed through the completion of survival analysis on OQ-45 data to determine the number of sessions required for 50% of clients in the sample to demonstrate CS change. And finally, research question 3 was addressed by calculation of Pearson correlation coefficients between various factors coded from clinical files and CS change and reliable improvement outcomes.

CHAPTER IV

RESULTS

Percentage of Clients Meeting Change Outcomes

The first research question addressed the degree to which clients at a university training clinic met criteria for clinically significant change or reliable change at the termination of therapy. Clients met criteria for clinically significant change in scores on the OQ-45 if they began treatment in the dysfunctional range of scores (above the clinical cutoff) and showed a change in scores from initial to final assessment that met or exceeded the RCI and fell in the functional range (below the clinical cutoff). Clinical cutoff values and RCIs for the OQ-45 Total Score and all subscales are listed in Table 2. Clients met criteria for reliable improvement if they improved in outcome score and met or exceeded the RCI. Clients met criteria for no change if they did not meet or exceed the RCI. Clients met criteria for deterioration if they met or exceeded the RCI and scores moved in the direction of increasing psychopathology or symptoms.

Results for the OQ-45 Total Score and all subscale scores are listed in Table 6. Overall, 56 clients (28.1%) demonstrated CS change, 46 clients (23.1%) demonstrated reliable improvement, 79 clients (39.7%) demonstrated no change, and 18 clients (9%) deteriorated. Therefore, slightly over half of the sample reliably improved throughout the course of therapy.

In comparison to other research on CS change outcomes in psychology training clinics, findings from the current study are similar to earlier findings by Kadera and

Table 6

Change Outcomes on the OQ-45 Subscales and Total Score

Scale name	*n*	%	Scale name	*n*	%
Symptom distress			Social role		
CS change	44	22.1	CS change	27	13.6
Reliable improvement	59	29.6	Reliable improvement	9	4.5
No change	90	45.2	No change	160	80.4
Deterioration	6	3	Deterioration	3	1.5
Interpersonal relations			OQ-45 total score		
CS change	28	14.1	CS change	56	28.1
Reliable improvement	10	5	Reliable improvement	46	23.1
No change	154	77.4	No change	79	39.7
Deterioration	7	3.5	Deterioration	18	9

colleagues (1996). A comparison of percentages of clients by change category is provided in Table 7.

Preexisting Characteristics of Various Outcomes Groups

In order to develop a clear understanding of client's change in outcomes across treatment, the current study sought to examine various preexisting characteristics of clients in each of change outcome groups, including the groups of clinically significant change in outcomes, reliable improvement, no change, and deterioration. Of the 56 clients who ultimately demonstrated clinically significant change, 71.4% (*n* = 40) were female and 62.5% (*n* =35) were employed at the time of intake. 44.6% (*n* = 25) of clients who met criteria for CS change reported taking psychoactive medication at intake and 62.5% (*n* = 35) reported previously engaging in psychological services. Additionally,

Table 7

Percentage of Clients by Change Category for Current and Comparison Study

Current study	*n*	%	Kadera et al. (1996)	*n*	%
CS change	56	28.1	CS change	21	33
Reliable improvement	46	23.1	Reliable improvement	16	25
No change	79	39.7	No change	24	37
Deterioration	18	9	Deterioration	3	5

39.3% (*n* = 22) of clients who met CS change criteria presented to treatment with anxiety and 37.5% (*n* = 21) presented with depression as the primary concern and 30.4% (*n* = 17) reported an onset of symptoms in the last 6 months.

Of the 46 clients who reliably improved across the course of treatment, 58.7% (*n* = 27) were female and 52.2% (*n* = 24) were employed at the time of intake. 43.5% (*n* = 20) of clients who reliably improved reported taking psychoactive medication at intake and 65.2% (*n* = 30) reported previously engaging in psychological services. Additionally, 45.7% (*n* = 21) of clients who reliably improved reported anxiety as the primary presenting concern and 41.3% (*n* = 19) reported long-term or chronic symptoms.

Of the 79 clients who demonstrated no change throughout the course of treatment, 55.7% (*n* = 44) were female and 57% (*n* = 45) were employed at the time of intake. 39.2% (*n* = 31) of clients who demonstrated no change reported taking psychoactive medication at intake and 67.1% (*n* = 53) reported previously engaging in psychological services. Additionally, 41.8% (*n* = 33) of clients who demonstrated no change in outcomes reported anxiety as the primary presenting concern and 39.2% (*n* = 31) reported long-term or chronic symptoms.

Of the 18 clients who demonstrated a deterioration in scores throughout the course of treatment, 50% (*n* = 9) were female and 38.9% (*n* = 7) were employed at the time of intake, 50% (*n* = 9) of clients who deteriorated reported taking psychoactive medication at intake and 11.1% (*n* = 2) reported previously engaging in psychological services. Additionally, 44.4% (*n* = 8) reported anxiety as the primary presenting concern and 38.9% (*n* = 7) reported long-term or chronic symptoms.

Survival Analysis

The third research question sought to determine the median effective dose for CS change in clients seen at a psychology training clinic. The Kaplan-Meier survival analysis procedure was employed as a way to estimate the number of sessions required for CS change while allowing for censored cases. The Kaplan-Meier analysis is a method of estimating the time it takes for a sample to reach criteria for a particular event of interest. For the current study, the Kaplan-Meier analysis was utilized to determine the number of sessions required for clients to attain CS change. Most importantly, the Kaplan-Meier procedure accounts for censored cases, or cases in which the event of interest has not yet occurred. The Kaplan-Meier procedure was an appropriate method to use in the current study because of the consideration of censored cases, which in the current study included individuals who did not meet criteria for CS change. Perhaps clients did not demonstrate CS change because they left treatment before meeting criteria for CS change or conversely, clients may have remained in therapy until termination but did not ultimately meet criteria for CS change.

The Kaplan-Meier analysis procedure contains various assumptions, including the assumption that calculated probabilities for CS change outcomes depend solely on passing of time and not other variables. Another assumption made by this statistical method is that clients who enter treatment at different times will behave similarly. These assumptions were present in the current analysis as all clients who attained CS change were assumed to have done so as a result of time in therapy as opposed to other possible factors (e.g., time they started treatment, treatment type, presenting problem, etc.)

A survival analysis of all clients who attained CS change is shown in Table 8. In this survival analysis, the time variable was coded as number of sessions and the status variable was met once clients had obtained CS change. Therefore, in the analyses that follow, clients who demonstrated CS change attained the status variable of interest and clients who have not yet met criteria for CS change are indicated by the number surviving at each interval. In Table 7, the cumulative CS probability score reflects the cumulative probability of clients' attaining CS change by the number of sessions received. The current findings suggest that approximately 27% of clients who attained CS did so by the end of session 3, 60% of clients by session 6, 77% by session 9, and all clients who attained CS change did so by session 20.

The minimum number of sessions necessary for clients to achieve CS change was two, and all clients in the sample who ultimately met criteria for CS change did so by 20 sessions. According to the results of this analysis, for clients who met criteria for CS change, if clients remained in treatment for three sessions, 25% would be expected to attain CS by the end of session 3; 50% would be expected to reach CS by session 6; and

Table 8

Survival Analysis of Clients Who Reached CS Change on the OQ-45 (N = 96)

Sessions attended	No. CS	Cum. CS probability
2	13	0.14
3	13	0.27
4	11	0.39
5	10	0.49
6	11	0.60
7	6	0.67
8	5	0.72
9	5	0.77
10	4	0.81
11	4	0.85
12	5	0.91
13	1	0.92
14	2	0.94
15	2	0.96
16	1	0.97
17	0	0.97
18	1	0.98
19	1	0.99
20	1	1.00
Total censored: 103 (51.8%)		Total attaining CS: 96 (48.2%)
Mean time to CS: 6.67 (0.43)		Median time to CS: 6 (0.46)

Note. Standard error for mean and median estimates are provided in parenthesis.

75% would be expected to attain CS by session 9. These findings are fairly consistent with findings by Anderson and Lambert (2001; N = 53) who found that 25% of clients were estimated to achieve CS by the end of session 5 and 50% by the end of session 11. However, current findings differ somewhat from Kadera et al. (1996; N = 47) who found that 25% were estimated to reach CS by the end of session 10, 50% by the end of session 16, and 75% by the end of session 25. A graphical comparison of these findings is provided in Figure 1.

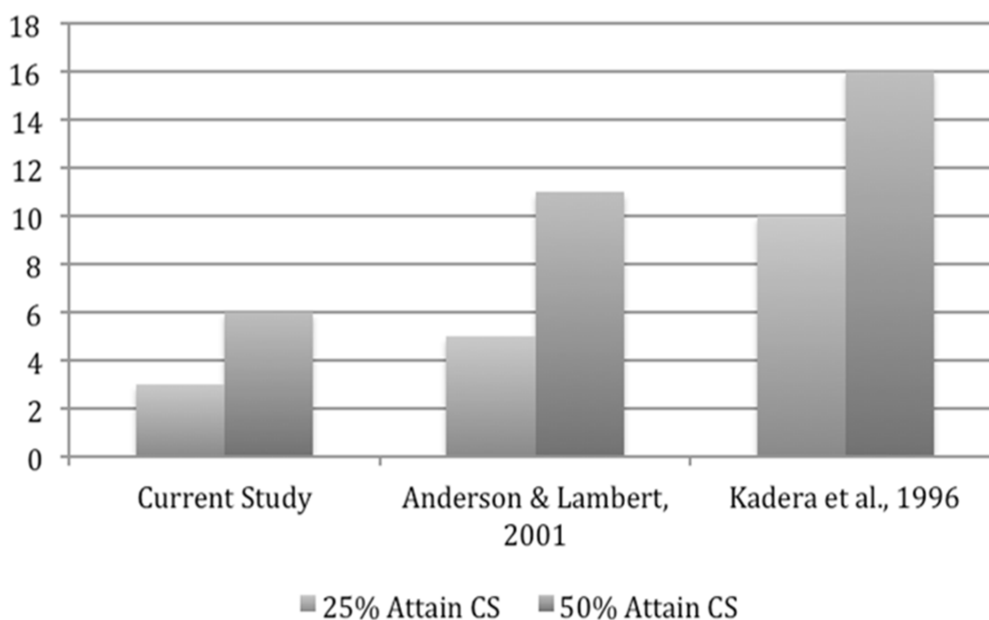

Figure 1. A graphical representation of number of sessions for 25% of clients to attain CS change and 50% of clients to attain CS change by study.

The mean estimate was 6.67 (standard error = 0. 43) and the median estimate was 6 (standard error = 0.46), suggesting that for clients who ultimately met criteria for CS change, it took them on average 6 sessions to do so. A graph of cumulative CS probability of survival data from these analyses is depicted in Figure 2

Pearson Correlations

The fourth empirical question aimed to identify various factors associated with clinically significant or reliable change. Pearson correlation coefficients were calculated for each coded factor (e.g., therapeutic, therapist-oriented, preexisting, and demographic) and change amount for clients who attained CS change, reliable improvement, no change, or deterioration as well as clients who demonstrated either CS change or reliable improvement. A full review of correlation data is listed in Table 9. The

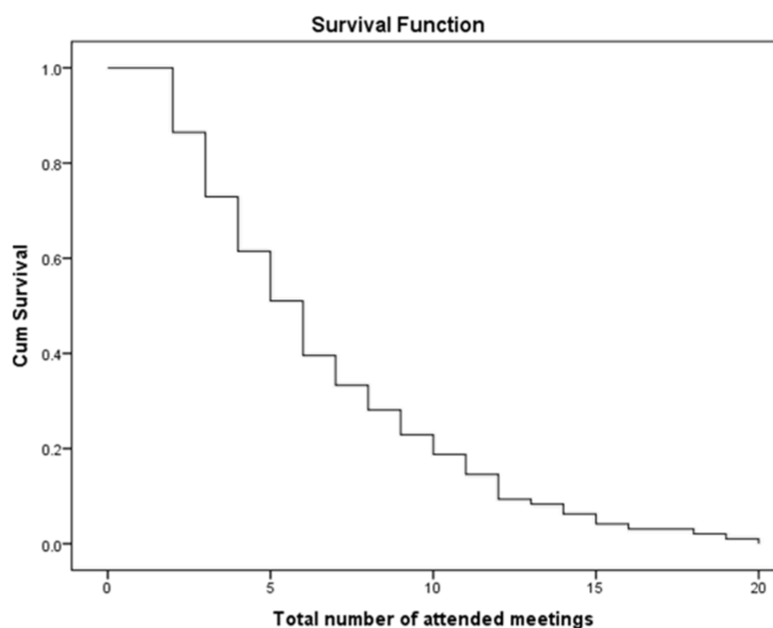

Figure 2. A graphical representation of cumulative probability of attaining CS change by session received,

change amount variable was calculated based on the difference in OQ-45 Total Score from a client's initial assessment and final assessment. The current study examined change scores across three groups based on the category of type of change (e.g., CS change [*n* = 56], reliable improvement [*n* = 46], and no change or deterioration [*n* = 97]). Additionally, the distribution for the change amount appeared to be normally distributed for clients who achieved CS change and reliable improvement. The change amount of clients who demonstrated no change or deterioration in scores was negatively skewed due to two extreme outliers. The validity of these outliers was confirmed. The two outliers were removed from the data set and distribution and correlation data were calculated a second time. The distribution of the no change or deterioration group became normal once the two outliers were removed. Furthermore, the correlation magnitude observed

Table 9

Pearson's Correlational Data Organized by Change Outcome

Variable	How variable was coded	CS change (n = 56)		Reliable improvement (n = 46)		No change (n = 79)		Deterioration (n = 18)		CS change and/or reliable improvement (n = 102)	
		r	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*
Gender	0 = female 1 = male	-.305	.022*	-.003	.987	-.243	.031*	-.556	.017*	-.236	.017*
Age	In years	-.288	.031*	.058	.700	.004	.969	.244	.244	-.186	.062
Session cost	In dollars	-.104	.450	.267	.079	.066	.571	.346	.346	-.017	.864
Marriage	0 = unmarried 1 = married	-.109	.425	.147	.334	.075	.510	-.287	.248	-.062	.540
Employment	0 = unemployed 1 = employed	-.153	.260	-.001	.995	.238	.041*	.195	.438	-.098	.333
Substance use	0 = no 1 = yes	-.218	.246	-.039	.852	-.149	.293	.138	.654	-.252	.061
Medication use	0 = no 1 = yes	-.141	.357	.324	.050	-.112	.390	-.040	.879	.008	.940
Prior mental health	0 = no 1 = yes	-.158	.283	-.050	.758	-.049	.681	.362	.153	-.118	.275
Past abuse	0 = no 1 = yes	.137	.599	.111	.651	.117	.604	-.310	.612	.140	.415
Suicidal ideation	0 = no 1 = yes	-.205	.327	.277	.317	.107	.603	.491	.216	-.054	.741
Living alone	0 = no 1 = yes	-.149	.324	-.225	.174	.089	.499	.140	.604	-.133	.228
Problem length	0 = within last year 1 = over 1 year	.006	.968	.051	.736	-.053	.669	.076	.773	-.068	.529

(*table continues*)

Variable	How variable was coded	CS change ($n = 56$)		Reliable improvement ($n = 46$)		No change ($n = 79$)		Deterioration ($n = 18$)		CS change and/or reliable improvement ($n = 102$)	
		r	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*
Treatment length	0 = under 6 months 1 = over 6 months	.104	.448	.204	.173	.125	.272	.127	.617	.105	.292
Termination type	0 = planned 1 = unplanned	-.211	.118	.192	.201	.000	.999	-.191	.447	-.193	.053
Number of sessions	Number attended	.087	.523	.354	.016*	.087	.446	-.011	.964	.114	.253
Therapist clinical master's	0 = no MA 1 = yes MA	.276	.039*	-.012	.937	-.035	.756	-.003	.990	.124	.216
Therapist gender	0 = male 1 = female	-.151	.266	-.295	.047*	-.077	.501	-.483	.042*	-.146	.143
Therapist level of training	0 = in first 2 years 1 = over 2 years	-.084	.537	.042	.779	.056	.626	-.426	.078	-.005	.961

$p < .05$.

between employment status and no change or deterioration in scores did not change after the removal of the two outliers. As a result, the current findings report the original distribution and correlation values with all data points included. A full review of change amount distribution data is provided in Table 10.

For clients who ultimately attained CS change through the course of treatment, client gender, client age, and therapist having obtained a clinical master's degree prior to starting their doctoral program were associated with amount of change on the OQ-45. Specifically, female gender was associated with greater improvement on the OQ-45. A moderate negative relationship was found between client gender and CS change (r = -.305, $p < .05$), indicating that the frequency of clients attaining CS change increases as the sample becomes more female. A negative relationship was found between client age and CS change (r = -.288, $p < .05$), indicating that the frequency of clients attaining CS change increases as the sample becomes younger. A positive relationship was found between the therapist having obtained a clinical master's degree prior to starting the program and CS change (r = .276, $p < .05$), indicating that the frequency of clients

Table 10

Change Amount Distribution Data by Change Category

Variable	CS change	Reliable improvement	No change/deterioration
Mean	38.69	24.13	-2.80
Standard deviation	2.22	8.40	13.04
Minimum	17.00	14.00	-53.00
Maximum	79.00	49.00	13.00
Kurtosis	-0.58 (*SE* =0 .63)	0.61 (*SE* = 0.68)	2.23 (*SE* = 0.46)
Skewness	0.61 (*SE* = 0.32)	0.95 (*SE* = 0.35)	-1.31 (*SE* = 0.25)

attaining CS change increases for therapists who had obtained a clinical master's degree prior to beginning the program.

For clients who met criteria for reliable improvement, the number of treatment sessions and therapist gender were found to be statistically significant in association with change amount on the OQ-45. A moderate positive relationship was found between number of treatment sessions and reliable improvement (r = .354, p < .05), indicating that the frequency of clients meeting criteria for reliable improvement increases as clients attend more sessions. Additionally, a weak positive relationship was found between therapist gender and reliable improvement in scores (r = -.295, p < .05), indicating that the frequency of clients meeting criteria for reliable improvement increases as the therapist gender becomes more female.

For clients who met criteria for CS change and/or reliable improvement, only the client's gender was found to be statistically significant in association with change amount on the OQ-45. A negative relationship was found between client gender and CS change or reliable improvement (r = -.236, p < .05), indicating that the frequency of clients attaining CS change or reliable improvement increases as the sample becomes more female.

For clients who did not demonstrate a significant change in scores, client gender and employment status at intake were statistically significant in association with change amount on the OQ-45. A weak negative relationship was found between client gender and no change or deterioration in scores (r = -.243, p < .05), indicating that as the sample becomes more female, the frequency of clients demonstrating no change in outcomes

decreases. A positive relationship was found between employment status at intake and no change in scores ($r = .238$, $p < .05$), indicating the frequency of clients demonstrating no change in scores increases as the sample becomes more employed.

For clients who met criteria for deterioration in scores, client gender and therapist gender were statistically significant in association with deteriorated outcomes on the OQ-45. A negative relationship was found between client gender and deterioration in scores ($r = -.556$, $p < .05$), indicating that as the sample becomes more female, the frequency of deterioration in outcomes decreases. A negative relationship was found between therapist gender and client deterioration in scores ($r = .483$, $p < .05$), indicating that as the frequency of deterioration in scores decreases as the therapist gender becomes more female.

CHAPTER V

DISCUSSION

Percentage of Clients Meeting Change Outcomes

The current study sought to characterize the change process of clients seen for outpatient psychotherapy at a psychology training clinic by graduate level student therapists. Results regarding the percentage of clients who met criteria for CS or other change outcomes indicate that 28.1% of clients' attained CS change throughout the course of treatment, 23.1% met criteria for reliable improvement in scores, 39.7% demonstrated no significant change in outcomes, and 9% of clients met criteria for deterioration. Therefore, slightly over half of the sample (51.2%) demonstrated reliably improvement in outcomes on the OQ-45 throughout the course of therapy.

It is important to clarify that due to the operational definition of clinically significant change in scores on the OQ-45, only clients who had an initial OQ-45 Total Score that exceeded the clinical cutoff were eligible to possibly meet full criteria for clinically significant change. In the current study, this meant that of the 199 participants, only 155 had an OQ-45 Total Score above the cut-off of 63 and therefore only these 155 clients had the potential to demonstrate a clinically-significant change in scores. Similarly, at the termination of treatment, 100 participants of the 199 in the sample had scores in the clinically significant range, therefore making it impossible for these clients to achieve a clinically significant change in scores as part of the criteria to do so requires client's scores must start above the cutoff and end below the cutoff.

A brief analysis of change in outcomes by change category is outlined in Table 11 for clients who started above the clinical cutoff and for those who did not. Overall, for clients who started treatment with an initial OQ-45 score below the clinical cutoff and who were therefore unable to met criteria for clinically significant change, slightly over a third (36.4%) continued to meet criteria for reliable improvement.

These findings are comparable to findings reported on rates of change in other psychology training clinic settings, including findings by Kadera and colleagues (1996) who found that 33% of clients met criteria for CS change and Anderson and Lambert (2001) who found that 38% of the sample attained CS change before leaving therapy. Additionally, findings from Wolgast and colleagues (2003) on percentages of CS change outcomes of clients seen at a college counseling center setting found that 29.7% of clients achieved CS change throughout the course of treatment. Furthermore, the current findings on percentage of clients who attained CS change are fairly analogous to research on CS change in nontraining, primary care environments. Shepherd and colleagues (2005) reported that 45% of clients demonstrated either reliable improvement or CS change in outcomes after interventions in a primary care setting. However, findings on

Table 11

Change Category Percentages for Clients Who Started Above or Below Clinical Cutoff

Clients with initial total score above cutoff (*n* = 155)	*n*	%	Clients with initial total score below cutoff (*n* = 155)	*n*	%
CS change	56	36.1	CS change	NA	
Reliable improvement	30	19.4	Reliable improvement	16	36.4
No change	57	36.8	No change	21	47.7
Deterioration	12	7.7	Deterioration	7	15.9

the rate of CS change differ from findings by Mullin and colleagues (2006), who examined recovery and improvement benchmarks in primary care and found that between five and six out of every 10 patients in the average met the criteria for recovery.

Overall, the current findings indicate that clients seen for outpatient psychotherapy at a graduate level psychology training clinic experienced fairly swift and clinically significant improvement in symptoms. These findings support the utility of outpatient psychotherapy services provided by graduate level student therapists as a beneficial treatment option for adults with mental health concerns. These findings also suggest that reliable change occurs for about half of clients seen and that for the clients who ultimately demonstrate CS change; the majority do so by session 6 to session 9. This could serve to inform treatment planning practices as well as clinic policy (e.g., monitor treatment progress and evaluate outcomes at a specified number of sessions).

Interestingly, when looking at change outcomes on the OQ-45 by subscale, the subscale with the greatest percentage of clients attaining CS change was symptom distress (22.1%). The subscale with the lowest percentage of clients attaining CS change was social role (13.6%). The primary presenting concerns for clients seen were anxiety and depression. Perhaps the greatest percentage of CS change was observed on the symptom distress scale as this scale assesses many symptoms, which are present in individuals experiencing anxiety or depression (e.g., fatigue, anhedonia, feelings of irritation, and suicidal ideation, among others) and which may have been addressed through initial interventions (e.g., relaxation techniques or behavior activation), whereas symptoms measured on the social role subscale might reflect more complex or chronic

issues that take more time to resolve. Additionally, previous research has suggested that symptom dimensions are associated with different treatment response rates, with anxiety and depression, among other symptom dimensions, being associated with rapid treatment response (Kopta et al., 1994). Perhaps rapid treatment gains were observed due to the nature and duration of the major presenting problems (e.g., depression and anxiety) for the current sample. Another consideration is whether change in symptom distress truly reflects overall recovery. Howard, Lueger, Maling, and Martinovich (1993) reported the recovery process in psychotherapy consists of three phases in which subjective well-being, symptoms, and general life functioning, improve sequentially as a result of improvements in the prior phase. In this theory, a client's subject well-being status at the start of treatment might predispose or hinder their initial symptom gains after several treatment sessions.

Survival Analysis Data

The current study examined the number of sessions necessary for half of the clients seen to achieve CS change. All clients in the sample who ultimately met criteria for CS change did so by 20 sessions. Results found that for clients who met CS change criteria, if clients remained in treatment for three sessions, 25% would be expected to attain CS by the end of session 3 and 50 % would be expected to reach CS by session 6.

Previous studies investigating the median effective dose for therapy in psychology training clinic settings include investigations by Anderson and Lambert (2001) and Kadera and colleagues (1996). Findings from the current study are fairly similar to

findings by Anderson and Lambert, who reported that 25% of clients were estimated to attain CS by the end of session 5 (compared to session 3 in the current study) and 50% by the end of session 11 (compared to session 6 in the current study). Current findings report noticeably lower estimates regarding the number of sessions until the median effective dose when compared to Kadera and colleagues (*n* = 47), who found that 25% were estimated to reach CS by the end of session 10 (compared to session 3 in the current study) and 50% by the end of session 16 (compared to session 6 in the current study). Overall, current findings report somewhat fewer number of sessions are needed to reach CS change when compared to previous research in psychology training clinics.

Research on the number of sessions needed for half the sample to reach CS change in other training settings report a greater number of sessions are required compared to findings in the current study. Wolgast and colleagues (2003) found that 26% of clients achieved CS by 7 sessions and 51% achieved CS by 14 sessions. Another study by Wolgast and colleagues (2005) reported that 15 sessions were necessary for 50% of clients who presented in the less dysfunctional range to demonstrate CS change and that 20 sessions were necessary for 50% of clients who presented in the more dysfunctional range to demonstrate CS change. Overall, the same pattern of fewer sessions required in the current study to have 50% of clients reach CS change is observed in comparing the current study to previous research in college counseling centers and to psychology training clinics. In general, the current findings are commensurate to research findings in other training settings.

In comparison to research on the median effective dose for outpatient

psychotherapy treatment in nontraining settings, the current study found that less treatment sessions were needed for 50% of the sample to reach CS change criteria. Lambert and colleagues (2001) examined clients of managed care organizations by change in outcomes based on disturbance severity and found that 21 sessions were required for 50% of clinically significant patients to achieve CS change. Another study by Kopta and colleagues (1994) examined patterns for recovery in clients of mental health centers and found that 50% achieved CS change by the 11th session.

Overall, the current study reports fewer sessions are required compared to findings from previous research in both training and nontraining settings. Discrepancies in findings could be due to differences in data collection methods (e.g., different treatment settings, different participant populations, different outcome assessment measures, different definitions of CS change or recovery) and data analyses. For example, the current study resembled survival analysis methodology used by Kadera and colleagues (1996). For all clients who achieved CS change, the earliest session number they reached CS change was coded as the time variable in order to classify the earliest occurrence of CS change. However, other studies might have coded clients as attaining CS only based on termination outcome score. Furthermore, it is possible that differences exist in severity of client distress or disturbance level at intake, which could impact survival analysis findings (as only clients who begin in the dysfunctional range can attain CS change). Additionally, recent shifts in the field, in both practice and training, toward the employment of evidence-based practices might account for some of the observed changes between current findings and previous research findings. For example, some

research has indicated that the development, implementation, and advancement of various practice improvement methods (e.g., evidence-based clinical materials, clinical guidelines, outcomes monitoring and management, and so on) have resulted in evidence of effectiveness in clinical practice and consequently effects on patient outcomes (Cape & Barkham, 2002).

Factors Associated with Change Outcomes

Factors Associated with CSC

The current study found that client gender, client age, and therapist having obtained a clinical master's degree prior to starting the program were statistically significant in relation to CS change in outcomes on the OQ-45.

Results found a moderate negative relationship between client gender and CS change, indicating that woman are significantly associated with CS change outcomes. This finding corresponds to findings on factors associated with improvement in primary care settings (Shepherd et al., 2005). Shepherd and colleagues also found that women have a better outcome after therapy and noted this gender difference could possibly be due to the reality that women often engage in more help-seeking behavior than males and that woman might be more likely to see a therapist of the same gender, which might then impact the therapeutic process and treatment outcomes.

A weak negative relationship was found in the current investigation between client age and CS change, indicating that the frequency of clients attaining CS change increases as the sample becomes younger. Interestingly, Shepherd and colleagues (2005)

did not find any statistically significant correlations among CS change in outcomes and client age. More investigation is needed to better understand the association between client age and CS change. One possible hypothesis is that younger clients might have less stress or responsibility in other areas of their life, which could allow them to engage in therapy more fully or present to therapy with more functional ability. Alternatively, another possible hypothesis is that older clients might present with more pervasive, chronic symptoms, which require more time in treatment to address and resolve.

Additionally, current findings report a weak positive relationship between the therapist having obtained a clinical master's degree prior to starting the program and CS change ($r = .276$, $p < .05$), indicating that the frequency of clients attaining CS change increases as therapists have obtained a clinical master's degree prior to beginning the program. This finding differs from Anderson and Lambert's (2001) investigation of CS change in a psychology training clinic, who reported that experienced therapists did not outperform inexperienced therapists by a wide margin. Additionally, findings reported by Okiishi and colleagues (2003, 2006) reported no significant correlation between client outcomes in a college counseling center and therapist level of training. One hypothesis regarding this correlation is that student therapists who have previous clinical experience might employ more developed skill sets in certain areas (e.g., active listening, treatment planning, case conceptualization, rapport-building, and so on), which could contribute to a change in client outcomes.

Factors Associated with Reliable Improvement

In terms of factors associated with reliable improvement across treatment, the number of treatment sessions and therapist gender were found to be significantly related.

A moderate positive relationship was found in the current study between number of treatment sessions and reliable improvement, indicating that the frequency of clients meeting criteria for reliable improvement increases as clients attend more sessions. Similarly, Shepherd and colleagues (2005) reported a positive relationship between length of intervention and client improvement of clients seen in a primary care setting. The correlation between number of treatment sessions and improvement in scores could be due to more treatment sessions allowing clients more opportunities and time to learn new coping strategies, engage in treatment, and implement new skills outside of treatment.

Additionally, a weak positive relationship was found between therapist gender and reliable improvement in scores in the current study, indicating that the frequency of clients meeting criteria for reliable improvement increases as the therapist gender becomes more female. This is a marked difference from research on therapist-specific factors and client outcomes in therapy at college counseling centers (Okiishi et al., 2003, 2006). Okiishi and colleagues (2006) found that overall therapist-specific demographic variables, including gender, level of training, and theoretical orientation, did not significantly influence client outcomes. This is in contrast to findings in the current study which indicate that a therapist having previously obtained a master's degree and therapist gender could be important correlates of reliable change across treatment. As mentioned

previously, female clients were more likely to see a therapist of the same gender in the current study, which could have impacted outcomes (60.3% of the sample was female and 60.3% (N = 120) of student therapists were female).

Factors Associated with No Change

The current study found that client gender and employment status at intake were statistically significant in relation to no change in scores on the OQ-45.

A weak negative relationship was found between client gender and no change or deterioration in scores ($r = -.243$, $p < .05$), indicating that as the sample becomes more female, the frequency of clients demonstrating no change in outcomes decreases. This finding counterbalances the statistically significant positive correlations found between CS change and reliable improvement and client female gender.

A positive relationship was found between employment status at intake and no change or deterioration in scores, indicating that the frequency of no change in scores increases as the sample becomes more employed. This is in contrast to findings by Shepherd and colleagues (2005), who reported employed clients were more likely to show improved scores. It is possible that clients who are employed at the time of intake might already function well in the world or be receiving certain mental health benefits through their work (e.g., having relationships with co-workers or feeling confident and valuable from successfully completing work tasks) which might make it less likely they would meet criteria for CS change or reliable improvement throughout the course of treatment (e.g., perhaps not beginning treatment in the dysfunctional range or not meeting the RCI). Conversely, it is also possible that clients who are employed might not improve

throughout treatment due to additional stress from their work environment or tasks.

Factors Associated with Deterioration

The current study found that client gender and therapist gender were statistically significant in relation to deterioration in scores on the OQ-45.

A negative relationship was found between client gender and deterioration in scores ($r = -.556$, $p < .05$), indicating that as the sample becomes more female, the frequency of deterioration in outcomes decreases. This finding fits well with other correlations observed in the current study in which client female gender was found to be positively, significantly related to improved outcomes on the OQ-45.

A negative relationship was found between therapist gender and client deterioration in scores ($r = .483$, $p < .05$), indicating that as the frequency of deterioration in scores decreases as the therapist gender becomes more female. This finding fits well with another finding from the current study in which a statistically significant positive correlation was found between therapist gender and increased frequency of reliably improved outcomes.

Limitations of the Current Study and Implications for Future Directions

Limitations

The current study was limited in several ways. First, the current sample was limited in terms of sample diversity. The sample consisted largely of white clients who presented primarily with anxiety and depression-related concerns. A more diverse sampling of clients from a variety of racial and ethnic backgrounds as well as across an

array of psychopathology presentations would allow for an investigation of the change process for a myriad of clients and would provide more generalizable information for outpatient clients in general.

Second, the current study utilized the OQ-45 questionnaire as the outcome measure for change. An assortment of assessments, both client self-report and observation could be employed to assess a greater range of mental health outcomes (e.g., in addition to symptoms of distress) and characterize the change process more fully.

Third, another limitation of the current study was that the failure to examine a client's level of disturbance on the OQ-45 and how this impacts the change process. Additionally, the current study did not examine the impact of client presenting concern or diagnosis and how this relates to the change process over treatment. Both would be beneficial investigations in psychology training clinics to determine if differences exist in terms of client presentation and the change process and to what extent these findings collaborate previous research in the area.

A final limitation of the study exists in the data-analytic methods employed. Survival analysis was an appropriate method of analysis for the current study and has been used repeatedly in previous research on clinical outcomes; however, it has several limitations and assumptions, which should be considered (Anderson & Lambert, 2001). For example, in the current study, all clients who met criteria for CS change did so by session 20 and the average number of treatment sessions was around 8, with a standard deviation of 9. This might provide challenges for the analysis procedure to calculate a model in which the frequency of treatment sessions lessens and becomes more scattered

after a certain number of sessions.

Implications of the Current Study

In conclusion, the current study reports generally similar to findings from previous research in terms of clinically significant change in outcomes of outpatient psychotherapy clients and some previously identified correlates of change. Overall, current findings taken with previous research suggest that roughly a third of clients are estimated to demonstrate CS change in outcomes in psychology training clinic settings and that the number of sessions needed for 50% to reach CS change ranges from 6 to 16 (Anderson & Lambert, 2001; Kadera et al., 1996). Research on various factors associated with CS change or reliable improvement suggest that some factors, including client gender, client age, number of sessions, therapist gender, and therapist having previously obtained a clinical master's degree, are significantly related to reliably improved outcomes in scores on the OQ-45.

Findings from the current study have numerous implications for the clinical training of student therapists, clinic policy and procedure, and overall client care. One important implication of the current study is that doctoral student therapists providing outpatient psychotherapy services provide beneficial services that are comparable to other training and nontraining professional settings. This suggests that with clinical supervision and appropriate clinical training, graduate-level student therapists can provide helpful and valuable services to individuals with mental health concerns. The current study has implications for the education and training of graduate-level student therapists. Specifically, current findings offer valuable information on the change process in terms

of mean estimate of sessions to CS change and factors associated with CS Change, which could benefit practice and procedure in the provision of services to adult outpatient psychotherapy clients. For example, clinic administration could utilize current findings to implement clinic policies regarding session cost, maximum number of sessions, or outcome measurement procedures in order to maximize services to clients. Additionally, current findings suggest that the majority of clients experience reliable improvement or CS change after six sessions, which can inform treatment planning with clients who might have limited time, financial capability, or willingness to attend treatment by promoting client “buy in” to attend and engage in therapy for at least 6 sessions. Furthermore, initial findings offer some insight into clinical presentations predominantly seen at a graduate level psychology training clinic, which can advise student therapist education in various interventions and symptom presentations.

Overall, while the current study found that clinical outcomes of clients seen by graduate-level student therapists were commensurate with outcomes of clients seen at other training and nontraining settings, the reality remains that approximately half of the clients seen for outpatient psychotherapy did not demonstrate reliable improvement or clinically-significant change in outcomes across treatment. As a result, outpatient psychotherapy services, both at training and nontraining settings, have much room to improve in order to provide services that reflect a meaningful change in client outcomes for more than half of the clients seen. Efforts to adjust education and clinical training based on the current findings could serve to increase the number of clients who benefit from clinical services. Additionally, perhaps current findings on the dose-response

relationship in psychotherapy could serve as a catalyst for policy changes to address the number of permitted sessions by various insurance companies or clinics could serve to increase client’s improvement across treatment by increasing their access to more treatment sessions.

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APPENDICES

Appendix A

Outcome Questionnaire-45

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#____________________

Session #________ Date___/___/___

SD IR SR
DO NOT MARK BELOW

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

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Total=

Developed by Michael J. Lambert, Ph.D. and Gary M. Burlingame, Ph.D.
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Appendix B

Clinical Cutoff and Reliable Change Index Values on the OQ-45

Table B1

Clinical Cutoff and Reliable Change Index Values on the OQ-45

OQ-45 scale	Clinical cutoff	RCI
Total score	63 or greater	14 or greater
Symptom distress	36 or greater	10 or greater
Interpersonal relations	15 or greater	8 or greater
Social role	12 or greater	7 or greater

Appendix C

Chart Review Coding Form

Chart Review Coding Form

<u>**Sex**</u>: F=0, M=1 <u>**Age**</u> <u>**Ethnicity**</u>: 1=White, 2=Black, 3=Asian, 4=Latino, 5=NativeAm, 6=No Identified, 7=Basque, 8=French <u>**Employment Status**</u>: 1=Employed, 2=Unemployed, 3=On Disability, 4=Student, 5=Not Indicated, 6=Retired <u>**Income Amount**</u> <u>**Session Cost**</u> <u>**Martial Status:**</u> 1=Married, 2=Divorced, 3=Single, 4=Widowed, 5=Engaged <u>**Religion:**</u> 1=LDS, 2=Catholic, 3=Protestant, 4=Jewish, 5=Not Identified, 6=Buddhist, 7=Wiccan, 8=Agnostic/Atheist, 9=Bahai <u>**Current Use of Substances:**</u> 1=Yes, 0=No, 3=Unspecified <u>**Taking Psychoactive Medication**</u>: 1=yes, 0=no, 3=Unspecified	<u>**Medication Category:**</u> 1=antidepressant, 2=antipsychotic, 3=sleep, 4=pain, 5=benzo, 6=not named, 7=anticonvulsant, 8=stimulant <u>**Previous Psychological Services**</u>: 1=Yes, 0=No, 3=Unspecified <u>Where/Type:</u> 1=hospital, 2=community MH, 3=university setting, 4=private therapist/agency, 5=unspecified, 6=marriage/family counseling, 7=rehab, 8=court ordered, 9=religious organization, 10=dept of rehab/disability, 11=school <u>When</u>: 0=currently, 1=within last 6 months, 2=within last year, 3=within last 5 years, 4=within last 10 years, 5=more than 10 years, 6=unspecified <u>**Past Abuse**</u>: 1=yes, 0=no, 3=not indicated <u>**Abuse Type:**</u> 1=Sexual, 2=Physical, 3=Unspecified <u>**Suicidal Ideation:**</u> 1=Yes, 0=No, 3=Not Indicated	<u>**Presenting Problem:**</u> 1=Depression, 2=Anxiety, 3=Relationship, 4=Anger, 5=Sleep, 6=Substance Use, 7=Psychosis/Mania, 8=Abuse/Trauma, 9=Eating Behavior, 10=Body Image, 11=Gender ID, 12=Porn Use, 13=Self-Harm, 14=Academic, 15=Compulsive Lying <u>**Length of the Problem:**</u> 1=onset in last 6 months, 2=onset in last year, 3=onset in last 5 years, 4=onset in childhood or long-term/chronic symptoms, 5=unable to determine <u>**Referral Type**</u>: 1=Self-referred, 2=physician, 3=Friend/family, 4=Not Indicated, 5=Rehab Office, 6=CAPS, 7=Disability RC, 8=Lawyer, 9=Other Therapist, 10=Head Start, 11=CPD, 12=Probation Officer <u>**Language of Treatment:**</u> 1=English, 2=Spanish <u>**# of Sessions:**</u> <u>**Length of Treatment:**</u> 1=less than/equal to 1 month, 2=1-2 mos, 3=2-3 mos, 4=3-4 mos, 5=4-5 mos, 6= 5-6 mos, 7=6 mos-1 year, 8=1 year-1.5 year, 9= 1.5 year-2 years, 10= over 2 years	<u>**Interventions Used:**</u> 1=Support, 2=Parenting, 3=Problem Solve 4=Relaxation, 5=Behavior Activation, 6=Cog Challenge/Restructure, 7=ACT, 8=Psychoeducation, 9=Identify Feelings, 10=Sleep Hygiene, 11=Communication, 12=Habit Reversal, 13-Exposure, 14=DBT, 15=Imagery <u>**Termination Type**</u>: 1=Failure to reschedule, 2=Planned termination, 3=Client cancelled, not planned <u>**Therapist Sex**</u>: F=0, M=1 <u>**Therapist Ethnicity**</u>: 1=White, 2=Black, 3=Asian, 4=Latino, 5=Native Am <u>**Level of Training:**</u> 1=1 year of training or in first year, 2=2 years of training or in second year, 3=3 years of training, 4=4 years of training, 5=5 years of training, 6=6 years of training, 7=7 years of training, 8=8 years of training <u>Therapist Last Name</u> <u>Year Case Seen</u> <u>Clinical M.A.:</u> 1=yes, 0=no <u>Year Therapist Entered the Program</u>