PREDICTING PSYCHOTHERAPY CLIENT DROPOUT FROM IN-TREATMENT

CLIENT-REPORTED OUTCOME

A Dissertation

by

JASON JUIJEN YU

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2011

Major Subject: Counseling Psychology

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Approved by:

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ABSTRACT

Predicting Psychotherapy Client Dropout from In-Treatment Client-Reported Outcome.

(December 2011)

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Treatment dropout is a pervasive phenomenon that can preclude clients from benefiting fully from psychotherapy. Research efforts to understand the phenomenon in the preceding decades yielded few consistent results. The investigation of intrinsic client and therapist factors gave way to the more recent exploration of dynamic therapeutic process factors potentially influencing the dropout process. The availability of periodic treatment outcome measurement instruments has helped client-focused research explore the effects of treatment response as a process factor on aspects of psychotherapy. As an added benefit, real-time treatment response measures, such as the Outcome Questionnaire, offer the possibility of timely adjustment in clinical intervention to meet evolving client needs and enhance therapeutic treatment. This present study primarily sought to explore the relationship between psychotherapy dropout and treatment response patterns in terms of clients' psychosocial well-being as measured by the Outcome Questionnaire. The results suggest that treatment response patterns alone may not effectively predict dropout probabilities. Even so, the measure's sub-component

assessing the client's subjective experience of symptom distress is shown to be more accurate in predicting dropout than the composite Outcome Questionnaire measure or any other component scale. This finding conceivably highlights the relative importance of symptom distress in the dropout process for the sampled clients. Those clients reporting higher levels of symptom distress appeared to be associated with greater probabilities of dropout termination. Additionally, prior research has recognized a likely mediated relationship between higher client educational attainment and lower dropout probabilities – a trend also observed in this study's sampled population. As one of its expressed intents, this study examined educational attainment's moderating effect on the relationship between aspects of client treatment response and dropout probabilities. While showing educational attainment to be a relevant factor in assessing dropout risks, the analysis results indicate that this client characteristic variable's interactional effect on the evaluated treatment response pattern feature is weak and statistically nonsignificant. The present study contributes to the research literature through providing some clarification to the importance of treatment response in the prediction of psychotherapy client dropout.

DEDICATION

This dissertation is dedicated to my wife, Berenice, and my parents whose abundant support, patience, and sacrifice made its completion possible.

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It takes a village to raise a child, and a community to write a dissertation. I am pleased to have the opportunity to recognize specific individuals in my community who made this dissertation possible. I would like to thank my doctoral committee members for their invaluable ideas and feedback in the formulation of my research and for their patience and support through its completion. Particularly, I would like to express my gratitude to my committee co-chairs for their guidance, encouragement, and mentorship throughout my studies.

I would also like to thank the individuals who provided me with necessary assistance. Katelyn McLemore, Chelsea Vaughan, and Arynn Auzout worked meticulously for hours recording client data that are the basis for this research. Finally, I appreciate Peter Flom for his assistance with data analysis and enlightening discussions.

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CHAPTER I

INTRODUCTION

Individuals seek psychotherapy in hope of positive changes in their lives. Many

receive psychological treatment with diagnosable, often longstanding, mental disorders.

Others enter treatment because of their difficulty in coping with stressful life events. Yet

others obtain treatment to help realize their personal potential, attain a greater measure

of success and life satisfaction, and enhance their state of general wellbeing (Klerman &

Weissman, 1984). Whatever their reasons, these individuals extend themselves and put

their trust in the personal process of psychotherapy. For most people, reaching out for

help and initiating psychotherapy are a decision not lightly made. They make this

decision with the belief that psychotherapy has the capacity to help them achieve lasting

improvement in their lives.

This belief in psychotherapy's beneficial effects is empirically well validated.

Treatment outcome research literature dates back to the 1930s. With the advent of meta-

analysis in the mid-1970s, consensus on the general efficacy of psychotherapy became

clearly established with the multitude of integrative studies that evaluated psychotherapy

outcome across a wide variety of treatment approaches and settings and a broad range of

psychological disorders (Lambert & Ogles, 2004; Lipsey & Wilson, 1993). Among the

first of such studies, Smith and Glass (1977) in a full review of 375 controlled

evaluations of psychotherapy outcome showed that psychotherapy clients were on

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This dissertation follows the style of *Clinical Psychology and Psychotherapy*.

average better off than 75% of untreated individuals. In the ensuing decades, additional

meta-analyses demonstrated consistently the positive effects of psychotherapy (e.g,

Griner & Smith, 2006; Leichsenring, Rabung, & Leibing, 2004; Lipsey & Wilson, 1993;

Shadish, Matt, Navarro, & Phillips, 2000; Shadish et al., 1997). Overall, research has

found the effect sizes of psychotherapy to be generally in the $d = 0.4$ to 0.6 range, with

the application of the more recent, refined meta-analysis research methodologies

(Lambert & Ogles, 2004).

In the evolving process of conducting efficacy studies, investigators have looked

beyond simply statistically significant differences between treatment and control groups

in orchestrated scientific experiments. More and more, practical social validity and

clinical significance are scrutinized in highly generalizable, real-world treatment settings

(Lambert & Ogles, 2004; Shadish et al., 1997). Outcome research has progressed to

rightly incorporate the perspectives of clients and people outside of the therapeutic

relationships and to appraise changes that are enduring and meaningful to clients and

important people in their lives. The resulting literature represents a resounding

endorsement of tangible benefits of psychotherapy to individuals who receive treatment.

Arguably, reaping the full therapeutic benefit, by engaging in the treatment

process until its proper conclusion, is in the best interest of individuals who recognize

their need for psychotherapy. Ideally, the conclusion of therapy takes place with the

client and the therapist's agreement that the client has attained distress relief and

addressed symptom causes in reaching mutually established goals and that the client is

ready to face life on his or her own (Joyce, Piper, Ogrodniczuk, & Klien, 2007). With

sufficient therapeutic progress, termination can be and should be approached and discussed – over multiple sessions if needed. Finally, at least a closing session should be available for the client and the therapist to work through the treatment termination to process treatment progress, consolidate therapeutic gains, empower the client in his or her readiness to do without therapy, process emotions for the impending separation, and discuss how the client would proceed and continue the change process without having therapy in his or her life before closing the therapeutic relationship (Greenberg, 2002). However, this timely and orderly conclusion to the psychotherapy treatment process does not always occur.

The manner in which psychotherapy is prematurely concluded can take numerous forms, and the initiating source of such an early ending to therapy can vary. Externally initiated premature terminations are usually rare. They can be prompted by, for example, a genuine incompatibility in client, therapist, and clinic schedules or even the closing of the mental health clinic due to lacking in funding (Pekarik, 1983b). Also relatively infrequent are therapist-initiated terminations. This type of termination can be a result of circumstances affecting the therapist, such as the ending of training or clinical rotation for a therapist, the retirement or illness of the therapist, or the geographical relocation of the therapist (Joyce et al., 2007). Lastly, client-initiated unilateral terminations are the most common and comprise the great majority of premature endings to psychotherapy (Renk, 2002; Roe, Dekel, Harel, & Fennig, 2006). Before attaining the desired therapeutic goals, sometimes clients inform the therapists of their intention to discontinue therapy against the therapists' advice. Even more frequently, after attending

some number of sessions, the client misses a scheduled appointment without explanation or notification to the therapist. Subsequently, the client no longer responds to the therapist's follow-up phone calls and letters and is not to be heard from again. This last type of treatment termination remains one of the more vexing issues in mental health services provision.

This phenomenon referred to by different names: "client-initiated premature termination, "unilateral termination", "therapy attrition", "discontinuing", and "dropout" are just a few examples. These terms are all intended to characterize the event in which the psychotherapy client begins treatment but, before some or all of the agreed upon goals have been accomplished, stops psychotherapy treatment against the therapist's recommendation. These terms are often used interchangeably in psychotherapy literature; however, the more neutral "dropout" is preferred by many researchers to connote the clinical significance of this client-originated behavior while minimizing possibly value-laden implications (Fray, 2000).

By many accounts, client dropout is a frequent occurrence. A 1975 (Baekeland & Lundwall) critical review of literature found that 31-56% of clients dropped out of psychotherapy at general psychiatric clinics after attending no more than four sessions. From his review of studies conducted at representative mental health facilities, Garfield (1986) concluded that a majority of outpatient clinics lost half of their clients prior to the eighth session. Wierzbicki and Pekarik's (1993) often referenced meta-analysis of 125 studies reported an average dropout rate of 47 % for individual psychotherapy and 46% cumulatively for couples, family, and group therapy. The same meta-analysis reported a

44 % average therapy dropout rate in private clinic settings, 50% in public clinic settings, 42% in university counseling center settings, and 51% in all other settings. While published reviews of major outcome studies over the years have reported approximately one quarter to more than two thirds of clients dropped out of treatment at a wide range of mental health settings (e.g., Baekeland & Lundwall, 1975; Garfield, 1986; Joyce et al., 2007; Sharf, 2007). Wierzbicki and Pekarik's meta-analysis (1993) concluded that the overall average dropout rate is around 47%. Moreover, high treatment dropout rate seems to be a problem transcending societal and cultural bounds. One research review (Phillips, 1995) reveals that mental health professionals in other countries such as Germany, Holland, Japan, and Poland also share a similar concern. With these results, most researchers have maintained the consensus that dropout is a sizeable and widespread problem for the practice of psychotherapy.

Not surprisingly, psychotherapy dropout is generally viewed as a negative event (Joyce et al., 2007; Mennicke, Lent, & Burgoyne, 1988). From therapists' perspective, although the client dropout phenomenon is commonly recognized as an unavoidable feature of the profession, clinicians can still be adversely affected by the loss of invested therapeutic effort and treatment progress. Moreover, high dropout rates can be demoralizing to psychotherapists (particularly beginning psychotherapists) personally when they interpret dropout as rejection which may in turn impair their clinical confidence and effectiveness (Joyce et al., 2007; Sledge, Moras, Hartley, & Levine, 1990) and contribute to job dissatisfaction and professional burnout (Maslach, 1978). Additionally, to most mental health service organizations and individual clinicians with

finite financial and human resources, client dropout presents a gratuitous drain (Reis & Brown, 2006) not only in terms of lost therapeutic efforts and abandoned treatment gains but also in wasted resources associated with multiple scheduled appointments frequently unattended by the dropout clients prior to ceasing contact with the clinicians or clinics entirely (K. J. Smith, Subich, & Kalodner, 1995). For many, especially in community mental health centers, the resources lost are valuable to other clients in need of services and can be better utilized to reduce the often long waitlist – particularly with the observation that long delays in initiating therapy increase the probability of client dropout (Rodolfa, Rapaport, & Lee, 1983) and fuel the cycle of treatment failures.

More important, for the clients, dropping out of therapy precludes them from receiving treatment necessary for recovery or improvement (Chasson, Vincent, & Harris, 2008). Treatment duration expectations of most theoretical models, even some time-limited therapy models, are longer than the median attendance of six sessions reported in Garfield's (1994) review of research studies. Additionally, a dose-effect meta-analysis demonstrated empirically that at least eight psychotherapy sessions are needed for half of the clients to show improvement (Howard, Kopta, Krause, & Orlinsky, 1986). This is not to say that dropout clients receive no benefit from therapy already attended. A number of researchers have shown that some clients' dropout was prompted by self-perceived improvement, and others have cautioned that not all dropouts should be seen as treatment failures (Lampropoulos, Schneider, & Spengler, 2009; Pekarik, 1983b). However, these clients end treatment with potentially substantive benefits unrealized. Simply ceasing therapy attendance, clients deprive themselves of the opportunity to

work jointly with their therapists to appraise the true sufficiency of their therapeutic progress relative to their evolving goals and assess the likelihood of benefiting from continuing treatment.

Indeed, many clinicians believe that only a small portion of clients who terminate psychotherapy prematurely actually reach their therapeutic goals (Robbins, Mullison, Boggs, Riedesel, & Jacobson, 1985). In contrast to the demonstrated consistent post-treatment improvement of those who complete therapy treatment (Pekarik, 1986), clients who drop out report less therapeutic progress and more distress (Pekarik, 1992b). One of the studies investigating this concern showed that dropouts had poorer adjustment than appropriate terminators at the follow-up point three months after initiating treatment (Pekarik, 1983a). Without a worked-through termination, clients often experience a sense of dissatisfaction or failure, which can result in worsening of their problems (Ogrodniczuk, Joyce, & Piper, 2005). Many of these clients later seek psychological services elsewhere (Carpenter, Del Gaudio, & Morrow, 1979; Christensen, Birk, & Sedlacek, 1977) where the unhealthful pattern is repeated: starting treatment and dropping out before its proper conclusion or before substantial resolution of their problems.

Naturally, researchers of psychotherapy have vested interest in understanding client dropout and finding reliable predictors to its occurrence. The incentive to treatment dropout prediction resides in the possibility of making adjustment to relevant aspects of psychotherapy provision to preempt or address causes of dropout and

motivate clients to focus on desired changes (Clarkin & Levy, 2004) and to minimize

this detrimental phenomenon of psychotherapy dropout.

CHAPTER II

LITERATURE REVIEW

Given the significant impact of psychotherapy dropout, the quest to understand the phenomenon occupies a notable portion of psychotherapy research literature. So, what prompts so many clients to ostensibly act against their own mental health interest and drop out of psychotherapy? Who are the clients at the highest risk for psychotherapy dropout? Attempts to answer these questions have received considerable attention in the research literature since at least the 1950s (Baekeland & Lundwall, 1975). Investigators have devoted substantial efforts searching for ways to identify clients at risk of dropping out and clues to impending dropout in hope of helping mental health providers anticipate and manage potential occurrences of dropout and develop targeted therapeutic interventions to avert them (K. J. Smith et al., 1995).

Defining Psychotherapy Dropout

One of the first challenges of psychotherapy dropout research has been establishing an operational definition for the seemingly intuitive construct of dropout. In a broad sense, researchers see therapy dropout as the clients' action of stopping treatment "before obtaining a requisite level of improvement or completing therapy goals" (Hatchett & Park, 2003, p. 226). Implicit in this construct is the therapists' judgment and belief that their clients have ended treatment before they should (Mennicke et al., 1988). Garfield's (1994, p. 195) well recognized definition identifies a dropout client as one who "discontinues treatment on his or her own initiative by failing to come for any future arranged visits with the therapist". Garfield further elaborated that,

in treatment dropout, "[t]here is no mutual agreement between patient and therapist to terminate therapy and therapy is viewed by the therapist as just begun, in process, or noncompleted." Distilling from various researchers' conceptualization, Ogrodniczuk and his follow researchers (2005) specified the inclusion of the elements of client decision, initial treatment goal, and therapist recommendation in defining psychotherapy dropout. In empirical studies, however, investigators have struggled over time to establish a workable set of criteria to accurately and reliably identify clients who drop out from psychotherapy.

Identifying Dropout by Insufficient Number of Sessions Attended

Critical reviews and meta-analyses (Baekeland & Lundwall, 1975; Garfield, 1994; Wierzbicki & Pekarik, 1993) of therapy dropout studies have noted that the majority of researchers have identified dropout as the failure of the client to continue beyond a set number of sessions or duration of treatment. Baekeland and Lundwall (1975) argued that the number of sessions is preferable in this case for it measures exposure to treatment, often a variable of interest to researchers and clinicians.

The dropout cutoff session number varies widely in research literature. Baekeland and Lundwall (1975) reported that many researchers applied anywhere from three to ten sessions as their cutoff threshold. In his review, Garfield (1994) found some studies classifying clients as dropouts with fewer than 20 sessions attended while others using one session as the dividing line between dropouts and remainders. Without apparent clinical justification, varying degree of arbitrariness seems to underlie the rationales for establishing cutoff points, such as the commonly used median or mean

number of sessions attended by clients under study (Baekeland & Lundwall, 1975;

Morrow, del Gaudio, & Carpenter, 1977).

Identifying psychotherapy dropout by the number of sessions attended has its

detractors. Studies have shown that ostensible treatment dropout can occur after virtually

any number of sessions (Pekarik, 1985b; Tutin, 1987). Some researchers have expressed

concerns over possible misclassification (Pekarik, 1985b). For instance, clients who

terminated treatment with their therapists' agreement, after getting what they needed in

very few sessions, could be misidentified with the cutoff session number tabulation

scheme. Conversely, clients, who might be still in need of therapeutic work or still

symptomatic after having attended a high number of sessions, could also be

misidentified by the same measure. Another methodological concern is the likely small

distinction between dropouts and continuers when a single cutoff session number is used.

For example, if a four-session cutoff was applied in a study, a client having attended

only three sessions would be classified as a dropout while another having attended only

four sessions would not. The likely small characteristic differences hinder most

researchers' effort to draw a sharp, qualitative distinction in variables associated with

dropouts and with remainers (Baekeland & Lundwall, 1975).

Researchers are often drawn to defining dropout by the number of sessions

attended for many reasons. Implicit in the approach of defining dropout by the number

of sessions attended is a theoretical assumption subscribed to by many therapists that a

minimal number of sessions are needed to effect the desired therapeutic change

(Hatchett & Park, 2003; Sharf, 2007). Moreover, classifying dropout by session number

reduces methodological complexity with the added benefit of high measurement reliability.

Identifying Dropout by Non-Attendance of Scheduled Session

Another highly reliable measurement approach taken by researchers is classifying dropout by missed last appointments. As part of the commonly observed pattern, clients who intend to drop out from therapy often do miss the last session they have scheduled with the therapists. Some researchers have argued that this criterion is inherently conservative in accounting for dropouts. Wierzbicki and Pekarik (1993) showed that the mean dropout rate (36%) reported by studies using this criterion was notably lower than studies applying therapist judgment (48%) and cutoff session numbers (48%). Excluding clients who refuse to schedule additional appointments while still in need of therapy is an example of measurement validity concern. Hatchett and Park (2003) suggested that this criterion might, at times, be measuring a different construct, such as lack of conscientiousness or avoidance of therapy issues.

However, missing the last scheduled session offers some face validity as a measure of dropout. An appointment is usually scheduled with the client and therapist's agreement to continue therapy. The implications of the client's missing that appointment and ceasing contact for additional treatment accord with the essence of dropout. Unsurprisingly, some researchers have found meaningful agreement between this measure and therapist judgment (Hatchett & Park, 2003).

Identifying Dropout by Therapist Judgment

Identifying dropout by therapist judgment has considerable appeal to many researchers for its apparent face validity and flexibility despite some concern of reliability (Wierzbicki & Pekarik, 1993). In determining the appropriateness of the timing of ending therapy, therapists gauge clients' progress against the agreed-upon goal of therapy to assess the sufficiency of treatment. As therapists can disagree on the nature, purpose, and goal of psychotherapy, their judgment of progress sufficiency at the time of termination may differ from each other's. One therapist's dropout may be another's timely end to treatment. Alternatively, standardizing therapist judgment dropout criteria across the practice of psychotherapy would require standardizing treatment for all – something that is unfeasible in actual clinical practice (Pekarik, 1992b). Moreover, research suggests that therapists generally are inclined to believe longer term therapy is needed for therapeutic change to take place (Pekarik, 1985a). This belief can potentially allow the variable of treatment duration to bias therapist judgment of dropout.

Therapist judgment is preferred by many researchers above other measures of dropout for very compelling reasons (Hatchett & Park, 2003; Pekarik, 1992b). To begin with, this criterion is face-valid. "[T]he essence of the concept of drop-out involves the assumption that a client has terminated before the therapist thinks he should have, i.e., it involves a therapist judgment" (Pekarik, 1992b, p. 94). The completeness of the treatment is typically determined by the therapist's employing clinical judgment and taking into consideration factors such as symptom alleviation, level of functioning, attainment of agreed-upon goals, and capacity to benefit from further treatment.

Researchers advocate this criterion be used over others (Reis & Brown, 1999; Wierzbicki & Pekarik, 1993) for its flexibility in capturing true dropout which can occur at any time in the course of the treatment and in various fashions (e.g., with or without missing a scheduled final appointment). Therapist judgment minimizes the concern of misclassifying unimproved, highly symptomatic clients who have attended a high number of sessions or have announced their intention to terminate at their last session and refused to schedule additional appointments (Pekarik, 1992b). Conversely, therapist judgment also minimizes misclassification of non-symptomatic, greatly improved clients who have attended a low number of sessions or have missed their last scheduled appointment for justifiable reasons. Furthermore, when compared with other methods, dropouts identified by therapist judgment share significant characteristic similarities with each other within the group (Hatchett & Park, 2003; Pekarik, 1985b). In other words, therapist judgment appears to be an effective measure in the attempt to identify dropouts as a unique group of psychotherapy clients.

Investigated Factors Potentially Associated with Psychotherapy Dropout

The investigation of variables potentially associated with dropout figures prominently in psychotherapy dropout research literature. Reviewers surveying the research literature on treatment dropout specifically and therapeutic outcome in general are able to distinguish a set of factors that have received considerable attention from researchers. These factors can be categorized as client characteristics factors, therapist characteristics factors, and treatment/interactional factors (Joyce et al., 2007; Luborsky, Auerbach, Chandler, Cohen, & Bachrach, 1971). Over decades, the literature has

accrued a sizable collection of work examining the influence of these factors on treatment dropout.

Client Characteristics Factors

The earliest research on psychotherapy dropout focused on client characteristics, particularly demographic variables. This line of research has sought to identify possible correlation between certain clients' susceptibility to dropout and their intrinsic attributes or pretreatment factors. Researchers are encouraged by findings suggesting that client variables provide the largest number of significant predictors of therapy outcome and that a great portion of therapeutic change could be attributed to the client's inherent characteristics (Luborsky et al., 1971; Luborsky et al., 1980). The implication is that certain clients are better able to take advantage of the therapeutic process while others are less likely to succeed in their treatment (Kolb, Beutler, Davis, Crago, & Shanfield, 1985).

Client demographic variables. Client demographic variables have been some of the most frequently investigated client factors in psychotherapy dropout research. In addition to prior research's suggestion of a potential relationship between therapeutic outcome and these client characteristics, the easy availability of client demographic information has at least partially fueled this line of research (Joyce et al., 2007). A few early studies (e.g., Altman, Angle, Brown, & Sletten, 1972; Lowinger & Dobie, 1968) reported the tendency of male clients under psychiatric care to attend fewer sessions or to drop out of treatment more frequently. Still, results from a somewhat greater number of studies (e.g., Brown & Kosterlitz, 1964; Carpenter & Range, 1983; Rosenthal &

Frank, 1958; J. M. A. Weiss & Schaie, 1958) indicated that the rates at which female

clients stopped treatment early were significantly higher than those of male clients. After

comprehensively reviewing 362 dropout research studies, 29 of which included gender

as a variable of interest, Baekeland and Lundwall (1975) concluded that female

psychotherapy clients, on the whole, were more likely to drop out of treatment. These

researchers speculated that the difference could be, at least in part, attributable to effects

from client-therapist gender mismatch.

However, as the volume of psychotherapy dropout research accumulated over the

decades, more and more studies found gender not to be a significant variable in

predicting treatment dropout (e.g., Berrigan & Garfield, 1981; Cartwright, 1955; Craig

& Huffine, 1976; DuBrin & Zastowny, 1988; Greenspan & Kulish, 1985; Heisler, Beck,

Fraps, & McReynolds, 1982; Raynes & Patch, 1971; Rodolfa et al., 1983; Sledge et al.,

1990). Some studies found mixed results in gender as a dropout predictor. For example,

in their study involving more than 13,000 clients of community mental health centers,

Sue, Fujino, Hu, Takeuchi, and Zane (1991) found gender to be a significant variable in

only one ethnic group out of the four under study. They found that Hispanic women

dropped out less frequently than Hispanic men, a result not found in Black, White, or

Asian American clients. Even in studies showing gender to be a significant variable, the

correlation was found to be weak (Weighill, Hodge, & Peck, 1983). In an often-

referenced major review of literature, Garfield (1986) concluded that gender was not an

important variable in treatment dropout. This conclusion was subsequently supported by

Wierzbicki and Pekarik's meta-analysis (1993) of 125 dropout studies, in which the

investigators found gender not to be a significant variable and its average effect size trivial ($d = 0.09$).

Client age has also been a frequently investigated variable in psychotherapy dropout research. A number of studies conducted at mental health clinics and hospitals reported that being younger, particularly 30 or younger, was a significant predictor to treatment dropout (Altman et al., 1972; Craig & Huffine, 1976; Heisler et al., 1982; Raynes & Patch, 1971). Similar observations relating younger age to dropout were also reported in later studies focusing on specific populations, such as university counseling center clients (average age 21.2) and psychiatric hospital clients with borderline personality disorder (age range 20 – 40) (Jenkins, Fuqua, & Blum, 1986; T. E. Smith, Koenigsberg, Yeomans, Clarkin, & Selzer, 1995). More extensive investigations involving broader age ranges in their subjects revealed a seemingly curvilinear relationship between age and psychotherapy dropout rates (Brown & Kosterlitz, 1964; Greenspan & Kulish, 1985). Individuals in the around-40 age group appeared to have the lowest dropout rate. Researchers did not find a clear explanation for the observed relationship between age and treatment dropout rates (Baekeland & Lundwall, 1975). However, some hypothesized that middle-aged individuals' staying in treatment longer could have been helped by their relative social stability (Greenspan & Kulish, 1985).

On the other hand, substantially more published studies found age not to be a significant factor in distinguishing clients who dropped out of psychotherapy from those who stayed longer (e.g., Affleck & Garfield, 1961; Berrigan & Garfield, 1981; Cartwright, 1955; Dodd, 1970; DuBrin & Zastowny, 1988; Frank, Gliedman, Imber,

Nash, & Stone, 1957; Rosenthal & Frank, 1958; Rubinstein & Lorr, 1956; Sledge et al., 1990). In their 1975 extensive review of the literature, out of 51 studies examining age as a potential dropout variable, Baekeland and Lundwall found 35 concluding that age was not a significant predictor. In a subsequent literature review of additional studies, Garfield (1986) concluded that age was not an important variable in treatment dropout. More recently, Wiersbicki and Pekarik, in their meta-analysis (1993), determined that the average effect size of age was trivial ($d = 0.10$) and statistically nonsignificant across the entire range of sample population.

Relatively few studies found marital status to be a significant variable in psychotherapy dropout. For some researchers, the various categories of marital status (single, married, separated, divorced, etc.) served as a partial proxy measure of social isolation and social stability (Baekeland & Lundwall, 1975). The few investigations in which dropout was found to be significantly related to marital status reported conflicting findings. For example, Altman, Angle, Brown, and Sletten (1972) found that being single was correlated to the rate of inpatient elopement from the state hospitals under study. In contrast, Weiss and Schaie (1958) reported single clients to be least likely to drop out of treatment from the psychiatric clinic of interest.

The majority of studies indicated that marital status was not a significant differentiator of clients who dropped out of psychotherapy treatment (e.g., Brown & Kosterlitz, 1964; Frank et al., 1957; Greenspan & Kulish, 1985; Jenkins et al., 1986; Raynes & Patch, 1971; Sledge et al., 1990; T. E. Smith et al., 1995). Wierzbicki and

Pekarik's (1993) meta-analysis found the average effect size of increased dropout rates for married clients trivial ($d = .11$) and not statistically significant.

Ethnicity has been another frequently examined variable in relation to psychotherapy dropout. A greater number of studies had generally found ethnicity to be a relevant factor in distinguishing clients who were more likely to drop out of treatment (e.g., Greenspan & Kulish, 1985; Kazdin, Stolar, & Marciano, 1995; Organista, Munoz, & Gonzalez, 1994; Richmond, 1992; Rosenthal & Frank, 1958; Sue et al., 1991; Sue, McKinney, & Allen, 1976; Yamamoto, James, & Palley, 1968). The findings of a 1976 (Sue et al.) investigation of treatment duration predictors were illustrative. From the analysis of 13,450 client records at 17 community mental health facilities, the researchers found significant indication that ethnic minority clients terminated treatment earlier than Whites, regardless of other demographic differences. In another frequently referenced large-scale study, Sue and his colleagues (1991) analyzed the records of 13,439 outpatient clients at a county mental health system in a study of the effects of treatment cultural responsiveness. As one of their findings, the investigators again found ethnicity to be a significant differentiator in psychotherapy dropout rates when using failure to return after the first session as the criterion for dropout. As the ethnic minority groups were analyzed separately in this more recent study, the researchers noted an additional nuance in the ethnicity variable: they found Blacks to have the highest dropout rate (19%), followed by Whites (15%), then Mexican Americans (15%), and then Asian Americans (11%).

Even after taking into consideration the nonsignificant findings of the few studies

(e.g., Craig & Huffine, 1976; Gibbs, 1975; Sledge et al., 1990; Stahler & Eisenman,

1987), client ethnicity was still viewed as a relevant factor overall to some extent

(Garfield, 1986). Wierzbicki and Pekarik's (1993) meta-analysis reported a small but

significant effect size (d = .23, p < .01). This less-than-than-definitive picture of

ethnicity's influence on client dropout might have been a product of compositing

research results over multiple decades in which the society's view on ethnic and cultural

differences, ethnic minorities' attitude toward psychotherapy, and therapists' cultural

sensitivity all had experienced significant transformation. However, some researchers

suspected that the relationship between client ethnicity and psychotherapy dropout might

not be a direct one. Noting the frequent correlation between ethnicity and socioeconomic

status (SES), which is seen as the intersecting measure of education, occupation, and

income (American Psychological Association Task Force on Socioeconomic Status,

2007), Garfield (1986) suggested that the influence of ethnicity on treatment dropout

might be at least partially mediated through SES, which has been shown to be a

somewhat more consistent predictor.

Considered a fundamental aspect of SES (American Psychological Association

Task Force on Socioeconomic Status, 2007) and often highly correlated with it, client

education level has also been evaluated on its own in studies as a separate variable of

psychotherapy dropout. Most investigations have found education to be a significant

predictor for treatment attendance (e.g., Blackburn, Bishop, Glen, Whalley, & Christie,

1981; Brown & Kosterlitz, 1964; Carpenter & Range, 1983; DuBrin & Zastowny, 1988;

Grilo et al., 1998; McNair, Lorr, & Callahan, 1963; Patterson et al., 2003; Rosenzweig &

Folman, 1974; Sue et al., 1976). In evaluations by level, ranging from incompletion of

high school to attainment of graduate or professional degree, higher levels of education

are generally associated with lower dropout rates or longer treatment duration. For

instance, Patterson and her colleagues (2003) found that college graduates were more

likely (OR = 1.92, $p < .05$) to complete the course of treatment in a behavioral

counseling and nicotine replacement clinical trial.

Taken together with the few studies (e.g., Beck et al., 1987; Mohl, Martinez,

Ticknor, Huang, & Cordell, 1991; Simons, Levine, Lustman, & Murphy, 1984; Sledge et

al., 1990) in which client educational attainment was found to be a nonsignificant factor,

Garfield (1994) in his critical review of the literature concluded that lower levels of

education does have some relationship with increased dropout rates; however, the

relationship may not very pronounced. Wierzbicki and Pekarik's (1993) meta-analysis

supported that view with its finding of a significant ($p < .01$) but small ($d = .28$) effect

size. Researchers' explanations of higher education levels' influence on staying in

treatment ranged from goal-directed persistence necessary for educational attainment

and remaining in treatment (Lorr, Katz, & Rubinstein, 1958) to therapist attitude bias for

more highly verbal clients (Rosenzweig & Folman, 1974), but no sufficiently definitive

conclusion has been established explicating the observed correlation between client

educational attainment and psychotherapy dropout.

Generally conceptualized as one's social standing relative to others in the society,

socioeconomic status is commonly assessed through a combination of education,

occupation, and income (American Psychological Association Task Force on Socioeconomic Status, 2007). SES has been another frequently researched factor of treatment dropout, for its hypothesized link to the individual's aptitude for and attitude toward psychotherapy. On the whole, SES has been found to be one of the more consistent predictors, more so than its specific components (Garfield, 1986). Most studies have reported lower SES to be associated with higher dropout rates or simply shorter duration of treatment (e.g., Berrigan & Garfield, 1981; Dodd, 1970; Fiester & Rudestam, 1975; Frank et al., 1957; Fraps, McReynolds, Beck, & Heisler, 1982; Gibbs, 1975; Gunderson et al., 1989; Pilkonis, Imber, & Rubinsky, 1984; Rubinstein & Lorr, 1956; Salzman, Shader, Scott, & Binstock, 1970; Schubert & Miller, 1980; Trepka, 1986; Weighill et al., 1983; S. L. Weiss & Dlugokinski, 1974). In a representative investigation, Trepka's (1986) study of 118 adult clients at an outpatient psychology clinic indicated a higher likelihood for lower class clients to drop out early in the treatment process. In another study, Berrigan and Garfield (1981) found a significant relationship between lower SES and missing one or more scheduled sessions of individual therapy at the training clinic under study. Weighill, Hodge, and Peck (1983) reported a similar correlation between lower social class and missed appointments – seen by the investigators as a form of treatment non-compliance. In their same 1981 study, Berrigan and Garfield further found that lower SES scores were associated with higher rates of treatment dropout whereas all sampled clients in the highest SES classification remained until treatment was terminated with client-therapist mutual agreement.

Taking into consideration of occasional nonsignificant findings of SES's correlation with treatment dropout (e.g., Albronda, Dean, & Starkweather, 1964; Billings & Moos, 1984; Brown & Kosterlitz, 1964), most major reviews of the treatment dropout literature have reported SES to be relevant. In their comprehensive review, Baekeland and Lundwall (1975) concluded that SES is an important factor in influencing the client's dropout or remaining in treatment until its proper conclusion. Garfield concurred in his (1986) critical review with his observation that most studies using a composite index of social class found a significant relationship between socioeconomic status and length of treatment. Even though SES had been found consistently to be a significant predictor of treatment dropout, its influence is still seen as rather limited. Wierzbicki and Pekarik's (1993) meta-analysis reported socioeconomic status to have the strongest relationship with treatment dropout edging out two other significant client demographic variables, education and ethnicity; but SES's effect size ($d = .37, p < .01$) is considered moderate. Although researchers have not established a definitive explanation for the correlation between SES and dropout, they suggest treatment expectation as a potential confounding factor for additional exploration (Garfield, 1994; Wierzbicki & Pekarik, 1993).

Other client demographic variables such as employment status, occupation, residence, and income have been investigated separately to a lesser extent (e.g., Beck et al., 1987; Billings & Moos, 1984; Chiesa, Drahorad, & Longo, 2000; DuBrin & Zastowny, 1988; Frank et al., 1957; Greenspan & Kulish, 1985; Grilo et al., 1998; Organista et al., 1994; Rubinstein & Lorr, 1956; Sledge et al., 1990; T. E. Smith et al.,

1995; Sue et al., 1976). Mostly, their relationships with treatment dropout have been found to be mixed or nonsignificant or not replicable – a conclusion reflected in major reviews of the literature (Baekeland & Lundwall, 1975; Garfield, 1994).

Overall, psychotherapy dropout research focusing on demographic variables has yielded SES as the strongest predictor. As one of the primary components of SES, education on its own also showed some promise as a predictor. Although results have been occasionally mixed, ethnicity has been shown to be sometimes relevant. However, these predictors' relationships with treatment dropout are still considered modest. Inferring from the results of their meta-analysis, Wierzbicki and Pekarik (1993) recommended the abandonment of further research effort in investigating clients' stable demographic variables' influence on dropout in favor of other, more complex variables related to the dynamics in the therapeutic process.

Client psychological variables. Turning their attention beyond demographic variables, a number of researchers examined psychological variables of clients such as diagnoses and presenting concerns as potential predictors of psychotherapy dropout. Some initial studies reported that clients diagnosed with anxiety and/or depression appeared to remain in treatment longer (Frank et al., 1957; Lorr et al., 1958; Taulbee, 1958). However, other studies found experiencing anxiety to be at most a modest (Straker, Davanloo, & Moll, 1967) or even nonsignificant (Greenspan & Kulish, 1985) predictor of remaining in treatment. Yet others found just the opposite and reported that anxious clients and depressed clients were more likely to terminate treatment relatively early (Greenspan & Kulish, 1985; Persons, Burns, & Perloff, 1988; Straker et al., 1967).

Research findings related to other diagnostic considerations have also been mixed. A few researchers found clients experiencing psychotic or neurotic conditions to stay in treatment significantly longer (Craig & Huffine, 1976; Dodd, 1970; Hoffman, 1985). Others found clients diagnosed with psychotic features to be significantly more likely to dropout after the initial session (Sue et al., 1976) and clients classified as neurotics more prone to failing to complete treatment (Marshall & Roiger, 1996). On the other hand, a few specifically targeted studies have found clients diagnosed with substance or alcohol use disorder associated with higher rates of dropping out of treatment (Dubinsky, 1986; Ford, Snowden, & Walser, 1991; Kelly et al., 1992; MacNair & Corazzini, 1994). Frequently, these clients with substance or alcohol use problems are referred to specialized treatment instead of general psychotherapy alone.

At times differing from diagnoses identified by clinicians, presenting concerns are what clients report as problems to be addressed in treatment. Research studies pertaining to psychotherapy clients' presenting concerns are relatively few. The studies found some indication that clients who express their concerns to be situational or rooted in causes external to themselves are more likely to drop out (Greenspan & Kulish, 1985). Moreover, when presenting their concerns, clients who stress somatic symptoms, external situations, multiple problems, or are unable to state their problems tend to have shorter duration of treatment (Brown & Kosterlitz, 1964). In contrast, clients who communicate their concerns to be intra-personal or inter-personal in nature are found to persist in treatment longer (Brown & Kosterlitz, 1964). However, partially contradictory results were found by Hoffman (1985) who reported that clients with presenting

problems in the area of interpersonal relationships were more likely to be terminators. In search of explanations for the findings, the investigator suggested that, when interpersonal problems are presented in treatment as crisis situations, clients can stop attending treatment when they feel the crises have passed (Hoffman, 1985). Furthermore, interpersonal problems may be indicative of deficiency in the capacity for interpersonal relationship, an essential ingredient in the continuing engagement of psychotherapy (Hoffman, 1985).

Along with significant findings showing mixed results, perhaps just as many studies failed to find diagnoses or presenting problems to be significant in predicting psychotherapy dropout (Brown & Kosterlitz, 1964; Chisholm, Crowther, & Ben-Porath, 1997; de Haan et al., 1997; Dreessen, Arntz, Luttels, & Sallaerts, 1994; Grilo et al., 1998; Hilsenroth, Handler, Toman, & Padawer, 1995; Katz & Solomon, 1958; Keijsers, Kampman, & Hoogduin, 2001; Pope, Geller, & Wilkinson, 1975; Rosenthal & Frank, 1958). In a study whose results appeared representative, researchers who surveyed information from 434 clients who sought help at a mental health center found that diagnoses had no significant effect on the clients' reliability or consistency in attending therapy sessions (Pope et al., 1975). In his major review and follow-up review of the psychotherapy dropout literature, Garfield (1986, 1994) concluded that, in general, diagnostic classification does appear to be a clearly helpful predictor of outpatient psychotherapy dropout.

Separately from types of diagnoses and presenting concerns, researchers have also investigated the influence of pretreatment symptom severity level on treatment

dropout. Studies examined the degrees of symptom severity or distress related to different concerns, such as depression, anxiety, obsession-compulsion, posttraumatic distress disorder (PTSD), and found that individuals less distressed or better functioning at the beginning of treatment were more likely to drop out in these studies (Gunderson et al., 1989; Hansen, Hoogduin, Schaap, & De Haan, 1992; Kelly et al., 1992; Kutter, Wolf, & McKeever, 2004; Stahler & Eisenman, 1987; Trepka, 1986; Tutin, 1987). In contrast, studies also found clients who rated higher on depression and other psychiatric symptomatology to drop out of treatment more frequently (McCallum, Piper, & Joyce, 1992; Persons et al., 1988). And then other researchers failed to find a significant relationship between symptom severity and treatment dropout (Keijsers et al., 2001; Sledge et al., 1990; T. E. Smith et al., 1995). Although research on the influence of pretreatment symptom severity has produced mixed results thus far, reviews of research suggest that a relationship could exist between in-treatment symptom severity and psychotherapy dropout (Garfield, 1994).

As a related but distinct construct, functional impairment is at once both the context and consequence of symptom severity (Clarkin & Levy, 2004). Some available research literature suggests an inverse relationship between functional impairment and the prognosis of completing treatment successfully (Clarkin & Levy, 2004); clients who are more functionally impaired are more likely to drop out. Mirroring available research on symptom severity, dropout research investigating functional impairment has focused on measurement at the initiation of treatment, possibly due to difficulty in consistently obtaining data from clients who have already dropped out. However, some research has

positively demonstrated therapists' global rating of change as a significant variable in differentiating dropouts from continuers (Garfield, 1994). These results suggest that, beyond singular, pretreatment measurements, changes in symptom severity and functional impairment in the context of the treatment process can be a promising area of further research.

As a psychological characteristic, personality disorders can often strain individuals' interpersonal interactions, including those with their therapists. This negative relational impact is suspected to have an effect on psychotherapy continuation. A few studies have reported concomitant personality disorders, such as paranoid, schizotypal, borderline, histrionic, avoidant, dependent, etc., to be a significant factor in increasing the frequency of treatment dropout or refusal of treatment (Chiesa et al., 2000; Fals-Stewart & Lucente, 1993; Gunderson et al., 1989; Hilsenroth, Holdwick, Castlebury, & Blais, 1998; Persons et al., 1988; Skodol, Buckley, & Charles, 1983). Overall, personality disorders, when present, appear to have a negative impact on the continuance of psychotherapy. However, with the prevalence rate of personality disorders estimated to be around 10% to as low as 6% (Maier, Lichtermann, Klingler, Heun, & Hallmayer, 1992; Paris, 2010), the utility of extending this finding to psychotherapy clients in general is limited.

On the other hand, the relevance of personality disorders invites scrutiny of inevitably concomitant interpersonal problems. Affecting more than just individuals with identified personality disorders, interpersonal problems have an impact on relational functioning in clients' lives and on interaction within the therapeutic process.

Researchers have examined clients' capacity to develop and maintain positive relationships with others as a possible variable related to psychotherapy dropout. Counter-intuitively, research studies seem to suggest that better interpersonal functioning is associated with higher probability of dropout. This finding is interpreted as the reduced need of individuals to maintain contact with their therapists when other productive relationships outside of therapy are available (Joyce et al., 2007).

Many see psychological testing, such as the Rorschach and Minnesota Multiphasic Personality Inventory (MMPI), as an effective way to provide an organized depiction of individuals' psychological characteristics. Some researchers had hoped to gain some insight on psychological characteristics relationship with treatment dropout by investigating the correlation between dropout and these tests or scales derived from these tests. Garfield's periodic reviews (1978, 1986, 1994) reported that the research literature presented contradictory and inconclusive results. Even a more recent comparison of Rorschach and MMPI-2 variables of 97 clients who dropped out before the eighth session and 81 clients who engaged in treatment for more than 24 sessions found limited success (Hilsenroth et al., 1995). In that study, none of the MMPI-2 scales appeared to have a significant predictor distinguishing the dropouts from the remainers. In the Rorschach category which the investigators considered to be the most robust indicator, only one of the three investigated interpersonal variables (aggressive movement, cooperative movement, and sum texture-shading) was significant at the .05 level; dropouts appeared to be ones more capable of establishing cooperative relationships. Echoing prior research specifically examining the role of interpersonal

functioning, the investigators hypothesized that presumed availability of positive relationships in perspective dropouts' lives lessen their need for the close interpersonal relationship within psychotherapy. Joyce and his co-authors (2007) indicated their agreement with this hypothesis in their review of exiting research literature. Otherwise, Garfield's research review (1994) concluded, efforts to distinguish psychotherapy dropouts' intrinsic characteristics through psychological testing generally have not been as successful as hoped.

Overall, from available research literature on clients' intrinsic psychological variables, no factor has emerged as a clearly conclusive predictor of psychotherapy dropout. However, the research suggests that the quality of clients' interpersonal relationships and shifting level of functioning may have a dynamic role influencing their continuance in psychotherapy treatment in-progress (Joyce et al., 2007). The influence of these variables seems to warrant further investigation.

Therapist Characteristics Factors

Although the greater portion of research has focused on client variables (T. E. Smith et al., 1995), some studies have also explored the role of therapist factors in client dropout. Paralleling the trend in client factor studies, therapist demographics have been a common subject of therapist factor research. Results from these studies have been inconsistent, for example, in finding a relationship between client dropout and the therapist's gender or ethnicity or the matching of these characteristics between the client and the therapist (Atkinson, Furlong, & Poston, 1986; Betz & Shullman, 1979; Bowman, Scogin, Floyd, & McKendree-Smith, 2001; Epperson, 1981; Jenkins et al., 1986;

Maramba & Hall, 2002; Sue et al., 1991). Other research efforts investigating therapist

experience level have found inconsistent relationship with client dropout (Baekeland &

Lundwall, 1975; Renk, Dinger, & Bjugstad, 2000; Rodolfa et al., 1983; Wierzbicki &

Pekarik, 1993).

Therapist demographic variables. Few studies investigated the possible

relationship between therapist demographic variables and client dropout. The most

researched therapist demographic variable is gender. In their study of 141 university

counseling center clients, Betz and Shullman (1979) reported that clients interviewed by

male therapists were significantly less likely to return than by female therapists while

other variables investigated were found not to be significant. This finding followed the

trend of an earlier study by Griffith (1976) which reported that clients had a tendency to

stay in treatment longer with female therapists. In contrast, when attempting to replicate

Betz and Shullman's study, Epperson (1981) found just the opposite and reported that

male therapists were associated with higher return rate at a different university

counseling center.

More studies found therapist gender not to be a significant predictor of

psychotherapy dropout (Jenkins et al., 1986; Krauskopf, Baumgardner, & Mandracchia,

1981; Mogul, 1982; Rodolfa et al., 1983). In his empirical review of the literature,

Zeldow (1978) tentatively concluded that most studies investigating the differentiating

effect of therapist gender offered no positive results; however, he contended that other

intervening factors should be considered. In a more recent meta-analysis (Bowman et al.,

2001) of 64 published and unpublished studies, the investigators reported that even

though female therapists showed some statistically significant difference in better treatment outcome than male therapists, the effect size was not considered substantive. The investigators concluded that therapist gender is a poor predictor of successful completion of psychotherapy treatment.

Other therapist demographic variables, such as age, ethnicity, and social class have been investigated to a much lesser extent in their relationship with client dropout. The few studies evaluating therapist variables concluded that research does not support a correlation between these variables and treatment dropout (Fiester, 1977; Wierzbicki & Pekarik, 1993).

As an extension to the research on therapist demographic characteristics and on client demographic characteristics, some researchers invested their effort in scrutinizing the interactional effect between these two sets of factors. Some researchers suggested that the interaction of client and counselor variables appeared to have greater explanatory value for treatment dropout than does either set of variables alone (Epperson, 1981). In a few studies, researchers reported that clients tended to persist in treatment longer when they were matched with therapists of the opposite gender (Abramowitz, Abramowitz, Roback, Corney, & McKee, 1976; Vail, 1978). However, when reviewed with other nonsignificant findings (e.g., Grimes & Murdock, 1989; Hunt, Carr, Dagadakis, & Walker, 1985; Krauskopf et al., 1981), researchers are more inclined to conclude that the literature has failed to support the efficacy of an optimal client-therapist gender match in reducing treatment dropout (Atkinson & Schein, 1986; Bowman et al., 2001; Mogul, 1982). Some suggested that underlying processes might be

potentially more important than gender differences between therapists and clients (Epperson, 1981).

Similar studies had been conducted to examine the influence of client-therapist ethnicity match on client dropout rates. A few studies found indications that clients were more likely to remain in therapy when matched with counselors of same ethnicities (Krebs, 1971; Sue et al., 1991; Terrell & Terrell, 1984). More extensive studies found additional interactional effect on client dropout between gender match and ethnicity match. For example, Vail (1978) found particularly high dropout rates when clients' and therapists' genders were matched but not ethnicity.

However, other researchers found the influence of ethnicity match between therapists and clients to be small, even when significant (Atkinson et al., 1986). Most critical reviews of the literature on the subject acknowledge some effect of ethnicity match on treatment dropout in spite of some less than conclusive findings (Atkinson, 1983; Beutler, Machado, & Neufeldt, 1994; Maramba & Hall, 2002). Some suggested that therapist cultural competency might be more a factor than simple ethnicity match (Maramba & Hall, 2002). At the same time, other researchers suggested exploring other variables that might mediate ethnicity match's effect on client dropout. Some of the studies point to the more process related variable of similarities in attitudes, values, and treatment expectations between clients and therapists (Atkinson et al., 1986; Atkinson, Poston, Furlong, & Mercado, 1989). Even as clients matched to therapists of different ethnicities showing higher rates of dropout, the clients do not identify ethnic factors as important in their decision to end therapy early (Griffith, 1976).

Therapist training. Beyond the more intrinsic demographic characteristics, researchers have also evaluated therapists' training as a possible influencing factor on client dropout. Researchers interested in the effect of therapists' experience level have conducted studies involving therapists in their early stages of training, where experience level's influence can be more readily discerned against the backdrop of a steeper learning curve, especially when seasoned clinicians are included in the studies. A number of studies have reported a significant proportional relationship between less therapist experience and higher client dropout rates (Dodd, 1970; Pekarik & Stephenson, 1988; Rodolfa et al., 1983; Scogin, Belon, & Malone, 1986). Additionally, studies investigating the closely related client perception of therapist expertness also supported the inverse relationship between therapist experience level and dropout rate (Dyck, Joyce, & Azim, 1984; Grimes & Murdock, 1989). However, these seemingly intuitive significant findings were accompanied with caution of small influence. For example, Grimes and Murdock (1989) saw clients' perception of therapists' expertness as only slightly predictive ($r = .24$, $p < .05$) of treatment dropout.

Furthermore, research results of inverse relationship between therapist experience and client dropout rates are countered by other studies' contrary findings (Renk et al., 2000) and findings of nonsignificant relationship between therapist experience levels and client dropout rates (Betz & Shullman, 1979; Fiester, 1977; Jenkins et al., 1986; Rodolfa et al., 1983; Sledge et al., 1990). The initial notion of the inverse relationship between the number of years of therapist experience and attendance rates reflected in the literature (Baekeland, Lundwall, & Shanahan, 1973) is replaced by

the conclusion of the failure of the larger body of literature to establish a relationship

between therapist experience and client attendance rates (Wierzbicki & Pekarik, 1993).

A smaller number of studies investigated the role of therapists' professional

discipline in affecting clients' treatment dropout rates. Studies reported that doctoral

psychologists were associated with lower dropout rates over clinical social workers and

medical doctors practicing psychotherapy (Greenspan & Kulish, 1985; M. Mueller &

Pekarik, 2000). On the other hand, other studies failed to find significant difference in

the dropout rates of therapists of different professional disciplines (Carpenter & Range,

1982; Hiler, 1958; Jenkins et al., 1986). Wierzbicki and Pekarik's (1993) meta-analysis

did not report therapists' professional discipline to be a significant variable in

psychotherapy client dropout.

Few studies are available on more subjective therapist characteristics, such as

personality and coping patterns, emotional well-being, values, attitudes, beliefs, and

cultural attitudes (Beutler et al., 1994). A few studies on variables such as therapist

trustworthiness (Kokotovic & Tracey, 1987), defense style and life stress (Greenspan &

Kulish, 1985), and therapist seeking personal counseling (Greenspan & Kulish, 1985),

receive little attention by other researchers. Replication of these studies is lacking.

Treatment and Interactional Factors

The volume of psychotherapy dropout research in the more stable characteristics

of clients and therapists has been mostly inconclusive or conflicting (Clarkin & Levy,

2004). The state of the research has prompted researchers to explore more complex

explanations to client dropout in the process of engaging psychotherapy. Some

researchers believed that process variables rather than preexisting traits would the best predictors of outcome (Fiester, 1977; Kolb et al., 1985). Research investigating the association between client dropout and qualitative characteristics of the therapeutic treatment process has shown some promise.

Treatment method. From psychodynamic to humanistic to cognitive-behavioral, commonly offered psychotherapy can vary widely in its emphasis on clients' background, context, emotions, sensations, thoughts, and actions (Seligman, 2006). Debates persisted historically regarding the relative efficacy of different types of therapy. However, more recent efforts in synthesizing results through meta-analysis of studies comparing treatment outcome across settings, client populations, and presenting concerns found strong suggestion of similar outcome from different therapy approaches (Lambert & Ogles, 2004; Wampold et al., 1997). Perhaps because of the clear implication of these outcome studies to the concern of treatment dropout, few studies specifically addressed the effect of therapy approach on dropout rates. The few studies available reported little difference in the dropout rates of different therapy approaches compared (e.g., Everson, 1999; Sledge et al., 1990).

Some researchers turned their attention to the varying treatment duration formats associated with different psychotherapy approaches. In contrast to comparisons of therapy approaches in general, these studies reported more revealing results. For example, Sledge and his fellow investigators (1990) found that when expected treatment duration was made explicit to clients, as in time-limited brief psychotherapy, the dropout rate (32%) was approximately half of the rates for brief therapy (67%) and for long-term

therapy (61%). Researchers reasoned that making the ending definite and explicit could lessen clients' tendencies to "enact conflicts or fears about termination or the treatment" through simply dropping out (Joyce et al., 2007, p. 142). These findings differentiating the effect of ambiguity regarding the treatment duration could also be suggestive of the relevance of treatment expectation alignment on therapy dropout.

Therapeutic alliance. Common to all treatment approaches is the factor of therapeutic alliance. Generally seen as the "collaborative, working relationship" between the client and the therapist (Joyce et al., 2007, p. 144), therapeutic alliance (alternatively "working" or "helping" alliance) is gauged by the strength of its three components: agreement on therapeutic goals, agreement on tasks to achieve the goals, and personal or emotional bond between the client and the therapist (Bordin, 1979). A weak therapeutic alliance often reflects a "poor affective bond", minimal collaboration and joint involvement, and a "disagreement in the tasks and goals" of psychotherapy (Joyce et al., 2007, p. 144). Most, if not all, therapists across theoretical orientations view good therapeutic alliance as an essential element in effective treatment (Gelso & Carter, 1985). In the absence of a good therapeutic alliance, Bordin (1979) suggested that one likely consequence is client dropout.

Results from empirical studies appear to support this belief. Researchers have shown that clients who eventually dropped out of treatment were more likely to report a weak therapeutic alliance (Mohl et al., 1991; Piper et al., 1999; Tryon & Kane, 1990). Correlated with dropout is not only the weak therapeutic alliance as perceived by the client alone. Other studies have shown that both the client's and the therapist's

perception of the strength of the therapeutic alliance, even as early as the first session, could be predictive of client dropout (Piper et al., 1999; Samstag, Batchelder, Muran, Safran, & Winston, 1998; Tryon & Kane, 1993). Researchers found further validation in studies specifically evaluating discrepancies between the client's and the therapist's definitions of the client's presenting problem. These researchers reported significant positive correlation between client-therapist disagreement and higher client dropout rates (Duehn & Proctor, 1977; Epperson, Bushway, & Warman, 1983; Pekarik, 1988; Tracey, 1986, 1988). Some researchers suggested that difficulties the client encounters in the treatment process could hinder the establishment of a quality therapeutic alliance (Gelso & Carter, 1985). Some of these difficulties can originate in client vulnerability as a consequence of being in distress. In other words, clients in greater distress may have more difficulty establishing a solid therapeutic alliance (Kokotovic & Tracey, 1990). Additionally, researchers also believe that the quality of the therapeutic alliance is related the client's past and current interpersonal relations (Kokotovic & Tracey, 1990). The quality of the client's interpersonal relations can be taken as an indicator of the client's capacity for establishing relationships, trusting others, and taking responsibility – all necessary in successful forming a good therapeutic alliance (Kokotovic & Tracey, 1990).

Client expectations. Clients may bring with them various expectations as they enter therapy. However, these expectations can be incorporated as a factor shaping the therapeutic process and can in turn be shaped with the process. Various studies have found association between client's expectations of what might take place in

psychotherapy and treatment dropout – possibly prompted by dissatisfaction resulting from unmet expectations (Joyce et al., 2007). These expectations can be about therapy goals, treatment focus, client and therapist roles and responsibilities, treatment rationale, and treatment time requirement. Generally, research has shown that clients whose expectations differed from those of their therapists were significantly more likely to drop out of treatment (Bernard & Drob, 1989; Hansen et al., 1992; Horenstein & Houston, 1976; Overall & Aronson, 1963; Pekarik, 1985b; Pekarik & Stephenson, 1988; Rabin, Kaslow, & Rehm, 1985). Illustratively, Reis and Brown (1999) found that clients who expected to have a passive role in treatment and to receive advice from the therapist had a higher probability of dropping out. Hansen et al. (1992) reported that dropouts reported unmet expectations in therapy three times more frequently than those who remained or completed treatment.

Other studies have shown that clients often had expectations regarding the time requirement of treatment that are considered unrealistic by therapists. In one study, over one third of the clients expressed their expectation of each treatment session to last no longer than 30 minutes (Garfield & Wolpin, 1963). In the same study, 73% of the clients anticipated some tangible improvement by the fifth session; 70% expected treatment to last fewer than 10 sessions. In contrast, a survey showed that psychologists commonly believed that 30 to 40 sessions were required for clinically significant change in individual therapy (Lowry & Ross, 1997). Not surprisingly, studies reported actual treatment durations to be better predicted by clients' expected treatment duration than

therapists' projection of required session numbers (Beck et al., 1987; Jenkins et al., 1986; M. Mueller & Pekarik, 2000; Pekarik & Wierzbicki, 1986).

Although some researchers reasoned that prior psychotherapy experience should be helpful in setting appropriate treatment expectations, research on the influence of prior treatment experience on dropout rate yielded mixed results. Some studies found some evidence that prior experience did reduce dropout rates (Hoffman, 1985; MacNair & Corazzini, 1994; Pekarik & Wierzbicki, 1986). However, other studies failed to find the lack of prior treatment experience to be a significant predictor of dropout (Koss, 1980; T. E. Smith et al., 1995).

Administrative variables. As some of the least explored variables, some administrative factors (such as waitlist, length of intake, transfer to another clinician, appointment reminder phone calls, etc.) relevant to the mental health provider settings (clinic, agency, private practice office, etc.) have been found to influence clients' decision to drop out of therapy. In their prominent study, Baekeland and Lundwall (1975) demonstrated that the longer a client remains on the waitlist, the more likely he or she is to drop out when treatment eventually begins. Researchers view dropouts in these instances as indicative of a spontaneous reduction in need for treatment that occurs while on the waitlist or simply as a retaliatory act for being kept in distress (Joyce et al., 2007). However, Baekeland and Lundwall's finding was supported by one subsequent study (Rodolfa et al., 1983) but not by another (T. R. Anderson, Hogg, & Magoon, 1987).

Summary of Prior Research's Results on Factors Potentially Related to Psychotherapy

Dropout

Considerable effort has been invested in the attempt to identify client, therapist, and treatment factors potentially associated with client dropout in psychotherapy. To the chagrin of many, the great majority of these studies yielded largely discrepant or inconclusive results and have mostly failed to identify strong, generalizable predictors of psychotherapy dropout (Garfield, 1994; Wierzbicki & Pekarik, 1993). When conclusive findings are available, they tend to be nonreplicable or site specific. Some have attributed the conspicuous absence of an explanatory theory or descriptive model for psychotherapy dropout to this absence of conclusive and generalizable findings in existing research.

The challenge in identifying strong dropout predictors has been especially apparent in client characteristics research. Although client factors are believed to be influential in psychotherapy outcome in general (Luborsky et al., 1971; Luborsky et al., 1980; Orlinsky, Grawe, & Parks, 1994), the search for pretreatment client characteristics predisposing clients to treatment dropout has yielded only SES and perhaps its primary component measure of educational attainment as the most promising, albeit modest, predictors. Overall, researchers are left with the prevailing sentiment that treatment dropouts are not a homogeneous group of individuals and the mythical typical psychotherapy dropout does not exist. Other search efforts on the impact of therapist characteristics have yielded little added information. No particular therapist

characteristics or combinations of client-therapist characteristics matching have been found to be clearly associated with client dropout.

Nevertheless, research on psychotherapy's participants' stable characteristics has aided researchers in refining their investigation of other promising predictors of treatment dropout. For instance, findings of SES's modest and occasionally inconsistent relationship with client dropout have prompted the investigation of possible confounding factors. With closer examination, investigators have come to understand SES's relationship with dropout as mediated through client expectations regarding various aspects of the treatment process, such as treatment goal and duration (Garfield, 1994; Wierzbicki & Pekarik, 1993). Clients' dissonance from discrepancies between their expectations and the actual treatment received (to a certain extent influenced by therapists holding middle-class values) can lead to dissatisfaction and eventual dropout (Heine & Trosman, 1960; Kupst & Schulman, 1979). This understanding is supported by researchers' observation of the disappearance of SES's univariate relationship with dropout in a multivariate analysis in which client expectation of treatment duration is also included as a variable (Pekarik & Wierzbicki, 1986). Also demonstrative are the findings of significant associations between lower dropout rates and time-limited therapy in which the expectation for treatment duration is clearly established for both the client and the therapist (Sledge et al., 1990). What is noteworthy to researchers in studies such as these is the relevance of variables, such as client expectations, that are products of clients' stable characteristics but are also potentially subject to the influence of treatment process dynamics (Brogan, Prochaska, & Prochaska, 1999).

Recent studies have turned their attention to variables related to the dynamic process of psychotherapy in search of psychotherapy dropout predictors. For example, therapeutic alliance, a function of agreement in the therapeutic agenda as well as the emotional bond between the client and the therapist, has been investigated as a product of managed treatment expectations and interpersonal relationship (Mohl et al., 1991; Piper et al., 1999; Tryon & Kane, 1990). These investigations have successfully shown weak therapeutic alliance to be a significant predictor of treatment dropout (Piper et al., 1999; Samstag et al., 1998; Tryon & Kane, 1993). Researchers believe that client pretreatment factors such as general functioning and quality of interpersonal relationships can affect dropout rates. Particularly, interpersonal functioning of the client has been shown to have predictive value for treatment dropout (Joyce et al., 2007). Beyond their inclusion as a static client characteristic, initial research examining the interpersonal parameters within the therapeutic relationship (therapeutic alliance) and outside of therapy (the quality of the client's social interaction in real life) has produced positive results. Likewise, studies on the effects of clients' enhanced functioning and related symptom severity reduction detect encouraging findings of a significant relationship between therapists' global rating of change and treatment dropout (Garfield, 1994). In investigating the relationship between clients' functional improvement (frequently a key objective of therapy) and their dropout likelihood, researchers seek to gain some insight to how clients gauge potential benefits from additional treatment based on therapeutic benefits already received. Furthermore, therapy takes place within the larger context of clients' lives. These investigations of functioning and interpersonal

relationships, in a sense, assess the perceived importance of therapy as an integral, even though transient, part of clients' lives.

Findings from these investigations thus far are at least partly corroborated by reasons given by clients themselves for dropping out. A very limited number of studies collected pertinent information from former clients to help clarify their reasons for terminating therapy. Dropout reasons cited by the great portion of these clients included problem improvement, negative attitudes toward the therapist and treatment, and environmental constraints (Acosta, 1980; Pekarik, 1983b, 1992b). Although insufficient motivation could play a part in ending treatment due to environmental constraints, these constraints can be unavoidable (Ogrodniczuk et al., 2005; Pekarik, 1992b). Circumstances such as conflict with work hours, transportation problems, relocation, and physical incapacitation are often beyond individuals' control. A client's termination due to one of these reasons can at times be considered appropriate (Ogrodniczuk et al., 2005). Negative attitudes include dissatisfaction with the interaction with the therapist or with the therapeutic process (Pekarik, 1992b). The sources of the dissatisfaction can include poor therapeutic alliance and lack of improvement from the client's perspective (Tryon & Kane, 1993).

On the other hand, client-perceived problem improvement can also prompt an unexpected early end to therapy. In one community mental health clinic study, "no need for services" was the reason for ending treatment for the largest group (39%) of dropouts (Pekarik, 1983a). Some of these clients may no longer see the need for therapy because changing circumstances have resolved their concerns (Pekarik, 1992b). Others may feel

that they have gotten enough out of treatment because they have experienced some reduction in distress or improvement in condition (Ogrodniczuk et al., 2005; Pekarik, 1983b). However, these dropout-client-perceived gains often fall short of the treatment goals mutually agreed upon between the clients and their therapists and may be insufficient to effect lasting changes (Pekarik, 1992a). For example, a client may seek treatment for distress arising from interpersonal conflicts that are a consequence of intra-personal difficulties. The client may quit treatment upon feeling some relief from distress when the particular circumstances of the interpersonal conflicts are changed due to outside forces. However, the intra-personal difficulties remain unabated. At some point the cycle of conflict is repeated, and the client is again in distress.

Findings from these retrospective dropout studies further support the investment of research efforts in examining client outcome, response to therapy, interpersonal functioning, and other variables in the context of treatment in progress as predictors of dropout. Limited success came from past studies treating factors in psychotherapy as invariable potential predictors through the therapeutic process. One implication is that not everyone responds the same way to treatment. Treatment outcome is likely a product of the interaction between the treatment process and the individual client. Moreover, some believe that process dimensions may have greater explanatory importance in regard to the dropout phenomenon than do client characteristics (Fiester, 1977). In a way, the emerging importance of dynamic process factors can offer some explanation to the limited success of research on intrinsic variables. Researchers have highlighted the changing influence of these supposedly stable variables once treatment begins as one

possible contribution to the observed inconsistencies in the results of past investigations of pretreatment variables (Clarkin & Levy, 2004). Even if pretreatment variables were to have some effect on the client's predisposition to dropout, the effect might be varied when changing dynamics of the treatment process interacts with these variables.

The shift from focusing on static client variables is seen as positive progression in psychotherapy dropout research (Clarkin & Levy, 2004; Wierzbicki & Pekarik, 1993). The investigation of dynamic variables linked to the treatment process in the larger context of the client's life as a whole presents a hopeful step in understanding the phenomenon of treatment dropout (Kazdin, Holland, Crowley, & Breton, 1997; Kazdin & Wassell, 1998).

<div align="center">Emerging New Paradigm in Psychotherapy Research</div>

Many of the studies discussed above and, in fact, a great portion of empirical studies in the existing psychotherapy research literature follow the traditional treatment-focused research approach. This research approach has aided the advancement of validation and support for the efficacy of psychotherapy and knowledge regarding treatment processes. However, the relatively recent client-focused research paradigm (Howard, Moras, Brill, Martinovich, & Lutz, 1996; Lambert, 2010) offers a perhaps an even more pragmatic way of understanding concerns of psychotherapy as practiced in natural settings.

Treatment-Focused Research

Also known as efficacy research or outcome research, the traditional treatment-focused research seeks to answer the question, "What treatment, by whom, is most

effective for this individual with that specific problem, under which set of circumstances, and how does it come about?" (Paul, 1969, p. 44). This approach to research is concerned with the determination of comparative efficacy and effectiveness of particular clinical interventions, aggregated over groups of clients (Howard et al., 1996; Lambert, 2010). Research efforts of this type follow the clinical trials model, in which internal validity is maximized through procedures such as subject randomization and close control of experimental conditions. In such fashion, researchers compare the average outcome of clients with specific diagnoses, receiving a specific treatment to that of other similar clients receiving a different treatment or a control treatment (Lambert et al., 2001). This approach relies on controlled experimental conditions and random assignment of relatively homogeneous treatment subjects so that observed differences in the average responses of groups of subjects can be attributed to the systematic effects of specific treatments (Lambert, 2001).

In conducting treatment-focused psychotherapy research, the application of therapy needs to be well controlled, often requiring "manualized" treatment to ensure theoretical conformity (Lambert, 2001; Leibert, 2005). This methodological requirement becomes limiting and sometimes infeasible in certain treatment approaches (e.g., psychodynamic psychotherapy, of which various ingredients, such as illumination of the unconscious, transference, etc., do not easily lend themselves to standardization). Nevertheless, the bulk of the research literature is comprised of treatment-focused research. And empirically validated psychotherapy, especially the readily manualizable

cognitive-behavioral therapy, owes its recognized efficacy and popular support at least in part to positively affirming results from this research approach.

Client-Focused Research

Client-focused research emerged amid the intensifying demands of Health Management Organizations (HMOs) in the 1990s to balance cost with treatment effectiveness (Lambert, 2001). In addition to enhancing the accountability of paid mental health services, research efforts of this kind also seek to improve services to individual clients through tracking and evaluating their progress and providing feedback to clinicians during the course of treatment (Lambert, 2001, 2010; Leibert, 2005).

In contrast to treatment-focused research, client-focused research is more interested in meaningful changes manifested in the response patterns of *individual* clients over the course of the treatment *in progress* rather than the aggregated, statistically significant differences in the outcome of *groups* of clients *after* treatment has been concluded (Lambert, 2001). In addition, client-focused research is concerned with the clinical characteristics of particular cases rather than intrinsic factors related to clients, therapists, or specific interventions (Howard et al., 1996). Thus, this research approach helps illuminate the likelihood of treatment effectiveness for clients exhibiting particular treatment responses over the course of the ongoing treatment.

The client-focused approach offers researchers and clinicians a practical way to empirically demonstrate the effectiveness of mental health services and to answer the question of whether a particular treatment is working for a particular client (Lambert et al., 2001). Additionally, this type of investigation produces results that can inform

clinicians in monitoring client progress and making timely adjustment to ongoing treatment (Lambert, 2001, 2010; Lambert, Harmon, Slade, Whipple, & Hawkins, 2005).

The client-focused approach also offers some methodological advantages to the research process. The loosening of experimental restrictions on applied treatment processes as practiced removes the need for multiple controlled treatment applications on randomly assigned subject groups that are often time- and cost-intensive. Furthermore, the external validity of client-focused research is comparatively high for its ready generalizability.

The body of literature based on client-focused psychotherapy research has steadily accumulated over recent years. With the availability of advanced statistical techniques such as probit analysis, survival analysis, and hierarchical linear modeling, researchers are better equipped to construct a clearer picture of expected treatment outcome as related to the process of psychotherapy through charting the progress of individual therapy clients in the course of treatment (Lambert, 2001). To that end, considerable work has been conducted in collecting data from a large number of clients of varying clinical characteristics for the generation of respective treatment progress curves.

"Quick and dirty" is valued over comprehensiveness and depth in the periodic, repeated measurement of client outcome in client-focused research. Some of the existing measures, such as the Minnesota Multiphasic Personality Inventory (MMPI), the Symptom Checklist-90 (SCL-90), etc., are traditionally utilized to assist clinical diagnosis. When adapted to assess outcome, these existing measures are considered too

cumbersome and costly to use on a regular basis. And many other measures are intended to be used with specific disorders, for example, the Beck Depression Inventory (BDI), the State-Trait Anxiety Inventory (STAI), etc. (Froyd, Lambert, & Froyd, 1996). Hence, client-focused research highlighted the need for a new measure appropriate for the construct of client outcome for a wide range of clinical concerns and convenient enough for regular assessment of ongoing treatment.

Responding to the need, at the same time responding to the demands of managed health care for quality control, Lambert and his colleagues developed the original Outcome Questionnaire (OQ) in 1996. Differing from traditional diagnostic tools, the OQ was conceived as a relatively convenient, standardized self-report measure to assess and monitor psychotherapy outcome regularly and repeatedly during the course of ongoing treatment (Lambert, 2010; Umphress, Lambert, Smart, Barlow, & Clouse, 1997). Many researchers contend that adequate assessment of treatment outcome should include the client's subjective sense of wellbeing, quality of interpersonal relationships, and functioning in societal roles (Lambert & Hill, 1994). In addressing that imperative, the OQ incorporates clients' weekly self-rating of agreement to statements to assess their status in the broad areas of Symptom Distress, Interpersonal Relations, and Social Roles – accessing common symptoms and concerns across a wide range of mental disorders and syndromes (Lambert, Gregersen, & Burlingame, 2004). And to validate that changes in the OQ measurement can indeed be associated with treatment response, researchers demonstrated the stability of OQ scores of untreated individuals (Lambert et al., 2005).

With the widespread use of the OQ instrument, some researchers assert that the use of the Total OQ score, a composite of scores in the three broad outcome areas, is the most empirically supported and recommended approach to outcome research (Lambert, Burlingame, et al., 1996). Furthermore, the voluminous collected data make possible researchers' charting of individual clients' outcome profiles and ideographic discernment of clients' distinct response patterns to psychotherapy. Consequently, the broad adoption of the OQ has further stimulated client-focused research efforts.

Before the general availability of in-progress outcome measures such as the OQ, researchers utilized an assortment of methods to estimate therapeutic change. These methods often involved therapist or staff rating of client conditions at termination or researcher rating of clinical charts sometime after termination and comparison with client pre-treatment status. Through analyses of data accumulated in this manner, a dose-effect relationship in psychotherapy became apparent. The estimated improvement represented by post-treatment outcome was positively related to the number of sessions attended or the "dosage" of exposure to various active ingredients of psychotherapy (Howard et al., 1986). This finding, in some sense, validates many clinicians' intuitive notion that benefits received by clients increase with from more treatment.

Although, in general, more sessions attended are associated with continuing improvement in client outcome; the relationship is not linear. The effectiveness of additional sessions becomes more attenuated after having attended higher numbers sessions – an observation concurred by other researchers (Orlinsky et al., 1994). From analyses of the same data, researchers constructed a general expected response curve

across different therapy settings and diverse client populations. Gleaned from this curve, at least half of psychotherapy clients needed 8 sessions to show improvement and 26 sessions for 75% of the clients to show measurable improvement (Howard et al., 1986).

As the drive for more client-focused research continued, the mounting collection of data from standardized in-progress OQ measurement further enhanced work in characterizing treatment response. The availability of a sizable volume of standardized data made possible the statistical determination of reliable change and clinically significant improvement, both considered essential in such treatment response characterization. Deriving from normative data of client and non-client populations, researchers determined a minimum magnitude in the change of OQ scores to indicate a change that is considered reliable beyond transient fluctuation in client condition and possible measurement error (Lambert et al., 2001). Also from the normative data, a threshold was statistically established to distinguish dysfunctional clinical clients from functional community individuals (Lambert et al., 2001). Clients are considered to have made a clinically significant improvement after having made a reliable change crossing the threshold into the functional realm (Lambert, 2010).

With OQ data from a national sample of over 10,000 subjects, investigators showed that, for at least half of the psychotherapy clients to achieve clinically significant improvement, 21 sessions were needed; at least 50 sessions were needed for 75% of the clients to show clinically significant improvement (Lambert et al., 2001). Results from this and other replication studies (E. M. Anderson & Lambert, 2001; Kadera, Lambert,

& Andrews, 1996) suggest that more sessions are needed to achieve clinical improvement than what was shown through previous research.

In these research efforts, investigators have eschewed generalizing clients by their intrinsic characteristics. These client-focused studies accommodate the individuality of clients. Instead of attempting to group them by intrinsic factors, the research focuses more on clinical characteristics, such as presenting level of distress and response to treatment. This research approach involving client clinical response patterns can utilize existing data from naturalistically conducted treatments to graph the expected course of progress for a client (Howard et al., 1996). Ultimately, the researchers seek to understand the issues of psychotherapy through examining the change for every participant in treatment in relation to common expectations (Lambert, 2001).

Client-Focused Research on Psychotherapy Client Dropout

After its introduction, the client-focused research paradigm has been gradually adopted by an increasing number of researchers to help answer questions in psychotherapy dropout. As recognized by some researchers, having some knowledge of differences in intrinsic factors related to dropout could be helpful in predicting rates of failure for large patient groups. However, the information "does not yield any insight into the dynamics of 'breaking therapy,' nor does it allow successful prediction of behavior in any single individual" (J. M. A. Weiss & Schaie, 1958, p. 430). Furthermore, with the observation that treatment dropouts do not constitute a homogeneous group of individuals, client-focused research can be a more appropriate approach with its emphasis on clinical characteristics, particularly the treatment response patterns, of

individual clients rather than on searching for differences in characteristics of groups of

clients (Reis & Brown, 1999).

Reasonably, most clients do not plan to initiate psychotherapy only to drop out

after having invested time and money into the treatment effort. The premise that clients'

decision to drop out of treatment is likely to develop at some point in the process of

receiving treatment can make client-focused research approach even more fitting. In

investigating how this dropout decision is formed, researchers stress the importance of

understanding clients' in-progress outcome response to treatment for its potential

relevance in the decision (Tryon & Kane, 1990). Arguably, the outcome assessed as

reduction of distress and improvement in psychosocial functioning and overall quality of

life is the primary reason for individuals to seek psychotherapy. Additionally, with a

functional understanding of the relationship between treatment response and dropout, a

periodic measurement constitutes a monitoring apparatus capable of alerting clinicians to

probable, imminent dropout. This real-time monitor offers the possibility of timely

application of targeted intervention to address the risk of treatment dropout.

One parallel area of research that has benefitted from examining clients' in-

progress treatment response patterns is the investigation of psychotherapy treatment

failure. Despite the best efforts of therapists, some clients do not respond to therapy.

According to one research review, some 5 – 10% of clients even deteriorate during the

course of treatment (Lambert, 2010; Lambert & Ogles, 2004). Although less frequent in

occurrence, these cases of treatment failure are not any less vexing than treatment

dropout to practitioners of psychotherapy.

Utilizing in-progress treatment response data, recent investigations have made considerable progress in the prediction of treatment failure. To help address therapeutic concerns surrounding treatment failure, a number of researchers empirically generated a family of expected recovery curves. These expected recovery curves are the product of clustering individual in-progress response curves of 11,492 clients by their pretreatment levels of distress and dysfunction as measured Total OQ scores (Finch, Lambert, & Schaalje, 2001). The intention was to develop an early warning system to identify clients whose treatment progress trajectories could lead to treatment failure. At any given session number, a client's outcome response measurement significantly and negatively deviating from his or her expected response curve could signal the beginning of such a trajectory toward treatment failure. A cutoff score at any given session number for each expected treatment response curve was statistically determined to help alert therapists to potential treatment failure (Lambert, 2010).

Subsequent investigations supported the utility of such an early warning system. Investigators found that when feedback of potential treatment failure was provided to therapists, the client outcome deterioration rate was reduced to a statistically significant 5%, compared to the 9% in the control group for which such feedback to therapists was not provided (Lambert et al., 2003). Researchers advocate the extension of this methodology to treatment dropout research with the incorporation of independent criteria of identifying dropout clients (Finch et al., 2001).

In exploring the relationship between in-progress treatment response pattern and therapy dropout, other researchers have focused on particular points in outcome profiles

for individual clients. Arechiga (2006) found higher initial OQ scores (indicative of higher symptom severity and lower psychosocial functioning) to be associated with treatment dropout. On the other hand, Chasson, Vincent, and Harris (2008) hypothesized that symptom severity measured just before termination could be associated with dropout to a greater extent than pretreatment measurement. These researchers argued that the decision to terminate would be related more to the level of distress nearly concurrent to termination than the client's condition at the treatment initiation, which could be months in the past. Through systematically examining in-progress, biweekly measurement of client symptom levels and termination status, the investigators supported their hypothesis with the finding of a significant relationship of moderate effect size between high symptom severity immediately before termination and treatment dropout (Chasson et al., 2008). The results support the importance of tracking in-progress treatment response and examining the level of symptom severity or psychosocial functioning at the time of potential termination in dropout studies as stressed by other researchers (Hembree et al., 2003). In summary, these findings highlight the relevant role of in-progress client condition patterns in psychotherapy dropout.

<p style="text-align:center">Statement of the Problem</p>

Psychotherapy client dropout is a pervasive concern in the provision of mental health services. Not only does the phenomenon have a negative impact on therapists and mental health services organizations, dropping out of treatment often presents unhealthful consequences for the clients. In minimizing the occurrence of therapy client

dropout, understanding the dropout phenomenon is essential in the effort to identify accurate and timely predictors and to devise effective, targeted interventions.

Conspicuously absent is a compelling explanatory theory or descriptive model for psychotherapy dropout. Discrepant and inconclusive findings afflict past research efforts emphasizing mostly psychotherapy's intrinsic factors, with the exception of some variables comprising client socioeconomic status. On the other hand, the moderate success of investigations of treatment process variables has encouraged researchers to turn their attention to dynamic variables in the therapeutic process.

With the introduction of client-focused research approach, a number of studies conducted in this paradigm have shown some promise in advancing psychotherapy dropout research. Investigation utilizing clients' periodic treatment outcome status, as measured with the Outcome Questionnaire, in the context of psychotherapy in progress, has produced some positive results. A number of studies have helped make available an empirically derived apparatus to alert therapists of the increasing risk of treatment failure which might contribute to eventual dropout for individual clients. Other studies extending in-progress treatment outcome research to client dropout found association between dropout risk and either the initial or the last available measurement in individual clients' response patterns. However, the currently available research literature leaves room for refinement through incorporating patterns of treatment response over the period of time leading up to the final sessions – a period in which events are likely to contribute to a decision as far reaching as discontinuing therapy.

The present study was intended to explore possible refinement in occurrence prediction and to further understanding of the dropout phenomenon through investigating the relationship between client dropout and various features of the treatment response patterns. Beyond broad measures of clients' general outcome, this study was also intended to examine in more detail the influence on dropout risk from domains comprising client overall outcome, i.e., subjective experience of symptom distress, quality of interpersonal relationships, and level of social role fulfillment. Additionally, with the likelihood of individual clients' predisposition to different behavioral reactions under varying clinical circumstances, this present study sought possible explanatory power through evaluating probable interaction from potentially relevant client characteristics, which alone might not substantially influence the dynamics in client dropout. Evaluating these factors' influence on client dropout could be potentially instrumental not only in offering refinement to the accurate anticipation of impending dropout but also in advancing a more nuanced understanding of the dropout phenomenon.

<div align="center">Pertinent Variables in the Present Study</div>

In exploring effective predictive models of psychotherapy dropout with variables from client treatment response pattern, this study in part drew upon relevant findings from existing research literature. The reported significance of high symptom severity level measured at the last attended session (Chasson et al., 2008) gave rise to the consideration of treatment response averaged over attended sessions in the final month of treatment. The inclusion of a variable representing the difference between the average

ending treatment response and the start-of-treatment mental health status was encouraged by the demonstrated significance of poor response to treatment of some clients who eventually became cases of treatment failure (Lambert et al., 2003). The interest in this variable of treatment improvement was also supported with the observation of self-perceived improvement's being one of the most common reasons cited by clients for dropping out (Acosta, 1980; Pekarik, 1983b).

Also highlighted in this study was the stability of the client's mental health wellbeing, which has likewise garnered attention in the literature. Some researchers consider clients exhibiting significant fluctuation as ones who are most unstable and vulnerable, perhaps susceptible to circumstantial stressors (Lambert et al., 2001). Others suggested a connection between fluctuation and the client's felt need to remain in treatment (Frank et al., 1957, p. 293):

> Fluctuations in a patient's condition suggest that pathogenic and restorative forces are still in active conflict without having reached a stable equilibrium. This would heighten the patient's awareness that he is ill and so increase his motivation to seek help. Moreover, fluctuations in severity often occur in response to changes in the patient's life situation, thus indication that he is accessible to interpersonal influences…. For this reason, he might be accessible to the beneficial interpersonal influence represented by psychotherapy, and therefore remain in it.

Conversely, clients lacking movement in treatment response, as measured with OQ, would mirror individuals receiving no therapy (Lambert et al., 2001). By extension, this

stability in treatment outcome, regardless of the concurrent level of symptom severity or dysfunction, might implicitly obviate the need for continuing therapy.

Additionally, research finds dropout to be characteristically different as it occurs at different phases of the treatment process (Lampropoulos et al., 2009; Martin, McNair, & Hight, 1988; Pekarik, 1992a). For example, the workings behind the dropout of a client after a year of treatment are considered to be substantively different from those of a client who has attended a mere few sessions. Results from these studies support the inclusion of treatment duration in the investigation of psychotherapy dropout.

A broad measure of the client's state of mental health can be consisted of assessment of multiple aspects of the client's overall psychosocial wellbeing. In the case of OQ, an individual's subjective sense of wellbeing, quality of interpersonal relationships, and performance of social roles add up to the person's general state of mental health. Conceivably, these aspects could have differential effects on the client's decision to remain in or drop out of treatment.

For instance, researchers have found that most frequently addressed problems in psychotherapy are interpersonal in nature (Horowitz & Vitkus, 1986). Moreover, various researchers have found the quality of interpersonal relationships in the client's life to be a pertinent factor influencing dropout risk (Clarkin & Levy, 2004; Hoffman, 1985; Joyce et al., 2007). The previously mentioned assertion that fluctuation in the client's treatment outcome promotes continuation in treatment might be especially applicable in this regard. For someone who is vulnerable to and experiencing ups and downs in his or her

interpersonal life, the relationship with the therapist arguably presents one desirably stable interpersonal relationship in the client's life.

Their effect on treatment dropout shown to be mediated through other process variables, some intrinsic client characteristics can still be predictive as they signal predisposition to different behavioral reactions to dynamics related to the treatment. Educational attainment, an important component of SES, can have a mediated effect on dropout through expectations regarding aspects of the treatment, such as the goal, the tasks, the duration, and the outcome (Garfield, 1994; Wierzbicki & Pekarik, 1993). Furthermore, some researchers point to goal-directed persistence necessary for education attainment as an ingredient in sustaining treatment continuance (Lorr et al., 1958). The same goal-directed persistence could possibly minimize the effect of transient clinical variables, such as fluctuation in treatment response.

This present study would evaluate the effectiveness of predictive models incorporating these variables and their germane interactions. Contributing to added understanding and insight on client dropout was the hope that compelled this endeavor.

Research Questions

This study attempted to answer the following questions:

1. How well can psychotherapy client dropout be predicted with the broad-measure treatment response pattern's features, such as

    a. The fluctuation in the progression of treatment outcome in the final weeks leading up to termination;

    b. The average level of treatment outcome in the final weeks;

    c. The amount of improvement over the entire course of treatment measured as the difference between the average level of treatment outcome in the final weeks and the level of distress and dysfunction presented at the initiation of treatment; and

    d. The interaction between the improvement over the course of treatment and the total duration of treatment?

2. Are features in the composite treatment response pattern better predictors of psychotherapy dropout than features in individual treatment response patterns of component domains – subjective sense of symptom distress, quality of interpersonal relations, and level of social role fulfillment?

3. Can psychotherapy client dropout prediction with features of treatment response patterns be improved with the inclusion of a client characteristic, such as educational attainment?

<div align="center">Hypotheses</div>

Hypothesis 1

Psychotherapy treatment dropout would be effectively predicted by features of client treatment response pattern in the weeks leading to termination. In particular, dropout would be significantly and effectively predicted with a model of the stability and the average in ending treatment outcome; the course-of-treatment improvement represented by the difference between the average in ending treatment outcome and the measurement at the beginning of treatment; and the interaction from the number of sessions attended before ending treatment.

Hypothesis 2

Less fluctuation in ending treatment response would be associated with an increased likelihood of treatment dropout.

Hypothesis 3

Higher average distress/dysfunction over final weeks would be associated with an increased likelihood of treatment dropout.

Hypothesis 4

Increasing number of attended sessions would be associated with a reduction in the association between the course-of-treatment improvement and the likelihood of treatment dropout.

Hypothesis 5

Treatment response pattern features for Interpersonal Relations subscale would be more effective in predicting client dropout than features in treatment response patterns of the composite scores or either of the other two subscale scores.

Hypothesis 6

Less fluctuation in ending treatment response in the Interpersonal Relations subscale of OQ would be associated with an increased likelihood of treatment dropout.

Hypothesis 7

Lower average Interpersonal Relations distress/dysfunction over final weeks would be associated with an increased likelihood of treatment dropout.

Hypothesis 8

Client educational attainment would be a significant factor in improving the effectiveness of dropout predictive models consisting of features treatment response patterns of Total OQ and OQ subscales.

Hypothesis 9

Higher client educational attainment would be associated with a reduction in the relationship between fluctuation in ending treatment response and the likelihood of treatment dropout.

CHAPTER III

METHOD

Procedures

This study utilized review of archival client charts of Texas A&M Counseling and Assessment Clinic (CAC). The CAC is a training clinic for Texas A&M University's counseling psychology and school psychology doctoral programs. The Clinic is located in the Bryan-College Station Community Health Center, a federally-qualified health center serving the surrounding communities. The CAC receives a variety of clients from children to older adults with differing presenting concerns (e.g., depression, anxiety, marital problems, parenting concerns, etc.) on a sliding fee scale. Individuals requesting psychotherapy treatment are prescreened, and those with severe psychopathology (such as major depressive disorder, bipolar disorder, psychosis, and suicidality) are usually referred to other mental health resources such as the local Mental Health and Mental Retardation authority (MHMR). All CAC therapists are trainees supervised by faculty psychologists. Types of therapy provided vary with individual clients' needs. The majority of clients are offered open-ended therapy. Even at sometimes slower treatment response rates, effectiveness of treatment in such setting is expected to be comparable to others with professional staff (Callahan & Hynan, 2005; Howard et al., 1986).

As part of the CAC required intake procedures, each prospective client provides informed consent for de-identified chart information to be used in archival research. The CAC began collecting information necessary for this study in 2005. All closed charts

dated from 2005 to 2010 were reviewed for this study. Only data from client charts eligible for this study were recorded. Eligibility criteria consisted of client's adult status (age 18 or older when initiating treatment) and attendance of four or more sessions. Per agency practice at the CAC, the initial sessions are considered case intake and evaluation. A treatment plan is completed before the fourth in-person session, prior to the active treatment process. Although some clients do drop out in the intake and evaluation phase, these early dropouts can be considered distinct from dropouts during the treatment phase (Lampropoulos et al., 2009). This study would to focus on therapy treatment dropout.

For each selected chart, the chart data was manually read from the original paper copy and entered into a spreadsheet file electronically. The data entry was repeated by a CAC staff member. Subsequently, data sets from the two rounds of recording were electronically compared to capture entry errors. Discrepancies were resolved after consulting the corresponding charts.

<div align="center">Participants</div>

Clients of the CAC are primarily community members. The serviced communities include the Bryan-College Station metropolitan area (combined population of approximately 190,000) and surrounding rural communities in Brazos, Burleson, and Robertson Counties (combined population of approximately 229,000) (U. S. Census Bureau, 2011). Although individuals of any income level are eligible for services at the CAC, many clients meet criteria of federal poverty guidelines based on income and number of members in the household. Adult clients of the CAC present a variety of psychosocial concerns, such as depression, anxiety, stress-related issues, attention

deficit/hyperactivity disorder (ADHD), current or past abuse issues, post-traumatic stress, grief and loss, relationship difficulties, family issues, marital or divorce related issues, and career or vocational issues. Clients are treated on an outpatient basis and are normally seen weekly. Individuals with severe psychopathology (e.g., bipolar disorder, major depressive disorder, and schizophrenia), to whom MHMR are mandated to provide services, are usually not treated at the CAC.

<div align="center">Measures</div>

Outcome Questionnaire

The Outcome Questionnaire (OQ) is a self-report instrument specifically developed to track the symptom severity and psychosocial functioning of outpatient clients on a weekly basis (Lambert, Burlingame, et al., 1996). Typically requiring approximately five minutes to complete, the instrument has 45 items asking clients to rate their feelings on a five-point scale ranging from never to almost always (from 0 to 4 points) (Appendix A) (Lambert, Hansen, et al., 1996). Both rationally and empirically selected, the items query the functioning of the individual in three ingredients of psychological wellbeing.

Symptom Distress subscale. These OQ subscale items (100 possible points from 25 items) assessing clients' symptomatic functioning address the most commonly encountered mental disorders (Lambert et al., 2001). Derived from a 1988 National Institute of Mental Health (NIMH) epidemiological survey and a review of diagnoses collected by a national managed care organization, this OQ subscale encompasses primary concerns such as depression, anxiety, and substance abuse (Lambert,

Burlingame, et al., 1996). Sample items include "I feel no interest in things"; "I tire quickly"; and "I have difficulty concentrating" (Lambert, Burlingame, et al., 1996, p. 250).

Interpersonal Relations subscale. This OQ subscale (44 possible points from 11 items) assesses the most frequently presented complaints in psychotherapy: problems in family life, friendship, and marriage. Derived from existing research literature, these items address "friction, conflict, isolation, inadequacy, and withdrawal" in these relationships considered essential to life satisfaction (Lambert, Burlingame, et al., 1996, p. 251; Lambert et al., 2001). Sample items in this subscale include "I feel loved and wanted"; "I have trouble getting along with friends and close acquaintances"; and "I am satisfied with my relationships with others" (Lambert, Burlingame, et al., 1996, p. 251).

Social Role subscale. This subscale (36 possible points from 9 items) evaluates clients' quality of life through their fulfillment of key roles and performance of important tasks in work, leisure, and family life (Lambert et al., 2001). Items in this subscale address commonly reported problems of "dissatisfaction, conflict, distress, and inadequacy" in marital and family relationship literature as well as in general interpersonal relationships literature (Lambert, Burlingame, et al., 1996, p. 251). Some sample items are "I feel that I am doing well at work/school"; "I find my work/school satisfying"; and "I enjoy my spare time" (Lambert, Burlingame, et al., 1996, p. 251).

These three subscales add up to the Total OQ score of 180 possible points as a global assessment of clients' progress in treatment (Appendix B). In a sense, the OQ also provides a general assessment of the quality of life (Lambert et al., 2005). A cutoff score

has been derived statistically from normative data to distinguish a respondent as a more

likely member of the community or the clinical population (Jacobson & Truax, 1992;

Lambert, 2010; Lambert, Hansen, et al., 1996). Any client scoring 64 or above in Total

OQ score is considered to be experiencing a clinical level of distress or dysfunction

(Lambert, Hansen, et al., 1996). Some researchers consider the OQ by itself a sufficient

measure of treatment outcome in an environment requiring regular testing (Lambert,

2010; Lambert et al., 2001).

The psychometric properties of the OQ are considered adequate. Internal

consistency of the OQ has been found to be high at $\alpha = .93$ for the total score and

ranging from .70 to .92 for subscale scores (Lambert, Burlingame, et al., 1996). The 21-

day test-retest correlation coefficients range from .78 to .84 for the total and subscale

scores, significant at $p < .01$ level (Lambert, Burlingame, et al., 1996; Lambert et al.,

2002).

The OQ's concurrent validity has been evaluated against other comparable

instruments such as Symptom Checklist-90R (SCL-90R) (.72 correlation with Total OQ),

Beck Depression Inventory (BDI) (.62), Zung Self-Rating Depression Scale (ZSDS)

(.88), Zung Self-Rating Anxiety Scale (ZSAS) (.80), State-Trait Anxiety Inventory,

Form Y-1 for state anxiety (STAI-Y1) (.64), State-Trait Anxiety Inventory, Form Y-2

for trait anxiety (STAI-Y2) (.80), Inventory of Interpersonal Problems (IIP) (.63), and

Social Adjustment Scale (SAS) (.60) (Lambert, Burlingame, et al., 1996). The

concurrent validity for the total score and subscales were all found significant at $p < .01$

(Lambert et al., 2002). No significant differences were found across genders or

ethnicities (Lambert et al., 2002). Additionally, the OQ's sensitivity in detecting change in psychotherapy clients' progress has been demonstrated through clients' statistically significant improvement in measured total and subscale scores after receiving seven sessions of treatment (Lambert, Burlingame, et al., 1996; Vermeersch et al., 2004).

Although inconclusive, a preliminary confirmatory factor analysis (CFA) study suggested that the subscales of the OQ might not represent dimensions entirely unique from one another (R. M. Mueller, Lambert, & Burlingame, 1998). The study showed the three subscales to have high intercorrelation. However, the same study's three-factor model corresponding to the three OQ subscales resulted in better model fit than the one-factor model in the CFA, even though both model fits were still considered poor. The researchers suggested using only the composite OQ to track clinically significant change in clients. At the same time, they also recognized the subscales to be valuable in providing useful information on various domains of the client's life.

The effect of weekly repeated administration on OQ scores could be a potential concern since some self-report instruments also intended to assess symptom levels had been found to produce reduced reporting of symptoms with repeated administration (Jorm, Duncan-Jones, & Scott, 1989). However, a later study indicated that although OQ scores did decrease slightly at the second administration, the decrease did not continue over further testing (Durham, 1998; Vermeersch, Lambert, & Burlingame, 2000). Researchers assert that any minimal test-retest effect of OQ45 is not cumulative (Lambert et al., 2001).

Termination Summary

The termination summary (Appendix C) is an intra-agency form implemented at the CAC since 2005 to be part of the termination administrative procedures. The summary is completed by the therapist upon the termination of a client. Information captured includes the number of therapists who have treated the client, the begin and end dates of treatment, the number of continuous sessions the client has attended, the number of sessions the client no-showed, and the client's initial and termination Global Assessment of Functioning (GAF) as judged by the therapist for that course of treatment. Most pertinent to this study, the therapist indicates the categories of reasons for termination in this form. The categories include "mutual agreement to terminate" with "sufficient progress made in treatment" or with "not sufficient progress made in treatment". The categories also include "therapist-initiated termination" with "sufficient progress made in treatment" or with "not sufficient progress made in treatment". Lastly, the categories also allow for "client-initiated termination" "with or without notice" with "sufficient progress made in treatment" or with "not sufficient progress made in treatment" or "coincided with transfer to another counselor".

Although studies in the dropout research literature vary in their definition of client dropout, therapists' assessment of individual client's readiness to terminate is seen as a more sophisticated measure of therapeutic progress or completion. Despite reliability concerns, researchers believe that therapist judgment is the best available way to identify or define dropouts for its ability to distinguish clients who have made adequate therapeutic gains from ones who have not upon treatment termination (Pekarik,

1985b). Reviews have found therapist judgment and classification of termination to be the most common in research literature (Hatchett & Park, 2003; Lampropoulos et al., 2009).

For the purpose of this study, the therapist's judgment of "client-initiated termination" with "not sufficient progress made in treatment" was accepted as treatment dropout. Following other researchers' recommendation in dealing with the failure to return after semester break (Hatchett & Park, 2003), failure to return with the inter-semester transfer to another therapist (usually due to the end of the current therapist's training at the CAC) was also considered dropout. This classification is reasonably justified for the intention is for the client to continue treatment and is likely based on the therapist's judgment of a still-present need.

Demographic Information

Individuals seeking services at the CAC provide demographic information during the telephone pre-screening and intake processes. This information includes client age, gender, ethnicity, education level, employment status, and household income level which is captured on the Telephone Screening Evaluation and Intake Questionnaire – Adult Personal History forms (Appendices D and E) in the client chart. Household income level is classified as one of four levels by percentage multipliers of the designated poverty level: 100% (at poverty level or below), 150%, 185% and 200% or more. As a point of reference, in 2010, federal guidelines designated the poverty threshold to be an annual income of $10,830 for an individual and $22,050 for a household of four (Delayed update of the HHS poverty guidelines for the remainder of

2010, 2010). Employment status was coded as employed, homemaking, student, or unemployed based on client-provided information. For this study, client education level was coded in five rank-ordered levels: some high school or less, high school graduate, some college, college graduate, and some graduate school or more.

Analyses

The purpose of this study was to examine various correlates of psychotherapy dropout. The dependent variable of Termination Category is dichotomous, either ending treatment by dropout or by appropriate termination, and was modeled with binary logistic regression. The basis of this statistical method is the natural logarithm of the odds ratio of belonging to either of two criterion groups. In this case, the log odds of a client's dropping out of treatment and terminating appropriately were regressed on the interested continuous and ordinal independent variables. The primary assumption of logistic regression is the binomial distribution of errors equal to the difference between the actual outcome and the predicted outcome. This assumption is commonly considered robust as long as the sample is random and the observations are independent from each other (Peng, Lee, & Ingersoll, 2002). Moreover, assumption-checking can be accomplished through model fit statistics such as the Hosmer-Lemeshow test (2000).

The primary independent variables for this study were OQ total and subscale (Symptom Distress, Interpersonal Relations, and Social Role) scores. Particularly of interest are features in the OQ score patterns over the final four sessions – to assess the state of the clients in the approximate month leading to their treatment termination. The independent variable Ending Fluctuation of treatment progress was approximated with

the standard deviations of OQ scores for the final four sessions for each subject to

provide an indication of the stability of the subject's level of distress and dysfunction.

Another independent variable Ending Outcome of treatment was calculated as the simple

averages of OQ scores for the final four sessions to provide a gauge of the subject's

mental wellbeing in the weeks leading to ending treatment. Course-of-Treatment

Improvement was computed as the difference between Ending Outcome and the first

available OQ measurement at the beginning of treatment for each client. Also included

as an independent variable to evaluate its interactions was each subject's treatment

duration, which was represented with Number of Sessions recorded. Finally, to explore

interaction from client characteristics, educational attainment was included as a

representative intrinsic client variable for its significance found in prior treatment

dropout research and its availability in this archival data set. This independent variable

was coded in five rank-ordered levels on an ordinal scale based on client provided

information. Initial data preparation involved the computation of some of these

independent variables. Table 1 summarizes variables of this study.

The initial data set consisted of 2,330 OQ-recorded sessions for 235 clients.

Eighty-five out of the 2,330 observations were on clients from whom fewer than four

sessions of OQ measurements were obtained, even though they had attended at least the

initial four sessions. Since the quantity of missing OQ data was not considered extensive,

the 85 observations were removed. After the removal of data from these clients, 2,032

observations on 144 clients were available for analysis. For models involving client

Educational Attainment as an independent variable, information on education level for

Table 1
Research Variables

	Variable	Measurement	Measurement Level
Independent	Ending Fluctuation of Treatment Progress	Standard deviation of final four sessions' OQ Total and Subscale scores	Interval scale
	Ending Outcome of Treatment	Average of final four sessions' OQ Total and Subscale scores	Interval scale
	Course-of-Treatment Improvement	Difference between first session's and average of final four sessions' OQ Total and Subscale scores	Interval scale
	Number of Sessions Attended	Recorded attendance	Interval scale
	Educational Attainment	Coded level of education	Some High School or Less
			High School Graduate
			Some College
			College Graduate
			Some Graduate School or More
Dependent	Termination Category	Therapist classification	Dropout Termination
			Appropriate Termination

eight dropouts and five appropriate terminators was not available. Since the number of

subjects missing this information constituted less than 10% of the sampled population

and the ratio between dropouts and appropriate terminators within the missing group was

not egregiously different from the ratio in the entire sample, subjects with missing

Educational Attainment information were deleted in these analyses. Models involving

Educational Attainment and its interactions as independent variables utilized 131

subjects.

Although the literature has not established a specific minimum sample size

requirement for logistic regression, some preliminary guidance is available (Peng, So,

Stage, & St. John, 2002). For an adequate sample size, some researchers have

extrapolated from guidelines for general linear regression and recommended the ratio of

ten subjects to each independent variable and a minimum of 50 observations (Peduzzi,

Concato, Kemper, Holford, & Feinstein, 1996; Peng, Lee, et al., 2002). The most

complex model in this study involved seven independent variables, including

interactions. At 144 or 131 subjects, this study's sample exceeded the recommendation

and was considered reasonably adequate.

All statistical analysis was performed in SAS, Version 9.2. Relationships were

considered statistically significant if $p < .05$, two-tailed. When evaluating interactions

with a continuous variable, the effect was treated as continuous, and the effect at each

quartile was examined. For interactions with a categorical variable, the effect of each

variable at different levels of the categorical variable was considered. For example, for

education, each level of education was examined.

Primary analyses were conducted for Total OQ and repeated for each of the

subscales of Symptom Distress (SD), Interpersonal Relations (IR), and Social Roles

(SR). Models were assessed for lack-of-fit with the Hosmer-Lemeshow test. This test

essentially divides the data set into ten subsets, ordered by the predicted probabilities of

being in individual groups, and then runs a chi-square test between the observed and

expected number of cases in each category (dropout or appropriate termination).

CHAPTER IV

RESULTS

Descriptive Statistics of the Sample

Demographic Characteristics

The study's sample consisted of anonymous data from archival charts for 144 psychotherapy clients at Texas A&M Counseling and Assessment Clinic. The sampled clients' age range was from 18 to 66. Female clients comprised approximately two-thirds of the subjects. Clients who self-identified as White were the majority (66%) of the subjects; and Hispanics (25%) comprised the largest group of minority clients. Approximately one-third of the sampled clients had some level of college education. Out of all the sampled clients, almost one-fifth self-described to be unemployed. Table 2 presents the descriptive statistics for other sample characteristics which was gathered as part of the demographic information recorded for this study.

Clinical Characteristics

Most of the sampled clients had attended 84 or fewer therapy sessions with a median of 13 sessions, even though the maximum number of attended sessions was 248 (registered by one client). Out of this group of clients, slightly over half (55%) were classified as dropouts whereas the rest were considered appropriate terminators. Although higher than the 50% dropout average in public clinic settings reported by Wierzbicki and Pekarik (1993), this dropout rate fell within the 31% – 56% range reported in Baekeland and Lundwall's (1975) research review. The mean initial Total OQ score (78.59) was well within the clinical range of 64 or above. On average, these

Table 2
Sample Demographic Characteristics

		Mean	Standard Deviation
Age		34.37	11.88

		Frequency	Percentage
Gender	Male	48	33.3
	Female	96	66.7
Ethnicity	White	95	66.0
	Hispanic	36	25.0
	Black	6	4.2
	Multi-Ethnic or Other	7	4.8
Education Level	Some High School or Less	18	12.5
	High School Graduate	26	18.1
	Some College	48	33.3
	College Graduate	21	14.6
	Some Graduate School or More	18	12.5
	Other or No Information	13	9.0
Employment Status	Employed	71	49.3
	Homemaker	13	9.0
	Student	25	17.4
	Unemployed	28	19.4
	Other or No Information	7	4.9
Marital Status	Single	56	38.9
	Married	49	34.0
	Separated	10	6.9
	Divorced	17	11.8
	Widowed	3	2.1
	Remarried	3	2.1
	Other or No Information	6	4.2
Household Income	≤ 100% of Poverty Level	85	59.0
	101 – 150% of Poverty Level	20	13.9
	151 – 185% of Poverty Level	11	7.6
	≥ 200% of Poverty Level	28	19.4

clients improved over the duration of their treatment; their mean final Total OQ

measurement (64.35) approached the score range of 63 or below for non-clinical

community members. At the initiation of their treatment, almost three-quarters (72%) of

the clients began with clinical level of distress and dysfunction. Just prior to their

termination, dropout or appropriate, just over half (54%) of all clients were at clinical

level. Table 3 summarizes these clinical characteristics of the studied sample.

Table 3
Sample Clinical Characteristics

		Median	Mean	Standard Deviation
Initial Total OQ		78	78.59	23.96
Final Total OQ		66	64.35	25.39
			Frequency	Percentage
Clinical Level Total OQ ($\geq$ 64)	Initial		103	71.5
	Final		77	53.5
		Median	Minimum	Maximum
Number of Sessions Attended		13	4	[†]248
			Frequency	Percentage
Termination Category	Dropout termination		79	54.9
	Appropriate termination		65	45.1

[†]The maximum number of 248 sessions attended was registered in one client chart; the next highest number of sessions attended was 84.

Logistic Regression

Model 1 – Analysis of Treatment Dropout Predicted with Total OQ Score Pattern

The first group of logistic regression models focused on treatment response pattern features as predictors of psychotherapy dropout. The first model was fitted to the data to assess the relationship between the likelihood of ending treatment by dropout and features in client Total OQ score pattern. The independent variables were Ending Fluctuation in Total OQ, Ending Outcome in Total OQ, Course-of-Treatment Improvement in Total OQ, Number of Sessions, and Interaction between Course-of-Treatment Improvement in Total OQ and Number of Sessions. The results are summarized in Table 4. Illustrative of an alternate expression applicable also to other regression models to follow, this logistic regression can be represented with this equation:

Predicted logit of Treatment Dropout = -0.9032 + (-0.0007) * EndingFluctuationTotalOQ + (0.0208) * EndingOutcomeTotalOQ + (-0.0121) * CourseOfTreatmentImproveTotalOQ + (-0.0100) * NumberSessions + (0.0004) * CourseOfTreatmentImproveTotalOQ * NumberSessions.

Table 4

*Model 1 – Logistic Regression Analysis of Treatment Dropout Predicted with Total OQ Score Pattern*

Predictor	B	*SE* β	Wald χ^2	df	*p*	Odds Ratio
Intercept	-0.9032	0.6681	1.8276	1	0.1764	0.4053
EndingFluctuationTotalOQ	-0.0007	0.0289	0.0006	1	0.9797	0.9993
EndingOutcomeTotalOQ	0.0208	0.0087	5.6814	1	0.0171	1.0210
CourseOfTreatmentImprove TotalOQ	-0.0121	0.0152	0.6397	1	0.4238	0.9880
NumberSessions	-0.0100	0.0104	0.9301	1	0.3348	0.9900
CourseOfTreatmentImprove TotalOQ*NumberSessions	0.0004	0.0004	0.8402	1	0.3593	1.0004

Test			χ^2	df	*p*	
Overall Model Evaluation						
Likelihood Ratio Test			9.2263	5	0.1004	
Goodness-of-Fit Test						
Hosmer & Lemeshow			15.9501	8	0.0431	

While qualitative notation of the variables' effects should be considered judiciously in the context of statistical significance and effect size, the following interpretation serves as an illustrative example for other models to follow. The first model's analysis found the log of the odds of a client's ending treatment by dropout to be negatively related to Ending Fluctuation in Total OQ, Course-of-Treatment Improvement in Total OQ, and Number of Sessions attended. At the same time, the log of the odds of a client's dropping out appeared to be positively related to Ending Outcome in Total OQ and Interaction between Course-of-Treatment Improvement in

Total OQ and Number of Sessions attended. In other words, a client was more likely to drop out of treatment when the client was more stable in his or her overall state of psychosocial health (smaller fluctuation in Total OQ scores), more symptomatic or dysfunctional (more elevated Total OQ scores), and less improved relative to the beginning of treatment and when he or she had been in treatment not as long (fewer sessions attended). Additionally, although the increase in the likelihood of a client's termination by dropout was generally associated with less course-of-treatment improvement measured in Total OQ, this effect appeared to diminish as the duration of treatment increased (more sessions attended) (see Figure 1). Moreover, each main effect of variables involved in the interaction term is reported with the other variable set to zero and should be interpreted cautiously.

The statistical significance of individual regression coefficients for the independent variables was tested with the Wald chi-square statistic. As shown in Table 4, the only individual predictor of treatment dropout significant at $p < .05$ was Ending Outcome in Total OQ (OR = 1.021, 95% CI = 1.004 – 1.039, $p = .017$). Holding other predictors constant, a one-point increase in Ending Outcome in Total OQ was associated with an increase in the odds of dropout by a multiple of 1.021 on average. On the other hand, Ending Fluctuation in Total OQ, Course-of-Treatment Improvement in Total OQ, and Number of Sessions attended were all nonsignificant; a single-point increase in each of these variables was associated with a change in the odds of dropout by an averaged multiple ranging from 0.988 to 0.999. As indicated in Table 4, any change in Interaction between Course-of-Treatment Improvement in Total OQ and Number of Sessions
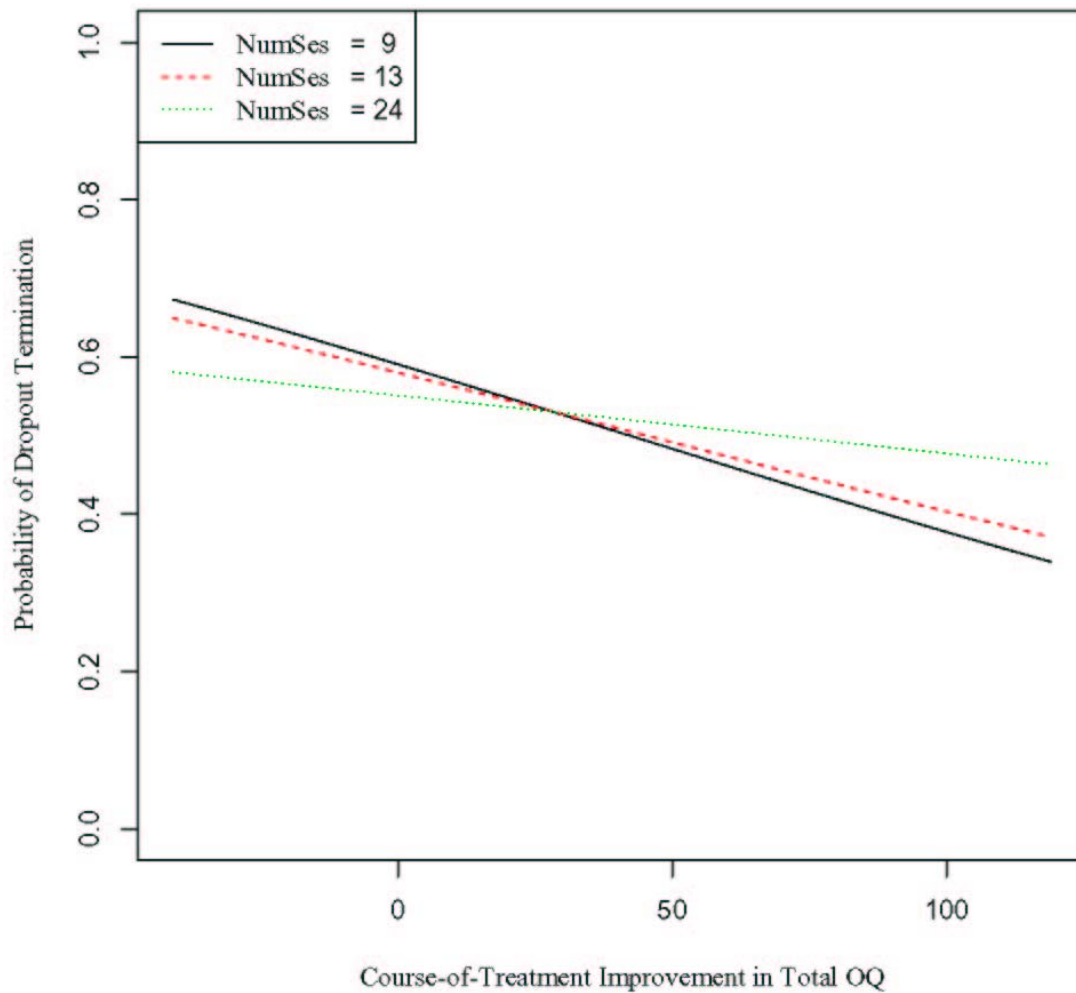
Figure 1. Probabilities of dropout predicted with course-of-treatment improvement in Total OQ at different numbers of sessions attended with other variables set to their means

attended also had a nonsignificant and negligible association with the change in the odds of dropout.

In evaluating this model overall, the data-fitting effectiveness of the full model is compared to that of the intercept-only (null) model. The null model contains no

independent variable and predicts all sampled data points to have the outcome associated with the greater number of observations (Peng, Lee, et al., 2002). In this case, the null model predicted all samples to have dropout termination. The decrement of calculated -2 log likelihood (-2LL) from the null model (198.263) to the full model (189.037) suggested that the full model with all the predictors presented somewhat of an improvement over the baseline null model in reducing the amount of variance to be explained. The likelihood ratio test ($\chi^2 = 9.226$, $df = 5$, $p = .100$) indicated that the overall model's improvement to data-fitting effectiveness was nonsignificant at $p < .05$ level, but just marginally.

The fit of the model against observed outcomes in the actual data was assessed with the Hosmer-Lemeshow test as a goodness-of-fit statistic. This test divides the data set into 10 subsets, ordered by the predicted probabilities of being in one group, and then runs a chi-square test between the observed and expected number of cases in each subset. The Hosmer-Lemeshow test raised some concern with this particular model fit ($\chi^2 = 15.950$, $df = 8$, $p = .043$); however, the test was minimally within the set limit of significance. Furthermore, the concern with the model fit could be reasonably attributed to the potential outlier who registered the maximum 248 attended therapy sessions while no other subjects registered more than 84. In assessing this potential outlier's effect on analysis results, the logistic regressions were re-run with that particular data point removed. No drastic changes to the analysis results were observed in the diagnostic analysis except for the improvement in the model fit for Model 1. However, omitting the

outlier, the Hosmer-Lemeshow test now indicated no significant differences between observed and model-predicted data points ($\chi^2 = 9.364$, $df = 8$, $p = .313$).

In validating the predicted probabilities, the Goodman-Kruskal Gamma statistic indicated that 30% fewer errors were made in predicting dropout termination using the estimated probabilities than by chance alone (Peng, Lee, et al., 2002). The c-statistic showed that for 65% of all possible combination pairs of clients – one dropped out of treatment and the other terminated appropriately, this model correctly assigned a higher probability to those who dropped out of treatment. A .5 value in c-statistic would mean that the model was no better than random assignment of observations to outcome categories while a value of 1 would mean that the model correctly assigned higher probabilities to all observations actually categorized as dropouts (Peng, Lee, et al., 2002). For the purpose of evaluating multiple models fitted to the same data set, the best model should be associated with the highest c-statistic (Peng, Lee, et al., 2002).

Model 2 – Analysis of Treatment Dropout Predicted with OQ Symptom Distress Subscale Score Pattern

The second logistic regression model was fitted to the data to assess the relationship between the likelihood of ending treatment by dropout and features in client OQ Symptom Distress subscale score pattern. The independent variables were Ending Fluctuation in Symptom Distress OQ, Ending Outcome in Symptom Distress OQ, Course-of-Treatment Improvement in Symptom Distress OQ, Number of Sessions, and Interaction between Course-of-Treatment Improvement in Symptom Distress OQ and

Number of Sessions. The results are summarized in Table 5. Additionally, the effects of

the interaction term are illustrated in Figure 2.

Table 5
Model 2 – Logistic Regression Analysis of Treatment Dropout Predicted with OQ Symptom Distress Subscale Score Pattern

Predictor	β	*SE* β	Wald χ^2	*df*	*p*	Odds Ratio
Intercept	-0.4611	0.6020	0.5866	1	0.4437	0.6306
EndingFluctuationSymDis	-0.0267	0.0433	0.3808	1	0.5372	0.9737
EndingOutcomeSymDis	0.0293	0.0134	4.8211	1	0.0281	1.0297
CouseOfTreatmentImprove SymDis	-0.0290	0.0242	1.4407	1	0.2300	0.9714
NumberSessions	-0.0080	0.0107	0.5635	1	0.4528	0.9920
CouseOfTreatmentImprove SymDis*NumberSessions	0.0006	0.0007	0.7203	1	0.3960	1.0006

Test	χ^2	*df*	*p*
Overall Model Evaluation			
Likelihood Ratio Test	10.5145	5	0.0619
Goodness-of-Fit Test			
Hosmer & Lemeshow	7.9888	8	0.4346

Figure 2. Probabilities of dropout predicted with course-of-treatment improvement in Symptom Distress OQ at different numbers of sessions attended with other variables set to their means

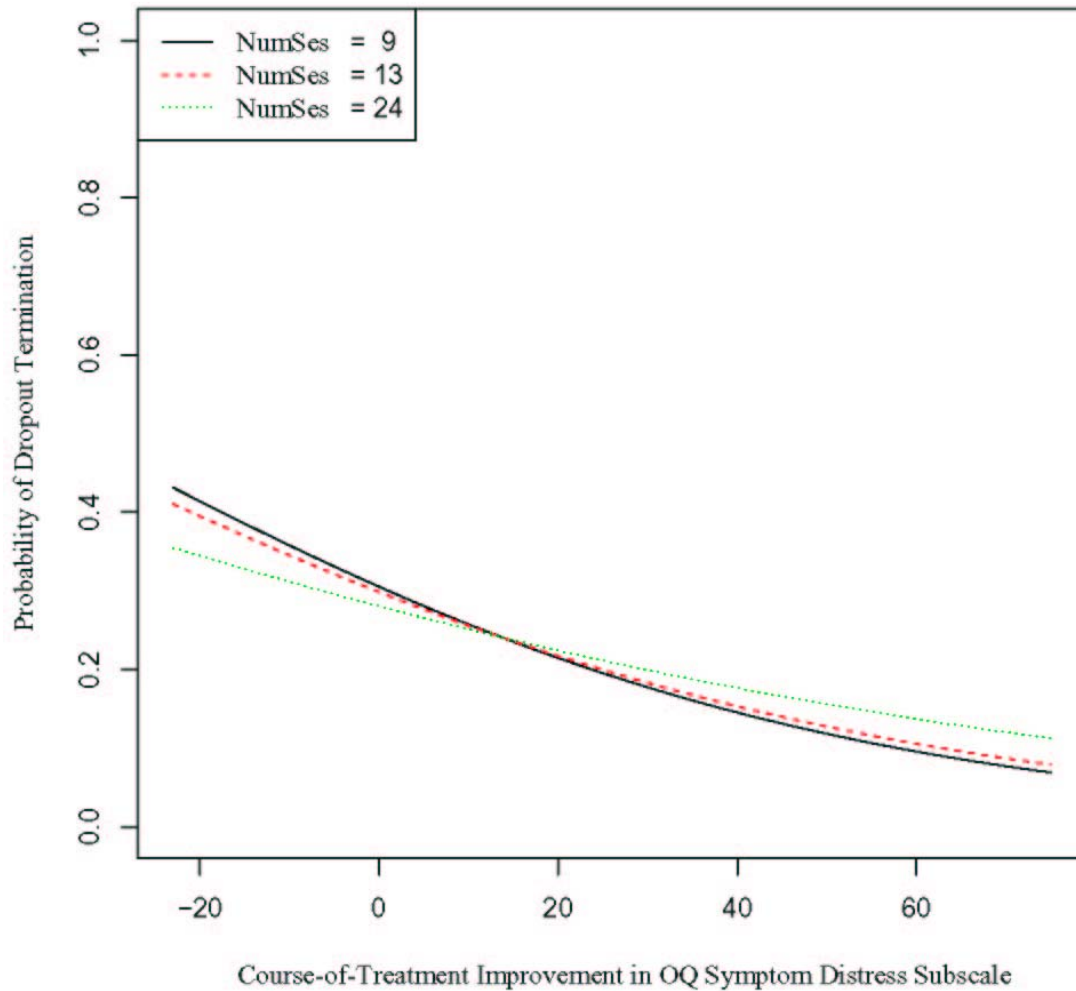*Model 3 – Analysis of Treatment Dropout Predicted with OQ Interpersonal Relations*

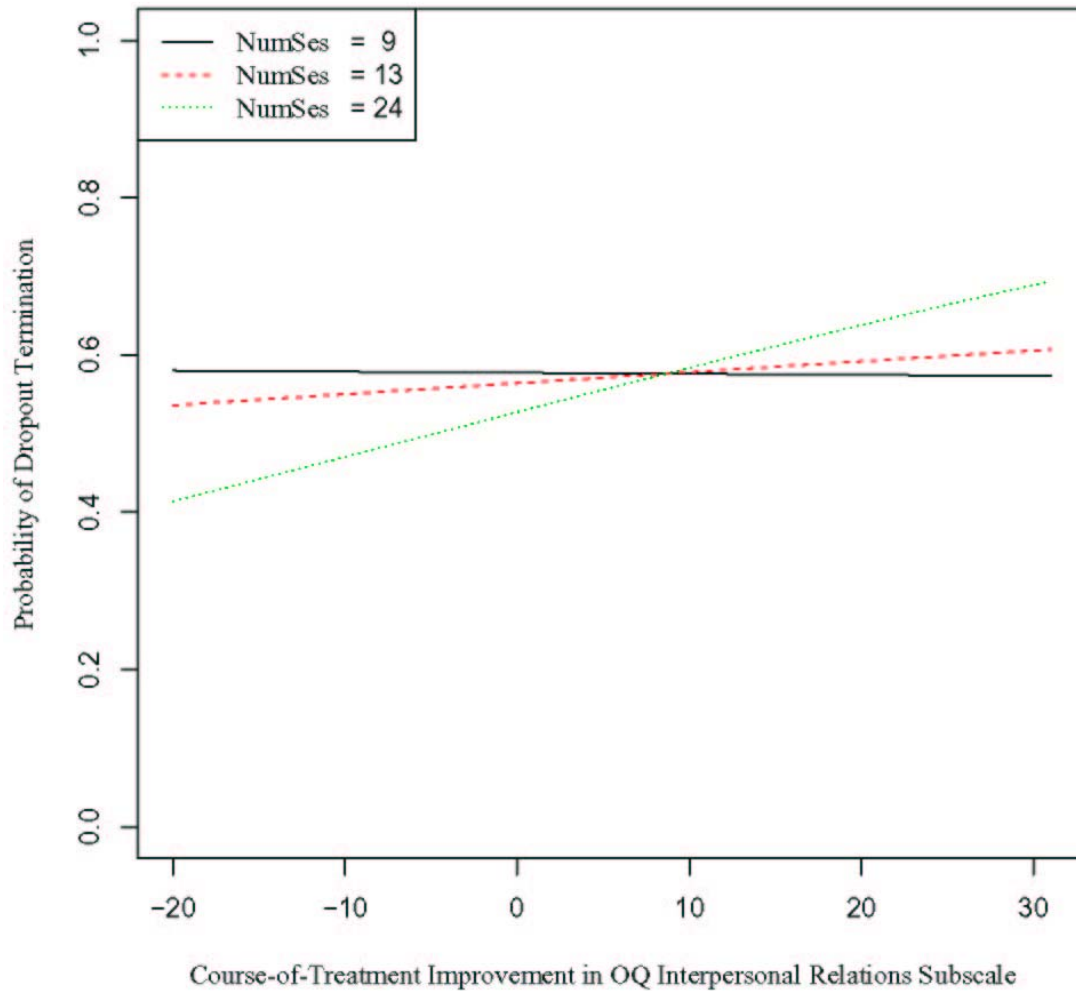*Subscale Score Pattern*

The third logistic regression model was fitted to the data to assess the

relationship between the likelihood of ending treatment by dropout and features in client

OQ Interpersonal Relations subscale score pattern. The independent variables were

Ending Fluctuation in Interpersonal Relations OQ, Ending Outcome in Interpersonal

Relations OQ, Course-of-Treatment Improvement in Interpersonal Relations OQ,

Number of Sessions, and interaction between Course-of-Treatment Improvement in

Interpersonal Relations OQ and Number of Sessions. The results are summarized in

Table 6. Figure 3 illustrates the effects of the interaction term.

Table 6
Model 3 – Logistic Regression Analysis of Treatment Dropout Predicted with Interpersonal Relations OQ Score Pattern

Predictor	β	*SE* β	Wald χ^2	*df*	*p*	Odds Ratio
Intercept	-1.5061	0.7012	4.6141	1	0.0317	0.2218
EndingFluctuationIntRel	0.1756	0.1111	2.5010	1	0.1138	1.1920
EndingOutcomeIntRel	0.0856	0.0334	6.5689	1	0.0104	1.0894
CouseOfTreatmentImprove IntRel	-0.0146	0.0456	0.1031	1	0.7481	0.9855
NumberSessions	-0.0135	0.0121	1.2588	1	0.2619	0.9866
CouseOfTreatmentImprove IntRel*NumberSessions	0.0016	0.0013	1.3702	1	0.2418	1.0016

Test	χ^2	*df*	*p*		
Overall Model Evaluation Likelihood Ratio Test	12.7449	5	0.0259		
Goodness-of-Fit Test Hosmer & Lemeshow	6.9833	8	0.5384		

Figure 3. Probabilities of dropout predicted with course-of-treatment improvement in Interpersonal Relations OQ at different numbers of sessions attended with other variables set to their means

Model 4 – Analysis of Treatment Dropout Predicted with OQ Social Role Subscale Score
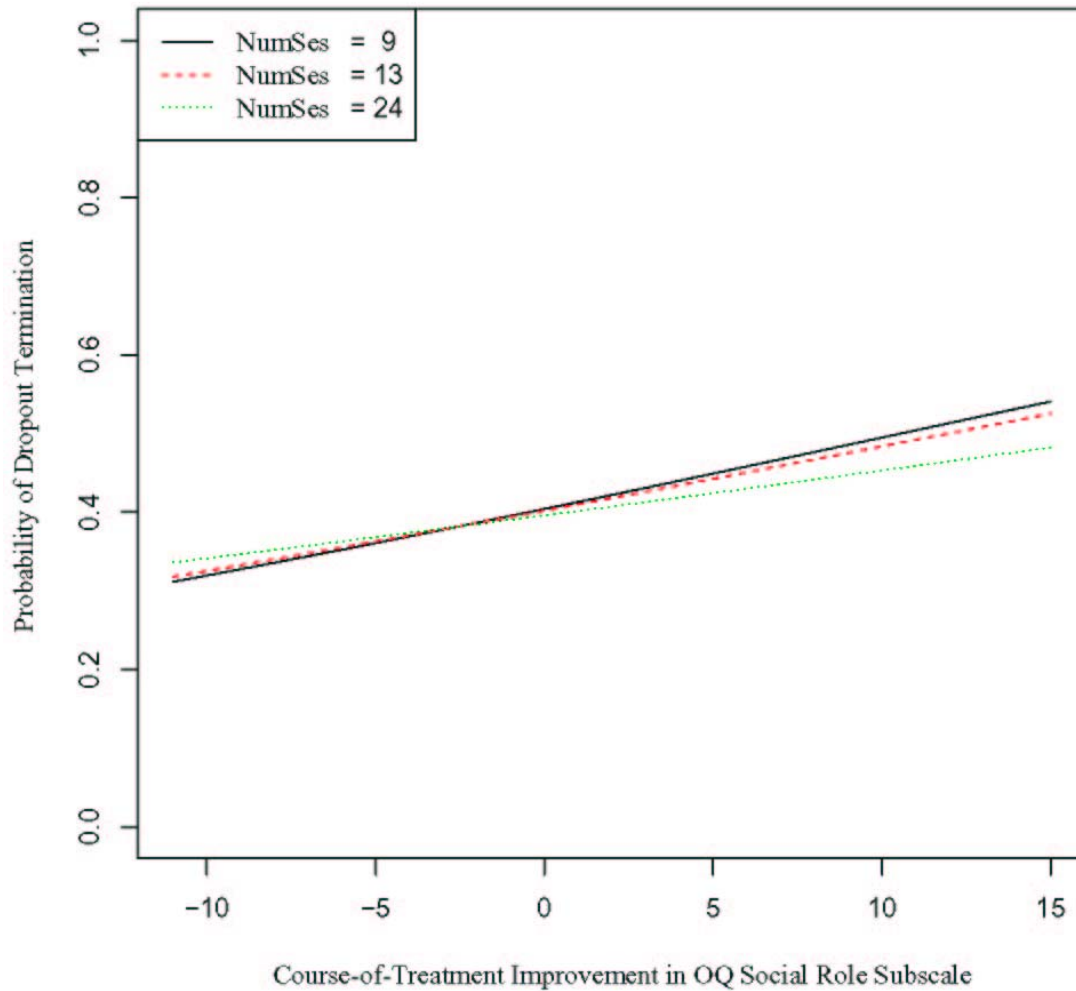
Pattern Features

The fourth logistic regression model was fitted to the data to assess the

relationship between the likelihood of ending treatment by dropout and features in client

OQ Social Role subscale score pattern. The independent variables were Ending

Fluctuation in Social Role OQ, Ending Outcome in Social Role OQ, Course-of-

Treatment Improvement in Social Role OQ, Number of Sessions, and Interaction

between Course-of-Treatment Improvement in Social Role OQ and Number of Sessions.

The results are summarized in Table 7; and the effects of the interaction term are

illustrated in Figure 4.

Table 7
Model 4 – Logistic Regression Analysis of Treatment Dropout Predicted with Social Role OQ Score Pattern Features

Predictor	β	*SE* β	Wald χ^2	*df*	*p*	Odds Ratio
Intercept	-0.2121	0.5457	0.1511	1	0.6975	0.8089
EndingFluctuationSocRol	-0.1012	0.1260	0.6460	1	0.4215	0.9038
EndingOutcomeSocRol	0.0548	0.0392	1.9475	1	0.1629	1.0563
CouseOfTreatmentImprove SocRol	0.0448	0.0595	0.5672	1	0.4514	1.0458
NumberSessions	-0.0023	0.0073	0.0968	1	0.7557	0.9977
CouseOfTreatmentImprove SocRol*NumberSessions	-0.0009	0.0019	0.2281	1	0.6330	0.9991

Test			χ^2	*df*	*p*	
Overall Model Evaluation Likelihood Ratio Test			2.9019	5	0.7151	
Goodness-of-Fit Test Hosmer & Lemeshow			6.9130	8	0.5460	

Figure 4. Probabilities of dropout predicted with course-of-treatment improvement in Social Role OQ at different numbers of sessions attended with other variables set to their means

Model 5 – Analysis of Treatment Dropout Predicted with Total OQ Score Pattern

*Features and Educational Attainment*

In addition to the treatment response pattern features evaluated in previous

models, the second group of logistic regression models incorporated the client

characteristic variable of educational attainment and its interaction as predictors. The fifth logistic regression model was fitted to the data to assess the relationship between the likelihood of ending treatment by dropout and features in client Total OQ score pattern along with the client characteristic of educational attainment. The independent variables were Ending Fluctuation in Total OQ, Ending Outcome in Total OQ, Course-of-Treatment Improvement in Total OQ, Number of Sessions, Interaction between Course-of-Treatment Improvement in Total OQ and Number of Sessions, Educational Attainment, and Interaction between Ending Fluctuation in Total OQ scores and Educational Attainment. The results are summarized in Table 8.

The analysis results related to individual predictors of Total OQ pattern features can be interpreted in a similar fashion as corresponding predictors are in Model 1. Namely, a client was more likely to drop out of treatment when the client was more stable in his or her overall state of psychosocial health (smaller fluctuation in Total OQ scores), more symptomatic or dysfunctional (more elevated Total OQ scores), and more improved relative to the beginning of treatment and when he or she had been in treatment not as long (fewer sessions attended). Moreover, the observed positive association between increasing likelihood dropout termination and increasing course-of-treatment improvement appeared to strengthen somewhat as the duration of treatment increased (more sessions attended) (see Figure 5). Similar to previous reporting, the main effects of variables involved in the interaction term are reported with the other variable in the interaction set to zero and should be interpreted cautiously.

Table 8

Model 5 – Logistic Regression Analysis of Treatment Dropout Predicted with Total OQ Score Pattern Features and Educational Attainment

Predictor	β	*SE* β	Wald χ²	*df*	*p*	Odds Ratio
Intercept	-1.2536	0.8928	1.9712	1	0.1603	0.2855
EndingFluctuationTotalOQ	-0.0628	0.0520	1.4592	1	0.2271	0.9391
EndingOutcomeTotalOQ	0.0291	0.0109	7.1006	1	0.0077	1.0295
CourseOfTreatmentImprove TotalOQ	0.0020	0.0175	0.0131	1	0.9087	1.0020
NumberSessions	-0.0049	0.0124	0.1563	1	0.6926	0.9951
CourseOfTreatmentImprove TotalOQ*NumberSessions	0.0001	0.0005	0.0938	1	0.7594	1.0001
Educational Attainment						
Education: High School	-0.8531	0.7865	1.1763	1	0.2781	0.4261
Education: Some College	-0.2076	0.6098	0.1159	1	0.7335	0.8125
Education: College Degree	-1.0556	0.7303	2.0891	1	0.1484	0.3480
Education: Graduate Studies	0.2991	0.9438	0.1005	1	0.7513	1.3486
EndingFluctuationTotalOQ* EducationalAttainment						
EndingFluctuationTotalOQ* Education: High School	0.1758	0.0957	3.3723	1	0.0663	1.1922
EndingFluctuationTotalOQ* Education: Some College	0.0595	0.0664	0.8029	1	0.3702	1.0613
EndingFluctuationTotalOQ* Education: College Degree	0.0468	0.0723	0.4193	1	0.5173	1.0479
EndingFluctuationTotalOQ* Education: Graduate Studies	-0.2093	0.1340	2.4391	1	0.1183	0.8112

| Test			χ²	*df*	*p*	
Overall Model Evaluation						
Likelihood Ratio Test			28.4417	13	0.0078	
Goodness-of-Fit Test						
Hosmer & Lemeshow			10.3708	8	0.2400	
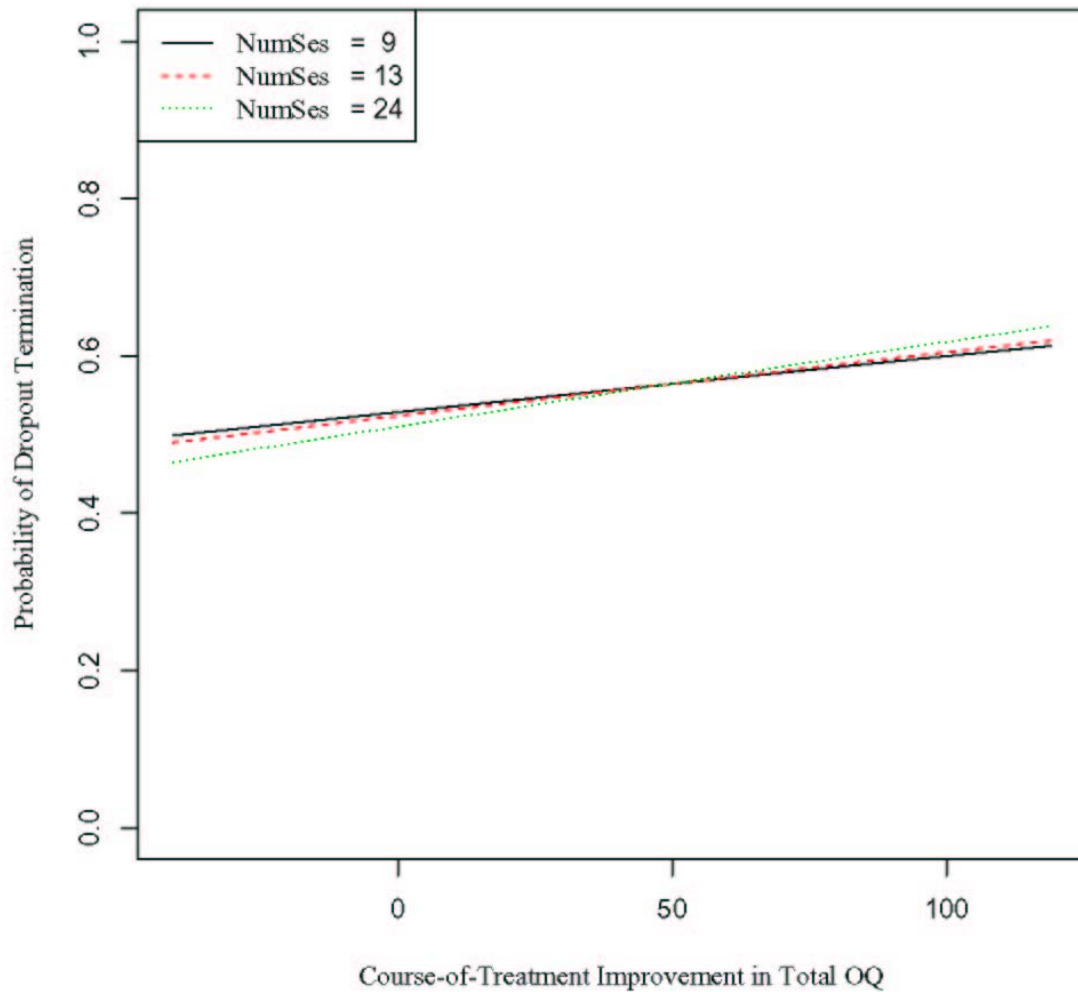
Figure 5. Probabilities of dropout predicted with course-of-treatment improvement in Total OQ at different numbers of sessions attended with other variables set to their means

Results related to the independent variable of client Educational Attainment

added to this model of dropout prediction. Also to be taking in the context of relevant

statistical significance and effect size to be discussed below, the following provides an

illustrative interpretation for the subsequent models' analysis results. Comparing to a client with educational attainment less than high school completion, a client was less likely to drop out of treatment if he or she had completed high school, received some college level education, or attained a college degree and more likely to drop out if he or she had received graduate studies education. Again, these main effects are to be considered cautiously for the variable of client Educational Attainment was also involved in an interaction term in this model and the reported main effect is only valid with the variable of Ending Fluctuation set to zero.

Additionally, as illustrated in Figure 6, for clients with less than high school educational attainment, higher ending fluctuation in Total OQ was associated with lower probability of dropout; and this relationship was consistent across all levels of ending fluctuation. For clients with high school education, the effect was opposite in direction and diminished at higher levels of ending fluctuation in Total OQ. For those with graduate studies education, higher levels of ending Total OQ fluctuation were associated with lower probability of dropout; but this effect was much stronger at low levels of ending fluctuation in Total OQ than at higher levels. For clients with some college education and clients who completed college, the effect of ending Total OQ fluctuation on dropout was minimal.

The statistical significance of individual regression coefficients for the predictor variables was again tested using the Wald chi-square statistic. As indicated in Table 8, the only individual predictor of dropout termination significant at $p < .05$ was Ending Outcome in Total OQ (OR = 1.030, 95% CI = 1.008 – 1.052, $p = .008$). Holding other
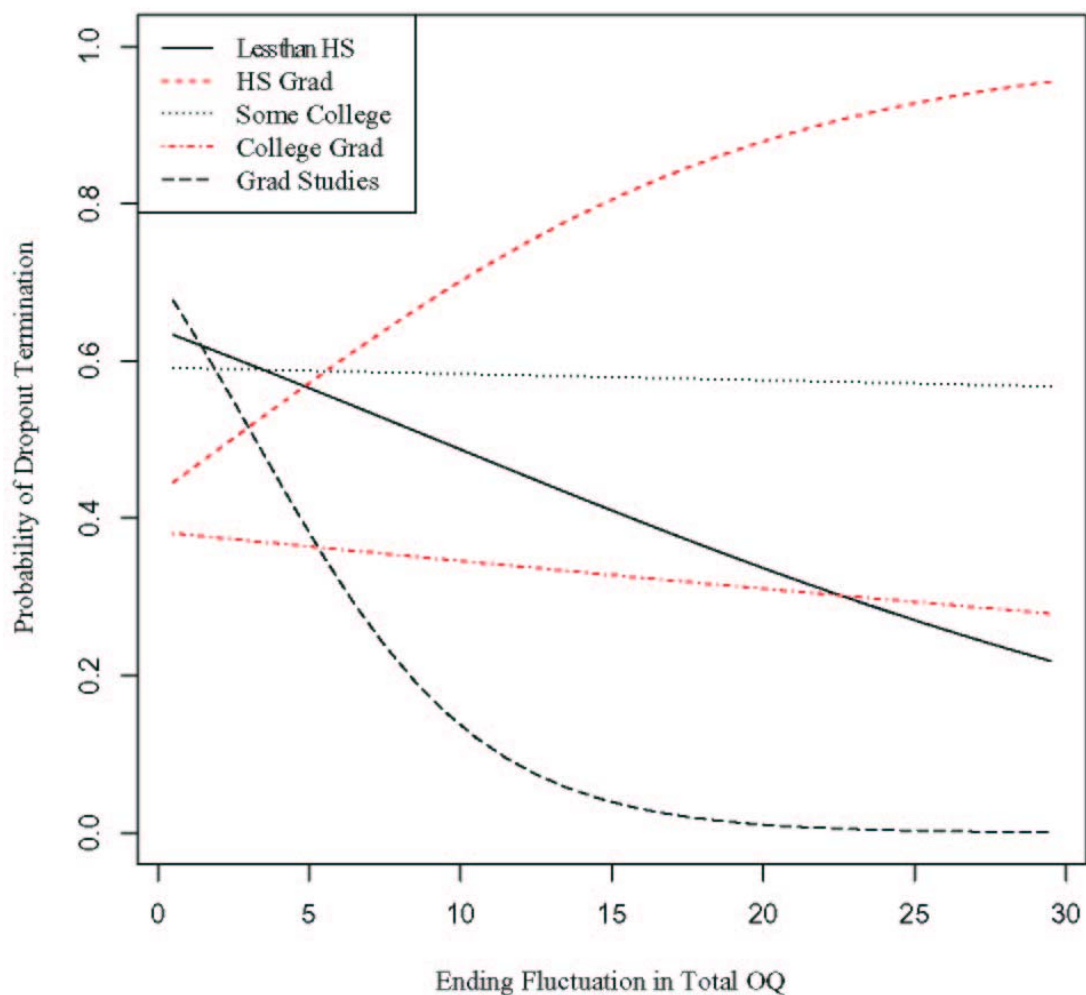
Figure 6. Probabilities of dropout predicted with ending fluctuation in Total OQ and levels of educational attainment with other variables set to their means

predictors constant, a one-point increase in Ending Outcome in Total OQ was associated with an increase in the odds of dropout by a multiple of 1.030 on average. On the other hand, Ending Fluctuation in Total OQ, Course-of-Treatment Improvement in Total OQ, and Number of Sessions attended were all nonsignificant; a single-point increase in each

of these variables was associated with a change in the odds of dropout by an averaged

multiple ranging from 0.939 to 1.002. As reported in Table 8, any change in Interaction

between Course-of-Treatment Improvement in Total OQ and Number of Sessions

attended also had a nonsignificant and negligible association with the change in the odds

of dropout. Furthermore, although client Educational Attainment did not appear to be a

variable significant at $p < .05$, relative to having less-than-high school education, having

any other level of educational attainment had a notable effect on changes in the

probabilities of dropout. These other educational levels were associated with the

decrease in dropout probabilities by multiples ranging from 0.813 to 0.348 and the

increase by a multiple of 1.349 on average, with the variable of Ending Fluctuation set to

zero. Additionally, the interaction between Ending Fluctuation in Total OQ and

Educational Attainment at each educational attainment level was nonsignificant.

The overall model was significant at $p < .05$, as indicated with the likelihood

ratio test ($\chi^2 = 28.442$, $df = 13$, $p = .008$). The decrement in -2LL from intercept-only

model (180.680) to the intercept-plus-covariates model (152.238) suggested that this full

model with all the predictors was significantly more effective than the null model.

The Hosmer-Lemeshow test revealed no concern with the model fit ($\chi^2 = 10.371$,

$df = 8$, $p = .240$). The observed termination outcomes in the actual data were within the

ranges of results expected with the model.

In validating the predicted probabilities, the Goodman-Kruskal Gamma statistic

indicated that 51% fewer errors were made in predicting dropout termination using the

estimated probabilities than by chance alone. The c-statistic showed that this model

correctly assigned a higher probability to those who dropped out of treatment for 75% of all possible combination pairs of clients – one dropped out of treatment and the other terminated appropriately.
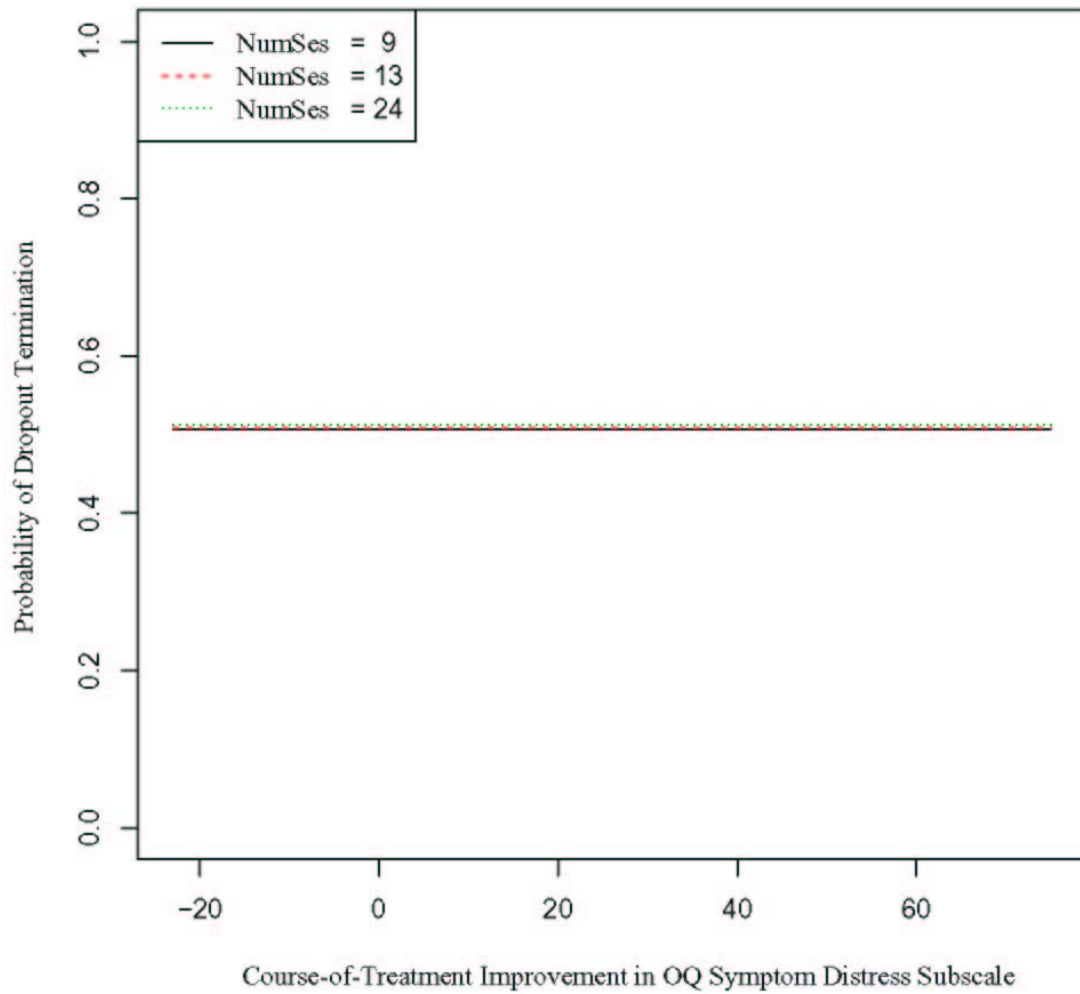
Model 6 – Analysis of Treatment Dropout Predicted with Symptom Distress OQ Score Pattern Features and Educational Attainment

The sixth logistic regression model was fitted to the data to assess the relationship between the likelihood of ending treatment by dropout and features in client Symptom Distress OQ score pattern along with the client characteristic of educational attainment. The independent variables were Ending Fluctuation in Symptom Distress OQ, Ending Outcome in Symptom Distress OQ, Course-of-Treatment Improvement in Symptom Distress OQ, Number of Sessions, Interaction between Course-of-Treatment Improvement in Symptom Distress OQ and Number of Sessions, Educational Attainment, and Interaction between Ending Fluctuation in Symptom Distress OQ scores and Educational Attainment. The results are summarized in Table 9. Additionally, the effects of the interaction terms are illustrated in Figures 7 and 8.
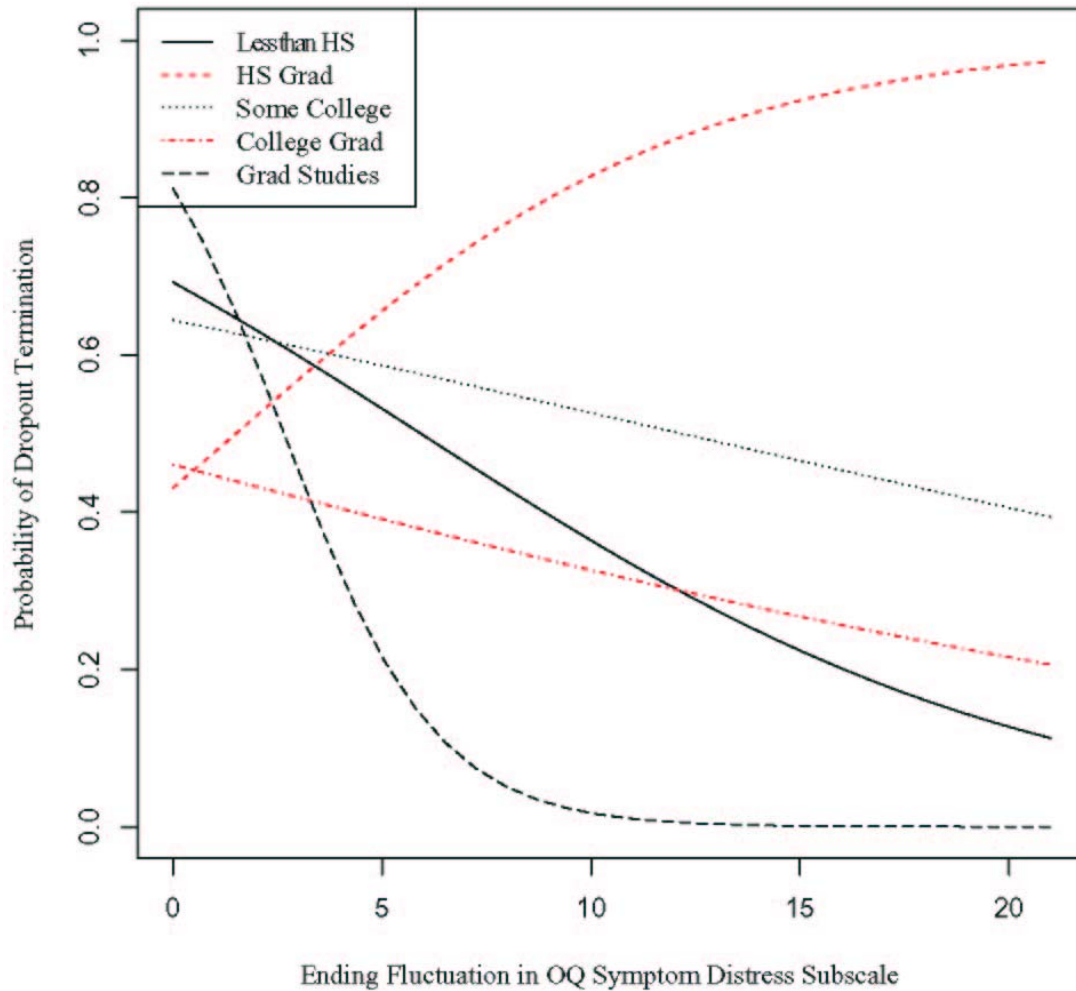
Table 9

Model 6 – Logistic Regression Analysis of Treatment Dropout Predicted with Symptom Distress OQ Score Pattern Features and Educational Attainment

Predictor	β	*SE* β	Wald χ²	*df*	*p*	Odds Ratio
Intercept	-0.4961	0.7856	0.3987	1	0.5277	0.6089
EndingFluctuationSymDis	-0.1369	0.0920	2.2111	1	0.1370	0.8721
EndingOutcomeSymDis	0.0396	0.0162	5.9725	1	0.0145	1.0404
CouseOfTreatmentImprove SymDis	-0.0204	0.0276	0.5482	1	0.4591	0.9798
NumberSessions	-0.0040	0.0131	0.0941	1	0.7591	0.9960
CouseOfTreatmentImprove SymDis*NumberSessions	0.0004	0.0008	0.2614	1	0.6091	1.0004
Educational Attainment						
Education: High School	-1.0897	0.7944	1.8818	1	0.1701	0.3363
Education: Some College	-0.2178	0.6182	0.1241	1	0.7246	0.8043
Education: College Degree	-0.9700	0.7265	1.7829	1	0.1818	0.3791
Education: Graduate Studies	0.6496	1.0390	0.3909	1	0.5318	1.9148
EndingFluctuationSymDis* EducationalAttainment						
EndingFluctuationSymDis* Education: High School	0.3216	0.1601	4.0347	1	0.0446	1.3793
EndingFluctuationSymDis* Education: Some College	0.0881	0.1105	0.6362	1	0.4251	1.0921
EndingFluctuationSymDis* Education: College Degree	0.0803	0.1197	0.4497	1	0.5025	1.0836
EndingFluctuationSymDis* Education: Graduate Studies	-0.4130	0.2615	2.4939	1	0.1143	0.6617

Test			χ²	*df*	*p*	
Overall Model Evaluation						
Likelihood Ratio Test			30.3890	13	0.0041	
Goodness-of-Fit Test						
Hosmer & Lemeshow			7.6289	8	0.4705	

Figure 7. Probabilities of dropout predicted with course-of-treatment improvement in Symptom Distress OQ at different numbers of sessions attended with other variables set to their means

Figure 8. Probabilities of dropout predicted with ending fluctuation in Symptom Distress OQ and levels of educational attainment with other variables set to their means

Model 7 – Analysis of Treatment Dropout Predicted with Interpersonal Relations OQ

Score Pattern Features and Educational Attainment

The seventh logistic regression model was fitted to the data to assess the

relationship between the likelihood of ending treatment by dropout and features in client

Interpersonal Relations OQ score pattern along with the client characteristic of educational attainment. The independent variables were Ending Fluctuation in Interpersonal Relations OQ, Ending Outcome in Interpersonal Relations OQ, Course-of-Treatment Improvement in Interpersonal Relations OQ, Number of Sessions, Interaction between Course-of-Treatment Improvement in Interpersonal Relations OQ and Number of Sessions, Educational Attainment, and Interaction between Ending Fluctuation in Interpersonal Relations OQ scores and Educational Attainment. The results are summarized in Table 10. Figures 9 and 10 illustrate the effects of the interaction terms in this model.

Model 8 – Analysis of Treatment Dropout Predicted with Social Role OQ Score Pattern Features and Educational Attainment

The eighth logistic regression model was fitted to the data to assess the relationship between the likelihood of ending treatment by dropout and features in client Social Role OQ score pattern along with the client characteristic of educational attainment. The independent variables were Ending Fluctuation in Social Role OQ, Ending Outcome in Social Role OQ, Course-of-Treatment Improvement in Social Role OQ, Number of Sessions, Interaction between Course-of-Treatment Improvement in Social Role OQ and Number of Sessions, Educational Attainment, and Interaction

Table 10

Model 7 – Logistic Regression Analysis of Treatment Dropout Predicted with Interpersonal Relations OQ Score Pattern Features and Educational Attainment

Predictor	β	*SE* β	Wald χ²	df	p	Odds Ratio
Intercept	-1.5468	0.8062	3.6808	1	0.0550	0.2129
EndingFluctuationIntRel	0.1154	0.1577	0.5351	1	0.4645	1.1223
EndingOutcomeIntRel	0.0896	0.0377	5.6498	1	0.0175	1.0937
CouseOfTreatmentImprove IntRel	0.0113	0.0513	0.0485	1	0.8257	1.0114
NumberSessions	-0.0118	0.0134	0.7783	1	0.3777	0.9883
CouseOfTreatmentImprove IntRel*NumberSessions	0.0013	0.0015	0.7693	1	0.3804	1.0013
Educational Attainment						
Education: High School	0.0578	0.7336	0.0062	1	0.9372	1.0595
Education: Some College	0.2085	0.6461	0.1041	1	0.7469	1.2318
Education: College Degree	-1.1498	0.8895	1.6709	1	0.1961	0.3167
Education: Graduate Studies	-0.6527	1.0831	0.3632	1	0.5467	0.5206
EndingFluctuationIntRel* EducationalAttainment						
EndingFluctuationIntRel* Education: High School	0.1142	0.2586	0.1952	1	0.6586	1.1210
EndingFluctuationIntRel* Education: Some College	0.0012	0.2160	0.0000	1	0.9954	1.0012
EndingFluctuationIntRel* Education: College Degree	0.1612	0.2900	0.3089	1	0.5784	1.1749
EndingFluctuationIntRel* Education: Graduate Studies	-0.0864	0.4620	0.0350	1	0.8517	0.9172

Test			χ²	df	p	
Overall Model Evaluation						
Likelihood Ratio Test			22.4890	13	0.0482	
Goodness-of-Fit Test						
Hosmer & Lemeshow			10.1209	8	0.2566	
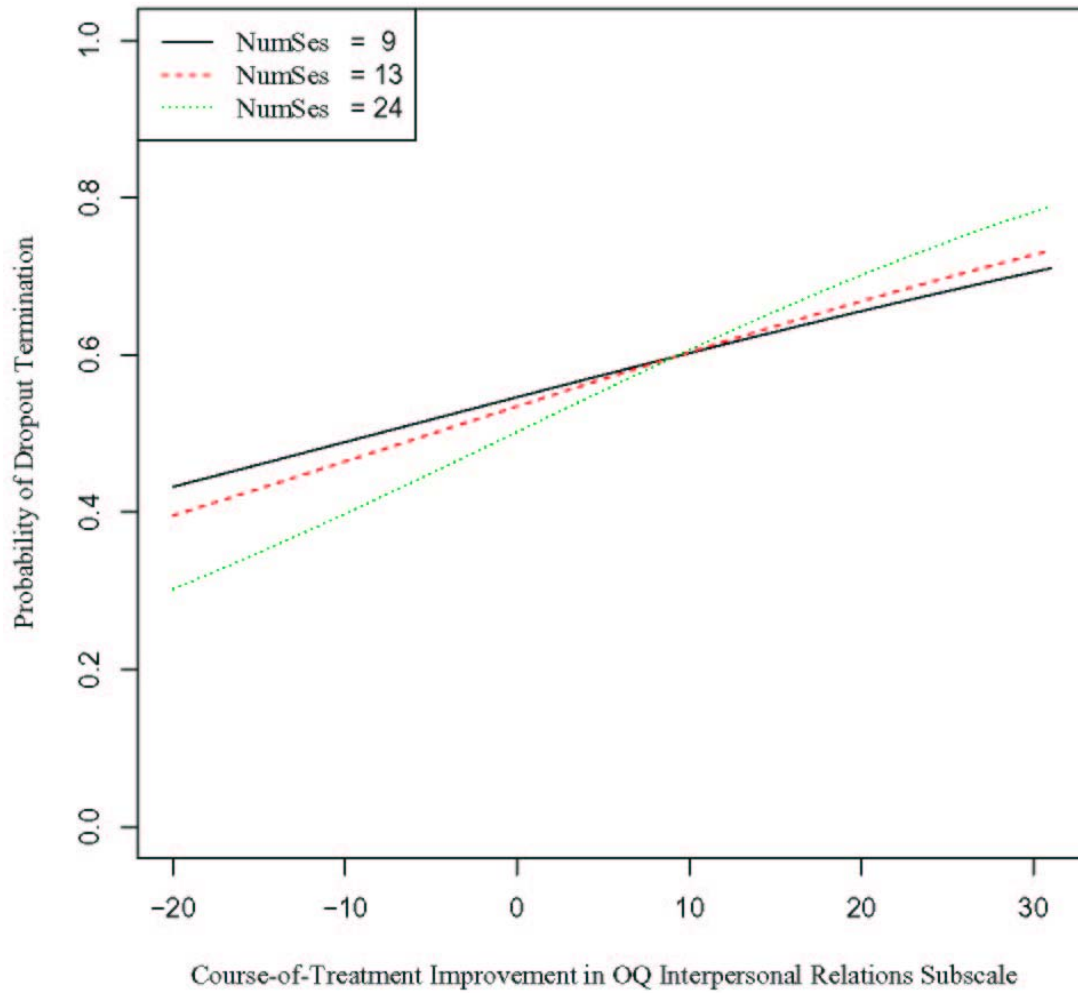
Figure 9. Probabilities of dropout predicted with course-of-treatment improvement in Interpersonal Relations OQ at different numbers of sessions attended with other variables set to their means
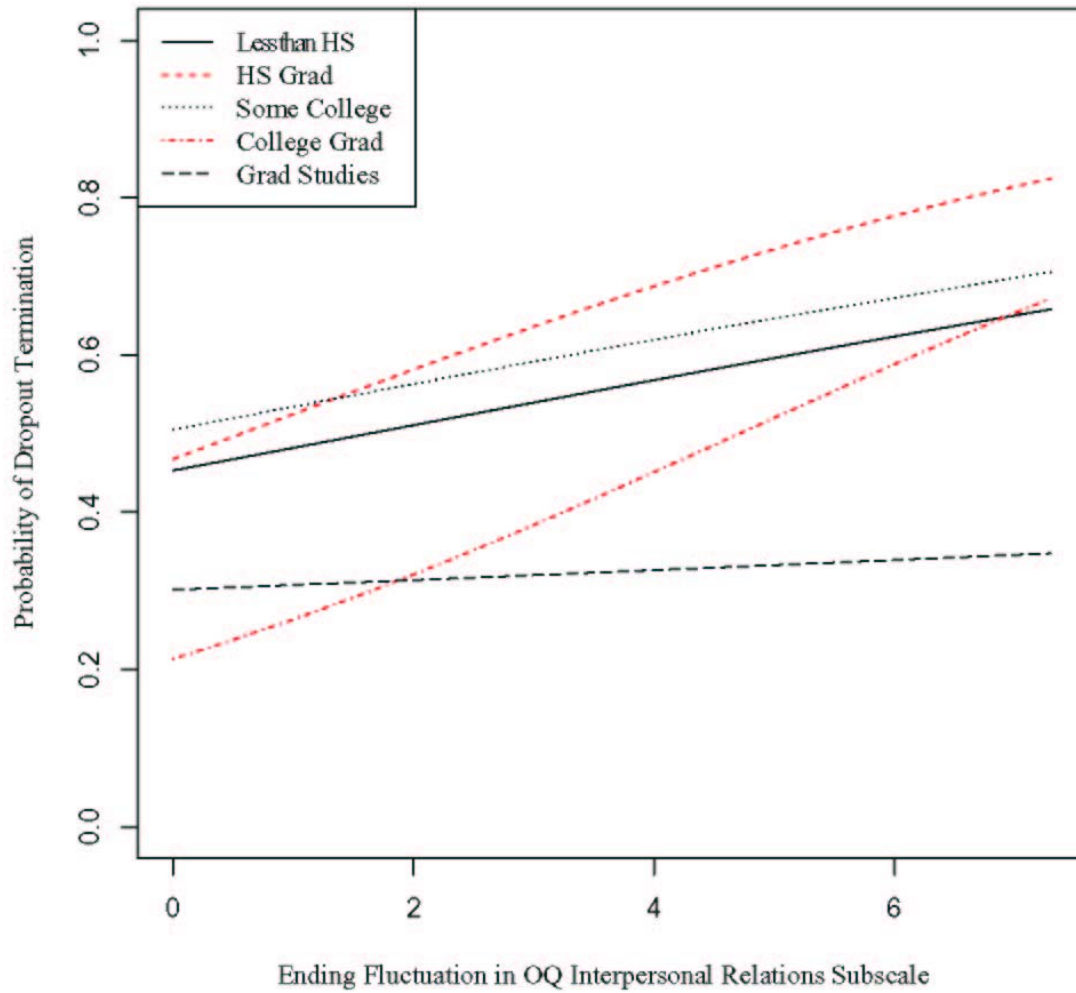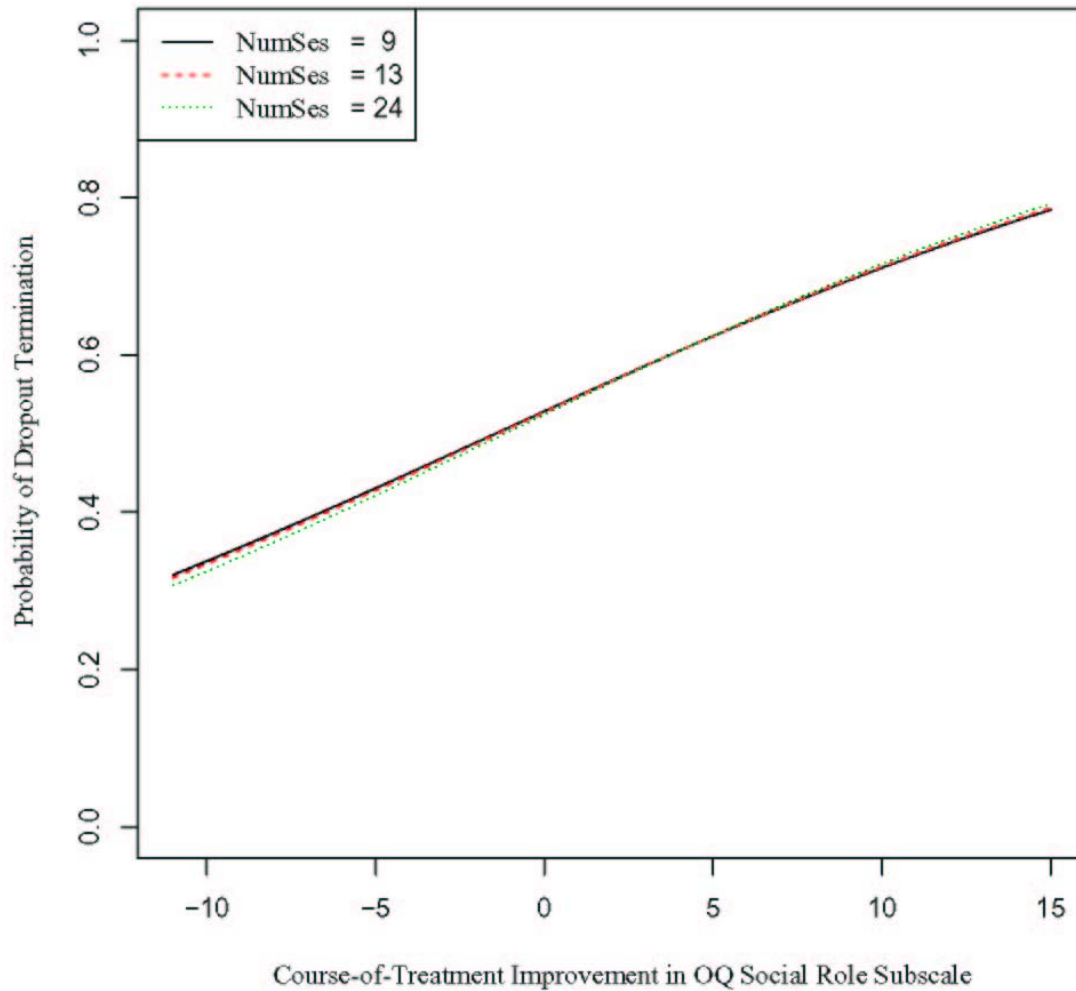
Figure 10. Probabilities of dropout predicted with ending fluctuation in Interpersonal Relations OQ and levels of educational attainment with other variables set to their means

Table 11

Model 8 – Logistic Regression Analysis of Treatment Dropout Predicted with Social Role OQ Score Pattern Features and Educational Attainment

Predictor	β	*SE* β	Wald χ^2	*df*	*p*	Odds Ratio
Intercept	-0.6735	0.7570	0.7916	1	0.3736	0.5099
EndingFluctuationSocRol	-0.1795	0.1941	0.8546	1	0.3552	0.8357
EndingOutcomeSocRol	0.1046	0.0487	4.6144	1	0.0317	1.1103
CouseOfTreatmentImprove SocRol	0.0761	0.0679	1.2555	1	0.2625	1.0791
NumberSessions	-0.0011	0.0081	0.0196	1	0.8886	0.9989
CouseOfTreatmentImprove SocRol*NumberSessions	-0.0003	0.0020	0.0195	1	0.8890	0.9997
Educational Attainment						
Education: High School	-1.2438	0.8659	2.0633	1	0.1509	0.2883
Education: Some College	0.0281	0.6721	0.0017	1	0.9667	1.0285
Education: College Degree	-1.0869	0.9240	1.3836	1	0.2395	0.3373
Education: Graduate Studies	-0.5527	1.0186	0.2944	1	0.5874	0.5754
EndingFluctuationSocRol* EducationalAttainment						
EndingFluctuationSocRol* Education: High School	0.8776	0.3915	5.0244	1	0.0250	2.4051
EndingFluctuationSocRol* Education: Some College	0.0340	0.2711	0.0157	1	0.9002	1.0346
EndingFluctuationSocRol* Education: College Degree	0.0775	0.3609	0.0461	1	0.8301	1.0806
EndingFluctuationSocRol* Education: Graduate Studies	-0.3962	0.4461	0.7888	1	0.3745	0.6729

Test			χ^2	*df*	*p*	
Overall Model Evaluation						
Likelihood Ratio Test			28.0240	13	0.0090	
Goodness-of-Fit Test						
Hosmer & Lemeshow			11.1551	8	0.1931	

Figure 11. Probabilities of dropout predicted with course-of-treatment improvement in Social Role OQ at different numbers of sessions attended with other variables set to their means

between Ending Fluctuation in Social Role OQ scores and Educational Attainment. The

results are summarized in Table 11; and the effects of the interaction terms are illustrated

in Figures 11 and 12.
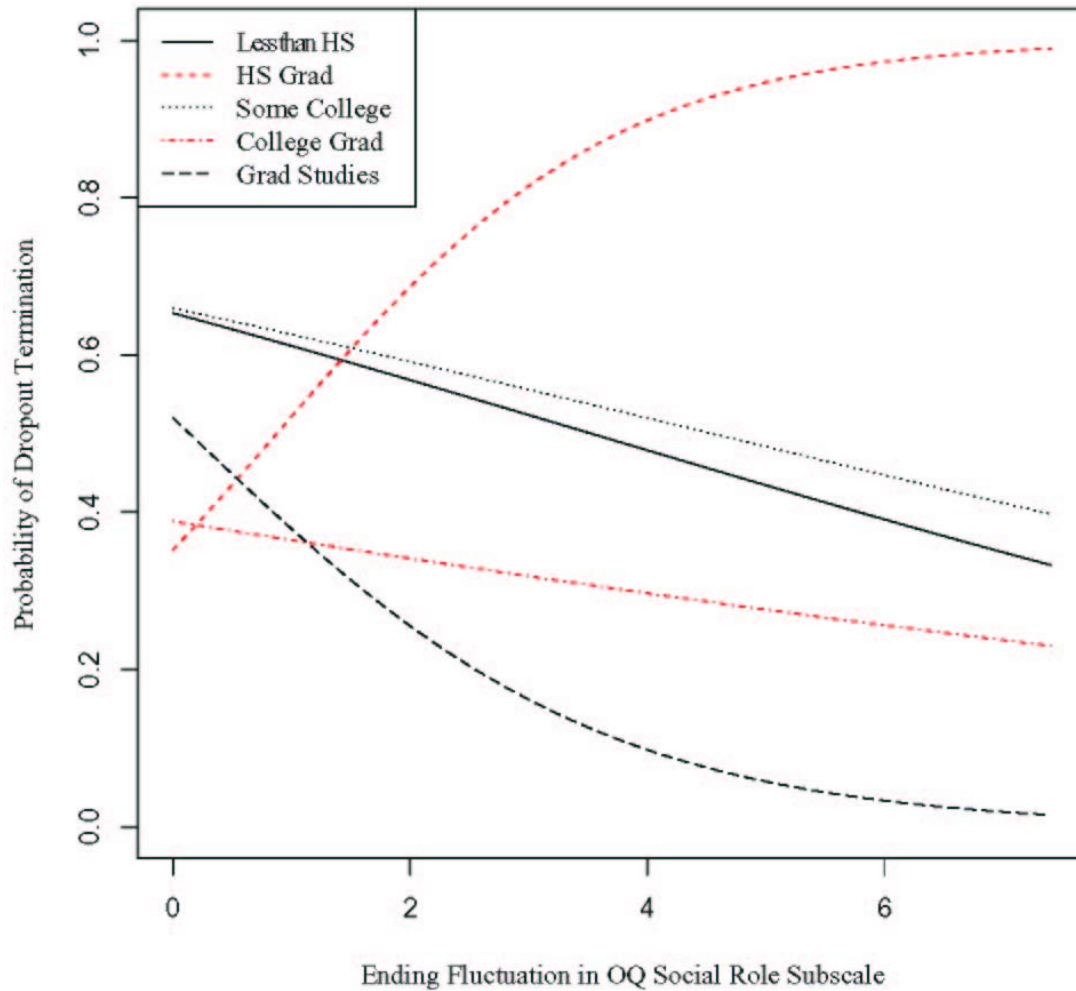
Figure 12. Probabilities of dropout predicted with ending fluctuation in Social Role OQ and levels of educational attainment with other variables set to their means

Summary of Analysis Results

Logistic regression was conducted to evaluate the fit of eight models to the

sampled data in the prediction of dropout termination from psychotherapy. Predictors in

the first group of models consisted of clients' score pattern characteristics in their Total

OQ and Symptom Distress, Interpersonal Relations, and Social Role subscale measurements. These predictor variables included the fluctuation and the average of scores recorded in the final weeks of treatment, the difference between the scores at the initiation and at the termination of treatment as the course-of-treatment improvement, and the total number of sessions attended. The model utilizing client score pattern features of their Interpersonal Relations subscale was statistically significant at the .05 level while the Symptom Distress subscale model (p = .062) and the Total OQ model (p = .100) might be considered marginally nonsignificant. The fourth model of Social Role subscale was nonsignificant (p = .715).

The values of the Goodman-Kruskal Gamma statistic and the c-statistic were considered in gauging the accuracy of these four models' prediction of dropout termination against the actual data. Relative to models of the other measures, the Symptom Distress subscale model appeared to make fewer prediction errors and correctly assign higher dropout probabilities to more subjects who actually dropped out from treatment. That level of predictive accuracy was followed by that of the Total OQ model and the Interpersonal Relations model, both comparable to each other. The predictive accuracy of the Social Role subscale model appeared to be lower than the other models in this group. Table 12 presents pertinent values from the logistic analysis for model comparison.

Table 12

Comparison of Overall Models

	Model Fit			Hosmer-Lemeshow				
	χ^2	*df*	*p*	χ^2	*df*	*p*	Gamma	c-stat
Model 1 Total OQ Pattern Features	9.226	5	.100	15.950	8	.043	.299	.649
Model 2 SD Subscale Pattern Features	10.515	5	.062	7.989	8	.435	.350	.674
Model 3 IR Subscale Pattern Features	12.745	5	.026	6.983	8	.538	.298	.648
Model 4 SR Subscale Pattern Features	2.902	5	.715	6.913	8	.546	.156	.577
Model 5 Total OQ Pattern Features plus Education	28.442	13	.008	10.371	8	.240	.505	.752
Model 6 SD Subscale Pattern Features plus Education	30.389	13	.004	7.629	8	.471	.557	.778
Model 7 IR Subscale Pattern Features plus Education	22.489	13	.048	10.121	8	.257	.442	.721
Model 8 SR Subscale Pattern Features plus Education	28.024	13	.009	11.155	8	.193	.515	.757

The second group of models included the client demographic variable of

Educational Attainment as one of their predictors in addition to all those previously

utilized in the first group. All four models of Total OQ and Symptom Distress,

Interpersonal Relations, and Social Role subscales became significant at the .05 level with this inclusion.

As suggested by the Gamma statistic and c-statistic in Table 12, the predictive accuracy of the Symptom Distress model was higher than other models in this group, echoing the corresponding model's relative accuracy among the first group of models. The Social Role and the Total OQ models exhibited somewhat lower levels of predictive accuracy, while the Interpersonal Relations model showed the lowest level of accuracy within the group. However, on the whole, all four of these models, with the addition of client Educational Attainment as one of their predictor variables, surpassed all models in the first group in predictive accuracy.

Table 13 summarizes the qualitative association between increasing probabilities of dropout and the main effects in the first group of models of score pattern features only predictor variables. The ending outcome main effect was significant at the .05 level in the Total OQ, the Symptom Distress, and the Interpersonal Relations models, while none of the other main effects was statistically significant. With odds ratios ranging from 0.904 to 1.192, the effect sizes of all the main effects were considered negligible. The interaction effect between course-of-treatment improvement and number of sessions was nonsignificant in any of this group of models.

The corresponding main effects in the second group of models involving client Educational Attainment as an added variable showed a similarly low effect size range between 0.836 and 1.122 in odds ratios for all OQ score pattern characteristic variables (Table 14). Significant at the .05 level across all four models, ending outcome was again

the only main effect that attained statistical significance in each model. Additionally, the interaction effect between the variables of course-of-treatment improvement and number of sessions was also nonsignificant in any of this second group of models.

Although analysis results from the added client Educational Attainment variable's main effects require cautious interpretation in the context of its interaction with Ending Fluctuation, the added variable's main effect yielded some notable effect sizes. At a hypothetical zero Ending Fluctuation point in the OQ measures, having completed high school was associated with moderately lower probabilities of dropout termination over those who did not complete high school or did not have high school education in the models of Total OQ and Symptom Distress and Social Role subscales. However, as illustrated in Figures 6, 8, and 12, the dropout termination likelihood of high school graduates became remarkably higher for those who were experiencing high fluctuations in ending treatment response. Having attained a college degree was generally associated with moderately lower probabilities of dropout over those who did not have a high school diploma in all four models. Furthermore, with a small to moderate effect size, having at least some level of graduate studies seemed to be associated with lower likelihood of dropout than those who did not complete high school in the context of the Interpersonal Relations and the Social Role models. Moreover, an inspection of the interaction graphs found this comparatively low dropout likelihood in all four models, especially as the fluctuation in the ending treatment response increased. An odds ratio value between 0.7 and 1.5 could be considered a trivial to small effect size

Table 13

Summary of Individual Independent Variables' Association with Increasing Likelihood of Dropout Termination in Models with OQ Pattern Features as Predictors

	Model 1 Total OQ	Model 2 Symptom Distress Subscale	Model 3 Interpersonal Relations Subscale	Model 4 Social Roles Subscale
Ending Fluctuation (Odds Ratio)	More stable (0.999)	More stable (0.974)	Less stable (1.192)	More stable (0.904)
Ending Outcome (Odds Ratio)	More elevated (1.021)*	More elevated (1.030)*	More elevated (1.089)*	More elevated (1.056)
Course-of-Treatment Improvement (Odds Ratio)	Less improved (0.988)	Less improved (0.971)	Less improved (0.986)	More improved (1.046)
Number of Sessions (Odds Ratio)	Fewer sessions (0.990)	Fewer sessions (0.992)	Fewer sessions (0.987)	Fewer sessions (0.998)

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

Table 14

Summary of Individual Independent Variables' Association with Increasing Likelihood of Dropout Termination in Models with OQ Pattern Features and Educational Attainment as Predictors

	Model 5 Total OQ	Model 6 Symptom Distress Subscale	Model 7 Interpersonal Relations Subscale	Model 8 Social Roles Subscale
Ending Fluctuation (Odds Ratio)	More stable (0.939)	More stable (0.872)	Less stable (1.122)	More stable (0.836)
Ending Outcome (Odds Ratio)	More elevated (1.030)**	More elevated (1.040)*	More elevated (1.094)*	More elevated (1.110)*
Course-of-Treatment Improvement (Odds Ratio)	More improved (1.002)	Less improved (0.980)	More improved (1.011)	More improved (1.079)
Number of Sessions (Odds Ratio)	Fewer sessions (0.995)	Fewer sessions (0.996)	Fewer sessions (0.988)	Fewer sessions (0.999)
Educational Attainment (Relative to Less-than-High School Education)				
High School (Odds Ratio)	Less likely (0.426)	Less likely (0.336)	More likely (1.060)	Less likely (0.288)
Some College (Odds Ratio)	Less likely (0.813)	Less likely (0.804)	More likely (1.232)	More likely (1.029)
College Degree (Odds Ratio)	Less likely (0.348)	Less likely (0.379)	Less likely (0.317)	Less likely (0.337)
Graduate Studies (Odds Ratio)	More likely (1.349)	More likely (1.915)	Less likely (0.521)	Less likely (0.575)

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

while a value around 0.3 or 3.5 could be considered moderate (Chen, Cohen, & Chen,

2010)

For added information, a post-hoc comparison was conducted on the percentages

of clients who terminated by dropout in the various educational attainment groups. The

comparison suggested a decreasing trend in dropout rates with increasing education

levels (Table 15). This observation is consistent with other researchers' findings

(Garfield, 1994; Wierzbicki & Pekarik, 1993).

Table 15
Dropout Rate Comparison by Educational Attainment

Education Level	Dropout Rate
Some High School or Less	78%
High School Graduate	62%
Some College	58%
College Graduate	38%
Some Graduate School or More	28%

In attempting to discern substantive patterns in the graphs for interaction effects

between client educational attainment and treatment response ending fluctuation, the

results appeared to be mixed. For the most part, lower ending fluctuation appeared to be

associated with higher dropout probabilities in the Total OQ, Symptom Distress, and

Social Role models. However, for the group of clients who had high school completion

as their highest level of educational attainment, higher ending fluctuation was associated

with higher probabilities of dropout. Moreover, in the same three models, this pattern

represented a statistically significant (p = .045 or p = .025) or nearly statistically

significant (p = .067) departure from the corresponding ending fluctuation-treatment

dropout relationship observed in the data of those clients who had not graduated from

high school. Particularly in the Social Role model, in which the largest effect size (OR =

2.405) was found, this departure could be considered small to moderate. Otherwise, the

interaction effects between client educational attainment and ending treatment response

fluctuation were statistically indistinguishable among those with less than high school,

some level of college, college completion, and graduate studies in educational attainment.

Furthermore, that statistically nonsignificant distinction was extended to *all* levels of

client educational attainment in the Interpersonal Relations model, for which the data

suggested a seemingly positive association between higher ending treatment response

fluctuation and higher dropout probabilities.

CHAPTER V

DISCUSSION AND CONCLUSIONS

The purpose of the present study was to explore a potentially effective approach to psychotherapy dropout prediction through the evaluation of clients' treatment response patterns. Moreover, this study sought to further the understanding of factors associated with (and possibly influencing) the dropout phenomenon through the assessment of a select set of probable predictors related to treatment response. Particularly of interest were the differentiated association between dropout probabilities and clients' treatment response patterns in the domains of subjective experience of symptom distress, quality of interpersonal relationships, and level of social role fulfillment, as well as the composite response to treatment overall. Additionally, the demographic variable of Educational Attainment was included as a representative client characteristic to evaluate its relevance in informing dropout risk assessment. Utilizing logistic regression analysis, these models of dropout termination prediction were evaluated and compared to assess the merit of this study's hypotheses and provide some answers to the stated research questions. In this discussion, the use of the words "predict", "predictive", and "prediction" is not intended to imply any causal relationship but an association among variables where one set precedes the other.

Evaluation of Hypotheses

Hypothesis 1

Psychotherapy treatment dropout would be effectively predicted by features of client treatment response pattern in the weeks leading to termination. In particular,

dropout would be significantly and effectively predicted with a model of the stability and the average in ending treatment outcome; the course-of-treatment improvement represented by the difference between the average in ending treatment outcome and the measurement at the beginning of treatment; and the interaction from the number of sessions attended before ending treatment.

This hypothesis found its basis in existing psychotherapy dropout research literature emphasizing the importance of therapeutic process factors over intrinsic client and therapist factors (Garfield, 1994; Joyce et al., 2007; Wierzbicki & Pekarik, 1993). The particular interest in the therapeutic process factor of treatment response was encouraged by its utilization in treatment failure prediction (Finch et al., 2001; Lambert, 2010). Furthermore, the selection of this study's initial set of variables drew upon other researchers' recognition of the relevance of the stability in the client's condition (Frank et al., 1957; Lambert et al., 2001), the client's final symptom severity level (Chasson et al., 2008), client-perceived improvement (Acosta, 1980; Lambert et al., 2003; Pekarik, 1983b), and the total duration of treatment (Lampropoulos et al., 2009; Martin et al., 1988; Pekarik, 1992a). Finally, with potentially far-reaching consequences, dropping out of treatment was presumed to be the product of a considered decision that might take some time to form and solidify. This presumption gave rise to one of this study's featured elements evaluating treatment response over the period of time leading up to the client's eventual termination.

The results of the logistic regression analysis suggested that the relationship between dropout termination and the features of client treatment response pattern was

mostly nonsignificant. The overall model evaluation indicated that the composite OQ

pattern model with predictors of Ending Fluctuation, Ending Outcome, Course-of-

Treatment Improvement, Number of Sessions attended, and interaction between Course-

of-Treatment Improvement and Number of Sessions presented some improvement over

the null model. However, the improvement was not sufficient for the full model to attain

statistical significance, marginally missing the established level of significance. The

results were also marginally nonsignificant for the corresponding model of the OQ

subscale measuring clients' subjective experience of symptom distress. Additionally, the

model of the subscale assessing clients' level of social role fulfillment was far from

being considered statistically significant. On the other hand, the model of the subscale

gauging clients' quality of interpersonal relationships was shown to be significantly

associated with dropout termination. Hence, the first hypothesis was only partially

supported with the results of the analysis.

Hypothesis 2

Less fluctuation in ending treatment response would be associated with an

increased likelihood of treatment dropout.

This hypothesis was based on other researchers' belief that fluctuation in the

client's condition signifies an individual who is unstable and is susceptible to

circumstantial stressors, particularly interpersonal ones (Frank et al., 1957; Lambert et

al., 2001). The fluctuation was hypothesized to highlight to the client his or her need to

continue treatment, which would offer a stable beneficial interpersonal influence (Frank

et al., 1957). In contrast, a client who experienced little movement in their treatment

response would mirror individuals receiving no therapy (Lambert et al., 2001), negating the effort of attending therapy. Consequently, those with lower fluctuation in their treatment response were hypothesized to be more likely dropouts.

The actual analysis results suggested that dropout probabilities were not significantly associated with fluctuation in the final weeks' treatment response measured as the clients' overall psychosocial wellbeing. Moreover, the main effect of this variable of Ending Fluctuation in the composite OQ had an effect size that was essentially negligible. The second hypothesis was not supported with the analysis results.

Hypothesis 3

Higher average distress/dysfunction over final weeks would be associated with an increased likelihood of treatment dropout.

As demonstrated in a prior study, a significant relationship appeared to link treatment dropout to high symptom severity level measured at the last attended session (Chasson et al., 2008). The researchers attributed dropping out in that study primarily to avoidance behavior as therapy prompted clients to address difficult issues. Additionally, continuing high distress and dysfunction as treatment is ongoing can be reasonably associated with client dissatisfaction which can lead to dropout (Pekarik, 1992b). This hypothesis brought together the relevance of high symptom severity and the supposition that the act of dropping out might not be solely guided by how the client felt concurrently. Clients' experience of weeks of distress and dysfunction might contribute significantly to the eventual decision to drop out of treatment.

The analysis results indicated that the average level of treatment outcome in the final weeks was significantly associated with termination by dropout. The analysis on the main effect of the ending outcome variable in the composite OQ model showed that higher levels of symptom distress experienced by the clients in the final weeks was associated with higher probabilities of dropout. Although the results could be said to support this third hypothesis, the effect size was too small for this finding to be clinically useful.

Hypothesis 4

Increasing number of attended sessions would be associated with a reduction in the association between the course-of-treatment improvement and the likelihood of treatment dropout.

This hypothesis was prompted by other researchers' observation of the relevance of the duration of treatment and the improvement experienced and perceived by the client (Acosta, 1980; Lambert et al., 2003; Pekarik, 1983b). The hypothesis essentially posited that, the longer a client remained in treatment, the level of improvement over the course of the treatment would become less important a consideration in the client's decision to drop out.

The results suggested that, as the number of attended sessions increased, the association appeared to attenuate between dropout probabilities and the course-of-treatment improvement in all measures, except for the Interpersonal Relations subscale. As clients attended more sessions, their perceived improvement in interpersonal relationships appeared to be even more strongly and positively related to the likelihood

of dropout. However, these interaction terms were shown to be statistically nonsignificant and their effect sizes negligible. The fourth hypothesis was not supported with the analysis results.

Hypothesis 5

Treatment response pattern features for Interpersonal Relations subscale would be more effective in predicting client dropout than features in treatment response patterns of the composite scores or either of the other two subscale scores.

This hypothesis drew upon the observation that most frequently addressed problems in psychotherapy are interpersonal in nature (Horowitz & Vitkus, 1986). Lending additional support for the hypothesis was other researchers' finding of interpersonal relationships' being a relevant factor influencing dropout probabilities (Clarkin & Levy, 2004; Hoffman, 1985; Joyce et al., 2007).

An initially encouraging assessment of the overall model fit singled out the model of interpersonal relations to be the only one that was statistically significant among models of treatment response pattern features. Further comparative evaluation revealed that this model did not produce the highest predictive accuracy against actual data. Consequently, the results could not be regarded as supportive of the fifth hypothesis.

Hypothesis 6

Less fluctuation in ending treatment response in the Interpersonal Relations subscale of the OQ would be associated with an increased likelihood of treatment dropout.

This hypothesis integrated previous hypotheses addressing the relevance of interpersonal relationships and fluctuation in the client's treatment response. Fluctuation in the quality of the client's interpersonal interactions was postulated to be especially relevant in the prediction of treatment dropout over fluctuation in any other domain of the client's psychosocial wellbeing.

The main effect of the ending fluctuation variable in the Interpersonal Relationships subscale model was demonstrated to be statistically nonsignificant. Moreover, the small effect size indicated that *more* fluctuation would be associated with higher probabilities of dropout termination, contrary to the stated hypothesis. Hence, the sixth hypothesis was not supported with the results.

Hypothesis 7

Lower average Interpersonal Relations distress/dysfunction over final weeks would be associated with an increased likelihood of treatment dropout.

This hypothesis was based on the premise that psychotherapy often offers a positive source of interpersonal relationship for many whose primary presenting concerns are interpersonal in nature (Horowitz & Vitkus, 1986). The presence of healthy interpersonal relationships in an individual's daily life might obviate the need for the therapeutic relationship available in treatment. Moreover, for those experiencing distress in other aspects of their lives, quality interpersonal relationships outside of psychotherapy might provide them with sufficient support in dealing with their concerns.

The main effect of the ending outcome variable in the interpersonal relations model was shown to have a statistically significant effect in the predictive model.

However, even though the effect size was nearly trivial, its direction was opposite to what was hypothesized: *higher* average Interpersonal Relations subscale scores were found to be associated with higher probabilities of dropout termination in the actual sampled data. The seventh hypothesis was not supported with the results of the analysis.

Hypothesis 8

Client educational attainment would be a significant factor in improving the effectiveness of dropout predictive models consisting of features treatment response patterns of Total OQ and OQ subscales.

While some researchers advocated shifting the focus of treatment dropout research to therapeutic process variables (Joyce et al., 2007; Wierzbicki & Pekarik, 1993), some client characteristics were hypothesized to predispose clients to different behavioral reactions to clinical circumstances. This hypothesis posited education, as one of the more promising client characteristic variables, would enhance the dropout predication model formerly consisting of only treatment response pattern features.

With the inclusion of the variables of client Educational Attainment and related interactions, all the previous treatment response pattern features-only models now attained statistical significance. Gauged against actual data, all four educational attainment-included composite OQ and subscale models were more accurate in predicting dropout than the models of response pattern features alone. These analysis results were deemed to be supportive of the eighth hypothesis.

Hypothesis 9

Higher client educational attainment would be associated with a reduction in the relationship between fluctuation in ending treatment response and the likelihood of treatment dropout.

Some researchers contend that goal-directed persistence necessary for educational attainment would help clients remain in treatment until terminating appropriately (Lorr et al., 1958). More recently, researchers believe that client education level is associated to psychotherapy dropout through mediating factors such as treatment expectations. This study's final hypothesis built upon these ideas and proposed that those with higher educational attainment could better weather fluctuations sometimes present during the course of treatment without dropping out.

When assessing the relationship between treatment response ending fluctuation and treatment dropout in the context of incrementing client educational attainment, no consistent trend emerged. Essentially, except for high school graduates, the association between ending fluctuation and treatment dropout probabilities on average did not vary in a statistically significant way among clients of different levels of educational attainment. This statistically indistinguishability was especially apparent in the model of Interpersonal Relations. Overall, the final hypothesis was not supported with the observed analysis results.

Response to Research Questions

Research Question 1

How well can psychotherapy client dropout be predicted with broad-measure treatment response pattern's features, such as the fluctuation in the progression of treatment outcome in the final weeks leading up to termination; the average level of treatment outcome in the final weeks; the amount of improvement over the entire course of treatment measured as the difference between the average level of treatment outcome in the final weeks and the level of distress and dysfunction presented at the initiation of treatment; and the interaction between the improvement over the course of treatment and the total duration of treatment?

The logistic regression analysis indicated that, although the model with the studied features from the composite OQ treatment response pattern could reasonably fit the observed data, the model did not attain statistical significance. The results suggested that the broad-measure treatment response pattern features alone might not be effectively predictive of psychotherapy client dropout.

Research Question 2

Are features in the composite treatment response pattern better predictors of psychotherapy dropout than features in individual treatment response patterns of component domains – subjective sense of symptom distress, quality of interpersonal relations, and level of social role fulfillment?

In comparing the predictive accuracy of the models against actual data, the Symptom Distress subscale model produced a higher percentage of correct predictions

and lower percentage of erroneous ones over the composite and other subscale models.

These results suggested that features in the composite treatment response pattern might

not be better predictors than those in the response pattern of the client's subjective

experience of symptom distress alone.

Research Question 3

Can psychotherapy client dropout prediction with features of treatment response

patterns be improved with the inclusion of a client characteristic, such as educational

attainment?

With the addition of the variable of client Educational Attainment and its

interaction with ending fluctuation to the previously analyzed models of features of

treatment response patterns, logistic regression was again conducted on the new models.

Model fit evaluation results indicated that each of these new models attained statistically

significance whereas only one of the previous models did. Additionally, the predictive

accuracy of the new models showed notable improvement over that of the previous

models. Consequently, the analysis results suggested that the inclusion of the client

characteristic of educational attainment improved the models' prediction of

psychotherapy dropout.

Explanations of Findings

Recent literature advocates for the evaluation of therapeutic process factors in

psychotherapy dropout research. The availability of ongoing weekly outcome measures

such as the Outcome Questionnaire offers an opportunity to evaluate how treatment

response as a process variable relates to dropout. For this study, prior research findings

guided the selection of specific predictor variables characterizing treatment response

patterns. However, their nonsignificance and low effect sizes suggest that, in this study

and dataset, these variables (ending fluctuation in treatment response, course-of-

treatment improvement, and number of sessions attended by clients) bear little relevance

to changing dropout probabilities, at least in the context of this study's models and

sampled data. The only variable whose main effect attained statistical significance in

most of the models was the averaged outcome in the four weeks just prior to termination.

This finding echoes other researchers' observation of association between treatment

dropout and elevated concurrent symptom severity (Chasson et al., 2008; Pekarik,

1992b). Some have attributed this association to clients' avoidance of psychotherapy

whose process can at times heighten clients' experience of distress when prompting

them to confront therapeutic concerns (Chasson et al., 2008; Pekarik, 1992b). Others

believe that unabated symptom severity can lead to client dissatisfaction with treatment

and eventual dropout (Chasson et al., 2008; Pekarik, 1992b). On the other hand, the

correlation between high symptom distress and increased dropout rate may reflect the

limited value clients assign to their treatment, which can be eliminated as just another

demand on them when their life stresses intensify. Nevertheless, averaging the weekly

treatment response over the last four weeks did not notably improve the predictive

effectiveness of the variable simply as the singular final week measurement. This

observation is not surprising since the two variables are highly correlated ($r = .93$) in this

sampled data set. Consequently, the averaged level of treatment response over the

ending multi-week period does not appear to be substantively more relevant than the

single final week's treatment outcome. The hypothesized dropout decision formation period is not evident in this regard. Furthermore, despite its statistical significance, the ending outcome variable's main effect sizes are trivial in this study's models.

The comparison of the four full models of treatment response pattern characteristics provides more useful information. With one attaining and two coming close to statistical significance, these models demonstrated reasonable fit with the sampled data. With the importance of interpersonal relationship to the process of psychotherapy emphasized by other researchers, the model of Interpersonal Relations OQ subscale treatment response pattern was expected be the most effective in predicting dropout. The actual results suggested otherwise. Instead, the Symptom Distress subscale model demonstrated higher accuracy than the other models in predicting dropout – an observation repeated later when the client Educational Attainment variable and its interaction term were added. This finding may point to the relatively prominent role of clients' subjective experience of symptom distress as a factor in dropout termination of psychotherapy clients.

When examining variables related to client education, more noteworthy results emerged. In agreement with prior research findings, this study's data set presents decreasing dropout rates with increasing levels of client educational attainment. The hypothesized expectation was for increasing educational attainment to moderate the effect of ending response fluctuation on dropout probabilities. However, actual analysis results showed no consistent trend. Evaluated as main effects, ending fluctuation did not attain statistical significance or achieve more than trivial effect sizes in the models.

When the data were separated by client educational attainment levels, the graphical results suggested a possible pattern of lower dropout rates with increasing fluctuation for most education levels in all models except for the Interpersonal Relations subscale model. Still, most of the individual educational attainment levels do not appear to significantly differ from each other in influencing the strength of association between ending treatment response fluctuation and dropout likelihood. On the other hand, clients who had high school completion as their highest level of educational attainment showed an opposite trend of higher dropout rates with increasing fluctuation. A closer examination of the data revealed that, among all levels of educational attainment, these clients on average reported the lowest level of dysfunction in their social role performance both at the initiation and at the end of treatment. A potential explanation is that these pragmatically high functioning individuals opted to eliminate psychotherapy to preserve their social role performance when life stresses became less stable and less predictable. Additionally, the similar trend relating ending fluctuation to dropout probabilities shared by clients of all education levels in the Interpersonal Relations model perhaps speaks to the generally interpersonal nature of psychotherapy. Regardless of educational attainment, a client with a chaotic interpersonal life may choose not to continue maintaining the therapeutic relationship and to drop out of treatment.

In comparing all the full models of this study, the relevance of the client characteristic of educational attainment quickly became apparent. With education added to the models, all models attained statistical significance. Furthermore, these models demonstrated notably higher predictive accuracy over all previous models of only

treatment response pattern features. As suggested by other researchers, these results open the possibility of mediating therapeutic process factors such as client expectations of the treatment process and goals and therapeutic alliance between clients and the doctoral level psychotherapy trainees (Joyce et al., 2007; Wierzbicki & Pekarik, 1993).

Implications of Findings

This study has highlighted a number of meaningful implications for psychotherapy practice and treatment dropout research. Its predictive effectiveness appears to be limited, yet a client treatment response pattern could provide some useful information on the likelihood of dropout termination. Even though a dropout decision could still take some time to develop, the degree of fluctuation in treatment response over an approximately month-long period is generally not informative of dropout potential. Also, average level of symptom severity is not significantly more effective a predictor than a single measurement of symptom severity. The clinical implication of this finding is that any elevated measurement of symptom severity, especially as symptomatic distress experienced by the clients, could signify potential dropout risk. Furthermore, in devising possible interventions to avert treatment dropout, clinicians might build upon the interpersonal nature of psychotherapy and explore with clients alternate coping strategies for those who are not as concerned with their social role performance but may sacrifice treatment at times of chaos.

The presence of confounding factors notwithstanding, the client characteristic of educational attainment is still informative in the assessment of dropout risks. Additional research is needed to further clarify the understanding of likely mediating process

variables, such as treatment expectation and therapeutic alliance, and translate the understanding into a clinically useful, timely prognosticating tool. In the meantime, clinicians are encouraged to periodically conduct their own dropout risk assessment. As no consistent interaction appeared between treatment response patterns and educational attainment, this client characteristic variable alone could offer valuable contribution to the starting point of the ongoing assessment process.

Limitations

Several limitations pertaining to the current study might be relevant in the consideration of its findings. One concern is the completeness of the OQ measurement. Clients did not always complete the OQ every week. Since relatively few OQ data points were missing, the analysis proceeded omitting subjects with insufficient OQ measurements, without missing data imputation. However, this omission potentially allowed for the introduction of a systematic bias in the data set. "Compliance with requests to complete questionnaires may indicate a general pattern of compliance or a greater degree of motivation to cooperate in therapy" (Garfield, 1994, p. 201). The available data might be weighted toward a group of clients who were more likely to comply with treatment recommendations.

Another limitation is related to the instrument that provided client termination classification for this study. The intra-agency Termination Summary form (Appendix C) is only applicable to clients who have attended four or more sessions. No termination classification is otherwise available for clients who have completed only three or fewer sessions. The exclusion of this group of clients in this study is consistent with agency

protocol considering the first three sessions to be primarily evaluative with the treatment phase to begin at the forth session. This exclusion was also necessary in this study due to the selected variables' minimum requirement of four OQ measurements per subject to provide characterization of the treatment response pattern. However, some researchers believe that therapeutic treatment may begin at first contact. For these researchers, clients' unexpected unilateral ending of psychotherapy, even during evaluation, may be considered treatment dropout (Lampropoulos et al., 2009). Although the group of "early dropouts" may be qualitatively different from other dropout clients, the exclusion of subjects who ended treatment (both appropriately and by dropout) prior to having attended four sessions might have precluded some potentially illuminating information.

An additional limitation related to instrumentation is the absence of information on the psychometric properties, such as validity and reliability, of intra-agency forms used to record client and treatment information. In particular, the Termination Summary that supplied the termination classification that was this study's outcome variable suffers from the commonly recognized reliability concern with identifying dropout by therapist judgment (Wierzbicki & Pekarik, 1993). Also, demographic information (such as client educational attainment) recorded on the Telephone Screening Evaluation form and the Intake Questionnaire is based on client self-report; accuracy of the provided information is not verified through other means.

This study's use of archival data engendered an additional facet of limitation. Factors to be evaluated in this study were limited by information already collected. For example, information was not available for client socioeconomic status assessment, a

variable previously demonstrated to be a consistent, albeit mediated, dropout predictor. Instead, client educational attainment was utilized in the models for its reasonable association with treatment dropout and as a proxy for SES, to which educational attainment is a component. Moreover, no direct measurement of additional therapeutic process variables, such as treatment expectations and therapeutic alliance, was possible.

No firm guideline has been established in the research literature for the minimum sample size required for logistic regression analysis. By some researchers' standards, the sample size was adequate given the number of independent variables in this study's models (Peduzzi et al., 1996; Peng, Lee, et al., 2002). However, the limited sample size may explain the difficulty in detecting statistically significant relationships among some of the variables.

Finally, a few factors related to the sample population and clinic setting may warrant attention when considering generalizing this study's findings. The clients of the CAC come from a central Texas small metropolitan area and its surrounding rural communities with their unique regional characteristics. Even though the clients' household income spans a reasonably wide range, the great majority of the clients reported very limited income, an important component of SES. Additionally, individuals seeking services are pre-screened and those with severe psychopathologies are typically not part of the CAC client population. This general characteristic of the client population can be particularly relevant when considering the suggestion of a relationship between symptom severity and treatment dropout. Furthermore, research literature has demonstrated the applicability of the general dose-effect model to training clinics, even

if at a somewhat less rapid response rate (Callahan & Hynan, 2005; Howard et al., 1986). However, with studies showing dropouts view their therapists as less expert or competent and trustworthy (Grimes & Murdock, 1989), special attention is required when generalizing to other treatment settings with professional clinicians.

Future Directions

The intended central focus of this study was client treatment response patterns in the prediction of psychotherapy dropout. Beyond the limited number of response pattern features already evaluated, the models should be expanded to include additional ways of characterizing response patterns, such as the initial symptom severity, clustering of which has been helpful in a number of treatment failure studies. As previously indicated, sample size could pose a limiting concern for the current study. Future investigation should have a larger sample size in order to detect statistically significant relationships with moderate associations among the variables of interest.

Another potentially productive direction for future research would be to incorporate the assessment of other therapeutic process variables, such as treatment expectations, more directly. Evaluating the interactional effects between client treatment response patterns and other process variables may provide information helpful in the monitoring of dropout risks. The same information may also enhance the understanding of related factors over which the therapist might have some influence.

Finally, this study utilized the quantitative research method. Employing a mixed method by incorporating qualitative inquiries, such as follow-up interviews after termination, could guide a more accurate interpretation of the results. Through the

narratives of the individuals, a nuanced understanding of the dropout process and related factors would be possible.

Undoubtedly, the results of this study serve to indicate that more investigation is needed in this area of psychotherapy dropout research. With this and future research, mental health practitioners could be provided with tools to assist them in their periodic assessment of treatment dropout risks and in determining the most effective interventions to address dropout concerns. Hopefully, these efforts can help clients get the most out of psychotherapy.

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APPENDIX A

Outcome Questionnaire (OQ™-45.2)

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

Name:_____ Age:____yrs.

Sex

ID#_____ M ☐ F ☐

Session #_____ Date____/____/____

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

_____

APPENDIX B

Provider Feedback Report - OQ

Provider:	ID:	Patient:	ID:

Clinic/Group: | **Date:** 10/13/2008

Setting of Care: | **Session #:** 0

Site: | **Treatment Start Date:**

Current Assessment: | **Progress Monitoring:**

OQ Scores:

	Current	Comm. Norm	Outpat. Norm
Total Score:	110	45	83
Symptom Distress:	70	25	49
Interpersonal Relations:	22	10	20
Social Role:	18	10	14

Patient IS within clinical range (>63).

First OQ for Current Treatment:

Date: 2/28/2006

Total Score: 108

Session: 0

Progress in Current Treatment:

Delta: -2   (Deterioration)

Alert Status: N/A

Critical Items:

Suicidal Ideation (item 8):   Frequently

Workplace Impulse Control (item 44):   Frequently

Substance Abuse

    Morning-after Drink (item 11): Never

    Noticed by others (item 26): Never

    Work Problems (item 32): Never

Recommendations:

N/A

Questions with Extreme Responses

05. I blame myself for things. [Almost Always]
16. I am concerned about family troubles. [Almost Always]
22. I have difficulty concentrating. [Almost Always]
23. I feel hopeless about the future. [Almost Always]
33. I feel that something bad is going to happen. [Almost Always]
34. I have sore muscles. [Almost Always]
35. I feel afraid of open spaces, driving, being on buses, subways, etc. [Almost Always]
36. I feel nervous. [Almost Always]

Change in Total OQ Score
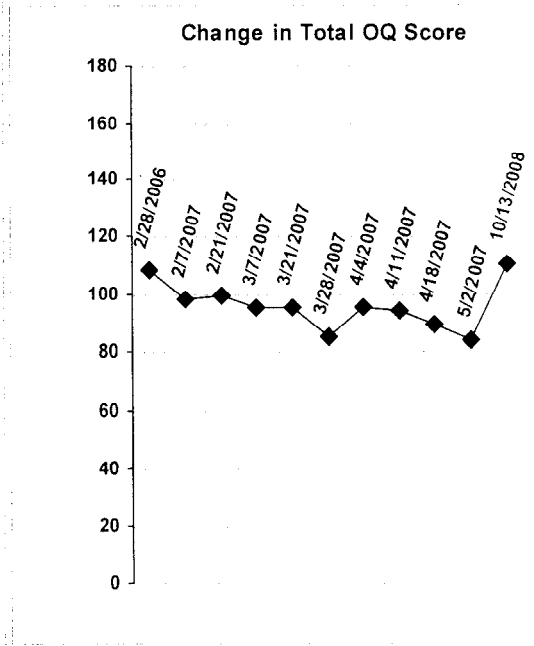
APPENDIX C

Termination/Transfer Summary
Counseling & Assessment Clinic (CAC)
Texas A&M University, MS 4225
College Station, TX 77843-4225

Client's Name: Date

Summary of Services

Counseling Service*	Counselor	Begin	End	# Sessions	# No Shows
Individual					

*Individual, Group, Marital, Assessment   Total =   Total=

Check One that Applies:
☐ **Transfer** To Whom? _____
☐ **Termination**

(Categorical Reasons for Termination Only)
  ☐ **Mutual agreement to terminate**
      ☐ **Sufficient progress made in treatment OR** ☐ **Not sufficient progress made in treatment**
  ☐ **Therapist-initiated termination**
      ☐ **Sufficient progress made in treatment OR** ☐ **Not sufficient progress made in treatment**
  ☐ **Client-initiated termination**   ☐ **with notice**
      ☐ **Sufficient progress made in treatment OR** ☐ **Not sufficient progress made in treatment**
      ☐ **Coincided with transfer to another counselor**

Initial Reason for Referral:

Summary of Counseling Progress:

Reason for Termination or Transfer:

Follow-up, Referrals, or Need for Further Treatment:
          ☐ **Provided additional referrals**

Initial Diagnostic Considerations: :

Axis I:

Axis II:

Axis III:

Axis IV:

Axis V: GAF =

APPENDIX D

TELEPHONE SCREENING EVALUATION Billing Code:_____

Date: _____ Referral Source: _____ Client #: _____
(Telephone intake date)

Name: _____ Age: _____ Gender: M / F

DOB: _____ # Family Members: _____ Annual Family Income: $_____

Self-reported Ethnicity:_____ Circle Ethnicity: 1 White-NH; 2 White Hispanic; 3 Black-NH; 4 Asian-NH; 5 AmIndian-NH; 6 Am Indian & White-NH; 7 Asian & White-NH; 8 Am Indian & Black-NH; 9 Black & White-NH; 12 AmIndian & White Hispanic; 13 AmIndian & Hispanic; 14 Black & Hispanic; 15 Pacific Islander; 10 Other Race Combination; 11 Not Available

Parent's name: _____ ☐ Counseling: $_____ per hour

☐ Assessment: __ hours at $ ___ per hour = $____

Address: _____

HM#: _____ WK#: _____ Cell #:_____ OK to leave msg? YES / NO

Occupation: _____ Legal Referral? YES / NO

Presenting Problem:_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Assessment of suicidal risk: (Hx previous therapy)_____
_____

Health and medications: (Hx meds for psych; hospitalization; Hx of family members) _____
_____

Interviewer recommendations (include type of case): ☐ Routine ☐ Emergent ☐ Urgent
_____
_____

Phone intake done by: **Ginger   Jason**   Client informed about videotaping and supervision? YES / NO

Intake scheduled for: _____   _____
                                        Intake Student   Assignment Date

DO NOT REMOVE THIS SHEET FROM THE CLINIC!!!
If not seen for intake, please indicate phone contact attempts and disposition on the reverse using modified Progress Note format.

APPENDIX E

Intake Questionnaire – Adult Personal History
Counseling & Assessment Clinic (CAC)
Texas A&M University, MS 4225
College Station, TX 77843-4225

A. Identification

Today's Date: _____/ _____/ _____

Your Name: _____

Date of Birth: _____/ _____/ _____ Age: _____ Ethnicity: _____

Home Street Address: _____

City: _____ State: _____ Zip: _____

Home/evening phone: _____
With whom are you now living? _____
Marital Status (Circle):   Single   Married   Separated   Divorced   Widowed   Remarried

B. Referral: By whom were you referred to us? _____

C. Why have you come to the Counseling & Assessment Clinic today?

_____
_____
_____
_____
_____
_____
_____
_____

D. Your current employer: _____
Address: _____
Workplace: _____

E. Your education and training

Dates From:	To:	School	Special Classes	Adjustment to school	Did you graduate?
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Were you ever in special education? (Circle) Yes   No

If you are a student, what is your present academic classification? (Circle)
Freshman   Sophomore   Junior   Senior   Graduate Student   Other: _____
Major: _____
     Are you on academic probation? (Circle) Yes   No
     Do you currently receive assistance through the Office for Disability Services? (Circle) Yes   No

F. Employment and military experiences

Date From:	To:	Name of employer or military	Job title or duties	Reason for leaving
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

G. Family - of origin - history

Relative Problems	Name	Current age (or age of death)	Illnesses (or cause of death, if deceased)	Education & Occupation	Psychiatric or Learning
Father	_____	_____	_____	_____	_____
Mother	_____	_____	_____	_____	_____
Stepparents	_____	_____	_____	_____	_____
Grandparents	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
Uncles / Aunts	_____	_____	_____	_____	_____
Brothers	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
Sisters	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____

H. Marital history

Spouse's name	Your age when divorced/widowed	Is spouse remarried?
First _____	_____	_____
Second _____	_____	_____
Third _____	_____	_____

I. Children

Name	Age	Grade	School
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

J. Previous Treatment

1. Have you ever received psychological, psychiatric or counseling services before? (Circle) Yes No

If yes, please indicate:

When?	From whom?	For what?	With what results?
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

2. Have you ever taken medication for psychiatric or emotional problems? (Circle) Yes No
If yes, please indicate:

When ?	From whom?	Which medications	For What	With what results
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

K. Substance Use (Circle one)

1. How much beer, wine, or hard liquor do you consume each week, on the average?_____
   _____
2. Have you ever felt the need to cut down on your drinking? ☐ No ☐ Yes
3. Have you ever felt annoyed by criticism of your drinking? ☐ No ☐ Yes
4. Have you ever felt guilty about your drinking? ☐ No ☐ Yes
5. Have your ever taken a morning "eye- opener"? ☐ No ☐ Yes
6. How much tobacco do you smoke or chew each week? _____
7. Which drugs (not medications prescribed for you) have you used in the last 10 years?_____
   _____
   _____

L. Legal History

1. Are you presently in a legal dispute with another party that is related to your reason for seeking counseling? _____
   _____
2. Are there any other legal involvement I should know about? _____
   _____
   _____

M. Medical History:

Do you have any significant medical problems?

Explain:_____
_____
_____
_____

Have you ever sustained a head injury? (circle) Yes   No

N. Concerns:

What concern brought you to the clinic? Please read this checklist and check ONCE the items of concern to you. Please check TWICE those items which are of most concern to you and which you would like to discuss with counselors.

_____ Relationships with parents	_____ Career and vocational issues
_____ School grades	_____ Test anxiety
_____ Work	_____ Stress
_____ Relationship with Spouse	_____ Dizziness/ Fainting spells
_____ Eating problems	_____ Relationship with children
_____ Feelings of depression	_____ Anger
_____ Social activities/involvement	_____ Friendships
_____ Headaches	_____ Sexual Matters
_____ Self - Confidence	_____ Being assertive
_____ Financial Stress	_____ Suicidal thoughts
_____ Sleep problems	_____ Stomach problems
_____ Loneliness	_____ Drug use
_____ Relationship with girl/boyfriend	_____ Other _____

VITA

JASON JUIJEN YU

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