IMPACT OF CLINICIAN EXPECTATIONS ON TERMINATION STATUS
AND THERAPEUTIC OUTCOME

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Given the high rates of premature termination in training clinics, research aimed at understanding client attrition is urgently needed. Recent investigations in this area have implicated expectations of psychotherapy as a strong predictor of premature termination; however, this phenomenon has only been studied from the perspective of *client* expectations to date. There is reason to believe *clinician* expectations for the duration and effectiveness of psychotherapy may further impact the likelihood of their clients terminating prematurely. This study sought to address this gap in the literature by examining the association of clinicians' expectations to clients' psychotherapy outcomes and termination status in a training clinic setting. Clinicians were found to hold significantly higher expectations for client improvement than would be expected, and these high expectations were found to be positively correlated with clinically significant change in clients. Implications for improving client retention and treatment outcome in training clinics are discussed.

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CHAPTER I

INTRODUCTION

Psychotherapy Outcomes and Termination

In the psychotherapy literature, many models have been developed in an attempt to describe the progress clients make over time. The dose-effect model, as proposed by Howard, Kopta, Krause, and Orlinsky (1986), is one such model that assumes the number of sessions of psychotherapy (dose) is related to the percentage of clients who improved or the probability of improvement (effect). In their 1986 meta-analysis, Howard and colleagues analyzed 15 different studies including outcome data from over 2,400 patients in individual outpatient psychotherapy. Their findings indicated rates of client improvement were 10% to 18% prior to Session 1 of psychotherapy, 48% to 58% after 8 sessions, 75% after 26 sessions; and 85% after 52 sessions (one year of weekly psychotherapy). The plot of the percentages of clients improved as a function of number of sessions of psychotherapy forms a negatively accelerated curve, indicating there is a greater likelihood of improvement with greater number of sessions, and relatively more frequent improvements are seen earlier in treatment than later in treatment.

Since the introduction of the dose-effect relationship, numerous researchers have explored this relationship in a range of different populations and using varied methodologies (e.g., Callahan & Hynan, 2005; Draper, Jennings, Baron, Erdur, & Shankar, 2002; Hansen & Lambert, 2003; Kadera, Lambert, & Andrews, 1996; Kopta, Howard, Lowry, & Beutler, 1994; Lambert, Hansen, & Finch, 2001; Lambert, Okiishi, Finch, & Johnson, 1998; Lueger, Lutz, & Howard, 2000; Wolgast, Lambert, & Puschner, 2003). Those studies conducted in training clinic settings with trainee clinicians generally demonstrated slowed dose-effect response curves (e.g. Kadera et al., 1996; Lambert et al., 1998) in comparison to Howard et al.'s seminal article

(1986). Utilizing session-by-session scores on the Outcome Questionnaire (OQ-45; Lambert et al., 1994) as an indicator of client progress, Kadera et al. (1996) tracked the progress of 64 clients in a university-based training clinic and reported a slowed dose-effect response curve with only 22% of clients seeing improvements after 8 sessions. A more recent study conducted by Callahan and Hynan (2005) examined session-by-session scores on the Outcome Questionnaire 45.2 (OQ45.2; Lambert et al., 1996) as an indicator of clinically significant change for 61 clients. The researchers found particularly modest effects with a mere 8% of clients showing significant improvements after 8 sessions of psychotherapy and only 38% of clients categorized as improved after 52 sessions. These findings suggest rates of recovery in training clinic settings tend to be significantly lower with an initial lag in response to psychotherapy when compared to previous dose-effect studies.

Moreover, a study conducted by Hansen, Lambert, and Forman (2002) reviewing the course of therapy for over 9,100 clients across a number of outpatient sites nationwide found that 33% of clients terminated after only one session of therapy. Of the remaining clients, the average number of sessions of therapy was 5, with a median of 3 sessions. Overall, the researchers estimated between 13 and 18 sessions are needed for 50% of clients to show improvement. Given these findings in the dose-effect literature, it is evident that clients, on average, do not get the adequate exposure to therapy necessary for experiencing significant improvements. Clients who discontinue psychotherapy prior to experiencing significant improvements are generally considered in the established literature to have prematurely terminated.

Premature termination is a pervasive problem in the field of psychotherapy (Garfield, 1994; Reis & Brown, 2006). The prevalence of premature termination in mental health and private practice settings is extensively reported in the historical literature as falling between 40%

and 60% (e.g. Clarkin & Levy, 2003; Garfield, 1994; Wierzbicki & Pekarik, 1993), though a recent meta-analysis put the rate at approximately 20% (Swift & Greenberg, 2012). These figures draw a striking contrast to the rates of premature termination reported within training clinics. Although few studies exist, premature termination rates of nearly 80% have been reported in two different training clinics (Callahan, Aubuchon-Endsley, Borja, & Swift, 2009; Swift, Callahan, & Levine, 2009), and the aforementioned meta-analysis noted that campus mental services were the only setting associated with increased rates of premature termination. These findings, in conjunction with the slowed dose-effect relationship observed in training clinics, show there is a drastic difference between the number of sessions needed to see improvement and the number of sessions actually attended by clients seeking services in training clinics. Given the large number of clients who leave treatment prematurely, and thus do not experience any reliable benefits, future research in this area should be given high priority.

Variables Related to Premature Termination

Several predictors of premature termination have been identified in the existing literature. Importantly, the therapeutic alliance has been consistently demonstrated as a predictor of both treatment outcome (Martin, Garske, & Davis, 2000) and of premature termination from psychotherapy (Chisholm, 1998; Corning, Malofeeva, & Bucchianeri, 2007; Dearing & Tangney, 2011; Dew & Bickman, 2005; Long, 2005; Sharf, Primavera, & Diener, 2010). Moreover, client factors such as a personal history of abuse (Claus & Kindleberger, 2002), poor social functioning (Handelsman, Stein, & Grella, 2005; Sayre et al., 2002), comorbid psychological diagnoses (e.g. Arnow et al., 2007; Claus & Kindleberger, 2002; Issakidis & Andrews, 2004; Lecrubier, 1998; Martinsen, Olsen, Tonset, Nyland, & Aarre, 1998) and severe

levels of psychopathology (Ogrodniczuk et al., 2008; Turner, Beidel, Wolff, Spaulding, & Jacob, 1996) have been found to increase the likelihood of premature termination from psychotherapy. Cognitive dysfunction (McKellar, Kelly, Harris, & Moos, 2006), maladaptive personality style (Ball, Carroll, Canning-Ball, & Rounsaville, 2006), history of legal issues (Claus & Kindleberger, 2002, Pagnin, de Queiroz, & Sagge, 2005, Vourakis, 2005), and mild levels of pretreatment symptomatology (Issakidis & Andrews, 2004) have also been shown to play a role in rates of premature termination. Furthermore, logistical problems such as financial and transportation difficulties are related to premature termination (Ball et al., 2006).

Although a wide range of specific client variables have been found to be related to premature termination, these relationships tend to be modest and are frequently not replicated across studies (Baekland & Lundwall, 1975; Garfield, 1994; Pekarik & Wierzbicki, 1986; Rabinowitz & Renert, 1997). The high rates of attrition in training clinics suggest there is likely a common, rather than orientation-specific, variable affecting a broad range of clients. In particular, client expectations have been implicated. Studies comparing clients who successfully completed treatment to those who prematurely terminated show terminating clients are much more likely to report therapy had not met their expectations (Garcia & Weisz, 2002; Hansen, Hoogduin, Schaap, & deHaan, 1992). Both role expectations, defined broadly as behaviors clients expect during treatment (e.g., Dew & Bickman, 2005; Hardin, Subich, & Holvey, 1988; Nock & Kazdin, 2001; Reis & Brown, 1999; Walitzer, Dermen, & Connors, 1999) as well as outcome expectations for the effectiveness of treatment (Acosta, 1980; Callahan et al., 2009; Garcia & Weisz, 2002; Hansen et al., 1992; Pekarik, 1983) have been shown to be strong predictors of premature termination from psychotherapy.

Moreover, Callahan and colleagues (2009) examined the pre-treatment expectations of clients in a university training clinic setting. Specifically, client expectations were found to be associated with 11-14% of the variance in premature termination. While client expectations play a vital role in the premature termination literature, there have been no studies to date that address the impact of clinician expectations for psychotherapy on client outcomes and rates of premature termination.

Expectations and Delay Discounting Methods

A delay discounting methodology may be one way to examine clinicians' outcome expectations. Initially associated with the field of behavioral economics and cognitive psychology (e.g. Chapman, 1996; Frederick, Loewenstein, & O'Donoghue, 2002; Green & Myerson, 2004), delay discounting traditionally refers to an individual's preference between a smaller immediate reward and a larger delayed reward (Wileyto, Audrain-McGovern, Epstein, & Lerman, 2004). For example, individuals may prefer to receive \$100 today (smaller immediate reward) more than receiving \$200 one year from now (larger delayed reward). Delay discounting procedures typically involve finding the point at which individuals view the smaller immediate reward as equal to the larger delayed reward, referred to as the "indifference point." In the previous example, an individual may not show a preference between the two monetary rewards if, for example, the larger delayed reward were increased to \$300 one year from now.

Delay discounting procedures have recently demonstrated utility in mental health research by providing greater understanding of addictive behaviors, (Bickel & Marsch, 2001; de Wit, 2009; Gottdiener, Murawski, & Kucharski, 2008; Heil, Johnson, Higgins, Bickel, 2006; Khwaja, Silverman, & Sloan, 2007; Ohmura, Takahashi, Kitamura, 2005) and a variety of

clinical disorders (Barkley, Edwards, Laneri, Fletcher, & Metevia, 2001; Crean, de Wit, & Richards, 2000; Wilson, Mitchell, Musser, Schmitt, & Nigg, 2010). Swift and Callahan (2008) demonstrated the effectiveness of these delay discounting methods in psychotherapy research by using these procedures to examine clients' outcome expectations for psychotherapy. This delay discounting model allowed the researchers to examine clients' expectations for psychotherapy by having them compare two hypothetical treatments that varied in effectiveness across different lengths of treatment. By systematically manipulating the effectiveness associated with these two treatments, the researchers were able to obtain a value that represented how much more effective psychotherapy would need to be in order for a client to prefer a longer treatment. By carefully choosing the assigned values of effectiveness and length of treatment, the researchers were able to compare client expectations to the existing outcome literature and better understand clients' decision making process with regards to psychological treatment. The researchers found participants' expectations for rate of recovery in psychotherapy were significantly higher than actual observed recovery rates.

A similar procedure was utilized in the present study as a method of examining expectations for psychotherapy across varying lengths of treatment. Lengths of the two hypothetical treatment scenarios were set to 1 and 15 sessions in order to obtain expectation estimates that could be directly compared to outcomes in the literature. Participants' expectations were obtained by systematically increasing the effectiveness of one treatment scenario and having participants indicate the more likely of the two scenarios. Through the use of three separate delay discounting measures, expectations were obtained for rate of recovery from symptoms distress, rate of recovery from long-term impairment, and rate of premature termination in a training clinic setting.

Rationale and Hypotheses

Given the staggering rates of premature termination in training clinics, there is little research aimed at understanding common factors among trainee clinicians that may affect outcomes of the broad range of clients seeking services. While the existing literature suggests inaccurate or unmet expectations of psychotherapy are strong predictors of premature termination, this phenomenon has only been studied from the perspective of *client* expectations to date. This relationship between inaccurate expectations and actual poorer outcomes lends us to consider the possible effect of trainee clinicians' expectations on client outcomes. Moreover, it seems likely trainee clinicians' expectations for psychotherapy may vary considerably from those of experienced clinicians, which may account for some of the differences in outcomes across these settings. The current study aimed to contribute to the emerging literature by exploring the relationship between clinician expectations for the duration and effectiveness of psychotherapy and the termination status and therapeutic outcomes of their clients in a training clinic setting.

It was hypothesized trainee clinicians' expectations for rate of recovery would be significantly greater than typical recovery rates provided in the literature (Callahan & Hyman, 2005; Hansen et al., 2002; Kadera et al., 1996). Additionally, it was hypothesized that clinicians' expectations for rate of recovery and premature termination would significantly impact their clients' treatment outcomes and termination status. This hypothesis was non-directional as the relationship between clinician expectations and client outcomes has not yet been considered in the existing literature. The researchers held a supplementary hypothesis based on the notion that clinicians tend to be reluctant to utilize outcome questionnaires as a tool for therapy (Kazdin, 2006; Talley & Clack, 2006) despite the suggested benefits such as helping to guide decisions

about the course of treatment and adding to their clinical judgment (Asay, Lambert, Gregersen, & Goates, 2002). Specifically, we hypothesized that clients of clinicians who report accessing and utilizing OQ45.2 scores on a regular basis would show better outcomes and lower rates of premature termination than clients of clinicians who report rarely or never accessing their clients' responses.

This research holds important clinical training implications. First, the effects of clinicians' expectations on their client's retention and treatment outcomes may elucidate the importance of addressing clinician expectations in clinical training. Moreover, obtaining an estimate of the accuracy of trainees' expectations could provide valuable information about the possible need for direct psychoeducation pertaining to realistic rates of recovery in psychotherapy. Additionally, exploring the possible effects of clinicians' use of the outcome questionnaire in informing their therapy may prove useful for training programs with regards to the utility of routinely tracking client-reported outcomes. Finally, analyses of the relationships between OQ45.2 scores, clinically significant change, and termination status can provide important information related to the use of objective measures for defining outcomes and termination of clients in psychotherapy.

CHAPTER II

METHODS

Participants

Participants of this study consisted of clinicians and clients at the University of North Texas (UNT) Psychology Clinic. Clinicians in the Psychology Clinic are students in doctoral programs in psychology and are trained in a scientist-practitioner model. In addition to current trainee clinicians, all clinicians who have seen clients in the UNT training clinic within the past 7 years were invited to participate. Clinicians were ensured confidentiality if they chose to participate and provided informed consent prior to data collection. Demographic variables including identified therapeutic approach were collected at the start of the study.

Setting

Participants were recruited and data was collected from the University of North Texas (UNT) Psychology Clinic. The Psychology Clinic is a year-round outpatient training facility open to students and the larger community of the Dallas/Fort-Worth metroplex. A variety of presenting problems are treated including, but not limited to, depression, anxiety disorders, interpersonal difficulties, and self-esteem difficulties. Fees for psychotherapy are based on a sliding fee scale and range from \$8-\$78 per session, contingent on annual household income and number of dependents. Trainee clinicians endorse a wide range of therapeutic orientations, though all are being trained by doctoral programs following a scientist-practitioner model. Trainees in the doctoral programs of clinical, counseling, and clinical health psychology typically begin to provide individual therapy services at some point during their 2nd year of training, when their immediate supervisor determines they are ready. The commencement of

providing therapeutic services is contingent upon successful completion of coursework in psychopathology, assessment, and psychotherapy as well as experience in conducting semi-structured intake interviews with clients. A faculty member who provides a minimum of 1 hour of weekly individual supervision supervises each trainee clinician. Trainees also receive group supervision with other trainees for 2 hours per week.

Measures

Clinicians

Detailed demographic information was collected from participants. For the purposes of this study, demographic variables of interest are ethnicity, age, gender, marital status, experience level, and identified theoretical orientation. Current clinicians were also asked about their frequency of accessing and using their clients' Outcome Questionnaire 45.2 (OQ45.2) scores to guide therapy.

Delay Discounting Measures

Three delay discounting tasks were used to measure clinicians' expectations of psychotherapy outcome. The first task determined the percent reduction in symptomatic distress a clinician expects to occur after 15 therapy sessions. Clinicians were first prompted to choose the most plausible scenario between seeing 0% reduction in symptom distress after 1 session and seeing 0% reduction in symptom distress after 15 sessions. After each choice, the effectiveness of the 15-session treatment scenario increased by 10%. Once this treatment reached the maximum of 100% effectiveness, the process immediately repeated in reverse order until the first choice was presented again.

The second delay discounting task was identical to the first with only one difference: the measure of effectiveness changed from reduction in symptomatic distress to reduction in long-term impairment. This change allowed the results of the clinicians' delay discounting task to be compared directly with the sub-scales of their clients' outcome measures. This delay discounting task determined how effective a clinician expects 15 therapy sessions to be in reducing long-term impairment.

The third delay discounting task was designed to determine the clinician's expectations for the likelihood of their client's premature termination after 15 therapy sessions. The clinician was prompted to choose the most plausible scenario between 0% chance of premature termination after 1 session and 0% chance of premature termination after 15 sessions. This followed a similar format as the previous two tasks, with the chance of premature termination for the 15-session scenario increasing by 10% after each choice until reaching 100%, at which point it decreased by 10% until returning to 0%. See Appendix B for the three delay discounting tasks.

Expectations Questionnaires

Clinicians also completed two questionnaires designed to assess their expectations for rate of recovery and premature termination rates in the training clinic. The first measure (Appendix C) asked the clinician to consider all of the clients in the training clinic and answer what percentage of clients they would expect to show clinically significant change in symptoms after 1 session of therapy. This question was repeated five times, replacing 1 session with 2-, 4-, 8-, 15-, and 26- sessions in order to estimate the expected rate of recovery. The treatment lengths were chosen to facilitate direct comparisons to rates of recovery reported in the existing literature.

The second questionnaire (Appendix D) asked the clinician to consider all of the clients in the training clinic and answer what percentage of clients they would expect to terminate from psychotherapy prematurely without having experienced clinically significant change after 1 session. This question was also repeated, replacing 1 session with 2-, 4-, 8-, 15-, and 26- sessions to estimate expected rates of premature termination.

In each of the three delay discounting scenarios, clinicians made a series of choices comparing rates of recovery or premature termination at 0 sessions to the alternative rates of recovery or premature termination at 15 sessions. Presumably, if the effectiveness of the 15 session treatment is too low, participants would endorse that low level of effectiveness to be more likely at 0 sessions. However, as the effectiveness of the 15 session treatment systematically increases to a more likely scenario, participants would make a switch in expectations to the 15 session treatment. The point at which the switch in expectations is made is the participant's indifference point. This indifference point represents the minimum effectiveness that a 15 session treatment must have in order to be seen as more likely than the same effectiveness at 0 sessions.

Clients

Detailed demographic information from the client's intake paperwork was included in the study. For purposes of this study, demographic variables of interest included ethnicity, age, gender, marital status, and education level.

Outcome Questionnaire 45.2 (OQ45.2)

Data was analyzed from measures previously completed by the clients of clinicians who

participated in this study. The OQ45.2 is a self-report measure of symptom distress that gives 3 sub-scores representing subjective distress, interpersonal functioning, and social role performance. The OQ45.2 is considered sensitive enough to detect week-by-week changes and is given to clients weekly prior to their therapy session. Clients are asked to describe their experiences during the past week with categorical ratings ranging from *never* to *almost always*. Scores above the cut-off of 63 are considered to be in the clinical range and reliable change is designated by a change of 14 points (Lambert et al., 1996; Lambert et al., 1998).

The OQ45.2 has demonstrated acceptable psychometric properties. The manual reports a test-retest reliability of .87 for the total score and .78 to .82 for the domains as well as an internal consistency of .93 for the total and .70 to .90 for the domains. The OQ45.2 is also seen to have high concurrent validity with numerous other measures: a correlation ranging from .78 to .88 of the total score with the General Severity Index of the SCL-90-R (Derogatis, 1977), .82 to .92 of the symptom distress domain score with the General Severity Index of the SCL-90-R, .49 to .64 correlation of the interpersonal domain score with the Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988) and the Social Adjustment Scale (SAS; Weissman & Bothwell, 1976), and .53 to .73 of the social role performance domain score with the IIP and SAS. Furthermore, the OQ45.2 shows no significant differences based upon gender (Lambert et al., 1996) or ethnicity (Nebeker, Lambert, & Huefner, 1995). An investigation of the specificity and sensitivity to change during treatment found that the OQ45.2 is largely sensitive to change based on both the overall score as well as the three subscale scores (Vermeersch, Lambert, & Burlingame, 2000; Vermeersch et al., 2004).

Psychiatric Diagnostic Screening Questionnaire (PDSQ)

The PDSQ is a self-report questionnaire with which clients endorse whether or not they have experienced each of 125 psychological symptoms during a specified time frame (past 2 weeks or past 6 months). It is used to assess for the presence of 13 of the most common *DSM-IV* Axis I disorders including: major depressive disorder, bulimia, posttraumatic stress disorder, panic disorder, agoraphobia, social phobia, generalized anxiety disorder, obsessive-compulsive disorder, alcohol abuse/dependence, drug abuse/dependence, somatization disorder, hypochondriasis, and psychosis (Zimmerman & Mattia, 2001b). Previous research has found that these 13 disorders represent approximately 75% of the diagnoses encountered in university psychology clinics (Callahan & Hynan, 2005).

The PDSQ has been proven psychometrically strong. Each of the 13 subscales have been reported to have excellent levels of internal consistency and good test-retest reliability (Zimmerman & Mattia, 2001b). Analyses of cross-validation with other self-report diagnostic measures such as the Structured Clinical Interview for the DSM-IV, demonstrate that each subscale is a valid measure of the symptom domain. Furthermore, the subscales on the PDSQ have good sensitivity and specificity, and high negative predictive values (Zimmerman & Chelminski, 2006; Zimmerman & Mattia, 2001a). Finally, research has shown the factor structure of the PDSQ to be consistent with the *DSM-IV* nosology from which it was created (Sheeran & Zimmerman, 2004).

Procedure

This study was conducted with approval from the University of North Texas Institutional Review Board and the Psychology Clinic Executive Committee. Recruitment of participants was

conducted via e-mail from January 2012 to May 2012. All trainee clinicians who had seen clients at the UNT Psychology Training Clinic during the past 7 years received an e-mail from the principal investigator informing the clinicians of the current study (see Appendix G and Appendix H for recruitment scripts). Clinicians were directed to follow a link to the survey if they were interested in participating. They were also encouraged to e-mail the investigator if they had any questions about participation. Clinicians were ensured confidentiality if they chose to participate; specifically, they were notified that their completed tasks would not be linked to any identifying information and their responses would be securely stored on a controlled access server. After providing informed consent via electronic signature (see Appendix I), participants were immediately directed to an online survey in which they were asked to complete a demographics questionnaire, three delay discounting tasks, and 2 expectations questionnaires that took approximately 15 minutes to complete. Upon completion of these tasks, clinicians were prompted to submit their responses by clicking the “submit” button. Participants were able to withdraw from the study at any time without providing their responses by simply closing their browser. No data was sent to the researcher until the participant clicked “submit.”

Next, the researcher obtained archived data from clients of clinicians who completed the survey. Data included demographic information, number of therapy sessions, clinician-reported reason for termination, self-report measures of symptomatology, and weekly scores of therapeutic outcome.

CHAPTER III

RESULTS

Clinician Demographics and Clinician Variables

Of 254 current and former trainee clinicians at the UNT Psychology Clinic who were informed of the study, 73 agreed to participate. Of those 73 clinicians who began the study, 54 participants completed the entire online survey. The majority of participants were current graduate students (63.0%) with ages ranging from 22 to 62 ($M = 29.59$). Participating clinicians were mostly female (64.3%), single (62.2%), and of Caucasian ethnicity (74.3 %). The theoretical orientations most frequently endorsed as integral to their therapeutic approach were cognitive behavioral therapy (42.5%), psychodynamic therapy (34.2%), interpersonal therapy (30.1%), acceptance and commitment therapy (23.3%), and object relations (16.2%). Further demographic characteristics for the participant sample, including a breakdown between completers and non-completers, are reported in Table 1.

Chi-square analyses and *t*-tests were conducted to compare completers to non-completers in terms of demographics and indicated that participants who completed the study were significantly younger in age than participants who did not complete the study. Interestingly, this age difference was not found to be related to whether or not the participant was a current student or past graduate. No other differences were found between completer and non-completer groups for sex, marital status, or race (see Table 1).

Fifty-three participating clinicians saw clients at the UNT Psychology Clinic during a time in which the Outcome Questionnaire 45.2 (OQ45.2) was being administered to clients.

Table 1

Descriptive Statistics for Clinician Demographic Variables

Variables		Completers (<i>n</i> = 54) <i>n</i> (%)	Non-Completers (<i>n</i> = 19) <i>n</i> (%)	χ^2 Test			
Gender	Female	38 (70.4)	16 (84.2)	χ^2 (73) = 1.40, <i>p</i> = .237			
	Male	16 (29.6)	3 (15.8)				
Marital Status	Single	37 (68.5)	9 (47.4)	χ^2 (73) = 4.84, <i>p</i> = .184			
	Married	15 (27.8)	8 (42.1)				
	Divorced	2 (3.7)	1 (5.3)				
	Separated		1 (5.3)				
Race	White	39 (72.2)	16 (84.2)	χ^2 (73) = 7.32, <i>p</i> = .292			
	Biracial	8 (14.8)					
	Hispanic	4 (7.4)	1 (5.3)				
	Black	1 (1.9)					
	South Asian	1 (1.9)	1 (5.3)				
	Middle Eastern	1 (1.9)					
	Asian		1 (5.3)				
Graduation Status	Current Student	37 (68.5)	9 (47.4)	χ^2 (73) = 2.70, <i>p</i> = .101			
	Graduate	17 (31.5)	10 (52.6)				
Therapeutic Orientation	CBT	22 (40.7)	9 (47.4)				
	Psychodynamic	19 (35.2)	6 (31.6)				
	Interpersonal	15 (27.8)	7 (36.8)				
	ACT	13 (24.1)	4 (21.1)				
	Object Relations	7 (13.0)	5 (26.3)				
	Client-Centered	7 (13.0)	2 (10.5)				
	Experiential	6 (11.1)					
	Humanistic	5 (9.3)	4 (21.1)				
	Emotion Focused	5 (9.3)	1 (5.3)				
	Behavioral	4 (7.4)	2 (10.5)				
	Constructivist	4 (7.4)	1 (5.3)				
	Solution Focused	4 (7.4)					
	Supportive	3 (5.6)	1 (5.3)				
	Family Systems	3 (5.6)					
	TLDP	3 (5.6)					
	DBT	1 (1.9)	1 (5.3)				
	Gestalt	1 (1.9)	1 (5.3)				
	Adlerian	1 (1.9)					
	CPT	1 (1.9)					
	Relational	1 (1.9)					
Completers (<i>n</i> = 54)		Non-Completers (<i>n</i> = 19)					
	<i>M</i> (<i>SD</i>)	Min	Max	<i>M</i> (<i>SD</i>)	Min	Max	<i>t</i> -Test
Age (years)	28.67 (5.69)	22	62	32.21 (8.32)	24	50	-2.42**

Of the 53 participating clinicians, 24.5% stated they almost always utilized the OQ45.2 data to inform their therapy, 18.9% often used the data, 26.4% sometimes used the data, 26.4% rarely used the data, and 2.7% never used the data. This frequency with which clinicians utilized the data from the outcome questionnaire was found to be strongly correlated with clinicians' reports of their clients' termination status ($r = -.17, p < .001$). Specifically, the less frequently clinicians reported utilizing the OQ45.2 data, the more likely they were to report their clients had successfully completed treatment.

Client Demographics and Client Variables

Data from adult clients who had received individual psychotherapy at the UNT Psychology Clinic during the past 7 years, and had previously consented to the use of their data for research purposes, were also used in analyses. Current records in the Psychology Clinic indicated no clients eligible for the current study had refused to have their data released. Overall, data from 511 clients were utilized in the analyses.

Clients receiving services at the clinic represent a wide range of demographics and clinical concerns. Clients in this study were 75.3% Caucasian, 9.8% Hispanic, 4.9% African American, 3.9% biracial, 2.9% Asian, 2.2% Middle Eastern, and less than 1% each Native American, South Asian, and Central/South American. The majority of clinic clients were female (66.7%) and ages ranged from 18 to 74 ($M = 30.90, SD = 11.50$). Clients presented with a wide range of clinical concerns and diagnoses. Of those clients who completed the Psychiatric Diagnostic Screening Questionnaire (PDSQ; $N = 331$), over half met the cutoff criteria for social phobia (60.9%), major depressive disorder (55.9%), and generalized anxiety disorder (54.4%).

Table 2

Descriptive Statistics for Client Demographic Variables

	Variables	<i>n</i> (%)
Sex	Female	341 (66.7)
	Male	170 (33.3)
Marital Status	Single	327 (64.0)
	Married	100 (19.6)
	Divorced	70 (13.7)
	Separated	11 (2.2)
	Widowed	3 (0.6)
Race	White	385 (75.3)
	Hispanic	50 (9.8)
	Black	25 (4.9)
	Biracial	16 (3.1)
	Asian	15 (2.9)
	Middle Eastern	11 (2.2)
	Native American	5 (1.0)
	Central/South American	2 (0.4)
Education	South Asian	2 (0.4)
	Elementary school	5 (1.0)
	Some high school	18 (3.5)
	High school graduate	86 (16.6)
	Some college	217 (42.0)
	College graduate	132 (25.5)
	Some graduate school	29 (5.6)
Self-Report Symptoms (PDSQ)	Major depressive disorder	185 (55.9)
	Posttraumatic stress disorder	137 (41.4)
	Eating disorder	37 (11.2)
	Obsessive-compulsive disorder	128 (38.7)
	Panic disorder	100 (31.2)
	Psychosis	81 (24.5)
	Social phobia	201 (60.9)
	Agoraphobia	1 (0.3)
	Alcohol abuse/dependence	79 (24.0)
	Drug abuse/dependence	44 (8.6)
	Generalized anxiety disorder	179 (54.5)
	Somatization	124 (37.7)
	Hypochondriasis	83 (25.2)
	<i>M</i> (<i>SD</i>)	Min Max
Age	30.90 (11.50)	18 74

The total number of therapy sessions each client attended at the UNT Psychology Clinic ranged from 1 to 285 ($M = 20.29$, $SD = 31.74$), while the range of sessions attended with their most recent clinician ranged from 1 to 84 ($M = 13.12$, $SD = 13.72$). The most frequent numbers of total sessions attended by clients were 1 and 2 sessions. Detailed demographic characteristics for the client sample are reported in Table 2.

Preliminary Analyses

In preparing data for analyses, the trimmed mean, extreme values table, and boxplot were utilized to identify potential outliers. Identified outliers were first checked for data entry error and were then corrected. Extreme values for clinician expectations and client change scores on the OQ45.2 were not removed from analyses as they were well within the possible range of responses and provided valuable information. Dependent variables were examined with skewness and kurtosis values, Shapiro-Wilk tests, and a normal quantile plot to assess normality. Although the Shapiro-Wilk test was significant for one variable (the OQ45.2 total change score), the skewness, kurtosis, and observed graphic plots for the variable fell within normal range; thus, variables were determined to meet the assumptions necessary for hypothesis testing.

Calculating Indifference Points

Clinician expectations were calculated by finding an indifference point in each of the delay discounting measures completed. In delay discounting, the indifference point is considered to be the point at which an individual views one of the presented options as equal in value or likelihood to the other option presented and is indicated by the point the individual “switches” from endorsing one option to the other. However, participants of the current study often

“switched” more than once during each delay discounting measure. See Figure 1 for an example, where each circle indicates an area where a switch occurred.

Which would you expect to be the more plausible treatment outcome?	
☒ 0% reduction in symptom distress after 1 session	☐ 0% reduction in symptom distress after 15 sessions
Which would you expect to be the more plausible treatment outcome?	
☒ 0% reduction in symptom distress after 1 session	☐ 10% reduction in symptom distress after 15 sessions
Which would you expect to be the more plausible treatment outcome?	
☒ 0% reduction in symptom distress after 1 session	☐ 20% reduction in symptom distress after 15 sessions
Which would you expect to be the more plausible treatment outcome?	
☒ 0% reduction in symptom distress after 1 session	☐ 30% reduction in symptom distress after 15 sessions
Which would you expect to be the more plausible treatment outcome?	
☐ 0% reduction in symptom distress after 1 session	☒ 40% reduction in symptom distress after 15 sessions
Which would you expect to be the more plausible treatment outcome?	
☐ 0% reduction in symptom distress after 1 session	☒ 50% reduction in symptom distress after 15 sessions
Which would you expect to be the more plausible treatment outcome?	
☐ 0% reduction in symptom distress after 1 session	☒ 60% reduction in symptom distress after 15 sessions
Which would you expect to be the more plausible treatment outcome?	
☒ 0% reduction in symptom distress after 1 session	☐ 70% reduction in symptom distress after 15 sessions
Which would you expect to be the more plausible treatment outcome?	
☒ 0% reduction in symptom distress after 1 session	☐ 80% reduction in symptom distress after 15 sessions
Which would you expect to be the more plausible treatment outcome?	
☒ 0% reduction in symptom distress after 1 session	☐ 90% reduction in symptom distress after 15 sessions
Which would you expect to be the more plausible treatment outcome?	
☒ 0% reduction in symptom distress after 1 session	☐ 100% reduction in symptom distress after 15 sessions

Figure 1. Delay discounting example of calculating indifference points.

In this example, the participant demonstrated two indifference points in their responding at 35% and 65%. As there was no precedence in the literature as to how to deal with multiple

indifference points, the researcher took the average of the two indifference points to obtain a single indifference point representing the clinician's expectations. In this example, the two indifference points were averaged to obtain an overall indifference point of 50%. This would indicate the clinician expects clients to experience approximately 50% reduction in symptom distress after 15 sessions of psychotherapy. As the indifference points obtained from the delay discounting measures only gave information about expectations at one time point rather than at various points of time, a hyperbolic discounting model could not be calculated. Instead, individual indifference points were calculated for each clinician for each of the three measures (symptom distress, long-term impairment, and premature termination) and were used as predictor variables in the analyses.

In terms of reduction in symptom distress, clinicians expected an average of 39.30% ($SD = 17.89$) improvement after 15 sessions of psychotherapy. There was significant variability in the expectations of clinicians, with expected symptom reduction ranging from 5% to 80%. Clinicians demonstrated similar variability in expectations in terms of reduction of long-term impairment, endorsing an expected average of 35.97% ($SD = 17.89$) improvement after 15 sessions, with responses ranging from 10% to 75%. This high variability indicates clinicians were not generally in agreement with regards to the amount of improvement that can be expected after a given amount of sessions.

In terms of premature termination, clinicians on average expected a 29.07% ($SD = 17.16$) chance a client would prematurely terminate after completing 15 sessions of psychotherapy. Again, clinicians demonstrated wide variability in their expectations, ranging from 5% to 80%. Overall, they expected relatively low levels of premature termination.

Calculating Clinically Significant Change (CSC)

The measure of clinically significant change was chosen as a classification of successful or unsuccessful treatment outcomes, as proposed in the literature (Jacobson & Truax, 1991). Clients were determined to have experienced clinically significant change if they: 1) began treatment in the dysfunctional range (OQ45.2 score ≥ 63); 2) demonstrated reliable change from pre- to post-therapy (a reduction of 14 or more points on the OQ45.2); and 3) completed treatment in the normal range (OQ45.2 score < 63). After removing from analyses those clients who did not receive the OQ45.2, as well as those who only attended one session of psychotherapy, the necessary outcome data for calculating clinically significant change was available for 301 clients. Of those, only 14.3% were found to have experienced clinically significant change before termination of therapy. However, 94 of those clients did not fall within the dysfunctional range on the OQ45.2 at the start of therapy, and thus could not be considered in the count for clinically significant change. When considering only those clients who did begin therapy in the dysfunctional range, 20.77% experienced clinically significant change (indicated by a reduction of at least 14 points and a final score in the normal range of functioning). See Table 3 for further information regarding client outcome scores on the OQ45.2.

Next, a comparison was made between clients classified as having experienced CSC and those identified by clinicians as having successfully completed treatment. On the whole, clinicians reported 25.7% of their clients successfully completed treatment at termination (see Table 4), compared to the 20.77% of successful completers indicated by the CSC method. This discrepancy demonstrates trainee clinicians tend to slightly overestimate the improvements their clients have made. This highlights the value of clinicians' use of outcome data in forming more consistently accurate expectations, perceptions, and predictions about their clients.

Table 3

Descriptive Statistics of Duration of Treatment and Client Outcomes on OQ45.2

Treatment and Client Outcome		M (SD)	Min	Max
Number of Therapy Sessions	Total Sessions at UNT	20.10 (31.75)	1	285
	Sessions with most recent clinician	13.05 (13.73)	1	84
OQ Start Scores	Total (0-180)	76.40 (23.61)	13	135
	Symptomatic Distress (0-100)	44.86 (15.44)	3	83
	Social Role Functioning (0-36)	13.50 (4.81)	2	28
	Interpersonal Relations (0-44)	17.97 (6.65)	1	34
OQ Finish Scores	Total (0-180)	66.88 (25.12)	0	150
	Symptomatic Distress (0-100)	39.06 (16.23)	0	90
	Social Role Functioning (0-36)	12.24 (5.05)	0	29
	Interpersonal Relations (0-44)	15.71 (6.61)	0	38
OQ Change Scores	Total Change	10.32 (19.74)	-49	92
	Symptomatic Distress Change	5.57 (14.14)	-73	56
	Social Role Functioning Change	1.25 (4.95)	-20	16
	Interpersonal Relations Change	2.34 (6.41)	-26	31

Table 4

Frequencies of Reasons for Termination and Termination Status

Reason		n (%)
Clinician Reported Reason for Termination	Client Decision: No Reported Reason	249 (48.7)
	Administrative	86 (16.8)
	Client Completed Treatment	39 (7.6)
	Client Decision: Relocation	37 (7.2)
	Client Decision: Perceived Improvement	29 (5.7)
	Client Decision: Therapy Not Beneficial	19 (3.7)
	Client Seeking Treatment Elsewhere	19 (3.7)
	Client Decision: No Time	12 (2.3)
	Client Decision: No Money	10 (2.0)
	Client Referred Elsewhere	19 (3.7)
	Client Transferred to C&T	3 (0.6)
	Client Seeking Couples Therapy	2 (0.4)
	Inactivity	2 (0.4)
Clinician Reported Termination Status	Premature Termination	376 (74.3)
	Successful Termination	130 (25.7)
Clinically Significant Change	Yes	43 (14.3)
	No	258 (85.7)

Exploratory Correlations

Bivariate Pearson and Spearman correlations (see Table 5) were conducted to evaluate the relationship between clinicians' responses on the delay discounting measures and their responses on the expectations questionnaires (Table 6). On the expectations questionnaires, clinicians were asked to estimate the percentage of clients they would expect to experience clinically significant change or premature termination on the second measures at each of the following sessions: 1, 2, 4, 8, 15, and 26. Thus, direct comparisons were made between the indifference points obtained relating to expectations at 15 sessions and the reported expectations for 15 sessions from the expectation questionnaires. Overall, clinicians' responses on the delay discounting measures were found to have high concordance with their responses on the expectations questionnaires.

Table 5

Correlations Between Delay Discounting Measures and Other Measures of Clinician Expectations

	1	2	3	4	5
1. Symptom Distress IP	—	.68** N=482	-.11* N=396	.53** N=436	.23** N=436
2. Long-Term Impairment IP		—	-.13 N=394	.46** N=434	.23** N=434
3. PT IP			—	.04 N=388	-.16** N=388
4. Outcome Expectations (15 sessions)				—	.10* N=436
5. PT Expectations (15 sessions)					—

Note. IP = Indifference Point; PT = Premature Termination.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6

Descriptive Statistics of Clinician Expectations

		<i>n</i>	<i>M (SD)</i>	Min.	Max.
Indifference Points (IP)	Symptomatic Distress IP	63	39.30 (17.89)	5	80
	Long-Term Impairment IP	59	35.97 (17.89)	10	75
	Premature Termination IP	51	29.07 (17.16)	5	80
Recovery Expectations	Recovery % at 1 session	54	7.53 (8.33)	0	50
	Recovery % at 2 sessions	54	10.17 (9.40)	0	50
	Recovery % at 4 sessions	54	19.33 (12.53)	0	60
	Recovery % at 8 sessions	54	35.31 (16.82)	0	70
	Recovery % at 15 sessions	54	54.37 (19.34)	15	100
	Recovery % at 26 sessions	54	67.48 (18.65)	17	100
Dropout Expectations	Dropout % at 1 session	54	25.43 (21.31)	0	90
	Dropout % at 2 sessions	54	22.80 (18.30)	4	85
	Dropout % at 4 sessions	54	23.81 (13.81)	3	60
	Dropout % at 8 sessions	54	23.67 (15.08)	0	70
	Dropout % at 15 sessions	54	29.54 (21.54)	0	80
	Dropout % at 26 sessions	54	35.89 (33.45)	0	100

Next, bivariate point-biserial, Spearman and Pearson's coefficient correlations were conducted between clinician expectation variables to determine if multicollinearity existed between them (see Table 7). As expected, results indicated symptom distress indifference points across clinicians were significantly correlated with long-term impairment and premature termination indifference points. Next, correlations between clinician expectations and measures of client improvement and termination status were conducted to test which clinician variables best predict client outcomes and termination. Results demonstrated that clinician-reported termination status was the only variable related to client's total OQ45.2 change scores ($r = .90, p = .026$). Specifically, clients identified as having completed treatment successfully generally

experienced greater reductions in scores on the OQ45.2 over the course of treatment. Moreover, the presence of clinically significant change in therapy was negatively correlated with the frequency with which clinicians reported using the OQ45.2 to inform their therapy ($r = -.12, p = .035$) and was positively correlated with clinicians' expectations for long-term improvement ($r = .12, p = .041$). Clinician expectations of symptom distress and premature termination were not related to measures of client outcome or termination; thus, they were decided not to be used for further analyses.

Table 7

Correlations Between Measures of Clinician Expectations and Measures of Client Outcome and Premature Termination

	1	2	3	4	5	6	7	8	9	10
1. OQ Frequency	—	.06 N=410	-.05 N=404	.03 N=341	-.17*** N=407	-.01 N=305	-.06 N=313	-.03 N=313	.00 N=313	-.12* N=295
2. Symptom Distress IP		—	.68*** N=482	-.11* N=396	-.04 N=500	-.00 N=311	.00 N=319	.03 N=319	-.05 N=319	.08 N=301
3. Long-Term Impairment IP			—	-.13 N=394	-.01 N=479	.04 N=305	.03 N=314	.09 N=314	.03 N=314	.12* N=297
4. Premature Termination IP				—	-.11* N=393	-.01 N=267	-.02 N=276	-.01 N=276	.04 N=276	-.11 N=262
5. Clinician Reported Termination Status					—	.13* N=310	.09 N=318	.09 N=318	.06 N=318	.11 N=300
6. OQ Total Change Score						—	.90*** N=309	.68*** N=309	.74*** N=309	.49*** N=301
7. OQ Symptom Distress Change Score							—	.58*** N=320	.64*** N=320	.50 N=301
8. OQ Social Role Change Score								—	.43*** N=320	.28*** N=301
9. OQ Interpersonal Funct. Change Score									—	.37*** N=301
10. Clinically Significant Change										—

Note. IP = Indifference Point

* $p < .05$. ** $p < .01$. *** $p < .001$.

Analyses for Hypothesis 1

A primary aim of this study was to assess clinicians' expectations for clients' rate of recovery in psychotherapy. Specifically, we hypothesized clinicians' expectations for rate of recovery would be earlier than typical treatment outcome recovery rates provided in the literature. Table 6 reported clinicians' expectations as measured by the indifference points on delay discounting measures and responses on the expectation questionnaires. In order to determine whether the differences between participants' expectations and observed rates were statistically significant, one-sample *t*-tests were conducted comparing the expected rates of recovery to the observed rates of recovery in the literature. Results of these *t*-tests can be found in Table 8. All comparisons were found to be statistically significant. Consistent with our hypothesis, this indicates clinician's expectations for rate of recovery across sessions were significantly higher than actual recovery rates across studies and settings. In other words, they expected a larger percentage of clients to recover in therapy at each session than is actually reported to occur (see Figure 2).

Table 8

Comparison of Participants' Expected Recovery Rates and Actual Observed Recovery Rates in Outpatient and Training Clinic Settings

Session No.	Current Sample % Recovery expected <i>M (SD)</i>	Lambert et al. Recovery % <i>t</i>	Kadera et al. Recovery % <i>t</i>	Callahan & Hynan Recovery % <i>t</i>
1	7.53 (8.33)			
2	10.17 (9.40)	7 2.48**	3 5.60***	
4	19.33 (12.53)	16 1.96**	7 7.23***	6 7.82***
8	36.31 (16.82)	30 2.32**	22 5.82***	8 11.93***
15	54.37 (19.34)	44 3.94***	44 3.94***	19 13.44***
26	67.48 (18.65)	56 4.52***		31 14.37***

Figure 2. Expected recovery rates compared to observed dose-effect recovery rates.

Next, one-sample *t*-tests were conducted to compare participants' expectations of rate of premature termination from psychotherapy to actual premature termination rates reported in the literature. Results of these *t*-tests can be found in Table 9. Statistically significant differences were evident for 13 of the 15 comparisons. Expectations of premature termination were generally higher than actual observed rates at session 1 and lower than actual rates for all subsequent sessions. This indicates clinicians in this study did not hold accurate expectations of clients' rates of premature termination from psychotherapy, and generally believed these rates to be lower than is typically observed (Figure 3).

Table 9

Comparison of Participant's Expected Premature Termination Rates and Observed Rates in Outpatient and Training Clinic Settings

Session No.	Current Sample % PT Expected <i>M(SD)</i>	Affleck & Garfield		Rosenthal & Frank	
		PT ^a %	<i>t</i>	PT ^a %	<i>t</i>
1	25.43 (21.31)	10	5.39***	20	1.87
2	22.80 (18.30)	25	-.885	35	-4.90***
4	23.81 (13.81)	45	-11.27***	50	-13.93***
8	23.67 (15.08)	67	-21.12***	55	-15.27***
15	29.54 (21.54)	80	-17.23***	63	-11.42***
26	35.89 (33.45)	--	--	--	--

Note. ^a Estimations derived from Figure 1 in Brandt (1965). PT = Premature Termination. *** $p < .001$.

Figure 3. Comparison of expected rates of premature termination and observed cumulative percentages of client premature termination from psychotherapy.

Analyses for Hypothesis 2

Hierarchical linear modeling (HLM) was used to test whether clinicians' expectations for rate of recovery significantly impacted the outcome and termination status of their clients. Specifically, clinicians' expectations for reduction in long-term impairment were used in these analyses as it was the only expectation value found to be correlated with client outcomes. HLM was used rather than multiple regression in order to account for the nested nature of each clinician being associated with scores of multiple clients. HLM has several advantages that produce more accurate estimates of individual variables: it can explain individual variables as both a function of group-level characteristics and individual-level characteristics, it can model between- and within- group variables at the same time, and it takes the issue of correlated errors into consideration and provides more realistic and conservative statistical testing (Arnold, 1992).

Hierarchical linear modeling was conducted with the statistical software HLM 7 (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2011). A two-step approach to multilevel modeling was implemented. In the first step, null models were tested as a means to determining what proportion of variance lay between clinicians. These null models are fully unconditional, as they have no predictors at Level-1 or Level-2. They serve to estimate the intercept in a random coefficients model and are equal to one-way analysis of variance (ANOVA) models with random effects. The multilevel equation for this null model is as follows:

$$\text{Level-1 Model: } Y_{ij} = \beta_{0j} + r_{ij}$$

$$\text{Level-2 Model: } \beta_{0j} = \gamma_{00} + \mu_{0j}$$

These two equations can be put together to make up the following:

$$Y_{ij} = \gamma_{00} + \mu_{0j} + r_{ij}$$

In this equation, Y_{ij} represents the psychotherapy outcomes of client i of clinician j . In addition, γ_{00} is the grand mean, μ_{0j} is the clinician's deviation from the mean and r_{ij} is the individual client's deviation from the mean. Importantly, this model can be used as a basis for the calculation of intra-class correlations (ICCs), which signify the proportion of variance in an outcome variable that is between Level-2 units. In the second step, conditional models, with predictors specified at Level-2, were tested. With clinician expectations entered as predictors at Level-2, these intercept-as-outcomes models were run to assess the influence of clinician-level expectations on psychotherapy outcomes. The multilevel equation for this intercept-as-outcome model is as follows:

$$\text{Level-1 Model: } Y_{ij} = \beta_{0j} + r_{ij}$$

$$\text{Level-2 Model: } \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{expectations}) + \mu_{0j}$$

These two equations can be put together to make up the following:

$$Y_{ij} = \gamma_{00} + \gamma_{01}(\text{expectations}) + \mu_{0j} + r_{ij}$$

Thus, error terms are essential to both models. Such ‘random effect’ models are used because of the likelihood that β_{0j} may vary across clinicians. Finally, variance explained by the Level-2 expectations can be calculated by comparing models in the first and second steps.

First, clinicians’ expectations, as measured by long-term impairment indifference points, served as the predictor variable and clients’ individual change scores on the OQ45.2 served as the dependent variable representing client outcomes. List-wise deletion was used to remove from the analysis clinicians who did not use the OQ45.2 in their time at the psychology clinic as well as clients who did not receive the OQ45.2. First, we ran the null model that did not include any independent variables to get an idea of how much clinicians vary in terms of their clients’ changes on the outcome questionnaire. This analysis showed that the grand mean change on the

OQ45.2 was 9.76. The intra-class correlation was found to be 0.0094, meaning that only roughly 0.94% of the variance is attributable to the clinician-level, and the remaining 99.06% is at the client level. As OQ45.2 change scores do not vary significantly between clients of different clinicians, $\chi^2 (43) = 34.38, p > 0.5$, no further models examining clinician expectations were warranted for this analysis.

Next, HLM was used to assess the relationship between clinicians' expectations for premature termination and their clients' termination status. Clinicians' expectations of reduction in long-term impairment served as the independent variable, while the dependent variable was measured by clinician-reported premature termination status. As termination status is a dichotomous variable (yes/no), the Bernoulli distribution setting was selected for this variable in HLM. The null model did not include any independent variables in order to assess how much clinicians vary in terms of their clients' termination statuses. The intra-class correlation was found to be .078, indicating approximately 7.8% of variance in this model was at the clinician-level, while the remaining 92.2% was at the client-level. As reported termination status did not vary significantly for clients across clinicians, $\chi^2 (43) = 0.28, p = 0.054$, no further models examining the effect of clinician expectations were warranted for this analysis.

Finally, HLM was used to assess the relationship between clinicians' expectations for premature termination and whether their clients experienced clinically significant change, as indicated by a significant reduction in pre- to post- scores on the OQ45.2 and final scores within the normal range of functioning. As the outcome variable of clinically significant change is dichotomous, the Bernoulli distribution setting was again selected for this variable in HLM. After running the null model, the intra-class correlation was found to be 0.146, indicating approximately 14.6% of the variance was at the clinician-level and the remaining 85.4% of the

variance was at the client-level. The comparison of clients' CSC across clinicians was found to be near significant, $\chi^2(43) = 58.02, p = 0.063$. As clients' outcomes tended to vary across clinicians, expectations of long-term improvement were added to the model as Level-2 predictors. Results indicated clinicians' expectations were positively associated with clinically significant change, $\gamma_{01} = 0.02, t = 2.05, p = .047$. The intra-class correlation showed that roughly 13.7% of variance was now attributed to the clinician-level with the remaining 86.3% attributable to variance at the client-level. By comparing between-unit variance in the null model and the second predictor model, clinician's expectations were found to explain 7.3% of the explainable variance in whether or not clients experienced CSC (Kreft & de Leeuw, 1998; Singer, 1998). Thus, it appears clinician expectations contribute to explaining the variation between clients with regards to clinically significant outcomes in training clinics.

Analyses for Hypothesis 3

Hierarchical linear modeling was used to test the third hypothesis that clients of clinicians who report accessing and utilizing OQ45.2 scores on a regular basis would show better outcomes than clients of clinicians who report rarely or never accessing their clients' responses. As previous analyses found that little Level-2 variance existed for the dependent variables of OQ45.2 change score and termination status, whether or not clients experienced clinically significant change served as the only outcome variable for this analysis. Clinicians' frequency of use of the outcome questionnaire served as the independent variable. First, we ran the null model that did not include any predictor variables. The intra-class correlation was found to be 0.113, indicating that approximately 11.3% of the variance is attributable to the clinician-level, and the remaining 88.7% due to variance at the client level. A chi-square analysis indicated that client

outcomes, as measured by clinically significant change, did not vary significantly across clinician groups, $\chi^2(45) = 53.58, p = 0.178$.

As 11.3% of variance in clients' CSC was found to be attributable to clinician factors, clinicians' frequency of use of the OQ45.2 were centered around the grand mean and added to the model as level-2 predictors. Results indicated that frequency of use was not significantly associated with clinically significant change, ($\gamma_{01} = 0.17, t = -1.68, p = .100$). The intra-class correlation showed that roughly 9.1% of variance was attributed to the clinician-level with the remaining 90.9% attributable to variance at the client-level. By comparing the null model and this second predictor model, clinicians' use of the OQ45.2 was found to explain 12.9% of the explainable variance in whether or not clients experienced CSC (Kreft & de Leeuw, 1998; Singer, 1998). Thus, it appears that the frequency of use of the OQ45.2 contribute somewhat to explaining variation between clients with regards to clinically significant outcomes. Although it is possible that simply viewing the OQ45.2 data may positively impact client's outcomes, it is probable that those clinicians more likely to view their clients' outcome data on a regular basis also tend to be more invested in the therapeutic process and to their clients as a whole; thus, these results should be interpreted with this probable relationship in mind.

CHAPTER IV

DISCUSSION

The purpose of this study was to examine both the accuracy of trainee clinicians' expectations' for their clients' outcomes as well as the potential impact of those expectations on actual client outcomes. Delay discounting measures were utilized to systematically compare the likelihood of client improvement and premature termination rates across varying session numbers; however, a true delay discounting model could not be used in analyses due to limitations in the measures and unexpected patterns in participant responding. On these delay discounting measures, clinicians expected clients to experience approximately 39.30% reduction in their symptom distress and 35.97% reduction in long-term impairment after 15 sessions of psychotherapy. They also indicated an only 29.07% chance of client premature termination after 15 sessions.

Clinicians' responses on these delay discounting measures were found to be strongly correlated with responses on the subsequent expectation questionnaires which assessed expectations for recovery and premature termination more directly for sessions 1, 2, 4, 8, 15, and 26. This relationship suggests that although the delay discounting measures were reportedly confusing and somewhat frustrating for participants, their responses still seem to represent true expectations. However, the high concordance also indicates expectations questionnaires, which are much simpler and more time-efficient for both participant and researcher, are able to obtain similar information. Furthermore, the use of expectations questionnaires allowed the researchers to assess expectations across multiple, carefully-selected session markers in order to compare expectations directly to recovery rates in the current literature. Thus, the use of delay discounting

measures, as they were used in this study, may not be the most efficient method of obtaining information regarding expectations or preferences.

On average, clients were found to have significantly higher expectations for clients' rates of recovery than is reported in the literature as actually occurring across settings. While clinicians expected a higher percentage of clients to have experienced significant improvement at each session, their expectations generally followed the dose-effect curve (Howard et al., 1986) in which greater percentages of clients were expected to show improvement with increasing doses of psychotherapy. Moreover, clinicians' expectations of premature termination rates across sessions of psychotherapy were significantly lower than actual rates reported in the literature. These expectations indicate that the trainee clinicians and recent graduates of this study held more optimistic expectations for the rate of recovery and retention rates of their clients than is typically realistic in training clinics. Overall, participants were not accurate predictors of client improvement or attrition in therapy. Clinician variables, including demographic variables and years of therapy experience, were not found to be significant predictors of expectations.

These optimistic, yet inaccurate expectations for recovery and premature termination could be taken to suggest a number of different things. First, it is possible individuals who pursue further education in the field of psychology tend to regard therapy as more beneficial. These high expectations could also be seen as a function of participants being current or recent trainee clinicians. Moreover, as client successes play an important role in the emerging confidence of the beginning therapist (Bischoff & Barton, 2002), they may demonstrate a tendency of perceiving in-session gains as generalized improvements. Finally, taking into consideration the high variability in clinician expectations, it is possible clinicians are unaware of client rates of recovery or premature termination from psychotherapy. This general discrepancy between

clinician expectations and actual outcomes was also evident in the low concordance rates between clinician-assigned termination statuses and whether their clients were actually categorized as having terminated successfully by the more objective methodology of CSC. This highlights the value of clinicians' use of outcome data in forming more consistently accurate expectations, perceptions, and predictions about their clients.

Next, the researchers aimed to examine whether clinicians' high expectations impacted their client's improvements in psychotherapy or rate of premature termination. In terms of premature termination, no differences were found between clients of different clinicians in terms of their termination statuses (successful or premature). Similarly, no differences were found across clinicians in terms of their clients' change in pre- and post- Outcome Questionnaire 45.2 (OQ45.2) scores. Small differences were found between the outcomes of clients of different clinicians as measured objectively by criterion for clinically significant change (CSC). Analyses suggested clinicians' expectations were positively associated with client outcomes, indicating that higher expectations for clients' long-term improvement in psychotherapy were related to more client positive outcomes. Clinicians' expectations accounted for approximately 7.3% of variance in whether their clients experienced CSC. Consistent with literature documenting the role of working alliance in improving psychotherapy outcomes and retention (e.g. Chisholm, 1998; Corning, Malofeeva, & Bucchianeri, 2007; Dearing & Tangney, 2011; Dew & Bickman, 2005; Long, 2005; Sharf, Primavera, & Diener, 2010). it is possible clinicians who hold more positive expectations for their clients may develop a stronger working alliance early in treatment. Another explanation is those clinicians with higher expectations for their clients may feel more confident in eliciting client change and thus may push their clients harder in therapy than clinicians who hold lower expectations for rate of recovery.

As clients of the UNT Psychology Clinic complete the OQ45.2 before each therapy session for clinical and research purposes, a secondary aim of this study was to explore how frequently clinicians reported accessing their clients' outcome data to inform therapy as well as if receiving this week-to-week feedback ultimately affects their clients' improvements in therapy. The majority of clinicians reported rarely (19.2%) or sometimes (19.2%) viewing their clients' outcome data, while slightly fewer reported often (13.7%) or almost always (17.8%) accessing the data. Only two clinicians endorsed never viewing their clients' outcome data (2.7%). This frequency with which clinicians utilized the data from the outcome questionnaire was found to be significantly, negatively correlated with clients' therapeutic outcomes and reported termination status. Specifically, the less frequently clinicians viewed the outcome data, the more likely they were to report their clients had successfully completed treatment and the more likely their clients were to be categorized as experiencing clinically significant improvement. Furthermore, results of HLM analyses indicated clinicians' frequency of utilizing the OQ45.2 to inform therapy accounts for 12.9% of variance in whether their clients experienced CSC. Interpretively, it is possible the feedback clinicians receive from outcome measures allows them to form more realistic perceptions of their clients' functioning, and thus clinicians are less likely to over report the improvements their clients have experienced. Another possible explanation of the negative relationship between utilizing the OQ45.2 and client improvement is that clinicians may simply be more likely to view outcome data for the clients they perceive to be more symptomatic or to be making less progress in psychotherapy.

Clinical Implications

Knowledge of clinician expectations for therapy and the impact those expectations have

on client outcomes hold a number of implications for clinical training and practice. First, it was found that clinician expectations were generally unrealistic; specifically, clinicians tended to hold more optimistic expectations of their clients' outcomes and retention rates than is actually observed. These high expectations for client rate of recovery were found to be positively associated with the probability of clients experiencing clinically significant change. This provides evidence to suggest holding positive expectations for client improvement is important early in clinical training. This holds training implications as it may provide support for a strengths-based supervision approach with a specific focus on recognizing clinician and client successes.

However, the large variability in participants' expectations suggests trainee clinicians may not be receiving direct training or supervision related to realistic client outcomes. As previous research demonstrates the negative effects of inaccurate client expectations for treatment duration on client outcomes and premature termination, it is important that clinicians are trained in and are able to communicate realistic expectations with their clients.

Limitations and Future Directions

A number of limitations with the current study should be noted. First, this study was conducted in a university-based psychology department training clinic. Analysis of participating trainee clinicians' demographics indicated the vast majority were of Caucasian ethnicity (72.2%) with an average age of 28.67. While these clinician demographics are consistent with reports of many training clinics nationwide (e.g. Constantino, Penek, Bernecker, & Overtree, 2013; Swift & Callahan, 2009), it is possible the expectations found within these clinicians may not generalize to clinicians in other settings or at other levels of training. Another limitation may be

the nature and presenting problems of clients of the UNT Psychology Clinic. It is possible that clients seeking treatment in other settings may be differentially affected by their clinicians' expectations for improvement. While the results of this study provide valuable information for training clinics, further research is warranted to examine clinician expectations and their effect on client outcomes in different settings.

A second limitation in this study related to the delay discounting measures that were used to assess clinician expectations. While these measures were able to assess clinician expectations for three separate improvement and premature termination scenarios, they only provided a measure of these expectations at one time point (15 sessions). Thus, the delay discounting measures did not provide us estimates of expectations across multiple time points that would be needed to utilize the proposed delay discounting model. This model would have allowed for the calculation of a hyperbolic function that could be used to predict clinician expectations across multiple time points. Future studies looking to explore the use of delay discounting as a measurement of expectations in psychotherapy should be careful to assess expectations at multiple time points. However, participating clinicians reported some frustrations with the dichotomous response choices and the redundant nature of the delay discounting measures, which may have contributed to the high attrition rates in this study (26%). Considering responses on the delay discounting measures were found to be highly correlated with responses on more direct, open-ended questions of expectations of rate of recovery (as measured by the expectations questionnaires), future research exploring expectations and preferences in psychotherapy may choose to utilize a variation of these seemingly more efficient and user-friendly measures.

Finally, limited statistical power because of the modest level-2 sample size in the present study ($N=43$) may have played a role in limiting the significance of some of the statistical

analyses conducted. A post hoc power analysis using the Optimal Design Plus Empirical Evidence HLM Software (Raudenbush et al., 2011) revealed that on the basis of the small effect sizes observed in the present study, a Level-2 sample size of approximately 56 clinicians and a Level-1 sample size of 377 clients would be needed to obtain statistical power at the recommended .80 level (Cohen, 1988).

Given the results, implications, and limitations of this study further research is warranted exploring clinicians' expectations for psychotherapy as well as the effects of expectations on client outcomes. As mentioned previously, research is needed to examine whether results found in this study generalize to other clinician and client populations and settings. It may be clinically useful to explore clinician factors that influence the development of expectations of psychotherapy outcomes including supervision and training experiences as well as internal factors such as self confidence. Moreover, it would be valuable to assess the relationship between clinician expectations and therapeutic alliance and whether the alliance acts as a moderator in the relationship between clinician expectations and treatment outcome. Finally, as much of the variability in client improvements and termination are unaccounted for in the extant literature, continued research is warranted to better understand factors that may improve client retention and treatment outcomes in psychotherapy.

Conclusions

The purpose of this study was to assess the potential impact of trainee clinicians' expectations of psychotherapy on the outcomes and premature termination rates of their clients in a training clinic setting. While clinician expectations for rate of recovery and client retention were significantly higher than can be expected, these optimistic expectations were found to be

positively associated with clinically significant change in clients. This more in-depth understanding of clinician expectations for psychotherapy may hold important training implications for improving client retention and treatment outcome.

APPENDIX A
REVIEW OF THE LITERATURE

Premature termination, broadly defined as dropping out before psychological services are complete, is a pervasive problem in the field of psychotherapy. Numerous studies have indicated that a large number of clients terminate prematurely from psychotherapy before experiencing clinically significant benefits. The existing literature generally reports that between 40% and 60% of clients in mental health and private practice settings terminate prematurely (e.g. Clarkin & Levy, 2003; Garfield, 1994; Wierzbicki & Pekarik, 1993). While these percentages are alarming, the concern of premature termination may be even greater within the setting of training clinics. In a recent study, Callahan and colleagues suggested that the prevalence of premature termination may be as high as 77% in training clinics (Callahan, Aubuchon-Endsley, Borja, & Swift, 2009; Swift, Callahan, & Levine, 2009). Additionally, only 22.5% of training clinic clients were found to terminate successfully as the result of a mutually agreed plan with their clinician, as compared to 40.2% of clients in other mental health settings. These very high rates of premature termination have serious implications for clients' mental health and the future of the field of psychology. Continued research aimed at understanding premature termination, particularly in the training clinic setting, is necessary.

The following sections provide a review of the existing literature related to defining and explaining premature termination. Specific variables found to be related to premature termination, including expectations, will be discussed. Next, in order to provide a model of describing the progress that clients make over time in psychotherapy, as well as a mode of comparing rates of recovery to past research, the dose-effect model is presented. The delay discounting model is further explained as it relates to implications for this and other studies in the field of mental health. Finally, objectives, research questions, and hypotheses are discussed.

Defining Premature Termination

Premature termination has been defined in a number of different ways, none of which are without flaws. Researchers have used a variety of methods to define premature termination from psychotherapy and this lack of consensus is a recognized problem within the literature in this area. Numerous studies have identified clients who prematurely terminate or “premature termination” as those who fail to attend a specified number of therapy sessions. The specific number of sessions set as the criterion for premature termination varies and is often based upon outcome expectations reported in the literature or upon the researchers’ expectations for the number of sessions needed to see improvement (e.g. Baruch, Vrouva, & Fearon, 2009; Beckham, 1992; Hartley & Strupp, 1983). Several researchers (e.g., Hansen, Lambert, & Forman, 2002; Hatchett & Park, 2003; Pekarik, 1985, Wierzbicki & Pekarik, 1993) have criticized this method of identifying clients who terminate prematurely from therapy. They argue that defining premature termination merely by the number of sessions attended is problematic because both treatment completion and treatment premature termination can occur after any number of sessions.

Researchers have also identified premature termination on the basis of missed appointment. With this method, clients are considered premature terminations upon missing a specified number of their scheduled appointments (typically one, two, or three; e.g. Hatchett, Han, & Cooker, 2002; Kolb, Beutler, Davis, Crago, & Shanfield, 1985; Tryon & Kane, 1993). An obvious shortcoming of this method is that clients’ termination statuses may be misidentified. For instance, clients who discontinue coming to therapy after seeing noticeable improvements may be wrongly classified as prematurely terminating, while severely impaired individuals may be misidentified as appropriate terminators if they simply fail to schedule a subsequent

appointment (Pekarik, 1985). In spite of these apparent shortcomings, some argue that utilizing a missed appointment approach is the preferable method of operationalizing premature termination, as it provides better reliability and direct comparability across different studies than other methods (Hatchett & Park, 2003).

Another method of defining premature termination commonly seen in the literature is through the use of therapist's ratings. This method defines premature terminators as those clients who discontinue therapy before their therapist believes appropriate. This subjective definition may also be problematic. Although therapists' clinical expertise is certainly an important part in the evidence-based practice of psychology (Levant & Hasan, 2008; Spring, 2007), it may not always be reliable. Researchers have found that therapists' judgments are often inaccurate when compared with statistical methods of judgment (Garb, 2005; Grove, Zald, Lebow, Snitz, & Nelson, 2000). In particular, research has provided support for the argument that using therapist's ratings as a definition of premature termination from psychotherapy may be problematic. For example, Hannan and colleagues (2005) asked therapists to predict their clients' progress and found that therapists tend to over predict improvements and fail to recognize clients who worsen when compared to their clients' ratings on the OQ-45. Similarly, Todd, Deane, and Bragdon (2003), found that when both therapists and clients were asked to provide reasons for termination, therapists were more likely to endorse "improvement" as the reason for termination than were their clients. Despite these shortcomings in this method of operationalization, some argue that using therapist judgment may be the best method for defining premature termination as it is face valid and offers more flexibility than other methods (Wierzbicki & Pekarik, 1993).

A more objective, yet less commonly used method for defining premature termination from psychotherapy is the utilization of the criterion of clinically significant change (CSC). Two

conditions must be met in order for CSC to be indicated: a) the client must obtain a score within the nonclinical range on a standardized and routinely implemented outcome measure and b) the change in score must reflect reliable change (Jacobson, Follette, & Revenstorf, 1984; Jacobson & Truax, 1991). Reliable change (RC) is used to determine whether or not a change in an individual's score is statistically significant and is measured by the Reliable Change Index (RCI). The RCI is equal to an individual's score at intake minus their score at termination then divided by the standard error of the difference for the test being used. If the RCI meets or exceeds the criterion of 1.96, an individual's change in scores is considered statistically significant. This method for calculating reliable change ensures that changes in a client's outcome scores over time is due to reliable change and not simply measurement error. Using this method, clients are considered to have terminated prematurely if they discontinue treatment before they have attained CSC as indicated on objective measures of outcome (Hatchett & Park, 2003).

In a study comparing treatment premature termination classifications when using different definitions of premature termination in a university-based clinic sample, researchers found little agreement between the CSC method and other popularly used methods (Swift et al., 2009). The utilization of CSC criterion appears promising as research has suggested that the CSC method is a highly valid and reliable system of identifying the construct of premature termination.

Predictors of Premature Termination

Several predictors of premature termination have been identified in the existing literature. A history of physical or sexual abuse has shown to be related to higher rates of attrition from psychotherapy (Claus & Kindleberger, 2002). Personal difficulties such as marital separation,

familial conflict, and social functioning may also be related (Handelsman, Stein, & Grella, 2005; Sayre et al., 2002). Research widely suggests that comorbid psychological diagnoses (e.g. Arnow et al., 2007; Claus & Kindleberger, 2002; Issakidis & Andrews, 2004; Lecrubier, 1998; Martinsen, Olsen, Tonset, Nyland, & Aarre, 1998; Sweet & Noones, 1989) and more severe levels of psychopathology (Ogrodniczuk et al., 2008; Turner, Beidel, Wolff, Spaulding, & Jacob, 1996) may also increase the likelihood of premature termination from psychotherapy. Specifically, clients with obsessive-compulsive disorder (Hansen, Hoogduin, Schaap, & de Haan, 1992) and personality disorder diagnoses (Chiesa, Drahorad, & Longo, 2000; Gunderson et al., 1989; Shea et al., 1990; Skodol, Buckley, & Charles, 1983) are at higher risk for premature termination. Other factors of psychological functioning such as cognitive dysfunction (McKellar, Kelly, Harris, & Moos, 2006), maladaptive personality style (Ball, Carroll, Canning-Ball, & Rounsaville, 2006), and mild levels of pretreatment symptomatology (Issakidis & Andrews, 2004) have also been shown to play a role in premature termination.

Clients with a history of legal issues such as delinquency behaviors (Pagnin, de Queiroz, & Saggese, 2005), fire setting, prostitution for drugs (Vourakis, 2005), and probation (Claus & Kindleberger, 2002) have demonstrated high attrition rates in psychotherapy. Furthermore, logistical problems interfering with appointments such as scheduling and transportation have shown to be related to premature termination (Ball et al., 2006).

The therapeutic alliance has long been recognized as a consistent predictor of treatment outcome (Martin, Garske, & Davis, 2000). Research has further implicated the therapeutic alliance as an important predictor of premature termination from psychotherapy (Chisholm, 1998; Corning, Malofeeva, & Bucchianeri, 2007; Dearing & Tangney, 2011; Dew & Bickman, 2005; Long, 2005; Sharf, Primavera, & Diener, 2010). A lack of therapeutic alliance may cause

the client to conflict with or feel misunderstood by their therapist, and in turn increase the likelihood of premature termination (Ball et al., 2006; McKellar et al., 2006).

In general, demographic variables have not been consistently found to be related to premature termination. Research examining the effect of gender on psychotherapy outcome has indicated gender is not related to retention in psychotherapy (Garfield, 1994; Petry, Tennen, & Affleck, 2000). Similarly, most research suggests client age is not related to premature termination (DuBrin & Zastowny, 1988; Gunderson et al., 1989; Sledge, Moras, Hartley, & Levine, 1990). However, there is some research to suggest demographic variables including racial minority status (Vourakis, 2005), younger age, and lower income (Arnow et al., 2007) may be related to the likelihood of premature termination.

Client Expectations

While research has suggested the relationship between premature termination and a wide range of specific variables, these relationships tend to be modest and are frequently not replicated across studies (Baekland & Lundwall, 1975; Garfield, 1994; Pekarik & Wierzbicki, 1986; Rabinowitz & Renert, 1997). Furthermore, several of these factors are uncommon in the training clinic setting (e.g., a broad range of legal issues). Although each of these specific factors are important, the alarmingly high rate of attrition in training clinics suggests there is likely a common, rather than specific, variable that may be affecting a broad range of clients. The literature implicates one such common factor, client expectations, as a consistent predictor of premature termination from psychotherapy.

Client expectancies refer to beliefs clients bring to therapy about any aspect of the treatment and its delivery, which might include anticipatory beliefs regarding procedures,

outcomes, their therapist, and treatment duration. There are two main types of expectations commonly referred to in the psychotherapy literature: role expectations and outcome (i.e., effectiveness) expectations (Dew & Bickman, 2005). Role expectations refer to behaviors the client anticipates to occur during the therapeutic session (e.g. who will be responsible for leading the conversation, will the therapist give advice, will there be homework assigned, etc). Numerous research studies suggest the disconfirmation of role expectations is related to premature termination (e.g. Dew & Bickman, 2005; Callahan et al., 2009; Hardin, Subich, & Holvey, 1988; Nock & Kazdin, 2001; Reis & Brown, 2006; Walitzer, Dermen, & Conners, 1999). Outcome expectations refer to clients' pretreatment beliefs regarding the effectiveness of treatment. These may include things like their anticipated likelihood of improvement and expected length of time needed before improvement is seen (Garfield, 1994). Research indicates outcome expectations are also significantly related to premature termination (Acosta, 1980; Callahan et al., 2009; Garcia & Weisz, 2002; Hansen et al., 1992; Pekarik, 1983) and may account for 15% of improvement in psychotherapy (Lambert, 1992).

Overall, research examining client expectations for psychotherapy has long indicated that unmet expectations increase the likelihood of premature termination (e.g. Jenkins, Fuqua, & Blum, 1986; Lorr & McNair, 1964; Overall & Aronson, 1963). Only one such study has been conducted in a university training clinic, and found that clients' pretreatment role and outcome expectations accounted for approximately 11 to 14% of the variance in premature termination (Callahan et al., 2009). However, the factors identified in the literature do not fully explain the variance in premature termination. Thus, further research in the area of common factors related to premature termination, especially in training clinics, is necessary for the understanding of the high rates of attrition from psychotherapy.

Since trainee clinicians are a common factor across all clients in a training clinic, it seems plausible that trainee clinician variables may account for the difference between outcomes and premature termination rates in training clinics versus other mental health settings. Despite the well-established role of client expectations, no research to date has explored the relationship between clinician expectations for psychotherapy on client outcomes and rates of premature termination. This study aims to examine this gap in the literature with hopes of further explaining the variance in the outcome and termination status of training clinic clients.

Dose-Effect Model

The dose-effect model is one of many models that have been developed in an attempt to describe the progress clients make over time in psychotherapy. In this model, it is assumed that the number of sessions is related to level of exposure to active ingredients of psychotherapy; thus, *dose* is measured by the number of sessions. The *effect* of treatment is measured by the percentage of clients who improved or the probability of improvement. The dose-effect model was first introduced by Howard, Kopta, Krause, and Orlinsky (1986) and states that with increasing doses of psychotherapy, greater percentages of clients are likely to show improvement. In their 1986 meta-analysis, Howard et al. analyzed 15 different studies including outcome data from over 2,400 patients in individual outpatient psychotherapy. Using probit analyses, their findings indicated 10% to 18% of clients showed measurable improvements prior to session one of psychotherapy. This improvement was explained to be the result of the initial contact with a service provider and the realization that they will be receiving help. After 8 sessions, 48% to 58% of clients improved; approximately 75% of clients showed improvement after 26 sessions (6 months of weekly psychotherapy); and about 85% improved after 52 sessions

(one year of weekly psychotherapy). The plot of the percentages of clients improved as a function of number of sessions of psychotherapy forms a negatively accelerated curve, as can be seen in Figure A1. Thus, the dose-effect model indicates there is a greater likelihood of improvement with a greater number of sessions, and relatively more frequent improvements are seen earlier in treatment than later in treatment.

Figure A.1. Howard et al. (1986) dose-effect relationship curve.

Since the introduction of the dose-effect relationship, numerous researchers have explored this relationship in a range of different populations and using varied methodologies (e.g. Barkham et al., 1996; Barkham et al., 2006; Callahan & Hynan, 2005; Draper, Jennings, Baron, Erdur, & Shankar, 2002; Hansen & Lambert, 2003; Kadera, Lambert, & Andrews, 1996; Kopta, Howard, Lowry, & Beutler, 1994; Lambert, Hansen, & Finch, 2001; Lambert, Okiishi,

Finch, & Johnson, 1998; Lueger, Lutz, & Howard, 2000; Wolgast, Lambert, & Puschner, 2003). While exact percentages vary considerably across studies, findings have consistently demonstrated a negatively-accelerated dose-effect relationship. Researchers Hansen, Lambert, & Forman (2002) summarized the results of seven primary studies on the dose-effect relationship. They found that between 13 and 18 sessions of psychotherapy are required for 50% of clients to improve, which suggests a much more modest effect than the 8 sessions reported in Howard et al.'s 1986 meta-analysis.

One such study conducted by Kopta and colleagues (1994) aimed to replicate Howard et al.'s 1986 study while addressing several of its major limitations. The researchers used a standardized outcome measure as well as the requirement of "return to normal functioning" to determine effect, rather than the criterion of general improvement that was used in Howard et al.'s seminal study (1986). Kopta et al. tracked 854 outpatient clients across 5 mental health centers and found that a higher number of sessions were needed to see the same level of improvement reported in the original: 50% of clients significantly improved after 11 sessions, and 75% improved after 50 sessions. Again, these results demonstrated a positive and negatively accelerated dose-effect relationship that was similar to the findings in Howard et al.'s seminal article (1986). However, this curve demonstrated little negative acceleration, suggesting clients are less likely to make significant improvements during the first few sessions of therapy.

The differences in recovery rates across studies have been hypothesized to be due, in part, to the treatment setting and the use of trainee therapists (Kadera et al., 1996; Lambert et al., 1998). Kadera et al. (1996) reported a slowed dose-effect response curve in a training environment with only 22% of clients seeing improvements after 8 sessions. Callahan and Hynan (2005) found even more modest effects in a training clinic setting with a mere 8% of clients

showing significant improvement after 8 sessions (see Figure A2). These findings, in conjunction with the staggering rates of training clinic attrition, show there is a drastic difference between the number of sessions needed to see improvement and the number of sessions actually attended by clients seeking services in training clinics. Given the large number of clients who leave treatment prematurely and thus do not experience any reliable benefits, future research in this area should be given high priority.

Figure A.2. Callahan & Hynan (2005) dose-effect response curve in a training clinic.

Delay Discounting Model

As previously discussed, delay discounting refers to an individual's preference for a smaller immediate reward versus a larger delayed reward and has long been studied in the field of economics and cognitive psychology (e.g. Chapman, 1996; Frederick, Loewenstein, &

O'Donoghue, 2002; Green & Myerson, 2004). Over time, this model has been adapted for research in the fields of medicine as a measure of patient preferences and decision-making related to treatment options (Asenso-Boadi, Peters, & Coast, 2008; Chapman, 2002; Chapman, Nelson, & Hier, 1999; Hayman, Weeks, & Mauch, 1996; Ortendahl & Fries, 2005; Stavem, Kristiansen, & Olsen, 2002) and preventative health behaviors (Chapman et al., 2001; Weller, Cook, Avsar, & Cox, 2008). Delay discounting procedures have recently been shown to have a multitude of applications in the mental health field as well including studying substance abuse and other addictive behaviors (Bickel & Marsch, 2001; de Wit, 2009; Gottdiener, Murawski, & Kucharski, 2008; Heil, Johnson, Higgins, Bickel, 2006; Khwaja, Silverman, & Sloan, 2007; Ohmura, Takahashi, Kitamura, 2005). They have also been used to provide greater understanding of a variety of clinical disorders (Barkley, Edwards, Laneri, Fletcher, & Metevia, 2001; Crean, de Wit, & Richards, 2000; Wilson, Mitchell, Musser, Schmitt, & Nigg, 2010)

Relevant to the conceptualization of this study, delay discounting procedures have emerged as an important method of measuring preferences and expectations in psychotherapy research. More specifically, delay discounting procedures have been used to find clients' rate-of-recovery expectations associated with varying lengths of treatment (Swift & Callahan, 2008). A similar procedure was adapted and used in the present study to examine clinicians' expectations of psychotherapy effectiveness and duration.

Delay discounting procedures allow for the calculation of the 'indifference point'; the point at which an individual views one of the presented options as equal in value to the other option presented. This obtained indifference point can then be used to determine how the individual values the reward associated with each option compared to the amount of time delay in getting that reward; this is often referred to as the individual's discounting rate. This

discounting rate takes the form of a hyperbolic function (Madden, Begotka, Raiff, & Kastern, 2003), which is quantified by the following formula:

$$V = A / (1 + kD)$$

where V is the subjective value of the delayed reward, A is the amount of the award delivered after the delay, D is the amount of delay, and k is the parameter describing the discounting rate.

In the present study, an adapted delay discounting procedure was used to measure clinician expectations. Clinicians compared two treatments scenarios that differed in effectiveness (in terms of symptomatic distress and long-term impairment; the “reward” or “A” in the formula above) across varying amounts of time (number of therapy sessions required; the “D” in the formula above). This model was also used to compare two treatments scenarios based on a client’s chance of premature termination across varying amounts of time. By systematically manipulating the effectiveness in the two hypothetical treatment scenarios, indifference points were calculated that represent expectations of treatment effectiveness and likelihood of premature termination across differing treatment lengths of treatment. See Appendix B for the delay discounting instruments that were used in this study to examine clinicians’ expectations.

Given the high rates of premature termination in training clinics (Callahan et al., 2009), there is little research aimed at understanding common factors that may be affecting the broad range of clients seeking services in training clinics. The existing literature gives us reason to believe clinicians’ expectations for the duration and effectiveness of psychotherapy may be related to both premature termination and treatment outcome. This study examined the impact of clinicians’ expectations for successful outcome on the termination status and outcomes of their clients. This research also holds clinician training implications for improving client retention and treatment outcome.

APPENDIX B

DELAY DISCOUNTING MEASURES

Instructions:

For the following questions, you are asked to imagine that you have been assigned a new therapy client. You are given no specific information about this client or their presenting concerns; thus, you are asked to imagine a client that is “typical” or “average” for your training clinic.

Keeping this “average” client in mind for the following questions, you will be asked to determine which of two treatment scenarios you would consider most likely based on potential reduction in your client’s ***symptomatic distress (current distress experienced from psychological symptoms such as depression, anxiety, etc.).***

You have the option of choosing an outcome of 0% reduction in your client’s *symptom distress* after **1** therapy session OR an outcome of __% reduction in your client’s *symptom distress* after **15** therapy sessions.

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 0% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 10% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 20% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 30% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 40% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 50% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 60% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 70% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 80% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 90% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 100% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 90% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 80% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 70% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 60% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 50% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 40% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 30% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 20% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 10% reduction in symptom distress after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in symptom distress after 1 session ☐ 0% reduction in symptom distress after 15 sessions

Instructions

Keeping this “average” client in mind for the following questions, you will be asked to determine which of two treatment scenarios you would consider *most likely* to occur based on the potential reduction in your client’s ***long-term impairment (long-lasting, stable reduction in psychological, social, and interpersonal impairments)***.

You have the option of choosing an outcome of **0%** reduction in your client’s *long term-impairment* after **1** therapy session OR an outcome of **__%** reduction in your client’s *long-term impairment* after **15** therapy sessions.

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 0% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 10% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 20% reduction in long-term impairment after 15 sessions

Which would you consider the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 30% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 40% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 50% reduction in long-term impairment after 15 sessions

Which would you consider the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 60% reduction in long-term impairment after 15 sessions

Which would you consider the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 70% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 80% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 90% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 100% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 90% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 80% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 70% reduction in long-term impairment after 15 sessions

Which would you consider the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 60% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 50% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 40% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 30% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 20% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 10% reduction in long-term impairment after 15 sessions

Which would you expect to be the more plausible treatment outcome?

- ☐ 0% reduction in long-term impairment after 1 session ☐ 0% reduction in long-term impairment after 15 sessions

Instructions

Keeping this “average” client in mind for the following questions, you will be asked to determine which of two treatment scenarios you would consider more likely to occur based on your client’s ***chance of premature termination***. Premature termination will be defined as your client dropping out of therapy before experiencing clinically significant benefits from therapy (significant reduction in symptoms which return to the nonclinical range).

You have the option of choosing a scenario with **0%** chance of premature termination after **1** therapy session OR a scenario with **__%** chance of premature termination after **15** therapy sessions.

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 0% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 10% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 20% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 30% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 40% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 50% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 60% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 70% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 80% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 90% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 100% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 90% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 80% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 70% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 60% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 50% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 40% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 30% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 20% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 10% chance of premature termination after 15 sessions

Which would you consider the more plausible scenario?

☐ 0% chance of premature termination after 1 session

☐ 0% chance of premature termination after 15 sessions

APPENDIX C

OUTCOME EXPECTATIONS QUESTIONNAIRE

Clinicians often have differing expectations with regards to the psychotherapy services provided in their clinical setting. Please answer the following questions with regards to your personal beliefs and expectations. Remember to answer each question according to how you really feel, not how you may think others would like you to respond.

Instructions

Considering all the clients in your training clinic at a given time, please indicate the percentage of clients you would expect to show clinically significant improvement in __ sessions.

Definition

Clinically significant improvement: A significant reduction in symptoms that return to the nonclinical range.

What percentage of clients would you expect to show clinically significant change in 1 session?

What percentage of clients would you expect to show clinically significant change in 2 sessions?

What percentage of clients would you expect to show clinically significant change in 4 sessions?

What percentage of clients would you expect to show clinically significant change in 8 sessions?

What percentage of clients would you expect to show clinically significant change in 15 sessions?

What percentage of clients would you expect to show clinically significant change in 26 sessions?

APPENDIX D

PREMATURE TERMINATION EXPECTATIONS QUESTIONNAIRE

Clinicians often have differing expectations with regards to the psychotherapy services provided in their clinical setting. Please answer the following questions with regards to your personal beliefs and expectations. Remember to answer each question according to how you really feel, not how you may think others would like you to respond.

Instructions

Considering all the clients in your training clinic at a given time, please indicate the percentage of clients you would expect to premature termination of therapy after ___ sessions without having experienced clinically significant change.

Definition

Clinically significant improvement: A significant reduction in symptoms that return to the nonclinical range.

What percentage of clients would you expect to premature termination of therapy after 1 session without having experienced clinically significant change?

What percentage of clients would you expect to premature termination of therapy after 2 sessions without having experienced clinically significant change?

What percentage of clients would you expect to premature termination of therapy after 4 sessions without having experienced clinically significant change?

What percentage of clients would you expect to premature termination of therapy after 8 sessions without having experienced clinically significant change?

What percentage of clients would you expect to premature termination of therapy after 15 sessions without having experienced clinically significant change?

What percentage of clients would you expect to premature termination of therapy after 26 sessions without having experienced clinically significant change?

APPENDIX E

RECRUITMENT SCRIPT FOR CURRENT TRAINEE CLINICIANS

Dear Psychology Graduate Student

You are being asked to consider participating in a study (for completion of thesis requirements) that explores the possible relationship between psychology trainee clinicians' expectations for treatment and the outcomes of their clients. These expectations for treatment include expectations for rate of various forms of client improvement as well as expectations related to the premature termination of clients. If you are willing to participate in this study, you will be asked to complete an online set of questionnaires requiring approximately 15 minutes of your time.

All information that is collected as part of this study will remain confidential and no information will be shared with your training program. If you have any questions or are interested in learning more about this study, please e-mail the student investigator at DanaConnor@my.unt.edu.

If you are interested in participating in this study, please click the link below to begin.

APPENDIX F

RECRUITMENT SCRIPT FOR FORMER TRAINEE CLINICIANS

Dear UNT Psychology Graduate

I am a second year doctoral student in the Clinical Psychology Program at the University of North Texas conducting research for the completion of my thesis. You are being asked to consider participating in a study that explores the possible relationship between clinicians' expectations for treatment and the outcomes of their clients. These expectations for treatment include expectations for rate of various forms of client improvement as well as expectations related to the premature termination of clients. If you are willing to participate in this study, you will be asked to complete an online set of questionnaires requiring approximately 15 minutes of your time.

All information that is collected as part of this study will remain confidential and no information will be shared with the University of North Texas training program. If you have any questions or are interested in learning more about this study, please e-mail the student investigator at DanaConnor@my.unt.edu.

If you are interested in participating in this study, please click the link below to begin.

APPENDIX G
INFORMED CONSENT

University of North Texas Institutional Review Board

Informed Consent Form

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

Title of Study: Impact of Clinician Expectations on Termination Status and Therapeutic Outcome: A Delay Discounting Model

Principal Investigator: Jennifer Callahan, PhD, ABPP; University of North Texas Department of Psychology

Student Investigator: Dana Connor, B. S.; University of North Texas Department of Psychology

Purpose of the Study: You are being asked to participate in a research study that involves exploring the possible relationship between psychology trainee clinicians' expectations for treatment and the outcomes of their clients seen in the UNT Psychology Clinic.

Study Procedures: You will be asked to complete several brief measures of your expectations for treatment outcome and rate of recovery, which should take about 15 minutes of your time.

Foreseeable Risks: No risks or discomforts are anticipated from taking part in this study. If you feel uncomfortable with a question, you can skip that question or withdraw from the study altogether. If you decide to quit at any time before you have finished the questionnaires, your answers will NOT be recorded.

Benefits to Participants or Others: This study is not expected to be any direct benefit to you, but may help improve training of future students and improve outcomes among clients of training clinics.

Procedures for Maintaining Confidentiality of Research Records: Measures will be completed online and data will be stored electronically on a controlled access server available only by password to the researchers. Data will be maintained for at least 5 years following completion of the project and dissemination of findings. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study. No information about your results will be shared with your training program.

Decision to Quit at Any Time: Your participation is voluntary; you are free to withdraw your participation from this study at any time. If you do not want to continue, you can simply leave this webpage. If you do not click on the "submit" button at the end of the questionnaires, your answers and participation will not be recorded. You also may choose to skip any questions that you do not wish to answer.

Questions about the Study: Should you have questions regarding the study, you can contact the principal investigator, Dr. Jennifer Callahan at XXX-XXX-XXXX or at Jennifer.Callahan@unt.edu, or Dana Connor at XXX-XXX-XXXX or at DanaConnor@my.unt.edu.

Review for the Protection of Participants: This research study will be reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at 940-565-3940 with any questions regarding the rights of research subjects.

By typing your name below and beginning the questionnaires, you acknowledge that you have read the above information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

Typed Name of Participant

Date

APPENDIX H
IRB APPROVAL LETTER

OFFICE OF THE VICE PRESIDENT FOR RESEARCH AND ECONOMIC DEVELOPMENT
Research Services

October 24, 2011

Dr. Jennifer Callahan
Department of Psychology
University of North Texas
RE: Human Subjects Application No. 11-459

Dear Dr. Callahan:

In accordance with 45 CFR Part 46 Section 46.101, your study titled "Impact of Clinician Expectations on Termination Status and Therapeutic Outcome: A Delay Discounting Model" has been determined to qualify for an exemption from further review by the UNT Institutional Review Board (IRB).

Enclosed is the consent document with stamped IRB approval. Please copy and **use this form only** for your study subjects.

No changes may be made to your study's procedures or forms without prior written approval from the UNT IRB. Please contact Jordan Harmon, Research Compliance Analyst, ext. 3940, if you wish to make any such changes. Any changes to your procedures or forms after 3 years will require completion of a new IRB application.

We wish you success with your study.

Sincerely,

Patricia L. Kaminski, Ph.D.
Associate Professor
Chair, Institutional Review Board

PK:jh

University of North Texas Institutional Review Board

Informed Consent Form

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

Title of Study: Impact of Clinician Expectations on Termination Status and Therapeutic Outcome: A Delay Discounting Model

Principal Investigator: Jennifer Callahan, PhD, ABPP; University of North Texas Department of Psychology

Student Investigator: Dana Connor, B. S.; University of North Texas Department of Psychology

Purpose of the Study: You are being asked to participate in a research study that involves exploring the possible relationship between psychology trainee clinicians' expectations for treatment and the outcomes of their clients seen in the UNT Psychology Clinic.

Study Procedures: You will be asked to complete several brief measures of your expectations for treatment outcome and rate of recovery, which should take about 15 minutes of your time.

Foreseeable Risks: No risks or discomforts are anticipated from taking part in this study. If you feel uncomfortable with a question, you can skip that question or withdraw from the study altogether. If you decide to quit at any time before you have finished the questionnaires, your answers will NOT be recorded.

Benefits to Participants or Others: This study is not expected to be any direct benefit to you, but may help improve training of future students and improve outcomes among clients of training clinics.

Procedures for Maintaining Confidentiality of Research Records: Measures will be completed online and data will be stored electronically on a controlled access server available only by password to the researchers. Data will be maintained for at least 5 years following completion of the project and dissemination of findings. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study. No information about your results will be shared with your training program.

Decision to Quit at Any Time: Your participation is voluntary; you are free to withdraw your participation from this study at any time. If you do not want to continue, you can simply leave this webpage. If you do not click on the "submit" button at the end of the questionnaires, your answers and participation will not be recorded. You also may choose to skip any questions that you do not wish to answer.

Questions about the Study: Should you have questions regarding the study, you can contact the principal investigator, Dr. Jennifer Callahan at [REDACTED] or at Jennifer.Callahan@unt.edu, or Dana Connor at [REDACTED] or at DanaConnor@my.unt.edu.

Review for the Protection of Participants: This research study will be reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at 940-565-3940 with any questions regarding the rights of research subjects.

Research Participants' Rights:

By typing your name below, you acknowledge that you have read all of the above information and that you agree to all of the following:

- You understand the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw your participation at any time will involve no penalty or loss of rights or benefits.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You understand you may print a copy of this form for your records.

Typed Name of Participant

Date

APPROVED BY THE UNT IRB

DATE Oct 10-24-11

REFERENCES

- Acosta, F. X. (1980). Self-described reasons for premature termination of psychotherapy by Mexican American, Black American, and Anglo-American patients. *Psychological Reports, 47*(2), 435-443.
- Affleck, D. C. & Garfield, S. L. (1961). Predictive judgments of therapists and duration of stay in psychotherapy. *Journal of Clinical Psychology, 17*, 134-137.
- American Psychological Association (2002). Ethical principles of psychologists and code of conduct. *American Psychologist, 57*, 1060-1073.
- Arnold, C. L. (1992). Methods of plainly speaking: An introduction to hierarchical linear models. *Measurement and Evaluation in Counseling and Development, 25*, 58-88.
- Arnow, B. A., Blasey, C., Manber, R., Constantino, M. J., Markowitz, J. C., Klein, D. N.,... Rush, A. J. (2007). Premature terminations versus completers among chronically depressed outpatients. *Journal of Affective Disorders, 97*(1-3), 197-202.
- Asay, T. P., Lambert, M. J., Gregersen, A. T., & Goates, M. K. (2002). Using patient-refocused research in evaluating treatment outcome in private practice. *Journal of Clinical Psychology, 58*(1), 1213-1225.
- Asenso-Boadi, F., Peters, T. J., & Coast, J. (2008). Exploring difference in empirical time preference rates for health: An application of meta-regression. *Health Economics, 17*, 235-248.
- Baekeland, F., & Lundwall, L. (1975). Dropping out of treatment: A critical review. *Psychological Bulletin, 82*, 738-783.
- Ball, S. A., Carroll, K. M., Canning-Ball, M., & Rounsaville, B. J. (2006). Reasons for premature termination from drug abuse treatment: Symptoms, personality, and motivation. *Addictive Behaviors, 31*(2), 320-330.
- Barkham, M., Connell, J., Stiles, W. B., Miles, J. N. V, Margison, F., Evans, C., & Mellor-Clark, J. (2006). Dose-effect relations and responsive regulation of treatment duration: The good enough level. *Journal of Consulting and Clinical Psychology, 74*(1), 160-167.
- Barkham, M., Rees, A., Stiles, W. B., Shapiro, D. A., Hardy, G. E., & Reynolds, S. (1996). Dose-effect relations in time-limited psychotherapy for depression. *Consulting and Clinical Psychology, 64*(5), 927-935.
- Barkley, R. A., Edwards, G., Laneri, M., Fletcher, K., & Metevia, L. (2001). Executive functioning, temporal discounting, and sense of time in adolescents with attention deficit hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD). *Journal of Abnormal Child Psychology, 29*, 541-556.

- Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Baruch, G., Vrouva, I., Fearon, P. (2009). A follow-up study of characteristics of young people that premature termination and continue psychotherapy: Service implications for a clinic in the community. *Child and Adolescent Mental Health*, 14(2), 69-75.
- Bauer, S., Lambert, L., & Nielson, S. A. (2004). Clinical significance methods: A comparison of statistical techniques. *Journal of Personality Assessment*, 82(1), 60-70.
- Bickel, W. K., & Marsch, L. A. (2001). Toward a behavioral economic understanding of drug dependence: Delay discounting processes. *Addiction*, 96, 73-86.
- Bischoff, R. J., & Barton, M. (2002). The pathway toward clinical self confidence. *American Journal of Family Therapy*, 30, 231-242.
- Brandt, L. W. (1965) Studies of "premature termination" patients in psychotherapy: A review of findings. *Psychotherapy: Theory, Research, & Practice*, 2, 2-13.
- Callahan, J. L., Aubuchon-Endsley, N., Borja, S. E., & Swift, J. K. (2009). Pretreatment expectancies and premature termination in a training clinic environment. *Education in Professional Psychology*, 3(2), 111-119.
- Callahan, J.L., & Hynan, M. T. (2005). Models of psychotherapy outcome: Are they applicable in training clinics? *Psychological Services*, 2(1), 65-69.
- Chapman, G. B. (1996). Temporal discounting and utility for health and money. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 22, 771-791.
- Chapman, G. B. (2002). Your money or your health: Time preferences and trading money for health. *Medical Decision Making*, 22, 410-416.
- Chapman, G. B., Brewer, N. T., Coups, E. J., Brownlee, S., Leventhal, H., Leventhal, E. A. (2001). Value for the future and preventive health behavior. *Journal of Experimental Psychology: Applied*, 7(3), 235-250.
- Chapman, G. B., Nelson, R., Hier, D. B. (1999). Familiarity and time preferences: Decision making about treatments for migraine headaches and Crohn's disease. *Journal of Experimental Psychology: Applied*, 5, 17-34.
- Chiesa, M., Drahorad, C. & Longo, S. (2000). Early termination of treatment in personality disorder treated in a psychotherapy hospital. *British Journal of Psychiatry*, 177, 107-111.
- Chisholm, S. M. A. (1998). Comparison of the therapeutic alliances of premature terminators versus therapy completers. *Dissertation Abstracts International*, 59(6), 3051B.

- Clarkin, J. F., & Levy, K. N. (2003). Influence of client variables on psychotherapy. In M. Lambert (Ed.), *Handbook of psychotherapy and behavior change* (5th ed.; pp. 194-226). New York: Wiley.
- Claus, R. E., & Kindleberger, L. R. (2002). Engaging substance abusers after centralized assessment: Predictors of treatment entry and premature termination. *Journal of Psychoactive Drugs*, 34(1), 25-31.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Constantino, M. J., Penek, S., Bernecker, S. L., & Overtree, C. E. (2013). A preliminary examination of participant characteristics in relation to patients' treatment beliefs in psychotherapy in a training clinic. *Journal of Psychotherapy Integration*. Advance online publication.
- Corning, A. F., Malofeeva, E. V., & Bucchianeri, M. M. (2007). Predicting termination type from client-therapist agreement on the severity of the presenting problem. *Psychotherapy: Theory, Research, Practice, Training*, 44(2), 193-204.
- Crean, J. P., de Wit, H., & Richards, J. B. (2000). Reward discounting as a measure of impulsive behavior in a psychiatric outpatient population. *Experimental and Clinical Psychopharmacology*, 8, 155-162.
- Dearing, R. L. & Tangney, J. P. (2011). *Shame in the therapy hour*. Washington, DC: American Psychological Association.
- Derogatis, L.R. (1977). *The SCL-90 manual: Scoring, administration and procedures for the SCL-90*. Baltimore: Johns Hopkins University School of Medicine, Clinical Psychometrics Unit.
- Dew, S. E., & Bickman, L. (2005). Client expectations about therapy. *Mental Health Services Research*, 7(1), 21-33.
- Draper, M. R., Jennings, J., Baron, A., Erdur, O., & Shankar, L. (2002). Time-limited counseling outcome in a nationwide college counseling center sample. *Journal of College Counseling*, 5(1), 26-38.
- DuBrin, J. R., & Zastowny, T. R. (1988). Predicting early attrition from psychotherapy: An analysis of a large private-practice cohort. *Psychotherapy: Theory, Research, Practice, Training*, 25(3), 393-408.
- Frederick, S., Loewenstein, G., & O'Donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of Economic Literature*, 40, 351-401.
- Garb, H. N. (2005). Clinical judgment and decision making. *Annual Review of Clinical Psychology*, 1, 67-89.

- Garcia, J. A., & Weisz, J. R. (2002). When youth mental health care stops: Therapeutic relationship problems and other reasons for ending youth outpatient treatment. *Journal of Consulting and Clinical Psychology, 70*, 439-443.
- Garfield, S. L. (1994). Research on client variables in psychotherapy. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed., pp. 190-228). New York: Wiley.
- Gottdiener, W. H., Murawski, P., & Kucharski, L. T. (2008). Using the delay discounting task to test for failures in ego control in substance abusers: A meta-analysis. *Psychoanalytic Psychology, 25*, 533-549.
- Green, L., & Myerson, J. (2004). A discounting framework for choice with delayed and probabilistic rewards. *Psychological Bulletin, 130*, 769-792.
- Grove, W. M., Zald, D. H., Lebow, B. S., Snitz, B. E., & Nelson, C. (2000). Clinical versus mechanical prediction: A meta-analysis. *Psychological Assessment, 12*, 19-30.
- Gunderson, J. G., Frank, A. F., Ronningstam, E. F., Wachter, S., Lynch, V. J., & Wolf, P. J. (1989). Early discontinuance of borderline clients from psychotherapy. *Journal of Nervous and Mental Disease, 177*(1), 38-42.
- Handelsman, L., Stein, J. A., & Grella, C. E. (2005). Contrasting predictors of readiness for substance abuse treatment in adults and adolescents: A latent variable analysis of DATOS and DATOS-A patients. *Drug and Alcohol Dependence, 80*(1), 63-81.
- Hannan, C., Lambert, M. J., Harmon, C., Nielsen, S. L., Smart, D. W., Shimokawa, K., & Sutton, S. W. (2005). A lab test and algorithms for identifying clients at risk for treatment failure. *Journal of Clinical Psychology, 61*, 155-163.
- Hansen, A. M., Hoogduin, C. A., Schaap, C., & de Haan, E. (1992). Do drop-outs differ from successfully treated obsessive-compulsives? *Behavior Research and Therapy, 30*, 547-550.
- Hansen, N. B., & Lambert, M. J. (2003). An evaluation of the dose-response relationship in naturalistic treatment settings using survival analysis. *Mental Health Services Research, 5*(1), 1-12.
- Hansen, N. B., Lambert, M. J., & Forman, E. M. (2002). The psychotherapy dose-response effect and its implications for treatment delivery services. *Clinical Psychology: Science and Practice, 9*, 329-343.
- Hardin, S. I., Subich, L. M., & Holvey, J. M. (1988). Expectancies for counseling in relation to premature termination. *Journal of Counseling Psychology, 35*(1), 37-40.
- Hartley, D. E., & Strupp, H. H. (1983). The therapeutic alliance: Its relationship to outcome in brief psychotherapy. In J. Masling (Ed.), *Empirical studies in analytic theories* (Vol 1, pp. 1-38). Hillsdale, NJ: Erlbaum.

- Hatchett, G. T., Han, K., & Cooker, P. G. (2002). Predicting premature termination from counseling using the Butcher Treatment Planning Inventory Assessment. *Counseling Psychologist, 9*, 156-163.
- Hatchett, G. T., & Park, H. L. (2003). Comparison of four operational definitions of premature termination. *Psychotherapy: Theory, Research, Practice, Training, 40*, 226-231.
- Hayman, J., Weeks, J., & Mauch, P. (1996). Economic analyses in health care: An introduction to the methodology with an emphasis on radiation therapy. *International Journal of Radiation, Oncology, Biology, Physics, 35*, 827-841.
- Heil, S. H., Johnson, M. W., Higgins, S. T., & Bickel, W. K. (2006). Delay discounting in currently using and currently abstinent cocaine-dependent outpatients and non-drug-using matched controls. *Addictive Behaviors, 31*(7), 1290-1294.
- Horowitz, L. M., Rosenberg, S. E., Baer, B. A., Ureno, G., & Villasenor, V. S. (1988). Inventory of interpersonal problems: Psychometric properties and clinical applications. *Journal of Consulting and Clinical Psychology, 56*(6), 885-892.
- Horvath A.O., & Greenberg L. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology, 36*(2), 223-233.
- Howard, K. I., Kopta, S. M., Krause, M. S., & Orlinsky, D. E. (1986). The dose-effect relationship in psychotherapy. *American Psychologist, 41*, 159-164.
- Issakidis, C., & Andrews, G. (2004). Pretreatment attrition and premature termination in an outpatient clinic for anxiety disorders. *Acta Psychiatrica Scandinavica, 109*, 426-433.
- Jacobson, N. S., Follette, W. C., & Revenstorf, D. (1984). Psychotherapy outcome research: Methods for reporting variability and evaluating clinical significance. *Behavior Therapy, 15*, 336-352.
- Jacobson, N. S. & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*(1), 12-19.
- Jenkins, S. J., Fuqua, D. R., & Blum, C. R. (1986). Factors related to duration of counseling in a university counseling center. *Psychological Reports, 58*, 467-472.
- Kadera, S. W., Lambert, M. J., & Andrews, A. A. (1996). How much therapy is really enough? A session-by-session analysis of the psychotherapy dose-effect relationship. *Journal of Psychotherapy Practice & Research, 5*(2), 132-151.
- Kazdin, A. E. (2006). Arbitrary metrics: Implications for identifying evidence-based treatments. *American Psychologist, 61*(1), 42-49.
- Khwaja, A., Silverman, D., & Sloan, F. (2007). Time preference, time discounting, and smoking decisions. *Journal of Health Economics, 26*(5), 927-949.

- Kolb, D. L., Beutler, L. E., Davis, D. S., Crago, M., & Shanfield, S. B. (1985). Patient and therapy process variables relating to premature termination and change in psychotherapy. *Psychotherapy: Theory, Practice, & Research*, 22, 702-710.
- Kopta, S. M., Howard, K. I., Lowry, J. L., & Beutler, L. E. (1994). Patterns of symptomatic recovery in psychotherapy. *Journal of Consulting and Clinical Psychology*, 62(5), 1009-1016.
- Kreft, I., & De Leeux, J. (1998). *Introducing multilevel modeling*. London: Sage Publications.
- Lambert, M. J., (1992). Psychotherapy outcome research: Implications for integrative and eclectic therapists. In J. C. Norcross & M. R. Goldfried (Eds.), *Handbook of psychotherapy integration* (pp. 94–129). New York: Basic Books.
- Lambert, M. J., Hansen, N. B., & Finch, A. E. (2001). Patient-focused research: Using patient outcome data to enhance treatment effects. *Journal of Consulting and Clinical Psychology*, 69(2), 159-172.
- Lambert, M. J., Hansen, N. B., Umprress, V., Lunnen, K., Okiishi, J., & Burlingame, G. M. (1996). *Administration and scoring manual for the OQ45.2*. Stevenson, MD: American Professional Credentialing Services.
- Lambert, M. J., Lunnen, K., Umprress, V. (1994). *Administration and scoring manual for the Outcome Questionnaire (OQ-45.1)*. Salt Lake City, UT: IHC Center for Behavioral Healthcare Efficacy.
- Lambert, M. J., Okiishi, J. C., Finch, A. E., & Johnson, L. D. (1998). Outcome assessment: From conceptualization to implementation. *Professional Psychology: Research and Practice*, 29, 63-70.
- Lecrubier, Y. (1998). The impact of comorbidity on the treatment of panic disorder. *Journal of Clinical Psychiatry*, 59, 11–14.
- Levant, R. F., & Hasan, N. T. (2008). Evidence-based practice in psychology. *Professional Psychology: Research and Practice*, 29(6), 658-662.
- Long, M. (2005). Therapeutic alliance in the identification of premature termination from psychotherapy. *Dissertation Abstracts International*, 66(1), 563B.
- Lorr, M., & McNair, D. M. (1964). Correlates of length of psychotherapy. *Journal of Clinical Psychology*, 20, 497-504.
- Lueger, R. J., Lutz, W., & Howard, K. I. (2000). The prediction and observed course of psychotherapy for anxiety and mood disorders. *Journal of Nervous and Mental Disease*, 188(3), 127-134.
- Madden, G. J., Begotka, A. M., Raiff, B. R., & Kastern, L. L. (2003). Delay discounting of real and hypothetical rewards. *Experimental and Clinical Psychopharmacology*, 11(2), 139-145.

- Madden, G. J., & Bickel, W. K. (Eds.). (2009). *Impulsivity: The behavioral and neurological science of discounting*. Washington, DC: American Psychological Association.
- Martin, D. J., Garske, J. P., & Davis, M. K., (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 68(3), 438-450.
- Martinsen, E. W., Olsen, T., Tonset, E., Nyland, K. E., & Aarre, T.F. (1998). Cognitive behavioral group therapy for panic disorder in the general clinical setting: A naturalistic study with 1-year follow-up. *Journal of Clinical Psychiatry*, 59, 437-442.
- McKellar, J. D., Harris, A. H., & Moos, R. H. (2006). Predictors of outcome for patients with substance-use disorders five years after treatment premature termination. *Journal of Studies on Alcohol*, 67(5), 685-693.
- Nebeker, R. S., Lambert, M. J., & Huefner, J. C. (1995). Ethnic differences on the Outcome Questionnaire. *Psychological Reports*, 77(3), 875-879.
- Nock, M. K., & Kazdin, A. E. (2001). Parent expectancies for child therapy: Assessment and relation to participation in treatment. *Journal of Child and Family Studies*, 10(2), 155-180.
- Ogrodniczuk, J. S., Joyce, A. S., Lynd, L. D., Piper, W. E., Steinberg, P. I., & Richardson, K. (2008). Predictors of premature termination of day treatment for personality disorder. *Psychotherapy and Psychosomatics*, 77(6), 365-371
- Ohmura, Y., Takahashi, T., & Kitamura, N. (2005). Discounting delayed and probabilistic monetary gains and losses by smokers of cigarettes. *Psychopharmacology*, 182(4), 508-515.
- Ortendahl, M., & Fries, J. F. (2005). Framing health messages based on anomalies in time preference. *Medical Science Monitor*, 11, 253-256.
- Overall, B., & Aronson, H. (1963). Expectations of psychotherapy in patients of lower socioeconomic class. *American Journal of Orthopsychiatry*, 33, 421-430.
- Pagnin, D., de Queiroz, V., & Sagge, E. G. (2005). Predictors of attrition from day treatment of adolescents with substance-related disorders. *Addictive Behaviors*, 30(5), 1065-1069.
- Pekarik, G. (1983). Improvement in clients who have given different reasons for dropping out of treatment. *Journal of Clinical Psychology*, 39(6), 909-913.
- Pekarik, G. (1985). The effects of employing different termination classification criteria in premature termination research. *Psychotherapy*, 22, 87-91.

- Petry, N. M., Tennen, H., & Affleck, G. (2000). Stalking the elusive client variable in psychotherapy research. In C. R. Snyder & R. E. Ingram (Eds.), *Handbook of psychological change: Psychotherapy processes & practices for the 21st century* (pp. 88-108). Hoboken, NJ: John Wiley & Sons Inc.
- Rabinowitz, J., & Renert, N. (1997). Clinicians' predictions of length of psychotherapy. *Psychiatric Services*, 48(1), 97-99.
- Raudenbush, S. W., Spybrook, J., Bloom, H., Congdon, R., Hill, C., Liu, X., & Martinez, A. (2011). Optimal Design Software for Multi-level and Longitudinal Research (Version 3.01) [Software]. Available from www.wtgrantfoundation.org.
- Reis, B. F. & Brown, L. G. (2006). Preventing therapy premature termination in the real world: The clinical utility of videotape preparation and client estimate of treatment duration. *Professional Psychology: Research and Practice*, 37(3), 311-316.
- Rosenthal, D., & Frank, J. D. (1958). The fate of psychiatric clinic outpatients assigned to psychotherapy. *Journal of Nervous and Mental Disease*, 127, 330-343.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., Congdon, R. T., JR., & du Toit, M. (2011). Hierarchical Linear and Nonlinear Modeling (Version 7) [Computer software]. Lincolnwood, IL: Scientific Software International, Inc.
- Sayre, S. L., Schmitz, J. M., Stotts, A. L., Averill, P. M., Rhoades, H. M., & Grabowski, J. J. (2002). Determining predictors of attrition in an outpatient substance abuse program. *American Journal of Drug and Alcohol Abuse*, 28(1), 55-72.
- Sharf, J., Primavera, L. H., & Diener, M. J. (2010). Premature termination and therapeutic alliance: A meta analysis of adult individual psychotherapy. *Psychotherapy: Theory, Research, Practice Training*, 47(4), 637-645.
- Shea, M. T., Pilkonis, P. A., Beckham, E., Collins, J. F., Elkin, I., Sotsky, S. M., & Docherty, J. P. (1990). Personality disorders and treatment outcome in the NIMH Treatment of Depression Collaborative Research Program. *American Journal of Psychiatry*, 147, 711-718.
- Sheeran, T., & Zimmerman, M. (2004). Factor structure of the Psychiatric Diagnostic Screening Questionnaire (PDSQ), a screening questionnaire for DSM-IV axis I disorders. *Journal of Behavior Therapy and Experimental Psychiatry*, 35(1), 49-55.
- Singer, J. (1998). Using SAS PROC MIXED to fit multilevel models, hierarchical models, and individual growth models. *Journal of Education and Behavioral Statistics*, 24(4), 323-355.
- Skodol, A. E., Buckley, P., & Charles, E. (1983). Is there a characteristic pattern to the treatment history of clinic outpatients with borderline personality? *Journal of Nervous and Mental Disease*, 171(7), 405-410.

- Sledge, W. H., Moras, K., Hartley, D., & Levine, M. (1990). Effect of time-limited psychotherapy on patient premature termination rates. *American Journal of Psychiatry*, 147(10), 1341-1347.
- Spring, B. (2007). Evidence-based practice in clinical psychology: What is it, why it matters; what you need to know. *Journal of Clinical Psychology*, 63(7), 611-631.
- Stavem, K., Kristiansen, I. S., & Olsen, J. A. (2002). Association of time preference for health with age and disease severity. *European Journal of Health Economics*, 3, 120-124.
- Sweet, C., & Noones, J. (1989). Factors associated with premature termination from outpatient treatment. *Hosp Community Psychiatry*, 40, 947-951
- Swift, J. K., & Callahan, J. L. (2008). A delay discounting measure of great expectations and the effectiveness of psychotherapy. *Professional Psychology: Research and Practice*, 39(6), 581-588.
- Swift, J. K., & Callahan, J. L. (2009). Early psychotherapy processes: An examination of client and trainee clinician perspective convergence. *Clinical Psychology and Psychotherapy*, 16, 228-236.
- Swift, J. K., Callahan, J. L., & Levine, J. C. (2009). Using clinically significant change to identify premature termination. *Psychotherapy: Theory, Research, Practice, Training*, 46(3), 328-335.
- Swift, J. K., & Greenberg, R. P. (2012). Premature discontinuation in adult psychotherapy: A meta-analysis. *Journal of Consulting and Clinical Psychology*, 80, 547-559.
- Todd, D. M., Deane, F. P., & Bragdon, R. A. (2003). Client and therapist reasons for termination: A conceptualization and preliminary validation. *Journal of Clinical Psychology*, 59, 133-147.
- Tryon, G. S., & Kane, A. S. (1993). Relationship of working alliance to mutual and unilateral termination. *Journal of Counseling Psychology*, 40, 33-36.
- Turner, S. M., Beidel, D. C., Wolff, P. L., Spaulding, S., & Jacob, R. G. (1996). Clinical features affecting treatment outcome in social phobia. *Behavior Research and Therapy*, 34, 795-804.
- Vermeersch, D.A., Lambert, M.J., & Burlingame, G.M. (2000). Outcome Questionnaire-45: Item sensitivity to change. *Journal of Personality Assessment*, 74, 242-261.
- Vermeersch, D.A., Whipple, J.L., Lambert, M.J., Hawkins, E.J., Burchfield, C.M., & Okiishi, J.C. (2004). Outcome Questionnaire: Item sensitivity to changes in counseling center clients. *Journal of Counseling Psychology*, 51, 38-49.

- Vourakis, C. (2005). Admission variables as predictors of completion in an adolescent residential drug treatment program. *Journal of Child and Adolescent Psychiatric Nursing, 18*(4), 161-170.
- Walitzer, K. S., Dermen, K. H., & Conners, G. J. (1999). Strategies for preparing clients for treatment: A review. *Behavior Modification, 23*(1), 129-151.
- Weissman, M. M., & Bothwell, S. (1976). Assessment of social adjustment by patient self report. *Archives of General Psychiatry, 33*, 129-151.
- Weller, R. E., Cook, E. W., Avsar, K. B., & Cox, J. E. (2008). Obese women show greater delay discounting than healthy-weight women. *Appetite, 51*, 563-569.
- Wierzbicki, M., & Pekarik, G. (1993). A meta-analysis of psychotherapy premature termination. *Professional Psychology: Research and Practice, 24*(2), 190-195.
- Wileyto, E. P., Audrain-McGovern, J., Epstein, L. H., & Lerman, C. (2004). Using logistic regression to estimate delay-discounting functions. *Behavior Research Methods, Instruments & Computers, 36*, 41-51.
- Wilson, V. B., Mitchell, S. H., Musser, E. D., Schmitt, C. F., & Nigg, J. T. (2010). Delay discounting of reward in ADHD: Application in young children. *Journal of Child Psychology and Psychiatry, 52*(3), 256-264.
- Wolgast, B. M., Lambert, M. J., & Puschner, B. (2003). The dose-response relationship at a college counseling center: Implications for setting session limits. *Journal of College Student Psychotherapy, 18*(2), 15-29.
- Zimmerman, M., & Chelminski, I. A. (2006). A scale to screen for axis I disorders in psychiatric outpatients: Performance of the Psychiatric Diagnostic Screening Questionnaire. *Psychological Medicine, 36*, 1601-1611.
- Zimmerman, M., & Mattia, J. I. (2001a). A self-report scale to help make psychiatric diagnoses: The Psychiatric Diagnostic Screening Questionnaire (PDSQ). *Archives of General Psychiatry, 58*, 787-794.
- Zimmerman, M., & Mattia, J. I. (2001b). The Psychiatric Diagnostic Screening Questionnaire: Development, reliability, and validity. *Comprehensive Psychiatry, 42*(3), 175-189.