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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

APPLICATION OF THE TRANSTHEORETICAL MODEL TO REDUCE DROPOUT FROM OUTPATIENT PSYCHOTHERAPY

A Dissertation

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

By

James D. Wright

Norman, Oklahoma

2000

UMI Number: 9988313

UMI Microform9988313

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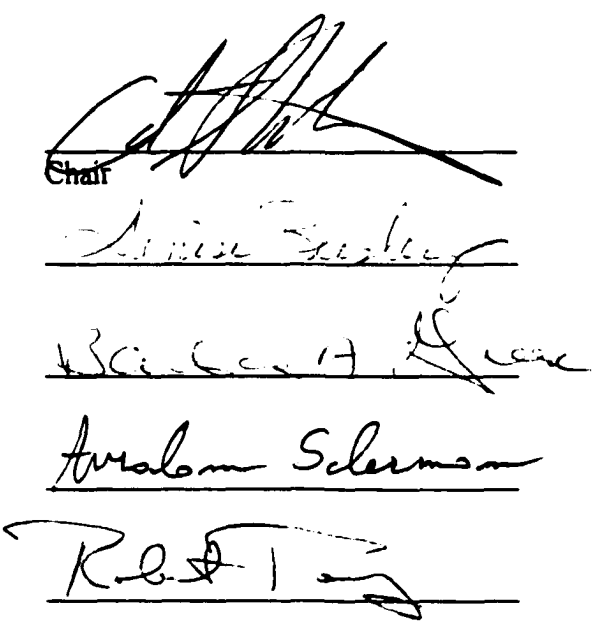

ACKNOWLEDGEMENTS

Many people contributed more to this project than I perhaps had any right to expect, not the least of whom were the participants themselves, and I would never be able to thank each of them properly in these few lines. Nonetheless, several individuals are deserving of special appreciation. To Cal, for his guidance and patience as my dissertation chair, and for withstanding the torrent of frantic emails and telephone calls that typically ensued at critical stages of this project. To the remaining members of my committee, for their challenging questions and insightful suggestions that contributed immeasurably to the finished product. To Drs. Hays, Weilert, and Carman, and Mr. Williams, for their moral support and assistance in the early stages of this project, particularly in helping streamline the data collection process. To Beverly, Carole, Carolyn, Dana, Debbie, Kathy, Lurline, Lynae, Mary Lee, Mary T., Melva, Sharon, and Trish, for their invaluable assistance in making sure those "orange questionnaires" made it to my office. To my wonderful family who I am now certain must believe I am the slow kid in my class, for their patience with my lengthy explanations at family reunions as to why I STILL had not completed my doctorate. And to my lovely wife, Martha Carolina, our unborn child, and our other two "children," Tisha and Max. Without their love and support, the rewards of this accomplishment would have counted for little.

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Abstract

This study investigated the utility of a central construct of the Transtheoretical Model (TTM), Stage of Change, as an ad hoc predictor of premature termination (PT) from outpatient psychotherapy. In addition, a TTM-derived telephone Motivational Interview technique was evaluated for its effect on PT rates among participants theoretically at greatest risk for PT (i.e., Precontemplation and Contemplation stages of change). Adult participants (N = 214) completed the Stage of Change Scale (McConnaughy et al., 1983; 1989) upon admission to an outpatient mental health clinic. Precontemplators and Contemplators were assigned to either a treatment or no-treatment control condition. An at-large control condition was comprised primarily of individuals in the Action and Maintenance stages of change. Treatment conditions were generally equivalent across variables demonstrated to impact PT, such as age, gender, and diagnostic category. Contrary to prediction, individuals in the Contemplation stage of change at intake were least likely to PT from therapy (PT = </=2 sessions including intake), and attended more sessions within 6 weeks post-intake than did individuals in either the Action or Maintenance stages of change. A brief telephone Motivational Interview technique conducted with Contemplators did not impact the number of sessions attended within 6 weeks post-intake, nor PT rates between the treatment and no-treatment control conditions. A discussion of the research, theoretical, and practical implications of these findings is included.

Application of the Transtheoretical Model to Reduce Dropout from Outpatient Psychotherapy

INTRODUCTION

Premature termination (PT) describes the manner in which from 30 to 60% of psychotherapy clients exit their treatment; the figure varying depending upon how the concept is defined in the literature (Reis & Brown, 1999). Consistent across definitions is that premature terminators leave therapy before their therapist feels that they are ready. Aside from the potential treatment benefits lost to the client, psychotherapy providers lose income potential when clients abruptly discontinue therapy, and may feel demoralized and rejected following a termination that they perceive to be premature. Each appointment hour not kept is one less that might have been utilized with another needy client.

PT is a significant problem for all categories of outpatient mental health agencies. Dropout rates from university counseling centers after an initial intake session range from 20 to 25%, with substantial numbers of clients leaving therapy after only a few post-intake sessions (Mennicke, Lent, & Burgoyne, 1988). In a meta-analysis of 125 studies, Wierzbicki and Pekarik (1993) report that the average dropout rate within a wide range of treatment settings, diagnoses, and treatment modalities is 46.86%. Garfield (1994) reports PT rates for community mental health centers, university counseling centers, and hospital-based clinics in the range of from 30 to 60%, with PT generally defined as discontinuation after 1 to 3 sessions. Although definitions of PT vary widely across studies, the mean number of sessions for PT ranges from 3 to 13 and clusters around 6 (Reis & Brown, 1999).

Given that many studies find weak or nonexistent relationships between psychotherapy duration and outcome (Steenbarger, 1994), "premature" termination of psychotherapy may represent a successful course of therapy for some clients (Hoyt, 1995). However, many clients leave therapy after only a session or two, when few therapeutic gains are likely to have been realized (Mennicke, Lent, & Burgoyne, 1988; Wierzbicki & Pekarik, 1993). Pekarik (1992) concluded in a study of the post-treatment adjustment of premature terminators that while PT's did not represent a homogeneous group of treatment failures, clients classified as "early" PT's (1-2 sessions) were significantly more symptomatic than "late" PT's (3+ sessions) at 4-month follow-up, and PT within 1 or 2 sessions predicted poorer functioning than even a brief course of therapy. Of additional concern is that PT's may return to therapy clinics numerous times, are expensive in terms of therapist time and revenue, display overall poor treatment outcomes, and may demoralize their therapists, resulting in lower self-confidence and therapeutic effectiveness (Reis & Brown, 1999)

If a mental health agency is able to predict and intervene to significantly lower PT rates, less of its scarce resources are wasted. However, despite this pressing need, most empirical studies in the area are currently of limited value in guiding intervention efforts. A host of potential predictors of PT has been examined in the literature (See Garfield, 1994; Reis & Brown, 1999 for reviews): including client and therapist characteristics, administrative variables (e.g., how long after intake a client is scheduled), and relationship variables between therapist and client, among others. Due to a variety of methodological and practical considerations, results of these studies are generally inconsistent, and conclusions are difficult to reach. Additionally, although

relatively simple interventions have been demonstrated to reduce PT rates in some settings (Reis & Brown, 1999; Walitzer et al., 1999), there exists a lack of empirically validated, theory-based, and cost-effective methods for reducing PT. This lack of theory-driven interventions has impeded efforts to deal with this problem in a cost-effective manner.

Predictors of Premature Termination

Numerous client and therapist variables have been examined for their ability to predict PT from psychotherapy (Beutler, Machado, & Neufeldt, 1994), often with disappointing results (Reis & Brown, 1999; Wierzbicki & Pekarik, 1993). Beutler, Machado, & Neufeldt (1994) report that poorly educated, lower SES clients are less likely to seek out and continue in psychotherapy than more privileged clients. Results for the study of ethnicity as a predictor are mixed, with a slight trend for minority group members to drop out over White clients. Such widely studied client factors as gender, age, and diagnosis do not reliably predict PT in outpatient settings (Garfield, 1994; Reis & Brown, 1999). Studies of therapist variables are likewise limited in their ability to predict PT (Garfield, 1994). Modest correlations between social influence variables such as therapist expertness, attractiveness, and trustworthiness (Strong, 1968) and PT have been inconsistently obtained in a few studies (Garfield, 1994), with therapist gender, experience level, and facilitative conditions such as empathy and warmth demonstrating relatively little impact on PT. In general, client social class variables most reliably predict PT (Wierzbicki & Pekarik, 1993).

Variables related to therapeutic process and treatment alliance have often been determined to be more predictive of PT from psychotherapy than client or therapist

variables alone. Client expectations of treatment duration more accurately predict PT than does any demographic variable, and PT rates increase when therapists do not accurately identify their clients' conceptualizations of their problems (Mueller & Pekarik, 2000; Wierzbicki & Pekarik,1993). Garfield (1994) adds that process variables such as the therapist's regard for the client, judgment of the client's ability to form a therapeutic relationship, and ability to acknowledge the content of their clients' communication were positively correlated with treatment retention. Communication harmony between therapist and client and similar expectations about therapy duration, content, process, or outcome is shown to predict lower PT rates (Mennicke, Lent, & Burgoyne, 1988). Tryon and Kane found that the extent to which clients relate to their therapists at intake predicted strength of working alliance, which in turn predicted termination status (1993; 1995). Process variables such as therapeutic alliance, dynamic work in session, client exploration, and focus on termination significantly predict continuation in therapy (Piper et al., 1999). Samstag et al. (1998) examined interpersonal process variables such as client and therapist-reported working alliance, therapist ratings of client hostility, client ratings of therapist friendliness, and each entity's ratings of session "smoothness" versus "depth" as they related to PT. In general, client ratings of working alliance were better predictors of overall outcome than therapist ratings. Reis and Brown (1999) explain these findings within the construct of "perspective convergence." Therapists who do not share their client's opinions of their problems may alienate clients by moving therapy along too quickly. As perspective divergence increases, PT is also likely to increase. Theoretical models that emphasize convergent expectations between therapist and client have significant

potential to reduce PT from outpatient psychotherapy.

The Transtheoretical Model of Behavior Change

The Transtheoretical Model of Behavior Change (TTM) was developed in response to a realization by researchers that psychotherapy clients spend relatively little time actually in therapy, and that much of their behavioral change must therefore be taking place outside of the therapeutic session (Prochaska, 1999; Prochaska et al., 1991). Early research suggested that clients who successfully change their behavior employ 10 processes of change (Prochaska, 1979) that are then systematically applied across a temporal series of stages of change (Prochaska & DiClemente, 1982, 1983). These processes include consciousness raising, dramatic relief, environmental reevaluation, self-reevaluation, self-liberation, counter-conditioning, contingency management, stimulus control, helping relationships, and social liberation (Prochaska, 1979; Prochaska, 1999; Prochaska, DiClemente, & Norcross, 1992; Prochaska, Velicer, DiClemente, & Fava, 1988). Successful psychotherapy clients and self-changers apply particular change processes during specific stages of change in a remarkably consistent fashion (Prochaska, DiClemente, & Norcross, 1992). The construct of stages of change is supported in the literature (Prochaska, 1999; Prochaska, DiClemente, & Norcross, 1992), and encompasses 6 stages: Precontemplation, Contemplation, Preparation, Action, Maintenance, and Termination (Prochaska, 1999).

Precontemplation: Precontemplation is the stage in which the client neither recognizes that their behaviors require change, nor contemplates making any behavior changes within a specified time period, usually 6 months (Prochaska, 1999).

Precontemplators may remain in dangerous and maladaptive behaviors indefinitely, and may present to mental health agencies under psychological distress but with little acknowledgement that personal behavior change may be necessary.

Contemplation: Contemplators are those clients who have acknowledged that their current behavior patterns may be doing them more harm than good (Prochaska, 1999), and who consider change as a necessity within the next 6 months. Like Precontemplators, Contemplators may remain in this stage for months, and do not typically respond well to prevailing action-oriented treatments.

Preparation: Individuals in the Preparation stage are prepared for action, typically to begin within a month, and are best served by traditional, action-oriented interventions and treatment modalities. These individuals in many ways represent the "ideal" psychotherapy client (Prochaska, 1999).

Action: Individuals in the Action stage have already made behavioral changes within the past 6 months (Prochaska, 1999). Individuals in this stage of change tend to receive positive reinforcement from others due to the visibility of their behavior change (Prochaska, DiClemente, & Norcross, 1992). Behavior change must be genuine and clinically significant to truly represent the Action stage (Prochaska, 1999).

Maintenance: People in the Maintenance stage of change have completed necessary behavioral modifications, and are now working to avoid relapse. This stage is postulated to last from 6 months to 5 years following behavior change. Relapse is less a problem in this stage than for those individuals still in the Action stage, due to the recognition that prolonged behavior change requires sustained and consistent effort (Prochaska, 1999).

Termination: The Termination stage of change represents the successful and final completion of behavior change, when the individual is confident and no longer considers relapse a significant threat (Prochaska, 1999).

Implications of the Transtheoretical Model for Premature Termination

The Transtheoretical Model of Behavior Change provides a theoretical framework from which to understand the problem of PT from therapy. This framework emphasizes therapists' recognition of their clients' motivation and readiness to change in therapy, and encourages appropriate therapist actions geared towards meeting their clients where they are (Prochaska, 1999; Velicer et al., 1998). It is hypothesized that people are less likely to drop out of therapy due to inappropriate demand characteristics if they receive interventions matched to their specific needs (Velicer et al., 1998). Most traditional therapeutic interventions assume that clients enter therapy ready for immediate action (Prochaska, 1995; Prochaska, DiClemente, & Norcross, 1992). This assumption would theoretically alienate clients in Precontemplation or Contemplation stages of change, potentially resulting in greater PT from therapy than for clients in the Action stage (Prochaska, 1995; Prochaska, DiClemente, & Norcross, 1992).

Two studies have examined the ability of the TTM to predict PT from psychotherapy. Smith et al. (1995) examined the Stages of Change Scale (SCS) and the Processes of Change Questionnaire (PCQ) for their ability to predict PT in a university counseling center sample (N = 74). Premature terminators (PT's) differed from non-PT's on the stage of change at which they entered therapy. PT's entered therapy in the Precontemplation stage to a greater degree than was predicted by

chance, as did non-PT's in the Preparation and Action stages. Additionally, the overall SCS score profile for non-PT's is higher than for PT's. PT's were predicted to use fewer processes of change than non-PT's, which was demonstrated for 6 of the 10 change processes accessed by the PCQ. PT status was predicted by the stage of change at which a client entered therapy, with all 9 clients in the Precontemplation stage leaving therapy by their second post-intake session. Likewise, none of the 15 clients in the Preparation or Action stages of change prematurely terminated therapy. Results of this study describe a distinct Precontemplation stage of change that predicts PT, a Contemplation stage which is somewhat less correlated with PT, and Preparation and Action stages in which clients typically do not PT from therapy. PT's also used fewer change processes than appropriate terminators or therapy continuers.

Brogan et al. (1999) compared variables derived from the TTM to traditional client characteristic variables for their ability to predict PT. Sixty client-therapist pairs were sampled from university counseling centers (51.7%), a CMHC (38.3%), and a doctoral training clinic (10%). PT was defined as termination against the therapist's advice within 10 sessions. Variables from the TTM included stages, processes, and levels of change, and decisional balance of behaviors. Also compared were client variables such as age, income, and education levels, and therapist variables such as experience, gender, age, and education level. None of the client or therapist variables was significantly predictive of PT. However, a prediction equation consisting of 11 variables (i.e., SOC's Precontemplation, Contemplation, and Action; POC's stimulus control, environmental reevaluation, contingency management, and resistance; and decisional balance variables self-approval, utilitarian gains for self, self-disapproval,

and utilitarian losses of others) was derived through discriminant function analysis. The prediction equation correctly predicted PT in 92% of cases when discriminating PT's from a combination of appropriate terminators and therapy continuers. Levels of change did not reliably predict termination status. PT's wanted to change their environments more than themselves, and tended to be in the Precontemplation stage of change. They likewise tended to overestimate the losses their therapy might pose for others (e.g., cost), and to underestimate the personal benefit they themselves might gain. Contemplators as a group were most likely in this study to continue in therapy rather than PT or terminate appropriately, though the authors note that this group preferred talking about change rather than actually making needed changes. This last finding was not anticipated by the researchers, due to the TTM's prediction that Contemplators are not yet ready to commit to working on behavioral change. As in Smith et al. (1995), Contemplators should therefore be second only to Precontemplators in their likelihood to PT from therapy.

Unlike other variables shown to predict PT from psychotherapy (Garfield, 1994; Reis & Brown, 1999), significant TTM constructs that predict PT are amenable to treatment. The TTM might therefore be used first to identify clients who should be most at risk for PT (i.e., Precontemplators & Contemplators), and then to design and empirically test dropout reduction techniques with these individuals. These results suggest that the TTM-derived variables powerfully predict PT from psychotherapy, though replication in diverse settings and with diverse populations is still needed (Brogan, et al., 1999). A major implication is that the ability to predict PT on the basis of theoretically derived process variables should lead to the development and

testing of techniques to advance clients across the stages of change and, hence, better prepare them to benefit from therapy (Brogan et al., 1999; Smith et al., 1995). Such interventions should most importantly be matched to the client's stage of change at intake. Clients in the Precontemplation and Contemplation stages of change (theoretically most at risk for PT), for example, should receive dropout reduction techniques derived from the TTM. These might emphasize the change processes of consciousness-raising and self-reevaluation to help these clients acknowledge their need to change. They should also be encouraged to balance their problems against the pros and cons of therapy (Brogan et al., 1999).

Dropout Reduction Techniques -- Motivational Interviewing

Studies of dropout reduction techniques have produced promising results. Assigning clients on the basis of cultural compatibility (i.e., gender by ethnicity) with the therapist has been shown to reduce PT in CMHC settings, (Reis & Brown,1999), as has the use of administrative techniques such as reducing wait times between intake and counselor assignment (Mennicke, Lent, & Borgyne, 1988; Salta & Buick, 1989; Stasiewicz & Stalker, 1999) and telephone appointment reminders (Reis & Brown, 1999; Salta & Buick, 1989). In a review, Walitzer, Dermen, and Connors (1999) concluded that the use of preparatory techniques such as role induction, vicarious therapy pretraining, and experiential pretraining reduces dropout from treatment, and may improve outcome. Reis and Brown, (1999) note that, although pretherapy preparation techniques show promise for improved retention and outcome, use of such techniques is rare.

A significant implication of the Transtheoretical Model for the reduction of PT

is that once a client's readiness for change is assessed, subsequent intervention can be designed and implemented to advance the client towards a more productive stage of change (Prochaska, 1995, 1999; Prochaska, DiClemente, & Norcross, 1992; Velicer et al., 1998). Motivational Interviewing is one such intervention, derived from the TTM, which is designed to raise the client's motivation for therapy, and thus improve psychotherapy participation and outcome (Walitzer, Dermen, & Connors, 1999). MI techniques are postulated to be most effective with individuals in the Precontemplation and Contemplation stages of change (DiClemente, 1991).

DiClemente (1991) provides recommendations for the conduct of Motivational Interviewing with clients in the Precontemplation and Contemplation stages of change. He notes that individuals in the Precontemplation stage of change are perhaps most in need of MI techniques before action-oriented interventions can be effective. They respond best to empathy, reflective listening, being provided choices, the instilling of hope, exploring barriers to change, and paradoxical interventions. The Contemplator is also in need of MI strategies, and often responds best to being provided information, exploring incentives to change, and emphasis on the pros of behavior rather then the cons of not changing.

Miller and Rollnick (1991) describe 5 basic principles of MI techniques as 1) expression of empathy, 2) development of discrepancy, 3) avoidance of argumentation, 4) rolling with resistance, and 5) support of self-efficacy. The expression of empathy includes an emphasis on reflective listening and acceptance, with express acknowledgment that ambivalence about change is normal. The MI interviewer is then advised to help the client develop a discrepancy between their goals

and present behavior. Clients are encouraged to articulate independently their need for change. Argument is seen as unproductive, and so is deterred by avoidance of labeling. Resistance is not viewed as a threat by the MI interviewer, but as valuable input from the client which implies that a change in strategies may be called for. Interviewers promote their clients' sense of self-efficacy and understanding that alternatives exist that can help them reach their goals.

Empirical research applying MI techniques specifically to the reduction of PT is limited (Walitzer et al., 1999). Swanson et al., (1999) administered a single, one-hour session of MI to psychiatric and dually-diagnosed clients referred for outpatient aftercare. New hospital inpatients were randomly assigned to receive either standard treatment (ST) or ST plus MI. All participants completed the URICA (McConnaughy et al., 1989) stage of change scale at intake. Those in the ST plus MI condition met with a therapist for 15 minutes at the beginning of treatment to discuss their URICA scores. They then met with their therapist again just before discharge, for an hour-long MI session. The two groups were compared for attendance to an initial follow-up outpatient aftercare therapy session. For participants with psychotic disorders, affective disorders, and dual-diagnoses, significantly more ST plus MI patients than ST patients attended the initial session. In addition, for non-dually-diagnosed patients, the 15 minute orientation session was correlated with better attendance at inpatient cognitive-behavioral treatment groups. Walitzer et al. (1999) report that the use of motivational enhancement techniques improved participation in a residential alcoholism treatment program, and resulted in less drinking at a 3-month follow up. In a second study, a brief MI technique at intake improved outcomes with outpatient

alcoholism treatment clients, though dropout was not affected in this sample.

Research Limitations

The utility of the literature on PT is confounded by a number of methodological limitations (Garfield, 1994). A majority of empirical studies at large do not describe their methods for recruiting subjects sufficiently to determine why attrition occurred in their particular samples (Flick, 1988). Many studies claiming to study termination status are really studying early termination, a construct that may include both PT's and early appropriate terminators (Reis & Brown, 1999). The definition of PT used in research studies has been shown to be the best single predictor of dropout (Wierzbicki & Pekarik, 1993), and this definition varies widely across studies (Garfield, 1994; Reis & Brown, 1999). The definitions of variables such as client and therapist characteristics are likewise inconsistent across studies (Mennicke et al., 1988), limiting their ability to be meaningfully compared. In response to these research shortcomings, Mennicke et al. (1988) recommend that researchers define their variables in theoretically prescribed manners, and that they utilize theoretical models of attrition in planning research. The Transtheoretical Model both describes the primary reasons that PT from psychotherapy occurs, and offers clear directions for development and study of appropriate interventions that are firmly based on significant tenets of the model.

Statement of the Problem

Premature termination is a significant strain on scarce mental health resources. The ability of agencies to predict and reduce premature termination through cost-effective means improves the management of those resources. However, few variables

consistently predict PT in the literature, and studies examining interventions to reduce PT are relatively rare. In addition, very little of this literature applies established theory to the question of reducing PT from psychotherapy.

Recent literature suggests that the Transtheoretical Model of Behavior Change is useful in predicting which psychotherapy clients are at greatest risk for PT at the outset of their treatment. Interventions derived from the TTM may prove to be optimally effective in motivating clients to an appropriate stage of change, and thus, in reducing PT. This study has been designed to examine whether the TTM-derived stages of change construct predicts PT from outpatient psychotherapy, and whether the use of brief Motivational Interviewing techniques impacts attrition from therapy by these clients.

Research Hypotheses

The hypotheses for this study are:

1. Outpatients in the Precontemplation and Contemplation Stages of Change will be more likely to terminate psychotherapy prematurely than those in more advanced, action-oriented stages of change.
2. A Motivational Interviewing intervention designed to address the specific readiness to change characteristics of Precontemplators and Contemplators will reduce these outpatients' incidence of premature termination.

METHOD

A posttest-only control group design was employed in this study, with random assignment to treatment. This type of design allowed for direct comparison of PT

between individuals in the treatment and no-treatment control groups. The predictive validity of the stages of change measure for PT was examined through post hoc analysis.

Participants

The participants in this study were 214 adult outpatient clients who presented at a regional community mental health care center for individual, family, couples, or group psychotherapy over a period of 4 and 1/2 months. They sought services at two urban and five rural clinics administered by this agency. There were a total of 127 female and 87 male participants in this sample (treatment group [TG] females = 35, males = 16, no-treatment control group [NTCG] females = 37, males = 22, at-large control group [ALCG] females = 55, males = 49). Ages of participants ranged from 18 to 71 (M = 36.18, SD = 13.91), 18 to 64 (M = 35.02, SD = 11.93), and 18 to 84 (M = 33.53, SD = 11.91), in the TG, NTCG, and ALCG conditions, respectively. The ethnic breakdown per group was as follows: TGs = 84.3% Caucasian, 2.0% African-American, 9.8% Hispanic/Latino, 2.0% Native American, and 2.0 % Biracial; NTCGs = 91.5% Caucasian, 1.7% African-American, 1.7% Hispanic/Latino, 1.7% Native American, and 3.4% Not Reported; and for the ALCGs, 93.3% Caucasian, 2.9% African-American, 2.9% Hispanic/Latino, and 1.0% Native American. Approximately 75.2% of this sample resided in primarily rural areas. Nearly 68% had access to health insurance, with another 11.2% eligible for Medicaid/Medicare reimbursement, and the remainder self-pay.

Instrument

One psychometric instrument was utilized in this study, the Stages of Change

Scale (McConnaughy, Prochaska, & Velicer, 1983; McConnaughy et al., 1989; SCS). Permission to use this instrument was obtained from the authors. Demographic and dropout data were collected from the institutional computerized admissions tracking system.

The Stages of Change Scale (SCS) has been widely utilized in studies of the Transtheoretical Model of Behavior Change (See Appendix II). It is a 32-item questionnaire designed to assess an individual's current stage of readiness for involvement in change of a problem behavior. McConnaughy et al. (1983; 1989) developed the SCS to measure the five stages of change hypothesized by the original TTM.

McConnaughy et al. (1983) devised a rational scale to measure the five stages of change (i.e. Precontemplation, Contemplation, Decision-Making, Action, and Maintenance). The authors generated 165 items derived from behavioral definitions of the stages of change. A 5-point Likert scale was used, ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Three judges familiar with the TTM were requested to place each item into its appropriate stage of change. One hundred, forty-five of the original 165 items had 100% agreement. One hundred, twenty-five of these remaining items were retained for analysis. Twenty-five items defined each stage of change. The 125 items were presented to 155 adult outpatients, and analyzed in three stages to reduce the total number of items. Items were reduced from 125 to 32 in three phases on the basis of three steps in each phase: a) principal components analysis on inter-item correlations with Varimax and oblique rotations, b) correlations between each item and scale total score, and c) coefficients alpha for items hypothesized to measure

each stage of change with and without a particular item included. The Decision-Making stage of change was dropped from analysis after the second phase as it was determined not to be measuring a separate stage. The resulting 32 x 32 item matrix was submitted to principal components analysis. The Varimax rotated component patterns revealed that each of the four remaining stages of change was comprised of 8 items each which loaded highly on their respective components and not on other components. These components accounted for 58% of the total variance. Coefficients alpha ranged from .88 to .89 for the four scales. Adjacent stages were determined to correlate more highly with each other than with other stages, forming a simplex pattern. Cluster analysis yielded 9 subtypes accounting for 90% of the variance in the sample.

The Stages of Change Scale (SCS) was cross-validated using an adult outpatient sample with a high incidence of severe psychiatric disturbance (N = 327; McConnaughy et al., 1989). Participants completed the SCS at intake. Principal components analysis with Varimax rotation was performed on the 32 x 32 matrix of inter-item correlations. Results of this analysis replicated results of the McConnaughy et al. (1983) sample, with some minor exceptions. One item from the Action stage loaded more highly on the Contemplation component. The components accounted for 45% of the total variance in this sample. Cronbach's Alphas for the four scales ranged from .79 to .84. Means and standard deviations for each of the scales were decidedly similar to those in the original sample. The correlations among scales replicated the original study as well. Contemplation, Action, and Maintenance were found to be related but "not highly redundant." Cluster analyses of the subject pool yielded an 8-

subtype-cluster solution rather the 9-cluster solution found in the original sample. The authors conclude that this study supports an invariant sequence of stages of change.

Additional reliability data for the SCS (referred to as the University of Rhode Island Change Assessment Scale [URICA]) is reviewed in Carey et al. (1999). The internal consistency reliability of the SCS has been evaluated using scales of from 28 to 32 items. Alpha coefficients for the 32-item version range from .79 to .89 per scale, and for the 28-item version, from .69 to .83. Temporal stability of the SCS has been reviewed in only one study. Stability over time was determined to be adequate over a 3-day period with substance abuse samples. However, the reviewers note that the study's employment of a t-test approach is inappropriate due to this method's insensitivity to specific item-by-item differences. Carey et al. (1999) summarize the SCS's internal consistency reliability as adequate, and applaud the fact that the measure is theory based. They caution, however, that the measure's temporal stability has not been well established.

The validity of the SCS is reviewed in Carey et al. (1999). Factorial evidence for the SCS's validity has been mixed overall. While the four-subscale structure of the measure is supported in two studies of psychotherapy clients and one study of alcoholic outpatients, this structure was not replicated in a sample of drug abusers. Studies have been inconsistent in their ability to interpret scale scores in terms of discrete stages. Contemplation, Action, and Maintenance have been shown to correlate positively with one another in one study, and negatively with the Precontemplation stage in another. Based on these findings, researchers have encouraged the use of stage profiles produced by cluster analysis to classify individuals

within stages of change. However, the number of clusters varies from 2 to 9 across studies, and appears to be heavily sample-dependent. It has been suggested that a series of distinct stages does not exist, and that instead a two-cluster model of change ("ready or not") best describes the data. Specific clusters have, however, been associated with other behavioral and attitudinal measures, such as drinking behaviors and self-efficacy.

Predictive validity of the SCS has been suggested (in Carey et al., 1999), with higher scores comprised of the summed Contemplation, Action, and Maintenance scales predicting better outcome in a sample of smokers. In contrast, the SCS did not predict completion of an alcohol treatment program. The SCS was likewise unable to distinguish stages of change between different drug abuse samples. The authors suggest that the best use of the SCS might be as a single, continuous measure of readiness to change rather than interpreted across stages of change.

Motivational Interview

The motivational interview was conducted by telephone in a semi-structured format (See Appendix II) adapted from models described in the literature (DiClemente, 1991; Lawendowski, 1998; Rollnick & Bell, 1991; Rollnick & Heather, 1992; Walitzer, Dermen, & Connors, 1999). All interviews were conducted by the primary researcher. Phone interviews began with introductions, followed by reminders regarding confidentiality and informed consent. Counseling "microskills" such as reflective listening, open questions, and minimal encouragers (Ivey & Authier, 1978), were employed throughout the interview process. Participants first provided a description of their presenting problem, symptoms, and the factors that led to their

coming in for treatment. The interviewer conveyed empathy through reflective listening and paraphrasing. The interviewer then shared the result of the assessment instrument (SCS) and information concerning the individual's potentially greater likelihood of leaving therapy before significant gains have been realized. The interviewer discussed the client's presenting problem, symptoms, support factors, and SCS results in a manner intended to be meaningful to the client, ignoring formal diagnosis. The client was encouraged to consider for her or himself the relative costs and benefits of making behavior change necessary for improved functioning. Responsibility for making behavior change was discussed as resting with the client alone, though the interviewer made it clear that change was advisable. The interviewer reviewed the types of interventions that may be incorporated by the client's therapist, as well as other treatment options that may address the client's particular issues. The interviewer ended each interview by stressing that treatment is likely to be effective only if the client is committed to making appropriate change.

Procedure

This study was approved by Institutional Review Boards (IRB) of both the University of Oklahoma and of the agency from which data were collected. An estimated 1,000 SCS questionnaires and consent forms along with routine agency intake questionnaires were mailed out to adults who requested outpatient services over a period of approximately 4 1/2 months. Clients brought these packets in to their respective treatment sites at the time of their initial scheduled intake session. Approximately 264 questionnaires were completed in total, for an estimated 26% return rate. Of these, 47 were excluded from analysis due to the client having come in

for services other than outpatient psychotherapy (e.g., inpatient treatment, medication evaluation, psychological testing, etc.). Three others were excluded due to being below 18 years of age. In all, data on 214 participants were retained for analysis. Stage of change was calculated by summation of each scale on the SCS (i.e., Precontemplation, Contemplation, Action, Maintenance) divided by the number of items in each scale. The highest scale score determined the stage of change at intake, with tie scores going in the direction of the higher stage of change. By this method, 1.9% of the sample were Precontamplators, 65% were Contemplators, 24.3% were in the Action stage, and 8.9% were in the Maintenance stage at intake.

Questionnaires were either placed in a specified location for daily collection by the researcher, or were couriered daily from outlying sites. Questionnaires were scored each day, and clients identified as high PT risks (i.e., Precontemplation & Contemplation Stages of Change) were then assigned to either a treatment group (TG) or a no-treatment control group (NTCG) using a random number table. All participants in the Action and Maintenance stages of change, as well as those who had been assigned as clients to the primary researcher, were assigned to the at-large control group (ALCG). Participants who did not list home telephone numbers or who requested not to be interviewed by telephone were also placed in the ALCG group.

Fifty-one participants were ultimately retained in the TG condition, and 59 in the NTCG condition. Those clients assigned to the treatment condition were contacted by phone by the researcher within 72 hours of their intake appointment. They received a Motivational Interviewing intervention that ranged in duration from 6 to 35 minutes ($M = 10.67$, $SD = 4.74$). Seven participants originally assigned to the

TG declined to participate in this interview, or could not be reached by telephone after several attempts, and so were removed to the ALCG condition. The average number of calls required for each participant before the MI could be completed was 2.98 (Range = 1 to 8, SD = 2.07).

Duration in therapy was monitored for all participants using the facility computerized admission tracking system. The number of weeks within 6 weeks of intake in which each participant attended at least one therapy session was compiled. Participants were considered to have prematurely terminated if they did not complete more than 2 sessions during this 6-week period. These 2 sessions included the intake session, as virtually all clients at this agency continue therapy with their intake therapist. This cutoff was chosen in light of the finding by Pekarik (1992) that outpatients classified as "early" PT's (1-2 sessions) were significantly more symptomatic than "late" PT's (3+ sessions) at 4-month follow-up. Dropping out within 1 or 2 sessions predicted poorer functioning than even a brief course of therapy.

Demographic data relevant to the question of PT from psychotherapy was also collected from computerized admissions tracking records. These included client age, gender, ethnicity, rural vs. urban residence, and method of payment (e.g. self-pay, private insurance) as a crude index of socio-economic status. Initial diagnosis and Global Assessment of Functioning (GAF) as recorded by the intake clinician were collected in this same manner.

A power analysis was conducted (power set at .80), suggesting a need for a minimum of 50 participants in each of the TG and NTCG conditions. Effect sizes are not reported for studies examining the effect of MI techniques on PT from treatment

(Lawendowski, 1998; Swanson et al., 1999; Walitzer et al., 1999), or for studies of MI treatment outcomes in general (Miller 1996), so a medium (.50) effect size was therefore deemed appropriate for the power analysis. The TG and NTCG conditions were composed of individuals in the Precontemplation and Contemplation Stages of Change. Examination of previous studies (DiClemente et al., 1991; McConnaughy et al., 1989; McConnaughy et al., 1983; Smith et al., 1995; Velicer et al., 1995) revealed that between 40 and 79% of participants fell within these stages of change.

RESULTS

Demographic variables for all comparison groups are presented in Tables 1 and 2. One-way ANOVA's calculated on the continuous variables of age and Global Assessment of Functioning (GAF) revealed no differences between the treatment (TG) and two control (NTCG, ALCG) conditions. Chi Square analyses were computed to assess for group differences in the frequencies of categorical variables with the exception of ethnicity, which could not be analyzed due to inadequate cell sizes. These analyses revealed no significant group differences for gender, rural/urban residence, or payment status. Diagnostic category was significantly related to treatment group ($X^2obs = 8.835$ [$df = 4$, $N = 214$, $p < .10$]), with higher than expected frequencies of combined affective and personality disorder participants in the TG condition, and lower than expected frequencies of substance abuse participants in this group. The reverse was true for the ALCG condition, and frequencies did not depart significantly from those expected for the NTCG condition. The Premature Terminator ($N = 77$) versus non-PT ($N = 86$) individuals in the combined NTCG and ALCG

conditions were compared using Chi Square analyses for frequencies of gender, diagnosis, rural/urban residence, and payment status. Ethnicity was excluded due to inadequate cell size. None of these analyses was significant. However, a Mann-Whitney U analysis calculated for number of session by gender revealed that women ($M = 3.07$, $SD = 1.708$) attended significantly more sessions than men ($M = 2.80$, $SD = 1.872$; $Z = -1.7090$, $p < .0875$).

Stage of change frequencies (Contemplation, Action, and Maintenance) across categorical demographic variables were compared using Chi Square analyses for the entire sample ($N = 210$). Gender, rural/urban residence, and payment status were not significantly related to stage of change. Diagnosis was modestly related to stage of change ($X^2obs = 6.12$ [$df = 3$, $p < .15$]), with Contemplators more likely to be diagnosed with affective disorders and less likely to have received substance abuse diagnoses, while Action/Maintenance individuals (stages combined to preserve cell sizes) demonstrated the opposite relationship with regard to diagnostic category. One-Way ANOVA's comparing age and GAF across stages of change were not significant.

The first hypothesis predicted that participants who score in the Precontemplation and Contemplation stages on the Stage of Change Scale would be more likely to terminate psychotherapy prematurely than those in the Action and Maintenance stages of change. For the purpose of this analysis, termination status was conceptualized in two ways, both as a continuous and a dichotomous variable. The number of weeks within 6 weeks of intake in which a participant completed a session of individual, couples, family, or group psychotherapy was computed for each

participant. Each participant was then characterized as either a Premature Terminator ([PT] </= 2 sessions including intake), or Non-PT (>2 sessions).

To help determine if the Stage of Change Scale (SCS) predicted PT status, the TG condition was excluded from this analysis. The remaining 163 participants making up the NTCG and ALCG conditions completed an average of about 3 sessions (M = 2.95, SD = 1.78) in 6 weeks, with 47.2% attending 2 sessions or less, and therefore characterized as PT's. As Stage of Change (SCS) and Sessions represented positively skewed distributions, Spearman rho correlations were calculated (See Table 3). SCS exhibited a modest negative correlation with number of sessions completed (r_s=-.1784, p = .023). A Chi Square analysis was conducted to compare frequencies of PT across the Contemplation, Action, and Maintenance stages of change (Precontemplators [N = 4] were excluded due to inadequate cell size). Stage of change was significantly related to PT status (X^2obs = 8.38 [df = 2, N = 163, p < .025]), with Contemplators prematurely terminating less often than expected, and Action and Maintenance stage individuals more than expected. A Kruskal-Wallis One-Way ANOVA comparing number of sessions across the stages of change was significant (X^2obs = 8.6889 [df = 2, N = 163, p = .0130]). Post hoc analysis revealed that Contemplators in the combined control groups attended more sessions (M = 3.36, SD = 1.85) than did participants in either the Action (M = 2.58, SD = 1.54) or Maintenance (M = 2.37, SD = 1.74) stages of change (Tukey's HSD p < .05 w/One-Way KWANOVA). A Mann Whitney U analysis comparing number of sessions for combined Precontemplators/Contemplators versus Action/Maintenance individuals likewise revealed that participants in the lower stages of change attended more sessions (M =

3.28, SD = 1.86) than those in higher stages (M = 2.52, SD = 1.58; Z = -2.5746, p < .01). In summary, while an individual's stage of change at intake does influence how many sessions they attend, as well as whether or not they terminate therapy prematurely, the relationship appears to be in the opposite of the hypothesized direction. These analyses were repeated (N = 138) excluding participants who attended only group psychotherapy. Many of these individuals were court-ordered for groups such as domestic violence and anger management, and would intuitively be more likely to attend a higher number of sessions and drop out less frequently, despite entering therapy in less advanced stages of change due to the involuntary nature of their referral. Results of these analyses were identical to those described above. Therefore, the null hypothesis could not be rejected.

The second hypotheses stated that participants (Precontemplators and Contemplators) assigned to the TG condition and receiving a brief telephone Motivational Interviewing (MI) intervention would less often be characterized as PT's than would those assigned to the NTCG condition, and would attend more overall sessions. For those receiving the MI intervention, number of calls (M = 2.98, SD = 2.07) required to reach each participant, as well as the calls' duration in minutes (M = 10.67, SD = 4.74), was compiled (See Table 4). Spearman correlation coefficients were calculated for these variables (See Table 5). Call duration was positively correlated with GAF (r_s = .34, p = .015), while number of calls was correlated negatively with participant age (r_s = -.30, p = .033). Independent samples t-tests were run to compare mean differences between PT's and non-PT's on number of calls and call duration. Call duration did not differ significantly between groups, but non-PT's

required significantly more calls before contact was achieved (M = 3.50, SD = 2.389) than did PT's (M = 2.24, SD = 1.22; $p < .03$). Chi Square analyses comparing PT's versus non=PT's on demographic variables in the TG (N = 51) condition were not significant for gender or rural/urban residence, and could not be calculated for ethnicity, payment status, or diagnosis due to inadequate cell sizes.

To directly assess the effect of MI interventions on PT for Precontemplators and Contemplators, the TG (N = 51) and NTCG (N = 59) conditions were compared using a Chi Square analysis with Yates Correction for Continuity for the frequency of PT (See Table 6). This analysis was not significant ($X^2obs = .00433$ [df = 1, N = 51, $p > .90$]). A Kruskal-Wallis One-Way ANOVA for number of sessions by group (TG [M = 2.96, SD = 1.48] vs. NTCG [M = 3.09, SD = 1.81]) revealed no difference for sessions by group ($X^2obs = .0157$, $p > .90$). Based on these results, the null hypothesis could not be rejected.

DISCUSSION

The purpose of this study was twofold: First, it was intended to help determine if a central construct of the Transtheoretical Model (TTM), stage of change, is useful as an ad hoc predictor of an individual's likelihood to prematurely terminate (PT) from outpatient psychotherapy. It was hypothesized that individuals in the Precontemplation and Contemplation stages of change would PT from psychotherapy at a greater frequency than those in the more change-oriented Action and Maintenance stages. Secondly, for individuals designated as theoretically most likely to PT (Precontemplators and Contemplators), it was hypothesized that a brief telephone

Motivational Interview (MI) intervention, based on the TTM, would lead to lower PT rates.

With regard to the first hypothesis, PT was conceptualized as both a continuous (number of weeks [within 6 weeks post-intake] in which a session of outpatient psychotherapy was completed) and a dichotomous (PT = <=2 sessions, non-PT = >=3 sessions) variable. The cutoff of 2 or fewer sessions was chosen based on findings by Pekarik (1992) suggesting that individuals who PT within 2 sessions were significantly more symptomatic and functioned more poorly than those completing 3+ sessions. Stage of change (SCS) was not related to gender, age, GAF at intake, rural/urban residence, or payment status for the sample as a whole. Only diagnostic category was mildly related to SCS, with Contemplators more likely to be diagnosed with affective disorders and less likely to have received substance abuse diagnoses, and Action/Maintenance individuals demonstrating the reverse of this pattern. Correlations for the NTCG and ALCG conditions revealed that contrary to theoretical prediction, SCS was negatively correlated with number of sessions completed. Thus, the more advanced an individual's assessed stage of change, the fewer sessions she or he was likely to attend within the 6 week period. This finding was further supported by a Kruskal-Wallis One-Way ANOVA which revealed that Contemplators attended more sessions than individuals in either the Action or Maintenance stages of change. Chi Square analyses suggested that, also contrary to prediction, Contemplators were characterized as PT's less often than expected, while Action and Maintenance stage individuals were so characterized more often than expected. Therefore, while the Stage of Change Scale was able to modestly predict

who was more likely to PT from psychotherapy, it did so in the opposite of the theorized direction. The null hypothesis therefore could not be rejected.

The second hypotheses predicted that participants (Precontemplators and Contemplators) assigned to the TG condition and receiving a brief telephone Motivational Interviewing (MI) intervention would less often be characterized as PT's than would those assigned to the NTCG condition, and would attend more overall sessions. Chi Square and One-Way ANOVA analyses revealed no differences among groups (TG, NTCG, and ALCG) on demographic variables such as gender, age, GAF at intake, rural/urban residence, or payment status. Ethnicity could not be calculated due to inadequate cell sizes. Diagnostic category was modestly related to group assignment, with relatively more affective and personality disorder diagnoses in the TG condition, and less substance abusers and dually-diagnosed individuals. The ALCG had somewhat fewer affective and personality disorder diagnoses and relatively more substance abusers. A Chi Square analysis comparing PT frequencies between the TG and NTCG conditions was not significant. A Kruskal-Wallis One-Way ANOVA for number of sessions by group was also non-significant. Therefore, individuals receiving the MI intervention attended approximately the same number of sessions and dropped out at the same rate as the control group, and the null hypothesis could not be rejected.

The average TG participant often required several calls before being reached, and number of calls was negatively correlated with participant age. Older participants appear to have been more often at home during regular business hours (when most calls were placed). Participant age was also positively correlated with number of

completed sessions. Independent sample t-test results comparing number of calls and call duration between PT's and non-PT's indicated that while call duration did not differ between these groups, non-PT's required significantly more calls before contact was made. Thus, while older participants required less calls before being reached, and fewer calls was correlated with greater frequencies of dropout, older participants dropped out less than their younger counterparts. It is most likely that abnormalities in the distributions of age and number of calls accounted for this apparent paradox.

Participants were initially informed that they might receive a telephone contact within a day or two of their intake. In this era of invasive telemarketing techniques, it is extremely likely that many individuals self-selected out of the study based on the possibility that they might be contacted at home. It is difficult to speculate how this may have affected the study's outcome. However, despite some individuals' obvious annoyance when the phone contact was made, the majority of TG individuals receiving the MI intervention were quite open to participation. They shared at length about personal issues with a relative stranger, often to an extent far beyond what was required to adequately conduct the interview. Duration of the interviews varied widely, and was positively correlated with GAF. This finding corroborated the interviewer's observation that less distressed individuals seemed to be more forthcoming and verbose during the interviews, and often appeared to view the intervention as a mini-therapy session. Though the intervention was neither designed nor intended to substitute for psychotherapy, essentially, all individuals in the TG condition received a brief psychotherapy session with a trained clinician, the researcher, in addition to any received at the agency. It is conceivable that this

opportunity to "vent," combined with the well-defined and directive nature of the MI intervention, may have led some individuals to conclude that no further therapy was needed.

Strengths

An important contribution of this study is that it explicitly tested several theoretical and practical implications of the Transtheoretical Model of Behavior Change (TTM) in a population where the model is not often applied, outpatient psychotherapy. Whereas previous studies examined the ability of TTM-derived constructs to predict PT post hoc, this study applied a central construct of the model, stage of change (SCS), to identify at intake which psychotherapy clients are most likely to PT. It also tested the utility of a TTM-based intervention, the Motivational Interview, to impact retention in therapy for clients identified by the SCS as being at greatest risk of leaving prematurely. In addition, this study was the first time to the researcher's knowledge that an MI intervention had been tested in a brief telephone format. The SCS was predictive of PT in former studies (Brogan et al., 1999; Smith et al., 1995). The utilization of this easily and cheaply administered and scored single instrument, along with the brief telephone MI intervention, was intended to help develop an effective method of reducing PT rates for financially limited agencies. This study thus attempted to incorporate a high level of relevance for treatment providers, while maintaining appropriate experimental rigor.

Limitations

This study incorporated a randomized posttest only design, which adequately addressed most threats to internal validity such as history, maturation, testing, and

instrumentation. Selection effects were minimized by statistical comparison of groups on demographic variables. Though somewhat under-representative of ethnic minority clients, the sample was overall quite typical of clients treated in rural Midwestern community mental health centers, allowing for generalizability of results to these populations. It is plausible that characteristics of the treatment intervention (MI) may have changed over repeated administrations, and that factors such as level of enthusiasm and time pressure might have altered the researcher's conduct of this intervention over time. This implies that, despite the standardized interview format, not all participants in the TG condition may have received identical interventions. It is unclear how this may have effected the study's outcome, but should be considered a possible threat to internal validity. Attrition from this sample primarily consisted of individuals completing questionnaires who were either not subsequently referred for psychotherapy, or who were too young for inclusion. However, several clients from the TG condition either refused the MI intervention or could not be reached after several calls, and were then assigned to the at-large control condition. This represents a potentially more serious form of attrition, given that a greater number of calls required before contact was achieved was related to less likelihood of dropping out prematurely.

Self-selection by clients concerned about the possibility of being contacted by the researcher at home may have impacted the external validity of the study. This factor should have affected clients in all three conditions equally, but may nonetheless have introduced systematic differences between participants in this study and the population of psychotherapy clients at large. The relationships between independent

and dependent variables were examined across different categories of participants, improving the study's external validity.

Practical Implications

Psychotherapists, chemical dependency counselors, and other mental health professionals incorporating the TTM as a measure of readiness for therapeutic change should use considerable caution in categorizing their clients on the basis of the Stage of Change Scale alone. The measure has demonstrated validity in other studies, but as in the current investigation, results appear to be heavily sample-dependent (Carey et al., 1999). Though the literature demonstrates support for the validity of the TTM in predicting psychotherapy outcome and PT rates, current results suggest that single measures of major TTM constructs are inadequate in categorizing clients or guiding selection of subsequent interventions.

The use of Motivational Interview techniques to improve PT rates in outpatient clinics should not be ruled out on the basis of the current study alone. Several elements of the intervention in the current study were atypical of MI techniques described in the literature, such as its brevity, telephone administration, and administration by an interviewer previously unknown to the participant. Given evidence in the scientific literature of the efficacy of these interventions, the practitioner is recommended to monitor future research developments in the area. Motivational Interview techniques represent well-designed cognitive interventions, and may be useful on an individual case basis.

Theoretical Implications

The Stage of Change Scale (McConnaughy et al., 1983; McConnaughy et al.,

1989; SCS) exhibited little predictive validity in identifying who in this study would leave psychotherapy prematurely. Indeed, what relationship was observed between SCS and PT frequency or number of sessions completed generally ran in the opposite of the direction predicted by the TTM. This contradicts the finding by Smith et al. (1995) that SCS was highly related to PT status, though for a much smaller sample (N = 74). This disparity may be accounted for in part by differences in the samples under study. Nonetheless, the present study adds fuel to the ongoing controversy in the literature (see Carey et al., 1999) over the validity of the stages of change construct, as well as the clinical utility of the SCS instrument for classification and prediction. Several rigorous studies have demonstrated the validity of SCS as a linear construct comprised of four distinct stages of change (McConnaughy et al., 1989; Prochaska, 1994; Prochaska et al., 1992; Velicer et al., 1996). However, the discriminant validity of the SCS measure is not supported elsewhere (see Carey et al., 1999), and fewer than the 4 primary stages of change may adequately account for the data. Some researchers suggest that the SCS measure discriminates only between those individuals who are ready to change (e.g, Preparation, Action), and those who are not (e.g., Precontemplation, Contemplation). However, findings from the present study do not appear to support this characterization of the measure.

The almost complete lack of Precontemplators in this sample may account in part for the observed discrepancy in PT frequencies by SCS. However, Contemplators, comprising the overwhelming majority of the TG and NTCG conditions in the present study, should theoretically in any case have exhibited higher PT rates than their more action-oriented counterparts. At least one previous study

(Brogan et al., 1999) also found that Contemplators did not PT as frequently as Action or Maintenance individuals. However, they tended to prefer talking about, rather than actually engaging in, meaningful change. Though outcome was not assessed in the present study, it may be that the relatively lower level of PT exhibited by Contemplators in this study likewise did not represent a clinically significant difference. If this is the case, the theoretical conceptualization of Contemplators as "behavioral procrastinators" who, though they may consider change to be a potential necessity, are at high risk for PT, may need to be reevaluated. They may instead be willing to go along with the therapeutic process with little commitment to making actual behavioral changes.

Contemplators in this study were often separated from Action stage individuals by very slim numerical margins on the SCS. They often expressed disagreement with their SCS score and subsequent classification as Contemplators in phone interviews, and rarely demonstrated the ambivalence about pros versus perceived costs of behavior change that is theorized to be characteristic of individuals in this stage of change. Most of the interviewed individuals verbalized commitment to change, as well as willingness to continue in therapy. Many Contemplators receiving the MI intervention described themselves as committed to begin behavior change in the near future, with traits of both the Contemplation and Action stages of change. This self-description appears to be more characteristic of the Preparation stage of change, and may also apply to many Action stage individuals in this study. Classification methods that incorporate stages of change profiles, as done in early validation studies of the SCS (McConnaughy et al., 1989; McConnaughy et al., 1983), might represent a more

valid conceptualization of the measure.

All individuals retained in the treatment group were classified as Contemplators at intake. The lone Precontemplator randomly assigned to that condition declined to be interviewed, and was reassigned to the at-large control condition. The Motivational Interview technique utilized in this study was closely patterned after recommendations by DiClemente (1991) for the conduct of MI with Contemplators. It is unclear then why, in this study, the MI intervention had no appreciable effect on either PT status or the total number of session completed. Since all interviews were conducted by the researcher, bias related to "therapist" variables cannot be ruled out as a contributing factor. Another possibility is that, as postulated above, many of these individuals may actually have been in a Preparation stage of change, requiring an adaptation of the technique as advocated by DiClemente (1991) For example, instead of an emphasis on providing information, exploring incentives to change, lowering ambivalence, and raising self-efficacy, these individuals may have benefited more from a focus on coping skills, discussion of barriers to change, and relapse prevention. An additional consideration is the "spiral progression" through stages of change postulated to occur for many individuals (Prochaska et al., 1992). Several Contemplators interviewed in this study were seeking therapy for at least a second time, and may have been more accurately characterized as being in the Action or Maintenance stages of change, and having experienced relapse. A third likely contributor to the ineffectiveness of the MI intervention in this study was the nature of the telephone contact. Participants were never certain ahead of time that they would be contacted, and thus may not have been in a "therapeutic mindset," able to benefit

fully from the intervention when it occurred. Additionally, contact was brief, and the researcher was not familiar to the participants beforehand. Given the demonstrated importance of the therapeutic alliance (Garfield, 1994), it may be the case that, for MI interventions to be optimally effective, they must be performed in person by the individual's therapist. Though this issue has not been directly tested, studies demonstrating improved PT rates with the use of MI techniques (Swanson et al., 1999; Walitzer et al., 1999) typically incorporated more lengthy, face to face, interventions. Additionally, MI interventions in these studies often took place on at least two occasions with the same participants. Because the elements of MI techniques that are responsible for promoting change are not yet well understood (Miller, 1994; 1995; 1996), the theoretical basis of these interventions may need to be broadened to take into account such therapist and contextual variables.

Research Implications

Though the results of this investigation are disappointing in that PT rates were not improved, they clearly point to the necessity of further research to illuminate central TTM constructs. Despite earlier findings, the SCS measure was obviously inadequate in this sample to meaningfully discriminate who would PT from psychotherapy and who would not. The literature suggests that combinations of TTM variables submitted to elegant post hoc analyses have predictive value for PT. However, as demonstrated in this study, any one measure alone is unlikely to be sufficient. Future research should be geared toward the discovery of the optimal TTM-derived predictive equation that can identify individuals at risk for PT on a case by case basis, and early enough in the psychotherapy process that intervention can still

be effectively applied. This may necessitate the development of a predictive algorithm based on a combination of constructs such as profile models of the stages and processes of change, levels of change, and decisional balance variables, to meaningfully predict PT on the basis of the TTM.

Additionally, the continued search for cost-effective means of reducing PT from outpatient psychotherapy should be influenced by present results. This study was the first to examine the efficacy of a brief telephone MI intervention in reducing PT from psychotherapy. Such interventions, most likely able to be administered by trained paraprofessionals, are relatively inexpensive options for financially limited mental health agencies, and should not be rejected based on the results of a single study. Future investigations might compare brief versus longer and/or repeated interventions, MI's conducted by telephone versus in person, and the effect of MI's conducted by primary therapists versus relative strangers. DiClemente's (1991) suggestions for the conduct of MI across the stages of change are not yet empirically validated, and this study was the first to explicitly incorporate these suggestions for individuals in the Contemplation stage of change. Ample opportunity to examine and refine these guidelines should result from continued efforts to apply MI interventions to reduce PT from psychotherapy.

Summary

In summary, the results of this study suggest that assessed stage of change at intake was somewhat predictive of PT rates and of the number of sessions completed for a sample of outpatient psychotherapy clients. However, results ran contrary to what is predicted by major tenets of the Transtheoretical Model (TTM). Individuals in

more advanced stages of change attended fewer sessions, and dropped out at higher frequencies than lower stage of change individuals. Additionally, the TTM-derived Motivational Interview technique did not improve PT rates or number of sessions attended for Contemplators over equivalent, no-treatment controls. Therefore, neither of the null hypotheses in this study could be rejected. Though each hypothesis was based on a critical review of the available literature, this study may have attempted to reach too far beyond the current state of our knowledge. More groundwork must be laid establishing both the predictive validity of the TTM across diverse samples as well as refining MI techniques specifically to address problematic PT from psychotherapy.

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TABLE 1
Descriptive Statistics for Comparison Groups

	Treatment Group (TG)		No Treatment Control (NTCG)		At-Large Control (ALCG)	
Variable	M	SD	M	SD	M	SD
Age	34.57	12.41	35.02	11.93	33.53	11.91
GAF	57.14	8.95	57.61	7.21	56.66	7.95

TABLE 2
Frequencies and Percents for Categorical Variables

	TG		NTCG		ALCG	
Variable	Freq.	Percent	Freq.	Percent	Freq.	Percent
Gender						
Female	35	68.6	37	62.7	55	52.9
Male	16	31.4	22	37.3	49	47.1
Ethnicity						
Caucasian	43	84.3	54	91.5	97	93.3
African-Am.	1	2.0	1	1.7	3	2.9
Hispanic	5	9.8	1	1.7	3	2.9
Native Am.	0	0.0	1	1.7	1	1.0
Biracial	1	2.0	0	0.0	0	0.0
Not Provided	1	2.0	2	3.4	0	0.0
Residence						
Rural	37	72.5	41	69.5	83	79.8
Urban	14	27.5	18	30.5	21	20.2
Pay Status						
Self-Pay	7	13.7	12	20.3	26	25.0
Medicare/Medicaid	7	13.7	5	8.5	12	11.5
Private Ins.	37	72.5	42	71.2	66	63.5
Stage of Change						
Precontemplation	0	0.0	3	5.1	1	1.0
Contemplation	51	100.0	56	94.9	32	30.8
Action	0	0.0	0	0.0	52	50.0
Maintenance	0	0.0	0	0.0	19	18.3
Primary Diagnosis						
Affective	36	70.6	30	50.8	42	40.4
Personality	4	7.8	5	8.5	9	8.7
Substance Abuse	4	7.8	13	22.0	21	20.2
Dual Diagnosis	4	7.8	9	15.3	14	13.5
Other	3	5.9	2	3.4	18	17.2

TABLE 3

Spearman Correlations for Variables of Interest for NTCG's and ALCG's (N = 163)

Variable	SCS	Age	GAF	Sessions
SCS		-.0518	-.0360	-.1784*
Age	-.0518		.0864	.2258**
GAF	-.0360	.0864		- 0495

* <.023, ** <.004

TABLE 4

Descriptive Statistics for Motivational Interview (Treatment Group, N = 51)

Variable	M	SD	Min.	Max.
Number of Calls	2.98	2.07	1.00	8.00
Call Duration	10.67	4.74	6.00	35.00

TABLE 5

Spearman Correlations for Variables of Interest for TG's (N = 51)

Variable	1	2	3	4	5
Age		.0888	-.0401	-.2987*	.2092
GAF	.0888		-.1313	.0841	.3389**
Sessions	-.0401	-.1313		.2269	.1541
Nu. of Calls	-.2987*	.0841	.2269		.1023
Call Duration	.2092	.3389**	.1541	.1023	

* < 033, ** < .015

TABLE 6
Premature Termination by Treatment Group
Frequency Distributions

Group	Premature Terminators	Non-Premature Terminators
TG		
Observed Frequency	21.5*	29.5*
Expected Frequency	21.33	29.67
NTCG		
Observed Frequency	24.5*	34.5*
Expected Frequency	24.67	34.33

*With Yates Correction for Continuity
$X^2obs = .00433, p > .90$

APPENDIX A

PROSPECTUS

Application of the Transtheoretical Model to reduce dropout

from outpatient psychotherapy

INTRODUCTION

Premature termination (PT) describes the manner in which from 30 to 60% of psychotherapy clients exit their treatment; the figure varying depending upon how the concept is defined in the literature (Reis & Brown, 1999). Consistent across definitions is that premature terminators leave therapy before their therapist feels that they are ready. Aside from the potential treatment benefits lost to the client, psychotherapy providers lose income potential when clients abruptly discontinue therapy, and may feel demoralized and rejected following a termination that they perceive to be premature. Each appointment hour not kept is one less that might have been utilized with another needy client.

The problem of premature termination from psychotherapy clearly represents a significant burden on mental health resources. Any improvement in a mental health agency's ability to predict and significantly lower PT rates improves the management of those resources. A host of potential predictors of PT has been examined in the literature (See Garfield, 1994; Reis & Brown, 1999 for review): including client and therapist characteristics, administrative variables (e.g., how long after intake a client is scheduled), relationship variables between therapist and client, among others. Due to a variety of methodological and practical considerations, results of these studies are generally inconsistent, and conclusions are difficult to reach. Nonetheless, some variables such as ethnicity and socio-economic status are consistent predictors of PT. Additionally, though research on techniques to reduce premature termination is limited

(Walitzer et al, 1999), some relatively simple interventions such as appointment reminder calls and addressing client expectations have been demonstrated to reduce PT rates in some settings (Reis & Brown, 1999; Walitzer et al., 1999).

The Transtheoretical Model (TTM; DiClemente & Prochaska, 1982) is a well-validated theory of behavior change that offers insight into the reasons clients do not continue in therapy (Brogan et al., 1999; Smith et al., 1995). Prochaska (1979) performed a comparative analysis of 18 schools of psychotherapy in a search for common processes of change utilized by clients. Ten processes of change were demonstrated to be the best producers of change in clients. These processes include consciousness raising, dramatic relief, environmental reevaluation, self-reevaluation, self-liberation, counter-conditioning, contingency management, stimulus control, helping relationships, and social liberation (Prochaska, 1979; Prochaska, 1999; Prochaska, DiClemente, & Norcross, 1992; Prochaska, Velicer, DiClemente, & Fava, 1988). It was demonstrated that these processes are used not only by clients in treatment but by successful self changers as well (DiClemente & Prochaska, 1982). These particular change processes are applied during specific stages of change in a remarkably consistent fashion (Prochaska, DiClemente, & Norcross, 1992).

Early research identified 5 stages of change (Prochaska & DiClemente, 1982). Prochaska (1999) describes 6 stages of change in the TTM's current conceptualization, including Precontemplation, Contemplation, Preparation, Action, Maintenance, and Termination.

Precontemplation: Prochaska (1999) describes Precontemplation as the stage in which the client does not contemplate making any behavior changes within a

specified time period, usually 6 months. People sometimes remain stagnant in this stage for long periods of time, even indefinitely. Precontemplators may present to mental health agencies under psychological distress but with little or no recognition that personal behavior change may be necessary. These individuals have no motivation to develop across the stages of change, and frequently must be moved by external events or pressures to cause them to contemplate behavior change.

Contemplation: Contemplators are those clients who have acknowledged that their current behavior patterns may be doing them more harm than good (Prochaska, 1999). Change is therefore considered as a potential necessity within the next 6 months. Like Precontemplators, Contemplators do not typically respond well to prevailing action-oriented treatments. Prochaska (1999) refers to this stage as a time of "behavioral procrastination" in which individuals may display pronounced ambivalence about the pros versus the perceived costs of behavior change.

Preparation: The Preparation stage is characterized by a commitment of the individual to begin behavior change, typically within a month. Individuals in this stage are prepared for action, and are best served by traditional, action-oriented interventions and treatment modalities. These individual typically represent the "ideal" psychotherapy client (Prochaska, 1999). The Preparation stage was dropped from early stages of change research due to principal components analyses that did not appear to support its inclusion (McConnaughy, Prochaska, & Velicer, 1983). Prochaska, DiClemente, and Norcross (1992) report that sophisticated reanalysis of these same data supported the retention of the Preparation stage.

Action: Individuals in the Action stage have already made behavioral changes

within the past 6 months (Prochaska, 1999). Individuals in this stage of change tend to receive positive reinforcement from others due to the visibility of their behavior change (Prochaska, DiClemente, & Norcross, 1992).

Maintenance: People in the Maintenance stage of change have completed necessary behavioral modifications, and are now working to avoid relapse. Individuals who present for therapy may indeed be trying to consolidate their behavior changes to avoid relapse in this stage (Prochaska, Rossi, & Wilcox, 1991). The Maintenance stage is hypothesized to last from 6 months to 5 years (Prochaska, 1999).

Termination: The Termination stage of change does not necessarily coincide with the end of formal treatment. Rather, this stage represents the successful and final completion of behavior change, when the individual is confident and no longer considers relapse a significant threat.

The TTM postulates that premature termination results from a lack of convergence between treatment provided and the client's readiness for change, with most treatments assuming the client has already committed to change (Brogan et al., 1999; Prochaska, 1991). Thus, if interventions were directed towards the client's assessed stage of change at the outset of therapy when clients typically make their decision to continue or discontinue treatment (Sherman & Anderson, 1987), PT rates should be reduced (Brogan et al., 1999; Prochaska, 1991). The five stages of change and ten processes of change postulated by this model have been shown to predict premature termination from psychotherapy in a college sample (Smith et al., 1995). Brogan et al. (1999) were able to predict PT with 92% accuracy across a variety of mental health settings using concepts from the TTM. These results suggest that TTM-

derived variables may powerfully predict PT from psychotherapy, though replication in diverse settings and with diverse populations is still needed (Brogan et al., 1999). However, predictive validity for the TTM was only examined post hoc in these studies, and did not evaluate the TTM's utility as a means of *reducing* PT.

Unlike other variables shown to predict PT from psychotherapy (Garfield, 1994; Reis & Brown, 1999), significant TTM constructs that predict PT are amenable to treatment. The TTM might therefore be used first to identify clients most at risk for PT (i.e., Precontemplators & Contemplators), and then to design and empirically test dropout reduction techniques with these individuals. Motivational Interviewing (MI) is one TTM-derived technique that has shown preliminary promise for reducing PT (Swanson et al., 1999; Walitzer, Dermen, & Connors, 1999). These techniques are specifically geared towards raising the client's motivation for therapy. Rollnick and Miller (1995) define MI as "...a directive, client-centered counselling style for eliciting behaviour change by helping clients to explore and resolve ambivalence." Interviewers promote their clients' sense of self-efficacy and understanding that alternatives exist which can help them reach their goals. Two studies examined the use of MI in reducing PT from alcohol treatment (in Walitzer et al. 1999), with promising results.

Premature termination from psychotherapy is a prevalent and potentially serious problem across treatment settings. Studies that examine predictors of PT have generally been of little help in understanding PT, and there exists a lack of theory-based, cost-effective interventions for dealing with the problem of PT. The TTM offers a theoretical understanding of PT that could potentially be applied to reduction of the problem. The TTM offers several easily measured constructs that

have been demonstrated to reliably predict dropout. Additionally, MI is a technique derived from the TTM that shows considerable promise in reducing PT from psychotherapy. The combination of these elements may significantly enhance an agency's ability to accurately predict and reduce PT from outpatient psychotherapy in a quick and cost-efficient manner.

The proposed study will employ the Stages of Change concept from the TTM as a way of identifying those outpatient adult clients who are at greatest risk for PT. Among those deemed at highest risk for PT, half will be randomly assigned to an experimental group, and will receive a telephone MI intervention as an attempt to raise their commitment to therapy and motivation to change. They will be compared to a no-treatment control group to assess whether the MI intervention lowered the incidence of PT in this group. If so, this study could have important implications for mental health agencies wishing to improve their ability to predict and lower the incidence of PT in their facilities.

The following chapter examines the state of our knowledge of premature termination from psychotherapy, including research that has studied methods of reducing the incidence of PT. The Transtheoretical Model of Behavior Change is examined in depth as it applies to clients in psychotherapy. Implications of the model for the understanding of unilateral termination are highlighted. The current study is described in detail in Chapter III, including participants, procedures, data analysis methods, and instruments to be utilized in the study.

Statement of the Problem

Premature termination is a significant strain on scarce mental health resources.

The ability of agencies to predict and reduce premature termination through cost-effective means improves the management of those resources. However, few variables consistently predict PT, and studies examining interventions to reduce PT are relatively rare. In addition, very little of this literature applies established theory to the question of reducing PT from psychotherapy.

Purpose for Study

The purposes of this study are to:

1. Further examine the utility of the Transtheoretical Model of Behavior Change in predicting the incidence of premature termination from outpatient psychotherapy.
2. Examine whether a brief, cost-effective Motivational Interviewing technique, derived from the Transtheoretical Model, lowers the incidence of premature termination from outpatient psychotherapy.

Research Questions

Research questions for this study are:

1. Does the Transtheoretical Model's Stage of Change Scale predict premature termination from outpatient psychotherapy?
2. Does an intervention designed specifically to address readiness to change reduce premature termination?

Hypotheses

The hypotheses for this study are:

1. Outpatients in the Precontemplation and Contemplation Stages of Change will be more likely to terminate psychotherapy prematurely than those in more

advanced, action-oriented stages of change.

2. A Motivational Interviewing intervention designed to address the specific readiness to change characteristics of Precontemplators and Contemplators will reduce these outpatients' incidence of premature termination.

Limitations

Potential limitations of this study are:

1. Data for this study will be derived from a relatively homogeneous sample in terms of ethnicity and geographical area of residence, which could reduce its generalizability to other samples.
2. Outpatients already low in motivation for change may be more likely to decline participation in this study.

Summary

Premature termination is a significant strain on scarce mental health resources. The ability of agencies to predict and reduce premature termination through cost-effective means improves the management of those resources. However, few variables consistently predict premature termination, and studies examining interventions to reduce premature termination are relatively rare. Quick, cost-effective methods to predict and subsequently intervene to reduce premature termination are lacking. The proposed study will examine the utility of the Transtheoretical Model of Behavior Change in predicting premature termination from outpatient psychotherapy. A technique derived from this model will be devised and assessed for whether it lowers the incidence of premature termination in that setting.

LITERATURE REVIEW

This chapter will first review the literature concerning premature termination (PT). Prevalence rates are presented, as well as research on the multitude of variables that have been assessed for their ability to predict termination status. Research on techniques designed to reduce PT is also examined, and limitations of the body of PT research are discussed. The Transtheoretical Model of Behavior Change (TTM; Prochaska & DiClemente, 1982, 1983) is detailed as a framework from which to conceptualize the problem of PT, including implications for the reduction of dropout from psychotherapy.

Premature Termination

The relationship between duration and outcome in psychotherapy is unclear. Although a slim majority of studies report that psychotherapy duration positively correlates with outcome (Beutler, Machado, & Neufeldt, 1994), many find weak or nonexistent relationships (Steenbarger, 1994), suggesting that significant gains can be obtained in a relatively small number of sessions. "Premature" termination of psychotherapy may therefore represent a successful course of therapy for some clients, though the clinician may disagree (Hoyt, 1995).

It is apparent, however, that a significant proportion of psychotherapy clients unilaterally terminate therapy after only a session or two, when it is unlikely that many treatment gains could have been realized (Mennicke, Lent, & Burgoyne, 1988; Wierzbicki & Pekarik, 1993). This can represent significant strains on mental health resources. Reis and Brown (1999) note that PT's may return to therapy clinics numerous times, are expensive in terms of therapist time and revenue, display poor

treatment outcomes, and may demoralize their therapists, resulting in lower self-confidence and therapy effectiveness.

Pekarik (1992) compared the post-treatment adjustment of premature terminators to clients who remained in therapy on a number of symptom variables. Overall, clients classified as "early" PT's (1-2 sessions) were significantly more symptomatic than "late" PT's (3+ sessions) at 4-month follow-up. Late PT's did not significantly differ from therapy completers, though the improvement trend approached significance. The author emphasizes that PT's did not represent a homogeneous group of treatment failures. Some dropouts were significantly improved at the follow-up assessment. On the whole, however, dropping out within 1 or 2 sessions predicted poorer functioning than even a brief course of therapy. Stark (1992) reviews studies showing similarly poor outcomes for PT from substance abuse treatment, a treatment sample notorious for early attrition from therapy.

Prevalence

PT is a significant problem for all categories of outpatient mental health agencies. Dropout rates from university counseling centers after an initial intake session range from 20 to 25%, with substantial numbers of clients leaving therapy after only a few post-intake sessions (Mennicke, Lent, & Burgoyne, 1988). Seventeen percent of clients from community mental health centers in New Zealand failed to arrive for their first session, and 13% more dropped out before two months of treatment (Deane, 1991). In a meta-analysis of 125 studies, Wierzbicki and Pekarik (1993) report that the average dropout rate from a wide range of treatment settings, diagnoses, and treatment modalities was 46.86%. Garfield (1994) reports PT rates for

community mental health centers, university counseling centers, and hospital-based clinics in the range of from 30 to 60%, with PT generally defined as discontinuation after from 1 to 3 sessions. Reis and Brown (1999) report that although definitions of PT vary widely across studies, the mean number of sessions for PT ranges from 3 to 13 and clusters around 6.

Predictors

A host of variables have been examined for their ability to predict PT from psychotherapy (Beutler, Machado, & Neufeldt, 1994), usually with disappointing results (Reis & Brown, 1999; Wierzbicki & Pekarik, 1993). Dropping out from university counseling centers has been moderately correlated with client factors such as minority group membership, low SES, being from a foreign country, personality variables, and academic ability. Gender did not reliably predict dropout in these samples (Mennicke, Lent, & Burgoyne, 1988). Client race and SES correlate with dropout in non-university samples as well (Wierzbicki & Pekarik, 1993). Beutler, Machado, & Neufeldt (1994) report that demographics are among the client variables most often studied in relation to PT. It is a generally consistent finding that lower SES clients are less likely to seek out and continue in psychotherapy than more privileged clients. Education plays a role in predicting PT as well, but is conceptualized as a measure of SES by many researchers, and not as a meaningfully distinct construct. Results for the study of ethnicity as a predictor are mixed, with a slight trend for minority group members to drop out over White clients. As in university samples, gender does not reliably predict PT in outpatient settings. Age and diagnosis, though widely studied for their predictive ability, do not reliably predict PT from

psychotherapy (Garfield, 1994; Reis & Brown, 1999). Referral source and substance abuse have been shown to predict PT in some studies, with involuntary clients and substance abusers somewhat more likely to PT than self-referrals and non-users (Reis & Brown, 1999). In general, client social class variables most reliably predict PT (Wierzbicki & Pekarik, 1993).

Garfield (1994) reports that most studies of therapist variables do not demonstrate their ability to predict PT. Modest correlations between social influence variables such as therapist expertness, attractiveness, and trustworthiness (Strong, 1968) and PT have been inconsistently obtained in a few studies (Garfield, 1994). Mennicke et al. (1988) note that research on the role of therapist as opposed to client variables on PT is relatively rare, perhaps suggesting a reluctance to self-scrutinize. This research has concentrated on the effects of therapist gender, experience level, social influence, and facilitative conditions such as empathy and warmth on PT. Of these, only social influence variables predicted PT in a somewhat consistent fashion. Reis and Brown (1999) report that therapist experience is weakly related to PT, though studies included in their review were generally contradictory and provided no firm conclusions.

Clearly, client and therapist characteristics are inconsistent at best in predicting PT, and the best overall predictor of dropout from psychotherapy is often the researcher's definition of "dropout" (Wierzbicki & Pekarik, 1993). Indeed, Wierzbicki & Pekarik (1993) recommend that researchers give up studies of client and therapist variables altogether as predictors of PT in favor of more complex studies of relevant process variables. They report that client expectations of treatment duration more

accurately predict PT than any demographic variable, and that PT rates increase when therapist's do not accurately identify their clients' conceptualizations of their problems. Likewise, identification of demographic variables is not likely to inform treatment. Garfield (1994) adds that process variables such as the therapist's regard for the client, judgment of the client's ability to form a therapeutic relationship, and ability to acknowledge the content of their clients' communication were positively correlated with treatment retention.

For example, while dropping out from eating disorder treatment was not impacted by client factors such as level of pathology or demographic variables, or therapist variables such as experience level, only discrepant expectations between therapist and client on the efficacy of specific eating disorder interventions separated PT's from treatment completers (Clinton, 1996). Likewise, communication harmony between therapist and client and similar expectations about therapy duration, content, process, or outcome is shown to lower PT rates (Mennicke, Lent, & Burgoyne, 1988). Tryon and Kane (1993) studied the relation of working alliance to termination status, and found that counselor estimates of working alliance after three sessions were negatively associated with PT. The extent to which clients relate to their therapists at intake has been found to predict strength of working alliance which in turn predicted termination status (Tryon & Kane, 1995). Piper et al. (1999) found that PT was not predicted by a variety of pretherapy patient variables, but that process variables such as therapeutic alliance, dynamic work in session, client exploration, and focus on termination did significantly predict continuation in therapy. Family support offered the client in therapy can also affect outcome. Dropouts from outpatient cognitive-

behavior therapy for bulimic disorders demonstrated poorer family functioning than therapy completers (Waller, 1997).

Joe, Simpson, and Broome (1998) examined the utility of client characteristics including demographic variables, diagnosis, treatment history, and drug abuse history in predicting dropout from long-term residential and outpatient treatment for drug addiction. They also incorporated a variable more relevant to treatment process, treatment readiness, for its ability to predict PT. Examination of data from a very large pool of subjects (N = 2,265) across 47 treatment sites in 11 cities revealed that only treatment readiness reliably predicted retention in these programs. The authors underscore the clinical importance of these findings by emphasizing that treatment readiness is the only one of these variables that is amenable to clinical change.

Samstag et al. (1998) examined interpersonal process variables across three psychotherapy outcome possibilities: good outcome, poor outcome, and dropout. Several of these variables relating to working alliance and interpersonal behavior as reported by both client and therapist were predictive of outcome. For example, variables predictive of dropout included client and therapist-reported working alliance, therapist ratings of client hostility, client ratings of therapist friendliness, and each entity's ratings of session "smoothness" versus "depth." Client ratings were best at discriminating dropout from either poor or good outcome, while therapist ratings best discriminated dropout from good outcome, but could not discriminate clients in the poor outcome condition. In general, client ratings of working alliance were better predictors of overall outcome than therapist ratings.

Reis and Brown (1999) review the literature examining the effects of

interpersonal dyadic variables on PT, with particular attention given to the concept of "perspective convergence." Disagreement between client and therapist regarding problem recognition has been demonstrated to predict PT for experienced therapists, but not for inexperienced therapists. The authors hypothesize that therapist-client similarity may compensate for this divergence in perspective for inexperienced therapists. Therapists with more experience who do not share clients' opinions of their problems may alienate clients by moving therapy along too quickly. Relationships between therapist experience and dropout has been demonstrated in rural CMHC settings, though not in university counseling centers, perhaps because therapists are more likely to be similar in age and SES to the university students. This interaction between therapist and client variables highlights the importance of process in explaining PT. The authors argue that it is perspective divergence between therapist and client across predictor variables such as SES and ethnicity that explains these variables' effect on PT, and not their role simply as client characteristics separate from the counseling dyad. As perspective divergence increases, PT is also likely to increase.

Dropout Reduction Techniques

Some administrative techniques show promise in their ability to reduce dropout rates, though they are relatively underresearched (Mennicke, Lent, & Borgyne, 1988). Reducing wait times between intake and counselor assignment appears to improve termination rates, as do brief telephone contacts with clients before sessions (Mennicke, Lent, & Borgyne, 1988) and telephone appointment reminders (Reis & Brown, 1999). Stasiewicz and Stalker (1999) compared three administrative techniques designed to reduce PT in a substance abuse clinic. Subjects were randomly

assigned to one of four intake conditions. Group 1 was assigned to an intake counselor within 48 hours of the initial phone call. Groups 2, 3, and 4 were assigned later than 48 hours after calling in, and were either given a reminder call 24 hours prior to their intake appointment (Group 2), were sent an appointment card and clinic brochure in the mail (Group 3), or received no intervention (Group 4). Results indicated that 71.8% of clients who were scheduled within 48 hours of their initial phone call (Group 1) arrived for their intake, while 53% or less of clients in Groups 2-4 arrived for theirs. This difference between Group 1 and Groups 2-4 was significant, and no differences were observed between Groups 2-4. Only timely appointment scheduling improved show rates for an initial intake session.

Changes in the administration of outpatient services has been shown to significantly reduce PT rates in a CMHC facility (Salta & Buick, 1989). Restructuring of intake, referral, and treatment services was performed over several years to reduce organizational barriers and enhance continuity of care to patients. The patient's progression from initial contact to making an appointment for outpatient treatment was greatly streamlined, 24-hour crisis stabilization services were implemented, and reminder calls for initial appointments were initiated. These changes resulted in an overall reduction of PT rates from 54.3% to 19.19%.

Sherman and Anderson (1987) were able to reduce PT rates in a community mental health setting by applying a technique adapted from social and sports psychology. Participants were instructed to spend 2 to 3 minutes imagining themselves coming in for therapy for at least 4 sessions. Participants were instructed to be as detailed and specific as possible in their imagery, and were provided with

information on the importance of attending therapy for at least 4 sessions. In addition, a second experimental group explained in their own words why attending 4 sessions of therapy was important to them. The experimental groups were compared to both an irrelevant task group and a historical base-rate group for dropouts before 4 sessions. Results indicated that both experimental groups were significantly more likely to continue therapy for 4 sessions or more (79.5%) than either control conditions (pooled = 57.1%).

Therapy socialization and role induction techniques also show promise in reducing dropout (Garfield, 1994; Heitler, 1976; Mennicke, Lent, & Borgyne, 1988), though much research remains to be done in this area (Garfield, 1994). Tolman and Bhosley (1990) examined the relative efficacy of a four-session preparation group and an intensive twelve hour workshop for reducing PT in ongoing group therapy for male batterers. Men in the preparation group were encouraged to vent their feelings without confrontation to avoid building resistance to treatment. They also learned some simple techniques to avoid violence, and by default took responsibility for their abusive behaviors by learning to self-monitor. The intensive workshop incorporated psychoeducation about the cycle of violence, processes of change, and relaxation techniques. This longer, more intensive format better allowed for role induction work and group cohesion than did the weekly preparation group. Though the intensive workshop placed relatively greater time demands on its participants, PT from the pretreatment conditions did not significantly differ. Likewise, no differences were noted between type of pretreatment preparation and early termination status. However, group members who completed the intensive workshop were retained for

significantly more group sessions than were men from the other preparation condition.

Pierce and Stoltenberg (1990) applied cognitive self-persuasion principles as part of a motivation enhancement (ME) program to improve attendance at professional weight loss clinics. Clients in a no-treatment control condition (Condition 1) completed their normal course of behavior education classes designed to alter maladaptive eating behaviors. Other clients were offered a new 4-hour member's orientation program, and then assigned to one of three remaining conditions based on their responses: Condition 2 was made up of clients who refused the orientation program. Condition 3 was essentially an attention placebo condition similar in duration and structure to the experimental condition. Condition 4 was the experimental condition, where clients received 4, 1-hour classes designed to raise their positive personal attitudes and behavioral intentions based on cognitive self-persuasion principles. The treatment incorporated the forewarning of impending counterattitudinal arguments, inoculation techniques to help clients effectively respond to arguments against losing weight, and role playing ways to resist counterarguments. They then completed the normal course of weight loss classes. As hypothesized, the orientation program incorporating cognitive self-persuasion and ME techniques significantly improved attendance to weight loss classes. Additionally, clients who had refused the orientation program (Condition 2) attended significantly less classes than clients in the other three conditions.

Bleyen, Vertommen, and Van Audenhove (1998) describe a negotiation approach to treatment selection which they hypothesized to reduce PT from therapy. The authors note that matching of client to therapist and therapeutic modality should

be a decision process of both parties, and that the client should not be assigned treatment based simply on the therapeutic modality used by a particular therapist. Their negotiation approach begins with the therapist trying to understand the client's perspective on their problems while maintaining appropriate, theory-based skepticism. Both the therapist and client's therapeutic frames of reference are incorporated into the negotiation. This includes theories of illness, problem conceptualization, and treatment goals. Clients must then be informed about appropriate therapy options and practical considerations such as waiting lists and fees. At this point, discrepancies between the clients' perceptions and the realities of available treatments can be corrected. A third step involves negotiation with the client regarding their treatment preferences (e.g., therapist age, action versus insight-oriented therapies, duration of therapy), discussing their motives for these choices, and then matching these preferences with available options. The goals of this approach to treatment selection include: a) the client is provided with more treatment options, b) he or she is able to make a more reasoned choice, and c) the client takes more responsibility for her/his problem and for her/his therapy.

The authors submitted this metatheory to empirical analysis with an outpatient sample from Belgium (Bleyen, Vertommen, & Van Audenhove, 1998). Clients were assigned to therapists and therapeutic settings either unilaterally by the intake therapist or through the described negotiation process. Clients who perceived the therapy process as negotiation dropped out at a significantly lower rate (19.9%) than clients in the control group (41.8%). The authors conclude that a negotiation approach to treatment selection appears to be useful in treatment selection.

As noted in previous sections, PT appears to be predicted less by particular client, therapist, or administrative variables, and more by variables emphasizing process and therapist/client interaction and perspective convergence (Garfield, 1994; Heitler, 1976; Piper et al., 1999; Reis & Brown, 1999; Wierzbicki & Pekarik, 1993). Reis and Brown (1999) review techniques hypothesized to account for interaction and process variables in promoting perspective convergence to reduce PT from therapy. Assigning clients on the basis of cultural compatibility (i.e., gender by ethnicity) with the therapist has been shown to reduce PT in CMHC settings, though this finding is by no means universal. Teaching intake therapists to elaborate on their clients' expressed problems without contradicting or invalidating reduces PT as well. The finding that clients' unmet expectations for initial therapy sessions predict PT implies that therapists should elicit and address those expectations early in treatment. Pretreatment preparation techniques that manipulate client expectations show promise in lowering rates of PT. Clients prepared in this manner show improved in-therapy behaviors, greater psychological-mindedness, and form better therapeutic relationships with their therapists than controls. The authors note that, although pretherapy preparation techniques show promise for improved retention and outcome, use of such techniques is rare.

A recent study of retention in a prevention program for at-risk parents (Dumka et al., 1997) demonstrated that PT rates were improved by paying attention to cultural factors in recruitment and program design. This study did not employ a control group, but instead compared PT rates to historical base-rate data. The culturally diverse target population was consulted at each stage of study design and recruitment. This

allowed for culturally sensitive development of teaching materials and methods, as well as staff recruitment and training. While results are preliminary, cultural sensitivity appeared to improve retention for an ethnic group (Mexican Immigrant/American) with traditionally high attrition rates.

In a review, Walitzer, Dermen, and Connors (1999) argue that most effective strategies designed to reduce PT can be characterized as either preparatory techniques or motivational enhancement. Preparatory techniques are designed to educate the client about the rationale for and process of therapy, and to bring their expectations of therapy into line with those of the therapist. They also encourage positive client behaviors and inoculate against relapse. Motivational enhancement techniques are specifically geared towards raising the client's motivation for therapy. In general, the use of preparatory techniques such as role induction, vicarious therapy pretraining, and experiential pretraining has been shown to reduce dropout from treatment, and may improve outcome. Of these, role induction demonstrates particular promise, especially with client groups who might otherwise show poor prognoses for therapy. Motivational interviewing likewise shows strong potential for improving clients' involvement in therapy and reducing dropout.

Research Limitations

The interpretation of the literature on PT is confounded by a number of methodological limitations (Garfield, 1994). A majority of empirical studies do not describe their methods for recruiting subjects sufficiently to aid in determining why attrition may have occurred in their particular samples (Flick, 1988). The definition of PT used in research studies has been shown to be the best single predictor of dropout

(Wierzbicki & Pekarik, 1993), yet this definition varies widely (Garfield, 1994; Reis & Brown, 1999). Many studies claiming to study termination status are really studying early termination, a construct that may include both PT's and early appropriate terminators (Reis & Brown, 1999). The definitions of other variables such as client and therapist characteristics are likewise inconsistent across studies (Mennicke, Lent, & Burgoyne, 1988), limiting their ability to be meaningfully compared. Mennicke et al. (1988) recommend that researchers clearly define their variables in theoretically prescribed manners, and that they utilize theoretical models of attrition in planning research. One such theoretical model with implications for PT, the Transtheoretical Model (Prochaska & DiClemente, 1982, 1983), is discussed in the next section.

The Transtheoretical Model of Behavior Change

The Transtheoretical Model of Behavior Change was developed in response to a realization by researchers that psychotherapy clients spend relatively little time actually in therapy, and that much of their behavioral change must therefore be taking place outside of therapy (Prochaska, 1999; Prochaska et al., 1991). The advent of research findings demonstrating that widely variant schools of psychotherapy seem to produce similar outcomes brought about a search for common factors in psychotherapy. Prochaska (1999) argues that since so much of the client's change process occurs outside of the therapy hour, a theory was needed that described the larger process of client change both within and without therapy.

Early exploration of this process identified 10 processes of change utilized by clients who successfully change their behavior (Prochaska, 1979). Subsequent research on these processes in cigarette smokers (Prochaska & DiClemente, 1982,

1983) brought about the realization that clients systematically apply these processes of change across a temporal series of stages of change. These stages and processes of change are salient across all major schools of psychotherapy (Prochaska et al., 1991). They are subsumed within a framework, the Transtheoretical Model of Behavior Change, that can optimize psychotherapy process and outcome when intervention is specific to a client's assessed readiness to change (McConnaughy et al., 1983; Prochaska, 1999; Prochaska, 1995; Prochaska, 1991; Prochaska, DiClemente, & Norcross, 1992).

Major Tenets

Prochaska (1979) performed a comparative analysis of 18 schools of psychotherapy in a search for common processes of change utilized by clients. Ten processes of change were demonstrated to be the best producers of change in clients. It was demonstrated that these processes are used not only by clients in treatment but by successful self changers as well (DiClemente & Prochaska, 1982). Additionally, successful changers use specific change processes at particular points in their change process (Prochaska & DiClemente, 1983; Prochaska, Rossi, & Wilcox, 1991).

Prochaska, DiClemente, and Norcross (1992) describe the processes of change as methods and techniques that individuals use to change both within and without psychotherapy. The authors explain that while as many as 130 change techniques have been identified in some samples (Prochaska et al., 1988), 10 processes have received the most empirical support, and are described in Table 1 adapted from Prochaska, DiClemente, and Norcross (1992). These processes include consciousness raising, dramatic relief, environmental reevaluation, self-reevaluation, self-liberation, counter-

conditioning, contingency management, stimulus control, helping relationships, and social liberation (Prochaska, 1979; Prochaska, 1999; Prochaska, DiClemente, & Norcross, 1992; Prochaska, Velicer, DiClemente, & Fava, 1988). These processes have been identified across a wide variety of psychotherapeutic targets such as smoking, obesity, and psychological distress, and are quite similar in terms of the frequency and patterns of their usage across problem areas (Prochaska, DiClemente, & Norcross, 1992).

Table 1

Titles and Definitions of the Processes of Change:

Processes	Definitions
Consciousness Raising	Increasing information about self and problem.
Self-reevaluation	Assessing how one feels and thinks about oneself with respect to a problem.
Self-liberation	Choosing and commitment to act or belief in ability to change.
Counterconditioning	Substituting alternatives for problem behaviors.
Stimulus Control	Avoiding or countering stimuli that elicit problem behaviors.
Reinforcement Management	Rewarding one's self or being rewarded by others for making changes.
Helping Relationships	Being open and trusting about problems with someone who cares.
Dramatic Relief	Experiencing and expressing feelings about one's problems and solutions.
Environmental Reevaluation	Assessing how one's problem affects physical environment.
Social Liberation	Increasing alternatives for non-problem behaviors available in society.

Prochaska and DiClemente (1982, 1983) discovered that the processes of change seemed to be systematically applied by clients within and without psychotherapy across a series of temporal stages. Likewise, successful psychotherapy clients and self-changers apply particular change processes during specific stages of change in a remarkably consistent fashion (Prochaska, DiClemente, & Norcross, 1992). Early research identified 5 stages of change (Prochaska & DiClemente, 1982).

McConnaughy, Prochaska, & Velicer (1983) identified only 4 stages in principal components analysis, and a 4 stage model was promoted for several years, though the decision-making stage known as "preparation" was re-evaluated and eventually returned to the model (Prochaska, DiClemente, & Norcross, 1992).

Prochaska (1999) describes the current conceptualization of the stages of change as encompassing 6 stages. Precontemplation, Contemplation, Preparation, Action, and Maintenance comprise the majority of stages of change studies. A sixth stage, Termination, represents a stage derived more from theory than empirical research.

Precontemplation: Prochaska (1999) describes Precontemplation as the stage in which the client does not contemplate making any behavior changes within a specified time period, usually 6 months. This stage might describe the alcoholic who has not acknowledged that he or she has a drinking problem. People sometimes remain stagnant in this stage for long periods of time. They may verbalize that the pros of their behaviors presently outweigh the cons for them. As a result, they may remain in dangerous and maladaptive behaviors indefinitely. Precontemplators may present to mental health agencies under psychological distress but with little or no recognition that personal behavior change may be necessary. These individuals have no motivation to develop across the stages of change, and frequently must be moved by external events or pressures to cause them to contemplate behavior change. They only seek mental health services if court-referred, or at the insistence of a concerned loved one or disgruntled spouse.

Contemplation: Contemplators are those clients who have acknowledged that

their current behavior patterns may be doing them more harm than good (Prochaska, 1999). Change is therefore considered as a potential necessity within the next 6 months. Like Precontemplators, Contemplators may remain in this stage for months, and do not typically respond well to prevailing action-oriented treatments. Prochaska (1999) refers to this stage as a time of "behavioral procrastination" in which individuals display pronounced ambivalence about the pros versus the perceived costs of behavior change.

Preparation: The Preparation stage is characterized by a commitment of the individual to begin behavior change, typically within a month. Individuals in this stage are prepared for action, and are best served by traditional, action-oriented interventions and treatment modalities. They tend to show traits of both the contemplation and action stages of change (Prochaska, DiClemente, & Norcross, 1992). They may also have made tentative attempts at behavior change within the past year. These individual typically represent the "ideal" psychotherapy client (Prochaska, 1999). The Preparation stage was dropped from early stages of change research due to principal components analysis that did not appear to support its inclusion (McConnaughy, Prochaska, & Velicer, 1983). Prochaska, DiClemente, and Norcross (1992) report that sophisticated reanalysis of this same data supported the retention of the Preparation stage.

Action: Individuals in the Action stage have already made behavioral changes within the past 6 months (Prochaska, 1999). Individuals in this stage of change tend to receive positive reinforcement from others due to the visibility of their behavior change (Prochaska, DiClemente, & Norcross, 1992). However, Prochaska (1999)

emphasizes that not all behavior change is truly representative of the Action stage. Behavior change cannot be defined simply by its statistical significance, but must be clinically significant change in order to represent the Action stage.

Maintenance: People in the Maintenance stage of change have completed necessary behavioral modifications, and are now working to avoid relapse. Relapse is less a problem now than for those individuals still in the Action stage, due to the realization in this stage that prolonged behavior change requires sustained and consistent effort (Prochaska, 1999). Individuals who present for therapy may indeed be trying to consolidate their behavior changes to avoid relapse in this stage (Prochaska, Rossi, & Wilcox, 1991). The Maintenance stage is hypothesized to last from 6 months to 5 years (Prochaska, 1999).

Termination: The Termination stage of change does not necessarily coincide with the end of formal treatment. Rather, this stage represents the successful and final completion of behavior change, when the individual is confident and no longer considers relapse a significant threat. Prochaska (1999) acknowledges that this stage is not plausible for some behaviors (e.g., alcoholism, smoking), but represents the ideal fruition of behavior change.

In addition to emphasizing the processes and stages of change, the TTM employs the notion of Decisional Balance in describing how individuals change. Prochaska et al. (1994) describe the empirical progression from an 8-factor theory of decisional balance (Janis & Mann, 1977) to 2 factors that must be balanced when making decisions. Individuals simply weigh both the pros and cons of their behaviors in order to make decisions about behavior change, and the balance shifts predictably

depending upon in which stage of change they find themselves (Prochaska et al., 1994).

Prochaska, DiClemente, and Norcross (1992) note that linear progression through the stages of change is not typical for most clients. As much of the work on the TTM has been done with addiction populations, the recognition of significant relapse potential has characterized this literature. This cycle of progression through the stages of change coupled with occasional relapse to an earlier stage is best described through a "spiral" model of change. Successful behavior change after only one trial is relatively rare. While the authors acknowledge that these spiral patterns of progression through behavior change stages are not well understood, it is believed that the tasks required of the individual at each stage do not vary (Prochaska, DiClemente, & Norcross, 1992).

Validation of Model

The validity of the TTM has been studied with a variety of clinical and non-patient samples, and its major tenets are generally considered to be well-validated (Prochaska, DiClemente, & Norcross, 1992). As previously noted, the ten common processes of change came from analysis of 18 schools of psychotherapy (Prochaska, 1979). The processes of change are described as "the covert and overt activities that people use to progress through the stages (of change)" (Velicer et al., 1998). DiClemente & Prochaska, (1982) demonstrated that these processes are used by clients in treatment and by successful self changers, and that they are systematically applied during specific stages of change (Prochaska & DiClemente, 1982, 1983; Prochaska, Rossi, & Wilcox, 1991). Prochaska, DiClemente, & Norcross, (1992)

review 10 studies which employed principal components analyses on the processes of change. Each study reportedly supports the existence of a pattern of from 10 to 12 change processes. These processes are believed to be consistent across stages of change, as in Table 2, adapted from Prochaska, DiClemente, and Norcross (1992):

Table 2
Stages of Change in Which Particular Processes of Change are Emphasized

Precontemplation	Contemplation	Preparation	Action	Maintenance
Consciousness Raising Dramatic Relief Environmental Reevaluation				
	Self-Reevaluation			
		Self-Liberation		
			Reinforcement Management Helping Relationships Counterconditioning Stimulus Control	

Prochaska et al., (1988) studied the processes of change as they applied to smoking cessation. Nine-hundred, seventy smokers were initially assessed for the processes of change they had independently employed both retrospectively and currently in their efforts to quit smoking. Frequency of usage and importance to their successful quitting were assessed. Ten change processes emerged as best describing the processes used by this sample. Subjects tended to use more than one change process at a time, and change processes correlated with the subject's assessed stage of change. Later research found a similarly consistent pattern of change processes systematically applied across stages of change by smokers (DiClemente et al., 1991).

A "naturalistic and longitudinal" study of change processes in psychotherapy (Prochaska, Rossi, & Wilcox, 1991) followed the course of therapy for three clients

with outcomes representing improvement, no improvement, and dropout. Processes utilized by each client matched those hypothesized to be relevant for their respective stages of change with the exception of the premature terminator, who did not consistently employ change processes.

The construct of stages of change has been widely studied, and is generally supported in the literature (Prochaska, 1999; Prochaska, DiClemente, & Norcross, 1992). McConnaughy, Prochaska, and Velicer (1983) derived an instrument known as the Stages of Change Scale (SCS) from a pool of 125 items designed to represent the five hypothesized stages of change (See Methodology section for complete description). Four, well-defined stages of change emerged from this study, with Decision Making (Preparation) dropped as described above and in Prochaska (1999). Internal consistency reliability was good, and correlations among stages of change scales were supportive of a linear construct. Nine distinct client subtypes were evident which demonstrated differential client involvement in each stage of change. Distinctions between the stages of change were nonetheless not blurred by the presence of these subtypes.

A follow up study (McConnaughy, DiClemente, Prochaska, & Velicer, 1989) was performed to cross-validate the SCS with a different clinical sample. Three hundred, twenty-seven adult outpatients were administered the SCS along with symptom measures. Principal components analysis validated the existence of four distinct stages of change. Measures of internal consistency reliability and correlation patterns between the stages were very similar to the original study. The stages of change construct held up across clients with a wide range of functioning levels. The

stages of change were correlated with one another in a manner predicted by the TTM, and so were interpreted as invariant in this research. Seven of the original 9 client profiles were identified in this study. As mentioned above, Preparation was eventually re-included among the stages of change following reanalysis of these data (Prochaska, 1999).

Prochaska (1994) submitted the constructs of Stages of Change and Decisional Balance to a direct test of their generalizability across 12 "problem behaviors." These behaviors differed widely with respect to populations, prevalence, etiology, and prognosis. The balance of the "pros" and "cons" of these behaviors was systematic across the participants' stage of change in a manner predicted by the TTM. For example, the crossover between the pros and cons of a problem behavior consistently occurred in the Contemplation stage of change across behaviors and populations. These results provide support for the validity and generalizability of the TTM. Further analysis of these data (Prochaska, 1994) revealed that the increases in the pros of changing 10 of these 12 behaviors as participants moved from the Precontemplation to Action stages of change was at least twice that of the increase in cons for maintaining those behaviors. The pros of negative behaviors decreased one full standard deviation and the cons increased one/half a standard deviation on average. The author conceptualized both a "strong" and a "weak" principle of progress through the stages of change. Choosing to practice a healthy behavior (e.g., not smoking) by default requires the choice not to practice an unhealthy behavior (e.g., smoking). These principles were predicted and validated with a second sample of smokers as well.

Velicer et al. (1995) performed a series of cluster analyses of the first four

stages of change to empirically examine the theoretically developed taxonomy of the TTM and stages of change. Participants were respondents to advertisements for a research project on smoking cessation. They were randomly assigned to interventions based upon their assessed stage of change pre-intervention. Cluster analysis was performed on baseline data. Dependent measures employed in the cluster analysis included habit strength, positive evaluation strength of the smoking habit (pros), and negative evaluation strength (cons). External validity of the stages of change was assessed in part with behavioral measures unrelated to the variables used to create the cluster analysis. Processes of change were also employed as measures of external validity. Distinct subtypes were detected within all four stages of change, with one subtype exemplifying each stage. Likewise, one subtype in each stage represented those participants clearly ready to progress to the following stage. Each of the last three stages examined included a subtype of participants at risk to regress to the preceding stage. In general, external validity measures yielded patterns of change process usage and outcomes that were in keeping with predictions from the TTM. Participants in higher stages of change used more change processes and had better outcomes than those in lower stages. The authors emphasize that these findings support the existent five-stage model over any 15-stage or more model which included all subtypes.

Velicer et al. (1996) studied smoking cessation outcome employing a criterion measurement model (CMM). Such a model was utilized as it is hypothesized to provide a more comprehensive picture of outcome than traditional outcome variables. The model incorporated 5 variables (pros and cons of smoking, and three situational

temptations scales) based on the constructs of habit strength, positive evaluation strength, and negative evaluation strength as outcome variables. Forty predictions from the TTM regarding movement among the first three stages of change were tested. All predictions were explicit estimates of expected effect sizes rather than directional hypotheses. Thirty-six of the original 40 predictions were confirmed at the level predicted. In general, the cons of smoking increased as smokers progressed through the subtypes of the first three stages of change. Likewise, temptation scores were lower for higher stages of change. The authors note that construct validity was strong for the use of criterion outcome measures in relation to stages of change.

A number of scales and measurement techniques have been devised to assess a client's readiness to change (ROC) in accordance with the TTM (Carey et al., 1999). Carey et al. (1999) report that the most common measurements of ROC in substance abuse research are staging algorithms, self-administered questionnaires, and clinician-report measures. While algorithms consisting of 4 or 5 forced-choice items have been shown to have adequate reliability (Donovan et al., 1998), Carey et al. (1999) report that they tend to vary widely in their composition across studies and are not well-established in terms of their validity. Likewise, reliability is shown to be adequate for several clinician rating scales in the context of treatment, but validity evidence is as yet inconsistent and limited.

Studies of self-administered questionnaires have provided somewhat more thorough reliability and validity data than either research algorithms or the relatively more recently-developed clinician ratings (Carey et al., 1999). The original Stages of Change Scale (SCS or URICA; McConnaughy et al., 1983; McConnaughy et al.,

1989) was determined to possess adequate reliability and validity for use in assessing stages of change in psychotherapy clients. Carey et al. (1999) review studies reporting limited reliability for the URICA and other self-report measures of ROC. The authors note that it is unclear theoretically just how temporally stable a measure of ROC should be, but that this should nonetheless be studied more completely. Other researchers (Morera et al., 1998) who examined an SOC measure adapted from the URICA (Crittenden et al., 1994;1998) report good psychometric properties including reliability in a population of smokers, and predictive validity for which smokers ultimately quit their habits.

Recent studies have shown inconsistent results for the discriminant validity of the URICA (in Carey et al., 1999) and similar self-report stages of change measures (Budd & Rollnick, 1996; Carey et al., 1999). In their analysis of the major self-report measures of ROC, Carey et al. (1999) suggest that fewer than the 4 to 6 stages of change postulated by the TTM may be sufficient to explain the data. Respondents are discriminated across these measures on whether they are ready to change (e.g, Preparation, Action) or not (e.g., Precontemplation, Contemplation), and further discrimination among advanced stages of change (Preparation, Action, Maintenance) is inconsistent across samples.

Concepts from the TTM have been validated in a wide variety of substance abuse and other clinical samples (Prochaska, 1999; Prochaska, 1995; Prochaska, DiClemente, & Norcross, 1992). Studies of smoking cessation and other substance abuse populations have provided a majority of support for the TTM (McConnaughy et al., 1983; McConnaughy et al., 1989; DiClemente et al., 1991; Prochaska et al., 1988;

Prochaska et al., 1994; Velicer et al., 1995; Velicer et al., 1999). Central constructs from the TTM have been validated for more traditional psychotherapy and health psychology populations as well. The processes of change has been used in a qualitative study to predict outcome in psychotherapy (Prochaska, Rossi, & Wilcox, 1991). Stages of change has been shown to predict condom usage and attitudes in the general population (Polacsek et al., 1999), dietary fat consumption (Brug, Hospers, & Kok, 1997; Curry, Kristal, & Bowen, 1992), motivation and control of blood sugar in Type I diabetes mellitis (Trigwell, Grant, & House, 1997), and outcome in brief group therapy for bulimia nervosa (Franko, 1997). The stages of change predicted which participants would most benefit from a clinical drug trial to reduce anxiety (Wilson, Bell-Dolan, & Beitman, 1997). Two studies have demonstrated that constructs from the TTM can be used to predict premature termination from psychotherapy (Brogan, Prochaska, & Prochaska, 1999; Smith, Subich, & Kalodner, 1995). As yet untested but theoretically viable applications of the TTM include the treatment of male batterers (Daniels & Murphy, 1997), simple phobias (Prochaska, 1991), stress management and other health promotion behaviors (Velicer et al., 1998), dual diagnosis populations (Brady et al., 1996), and in the formation of dose\effect linkage models in psychotherapy (Steenbarger, 1994).

Implications of the Transtheoretical Model for Premature Termination

As described above, few client or therapist variables reliably predict PT from psychotherapy, with client SES and ethnicity representing the most reliable predictors in many studies (Garfield, 1994; Reis & Brown, 1999; Wierzbicki & Pekarik, 1993). Review of the PT literature demonstrates that complex process variables typically

account for more variance in psychotherapy dropout than simplistic measures of demographic characteristics (Garfield, 1994; Piper et al., 1999; Reis & Brown, 1999; Tryon & Kane, 1994, 1995; Wierzbicki & Pekarik, 1993;). These findings make intuitive sense within the context of "perspective convergence" (Reis and Brown, 1999), that emphasizes the importance of agreement between the therapist and client on therapy issues such as problem recognition, duration, and outcome expectations.

The Transtheoretical Model of Behavior Change provides a theoretical framework from which to understand the problem of PT from therapy. This framework emphasizes therapists' recognition of their clients' motivation and readiness to change in therapy, and encourages appropriate therapist actions geared towards meeting their clients where they are (Prochaska, 1999; Velicer et al., 1998). It is hypothesized that people are less likely to drop out of therapy due to inappropriate demand characteristics if they receive interventions matched to their specific needs (Velicer et al., 1998). Most traditional therapeutic interventions assume that clients enter therapy ready for immediate action (Prochaska, 1995; Prochaska, DiClemente, & Norcross, 1992). This assumption would theoretically alienate clients in Precontemplation or Contemplation stages of change, resulting in greater PT from therapy than for clients in the Action stage (Prochaska, 1995; Prochaska, DiClemente, & Norcross, 1992).

Two studies have examined the ability of the TTM to predict PT from psychotherapy. Smith, et al. (1995) examined the Stages of Change Scale (SCS) and the Processes of Change Questionnaire (PCQ) for their ability to predict PT in a university counseling center sample (N = 74). Premature terminators (PT's) differed

from non-PT's on the stage of change at which they entered therapy. PT's entered therapy in the Precontemplation stage to a greater degree than was predicted by chance, as did non-PT's in the Preparation and Action stages. Additionally, the overall SCS score profile for non-PT's is higher than for PT's. PT's were predicted to use fewer processes of change than non-PT's, which was demonstrated for 6 of the 10 change processes accessed by the PCQ. PT status was predicted by the stage of change at which a client entered therapy, with all 9 clients in the Precontemplation stage leaving therapy by their second post-intake session. Likewise, none of the 15 clients in the Preparation or Action stages of change prematurely terminated therapy. Results of this study describe a distinct Precontemplation stage of change that predicts PT, a Contemplation which is somewhat less correlated with PT, and Preparation and Action stages in which clients typically do not PT from therapy. PT's also used less change processes than appropriate terminators or therapy continuers.

Brogan, et al. (1999) compared variables derived from the TTM to traditional client characteristic variables for their ability to predict PT. Sixty client-therapist pairs were sampled from university counseling centers (51.7%), a CMHC (38.3%), and a doctoral training clinic (10%). PT was defined as termination against the therapist's advice within 10 sessions. Variables from the TTM included stages, processes, and levels of change, and decisional balance of behaviors. Also compared were client variables such as age, income, and education levels, and therapist variables such as experience, gender, age, and education level. None of the client or therapist variables was significantly predictive of PT. However, a prediction equation consisting of 11 variables (i.e., SOC's Precontemplation, Contemplation, and Action; POC's stimulus

control, environmental reevaluation, contingency management, and resistance; and decisional balance variables self-approval, utilitarian gains for self, self-disapproval, and utilitarian losses of others) was derived through discriminant function analysis. The prediction equation correctly predicted PT in 92% of cases when discriminating PT's from a combination of appropriate terminators and therapy continuers. Levels of change did not reliably predict termination status. PT's wanted to change their environments more than themselves, and tended to be in the Precontemplation stage of change. They likewise tended to overestimate the losses their therapy might pose for others (e.g., cost), and to underestimate the personal benefit they themselves might gain. Contemplators as a group were most likely in this study to continue in therapy rather than PT or terminate appropriately, though the authors note that this group preferred talking about change rather than actually making needed changes.

These results suggest that the TTM-derived variables powerfully predict PT from psychotherapy, though replication in diverse settings and with diverse populations is still needed (Brogan, et al., 1999). Importantly, significant TTM constructs that predict PT are amenable to treatment. A major implication is therefore that the ability to predict PT on the basis of theoretically derived process variables should lead to the development and testing of techniques to advance clients across the stages of change and, hence, better prepare them to benefit from therapy (Brogan, et al., 1999; Smith, et al., 1995). Such interventions should most importantly be matched to the client's stage of change at intake. Clients in the Precontemplation and Contemplation stages of change (theoretically most at risk for PT), for example, should be applied dropout reduction techniques derived from the TTM. These might

emphasize the change processes of consciousness-raising and self-reevaluation to help these clients acknowledge their need to change. They should also be encouraged to balance their problems against the pros and cons of therapy (Brogan, et al., 1999). Motivational Interviewing, described below, is one TTM-derived technique that has shown preliminary promise for reducing PT (Swanson et al., 1999; Walitzer, et al., 1999).

Motivational Interviewing

Motivational Interviewing (MI) techniques are specifically geared towards raising the client's motivation for therapy. These techniques are theoretically derived from the TTM, and have shown potential for improving clients' involvement in therapy and reducing dropout (Walitzer, et al., 1999). Rollnick and Miller (1995) define MI as "...a directive, client-centered counselling style for eliciting behaviour change by helping clients to explore and resolve ambivalence." Miller and Rollnick (1991) describe 5 basic principles of MI techniques as 1) expression of empathy, 2) development of discrepancy, 3) avoidance of argumentation, 4) rolling with resistance, and 5) support of self-efficacy. The expression of empathy includes an emphasis on reflective listening and acceptance, with express acknowledgment that ambivalence about change is normal. The MI interviewer is then advised to help the client develop a discrepancy between their goals and present behavior. Clients are encouraged to articulate independently their need for change. Argument is seen as unproductive, and so is deterred by avoidance of labeling. Resistance is not viewed as a threat by the MI interviewer, but as valuable input from the client which implies that a change in strategies may be called for. Interviewers promote their clients' sense of

self-efficacy and understanding that alternatives exist that can help them reach their goals.

Rollnick and Heather (1992) describe how brief Motivational Interviewing is applied in medical settings. Resistance to behavior change is regularly encountered in health care consultations, as evidenced by high rates of treatment and medication noncompliance, and reticence to employ health-promoting behaviors (e.g., exercise). Oftentimes, simply giving appropriate advice about behavior change is insufficient to promote that change. MI techniques have been adapted to this setting in order to address patient ambivalence and readiness to change. MI are client-centered, emphasizing empathy, and alternately employ directive and non-directive interviewing styles. Appropriate MI strategies may include assessment of readiness to change, determining the patient's pros and cons of particular behaviors, providing information, exploring concerns, and helping with decision-making. The patient is viewed as an expert in this interaction, and an emphasis is placed on *negotiation* of change rather than direct persuasion.

DiClemente (1991) provides recommendations for the conduct of Motivational Interviewing with clients in different stages of readiness for change, noting that MI is appropriate for clients in all the stages. The author emphasizes the importance of using different motivational tactics in responding to subtypes of individuals within stages of change as well. For example, some Precontemplators are characterized by rebellious attitudes in avoiding commitment to behavior change. However, individuals in the Precontemplation stage of change are perhaps most in need of MI techniques before action-oriented interventions can be effective. These rebellious individuals

respond best to being provided choices and paradoxical interventions with the purpose of re-directing some of their rebellious energy towards at least contemplating behavior change. Those Precontemplators who appear resigned to their problem behavior are best motivated through instilling hope and exploring barriers to change. The rationalizing Precontemplator responds better to empathy and reflective listening than to attempts to debate their points of view.

The Contemplator is also in need of MI strategies, because the individual wavers between recognizing the existence of a problem and actually making a concrete decision to change (DiClemente, 1991). These individuals express interest in changing without the commitment to follow through with that change. Providing information and exploring incentives to change often are effective with Contemplators, as these interventions directly impact the decisional balance of their behaviors. The pros of behavior change should be emphasized for these individuals beyond the cons of not changing. The target goals of MI with Contemplators are to lower ambivalence and raise self-efficacy.

Clients in the Determination (Preparation or Decision-Making) stage have committed to changing their behavior. Here, the task of MI involves assessing the strength of the client's commitment. This is to separate those clients truly committed to change from those trying to convince themselves that their commitment is real. Barriers to successful action must be discussed, and the client must be inoculated against the realistic likelihood of occasional relapse. The client should be aided in developing coping skills and alternatives to their old behavior patterns so that change can be maintained (DiClemente, 1991).

Although the client in the Action and Maintenance stages of change has already committed to and implemented a plan of action, MI techniques can help these clients more successfully complete their plans and avoid relapse (DiClemente, 1991). The MI therapist should concentrate on promoting self-efficacy by way of praise for successful activity, reaffirming the client's decisions, offering models of change have helped others, and emphasizing internal attributions of success. As success is solidified over time, the client enters the Maintenance stage of change. These clients' primary goal is the integration of successful changes and the avoidance of relapse. MI should focus on information about cues and situations that might provoke relapse, and about the fact that changes can take a long time to consolidate.

Miller (1996) reviews literature examining the efficacy of MI techniques in the treatment of alcohol and substance abuse. Early applications of MI techniques in the form of Drinker's Check-Ups (DCU) provided assessment and feedback on the drinking behavior of individuals recruited from the community. These individuals were then provided minimal advice about appropriate behavior change, leaving the responsibility for change up to them. This intervention alone lowered alcohol consumption 27%; an effect maintained at 12 months. Replication studies of this technique produced even better results (55-76% reduction), and therapist confrontation was found to have a strong negative correlation with behavior change. DCU's demonstrated efficacy in clinical samples as well. DCU-prepared clients were rated as more involved and participatory in therapy, and were twice as likely to be completely abstinent at three months. In three other well-designed studies, MI techniques were shown to suppress drug use in general, and marijuana and heroin use

in particular (Miller, 1996).

Empirical evidence for MI techniques in reducing PT from psychotherapy is reviewed in Walitzer et al. (1999). Two studies examined the use of MI in preparing clients for alcohol treatment. The first discovered that a two-session motivational assessment and interview improved participation in a residential alcoholism treatment program, and resulted in less drinking at a 3-month follow up. The second incorporated a brief MI technique at intake with outpatient alcoholism treatment clients. Although the treatment group had better outcomes at 3 months, dropout was not affected in this sample. The authors conclude that MI techniques show great promise in reducing dropout from therapy, and could readily be applied in outpatient mental health settings.

Swanson et al., (1999) administered a single, one-hour session of MI to psychiatric and dually-diagnosed clients referred for outpatient aftercare. New hospital inpatients were randomly assigned to receive either standard treatment (ST) or ST plus MI. All participants completed the URICA (McConnaughy et al., 1989) stage of change scale at intake. Those in the ST plus MI condition met with a therapist for 15 minutes at the beginning of treatment to discuss their URICA scores. They then met with their therapist again just before discharge, for an hour-long MI session. The two groups were compared for attendance to an initial follow-up outpatient aftercare therapy session. For participants with psychotic disorders, affective disorders, and dual-diagnoses, significantly more ST plus MI patients than ST patients attended the initial session. In addition, for non-dually-diagnosed patients, the 15 minute orientation session was correlated with better attendance at inpatient

cognitive-behavioral treatment groups.

Although a proponent of MI techniques, Miller has raised serious questions about why these techniques induce change at all (1994; 1995; 1996). He notes that individuals in treatment, particularly for substance abuse disorders, usually already know that their maladaptive behaviors have adversely affected their lives. They typically have already made efforts to change the behaviors, to little avail. He speculates that the answer may lie in understanding what constitutes true motivation for change (1996). This question is yet unanswered in the literature. Nonetheless, it seems apparent that an individual must acknowledge the incompatibility of current behaviors with values that he or she holds more dear than these behaviors. Thus, existential questions of meaning may better explain true motivation for change than do behavioral or other conceptualizations of behavior change. A key component of change is therefore bringing the individual's conflict to conscious awareness (1994).

Does such a potentially coercive technique pose particular ethical questions? When, for example, is a therapist justified in attempting to promote change in an unmotivated individual, and is such a technique not manipulative in these circumstances? Society is generally accepting of coercive persuasion in some situations, such as suicide stabilization, though less so when stakes are not so high. The less serious the potential consequences of a behavior, the less manipulative should be the intervention (Miller, 1994).

Miller (1994) notes that MI techniques can be seen as manipulative in some contexts, but that this concern may rarely be justified. MI techniques are manipulative in the sense that they demonstrate the ability to effectively alter behavior. This is not

likely to be seen as an ethical concern, as most psychotherapeutic techniques are applied for the same purpose. Withers (1995) agrees, arguing that MI is essentially no different from education or advertising in that it may evoke changes in people who had not previously intended to make changes. Inasmuch as this is done without trickery or coercion, the technique does not pose ethical concerns beyond those inherent with any powerful technique.

For the resistant client (e.g., court referrals), MI techniques could potentially effect behavior change against their permission (Miller, 1994). Indeed, such effects may occur without the client even being aware of how these behavior changes have taken place. From a descriptive standpoint, MI techniques may produce each of these scenarios, and so could be considered manipulative. However, outcomes are clearly intended to be benevolent. Likewise, these types of effects arguably result from many other cognitive or behavioral psychotherapeutic interventions. Additionally, the client is consulted at every turn, and is encouraged to incorporate her or his own goals, expectations, and hopes. The client's pre-existing internal conflicts are liberated, and thus produce an internal, rather than therapist-imposed, motivation for change. In short, while MI techniques clearly exert influence on the client, ultimate change comes from within the client, and is not brought about by imposition of therapist values (Miller, 1994).

Summary

Premature termination from psychotherapy is a prevalent and potentially serious problem across treatment settings in terms of lost revenue, compromised treatment outcomes for clients, and the potential for therapist demoralization. Studies

that examine predictors of PT, though plentiful and creative, have generally been of little help in understanding PT. While some techniques have been shown to reduce dropout, there exists a lack of theory-based, cost-effective interventions for dealing with the problem of PT.

The Transtheoretical Model of Behavior Change offers a theoretical understanding of PT which could potentially be applied to reduction of the problem. The TTM posits that if therapists assess for a client's stage of readiness for change at the outset of therapy, and then adjust their interventions accordingly instead of assuming that all clients are ready to take action, PT will be reduced, and participation and outcome will be enhanced. The TTM offers several easily measured constructs that have been demonstrated to reliably predict dropout. Additionally, Motivational Interviewing is a technique derived from the TTM that shows considerable promise in reducing PT from psychotherapy. The combination of these elements may significantly enhance an agency's ability to accurately predict and reduce PT from outpatient psychotherapy in a quick and cost-efficient manner.

METHODOLOGY

This study will employ a posttest-only control group design with random assignment to treatment. This type of design allows for direct comparison of dropout between individuals in the treatment and no-treatment control groups. Most of the major threats to internal validity are adequately addressed by this design, and causal attributions are permissible (Heppner, Kivlighan, & Wampold, 1992, pp. 120-122). The predictive validity of the stages of change measure has been demonstrated in two studies (Brogan, Prochaska, & Prochaska, 1999; Smith, Subich, & Kalodner, 1995), and so will only be examined through post hoc analysis.

Research Setting

Data for this study will be gathered at two primary locations. The first is a rural, not-for-profit, tri-county community mental health center located in a Midwestern state. The second location is an outpatient mental health clinic located in an urban setting. The two sites are institutional affiliates. Demographic information will be collected in the admissions office by intake personnel before any consent form or questionnaire is administered. Actual data collection will take place in the respective outpatient waiting rooms of these facilities. Permission to collect data at these facilities has been obtained from the organization's research director. Further permission will be sought from the organization's institutional review board pending approval of this prospectus and IRB approval from the University of Oklahoma.

Participants

The participants in this study will consist of adult (18+), outpatient clients who present for psychotherapy at either of the two clinics described above over a course of

approximately 4 months. Excluded will be clients referred solely for medication evaluations by psychiatrists. Additionally, data for clients who initially dropout of treatment but re-enter within 6 weeks will be excluded from analysis. Sample size will be determined by power analysis, as described below.

Descriptive statistics on the population at this organization were derived from a survey including data from over 940 clients. This sample should include a relatively broad cross-section of clients in terms of SES and rural-urban status given the diversity of the two treatment settings. Ethnicity statistics do not vary significantly between these settings. Prairie View Comprehensive Outcomes Management System (PVCOMS) data (Hays & Williams, 1999) indicate that across the two settings, approximately 69.4% of clients are female. Caucasians make up 93.6% of clients, with 1.1% African-American, 1.6% Hispanic, 0.2% Asian-American, and 3.6% "Other" including Native American. The mean age for all adult participants should be approximately 43.34 years. The average annual income is likely to be somewhat higher for participants at the private urban setting than at the CMHC rural setting. The overwhelming majority of these clients are likely to consider themselves Protestant Christian (Hays & Williams, 1999).

Protection of Human Subjects

Procedures for protecting human subjects will be guided by the American Psychological Association's Ethical Principles for Psychologists (1992). Several procedures will be incorporated to protect the rights of participants. A proposal of this study will be submitted to the Institutional Review Board (IRB) of the University of Oklahoma for review and approval. The proposal will then be reviewed by the

organization's IRB from which data will be collected.

Participants will receive a consent form which includes a brief written description of this study, including the risks and benefits, if any, of participation (See Appendix A). This form will explain that participation is voluntary, that it will not affect their access to or the quality of treatment, and that their participation will remain confidential. This will be reconfirmed verbally in telephone interviews for participants in the treatment condition. Return of the completed questionnaires will be considered consent to participate. Participants will be advised that they may withdraw from the study at any time without harm.

Instruments

One psychometric instrument will be utilized in this study, the Stages of Change Scale (McConnaughy, Prochaska, & Velicer, 1983; McConnaughy et al., 1989; SCS). Permission to use this instrument will be obtained from the authors (See Appendix B). Demographic and dropout data will be collected from the institutional computerized admissions tracking system.

Stages of Change Scale

The Stages of Change Scale (SCS) has been widely utilized in studies of the Transtheoretical Model of Behavior Change (See Appendix C). It is a 32-item questionnaire designed to assess an individual's current stage of readiness for involvement in change of a problem behavior. McConnaughy et al. (1983; 1989) developed the SCS to measure the five stages of change hypothesized by the original TTM.

Test Construction and Development

McConnaughy et al. (1983) devised a rational scale to measure the five stages of change (i.e. Precontemplation, Contemplation, Decision-Making, Action, and Maintenance). The authors generated 165 items derived from behavioral definitions of the stages of change. A 5-point Likert scale was used, ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Three judges familiar with the TTM were requested to place each item into its appropriate stage of change. One hundred, forty-five of the original 165 items had 100% agreement. One hundred, twenty-five of these remaining items were retained for analysis. Twenty-five items defined each stage of change. The 125 items were presented to 155 adult outpatients, and analyzed in three stages to reduce the total number of items. Items were reduced from 125 to 32 in three phases on the basis of three steps in each phase: a) principal components analysis on inter-item correlations with Varimax and oblique rotations, b) correlations between each item and scale total score, and c) coefficients alpha for items hypothesized to measure each stage of change with and without a particular item included. The Decision-Making stage of change was dropped from analysis after the second phase as it was determined not to be measuring a separate stage. The resulting 32 x 32 item matrix was submitted to principal components analysis. The Varimax rotated component patterns revealed that each of the four remaining stages of change was comprised of 8 items each which loaded highly on their respective components and not on other components. These components accounted for 58% of the total variance. Coefficients alpha ranged from .88 to .89 for the four scales. Adjacent stages were determined to correlate more highly with each other than with other stages,

forming a simplex pattern. Cluster analysis yielded 9 subtypes accounting for 90% of the variance in the sample.

The Stages of Change Scale (SCS) was cross-validated using an adult outpatient sample with a high incidence of severe psychiatric disturbance (N = 327; McConnaughy et al., 1989). Participants completed the SCS at intake. Principal components analysis with Varimax rotation was performed on the 32 x 32 matrix of inter-item correlations. Results of this analysis replicated results of the McConnaughy et al. (1983) sample, with some minor exceptions. One item from the Action stage loaded more highly on the Contemplation component. The components accounted for 45% of the total variance in this sample. Cronbach's Alphas for the four scales ranged from .79 to .84. Means and standard deviations for each of the scales were decidedly similar to those in the original sample. The correlations among scales replicated the original study as well. Contemplation, Action, and Maintenance were found to be related but "not highly redundant." Cluster analyses of the subject pool yielded an 8-subtype-cluster solution rather the 9-cluster solution found in the original sample. The authors conclude that this study supports an invariant sequence of stages of change.

Reliability

Additional reliability data for the SCS (referred to as the University of Rhode Island Change Assessment Scale [URICA]) is reviewed in Carey et al. (1999). The internal consistency reliability of the SCS has been evaluated using scales of from 28 to 32 items. Alpha coefficients for the 32-item version range from .79 to .89 per scale, and for the 28-item version, from .69 to .83. Temporal stability of the SCS has been reviewed in only one study. Stability over time was determined to be adequate over a

3-day period with substance abuse samples. However, the reviewers note that the study's employment of a t-test approach is inappropriate due to this method's insensitivity to specific item-by-item differences. Carey et al. (1999) summarize the SCS's internal consistency reliability as adequate, and applaud the fact that the measure is theory based. They caution, however, that the measure's temporal stability has not been well established.

Validity

The validity of the SCS is reviewed in Carey et al. (1999). Factorial evidence for the SCS's validity has been mixed overall. While the four-subscale structure of the measure is supported in two studies of psychotherapy clients and one study of alcoholic outpatients, this structure was not replicated in a sample of drug abusers. Studies have been inconsistent in their ability to interpret scale scores in terms of discrete stages. Contemplation, Action, and Maintenance have been shown to correlate positively with one another in one study, and negatively with the Precontemplation stage in another. Based on these findings, researchers have encouraged the use of stage profiles produced by cluster analysis to classify individuals within stages of change. However, the number of clusters varies from 9 to 2 across studies, and appears to be heavily sample-dependent. It has been suggested that a series of distinct stages does not exist, and that instead a two-cluster model of change ("ready or not") best describes the data. Specific clusters have, however, been associated with other behavioral and attitudinal measures, such as drinking behaviors and self-efficacy.

Predictive validity of the SCS has been suggested (in Carey et al., 1999), with

higher scores comprised of the summed Contemplation, Action, and Maintenance scales predicting better outcome in a sample of smokers. In contrast, the SCS did not predict completion of an alcohol treatment program. The SCS was likewise unable to distinguish stages of change between different drug abuse samples. The authors suggest that the best use of the SCS might be as a single, continuous measure of readiness to change rather than interpreted across stages of change.

Summary and Reasons for Inclusion

Despite the significant criticisms expressed in Carey et al. (1999), the SCS has advantages over other measures of readiness to change for the purposes of the present study. McConnaughy, et al. (1983) note that this instrument could be used at intake to help determine in which stage of change clients present themselves. It is brief and internally consistent. Though temporal stability has not been well established, it is in any case theoretically unclear how temporally stable a measure of readiness to change should be. Carey et al. (1999) note that the SCS is the only self-report measure which has been validated on non-drug abusing samples of adults in outpatient psychotherapy. Though the authors note that only the Precontemplation stage is consistently predictive of outcome, and the SCS may be nothing more than a two-factor instrument measuring whether or not a client is prepared for change, this descriptive model of the SCS stages would not invalidate its usage in the proposed study. Participants low in readiness to change (i.e. Precontemplators, Contemplators) can be distinguished from those high in change readiness (i.e. Action, Maintenance) with the scale. Additionally, the SCS has already been shown to significantly aid in predicting dropout from outpatient psychotherapy in two studies (Brogan, Prochaska, & Prochaska, 1999;

Smith, Subich, & Kalodner, 1995). Despite some evidence of psychometric shortcomings (Carey et al., 1999), the SCS is the most appropriate instrument for the present study.

Motivational Interview

A significant implication of the Transtheoretical Model for the reduction of PT is that once a client's readiness for change is assessed, subsequent intervention should be designed and implemented appropriately (Prochaska, 1995, 1999; Prochaska, DiClemente, & Norcross, 1992; Velicer et al., 1998). Motivational Interviewing is one such intervention, derived from the TTM, which is designed to improve motivation for psychotherapy. MI techniques should specifically be useful in raising psychotherapy participation and outcome with individuals in the Precontemplation and Contemplation stages of change (DiClemente, 1991), and in reducing dropout (Walitzer, Dermen, & Connors, 1999).

The motivational interview will utilize a semi-structured format (See Appendix D) adapted from models described in the literature (Lawendowski, 1998; Rollnick & Heather, 1992; Rollnick and Bell, 1991; Walitzer, Dermen, & Connors, 1999). Rollnick and Miller (1995) describe essential features of MI which are incorporated in this format. These include: 1) that change motivation comes from the client, and is not imposed; 2) the client must articulate and resolve ambivalence, not the therapist; 3) direct persuasion is avoided; 4) the counseling style is "quiet and eliciting;" 5) the therapist directs the client's resolution of ambivalence, 6) readiness to change is seen as a product of interpersonal interaction, not as a client trait, and; 7) therapy is collaborative, and avoids expert/recipient roles. The therapist seeks to understand the

client's frame of reference through reflective listening. He or she expresses acceptance and affirmation. The therapist then elicits and reinforces the client's self-motivational statements. The client's readiness to change is assessed, not assumed, and her or his freedom of choice and self-direction is supported.

The MI technique used in this study will essentially be a brief therapy intervention. Phone interviews will begin with introductions, and reminders regarding confidentiality and informed consent. Counseling "microskills" such as reflective listening, open questions, and minimal encouragers (Ivey & Authier, 1978), will be used throughout the interview process. The interviewer will first elicit a description of the client's presenting problem, symptoms, and the factors that led to their coming in for treatment. The therapist conveys empathy through reflective listening and paraphrasing. The interviewer then shares the result of the assessment instrument (SCS) and information concerning the individual's potentially greater likelihood of leaving therapy before significant gains have been realized. The interviewer discusses the client's presenting problem, symptoms, support factors, and SCS results in a manner that is meaningful to the client, and ignores formal diagnosis. The client is encouraged to consider for her or himself the relative costs and benefits of making behavior change necessary for improved functioning. Responsibility for making behavior change is discussed as resting with the client alone, though the interviewer makes it clear that change is advisable. The interviewer reviews the types of interventions which may be incorporated by the client's therapist, as well as other treatment options which may address the client's particular issues. The interviewer ends the interview by stressing that treatment is likely to be effective only

if the client is committed to making appropriate change. This places responsibility for improvement on the client, and raises the client's self-efficacy for being the architect of her or his own improvement.

Procedure

Data for this study will be collected during a period of approximately 4 months in the winter and spring of 2000. Permission to collect data at both facilities has already been granted by the institutional director of research and training. Clinical support staff will administer the SCS and consent form/study description to clients when they arrive for their initial intake session. Clients will be requested to complete the materials before leaving the facility after their intake. SCS questionnaires will be placed in a specified location for daily collection by the researcher. The researcher will score these questionnaires each day, and clients who are identified as high PT risks (i.e., Precontemplation & Contemplation Stages of Change) will then be randomly assigned to either a treatment group or a no-treatment control group using random number lists. Clients without a home telephone will be excluded from this study without regard to which condition they are assigned. Likewise, clients who are referred to psychiatrists for medication evaluation will be excluded unless they are then assigned to outpatient psychotherapy.

Those clients assigned to the treatment condition will be contacted by phone by the researcher within 72 hours of their intake appointment. Calls will be placed between the hours of 6 and 8pm on weekdays, and between noon and 6pm on Saturdays. No calls will be placed on Sundays. The interview technique is intended to take no longer then approximately 10 to 12 minutes to complete, and will be timed.

The researcher will not serve as therapist for any participants in the experimental condition.

PT will be monitored for all participants using the facility computerized admission tracking system. Clients will be considered to have prematurely terminated if they leave therapy against their therapist's advice before completing more than 2 sessions. This cutoff was chosen in light of the finding by Pekarik (1992) that outpatients classified as "early" PT's (1-2 sessions) were significantly more symptomatic than "late" PT's (3+ sessions) at 4-month follow-up. Dropping out within 1 or 2 sessions predicted poorer functioning than even a brief course of therapy. Therapists will be contacted to help determine whether termination was premature or appropriate. Clients who appropriately terminate due to a cessation of symptoms before completing more than 2 sessions will not be considered to have prematurely terminated therapy. These 2 sessions will include the intake session, as the majority of clients at these facilities continue therapy with their intake therapist.

Demographic data relevant to the question of PT from psychotherapy will also be collected from computerized admissions tracking records. This will include client age, ethnicity, rural vs. urban residence, and method of payment as a crude index of socio-economic status. Initial diagnosis as recorded by the intake clinician will be collected in this same manner. Qualitative data will be collected post hoc to aid in interpretation of results. This will include contacting by phone or email the therapists of participants in the experimental condition to help determine the proportion of PT versus appropriate termination in this group.

The appropriate sample size for this study is determined through power

analysis. Statistical power denotes the chance of obtaining a significant result with a statistical analysis, and incorporates the relationships between itself and three other variables involved in statistical inference: alpha or significance level, population effect size (ES), and sample size (N; Cohen, 1992). The alpha level for this study will be .05, as is generally accepted by the community of scholars. Effect sizes are not reported for studies examining the effect of MI techniques on PT from treatment (Lawendowski, 1998; Swanson et al., 1999; Walitzer et al., 1999), or for studies of MI treatment outcomes in general (Miller 1996). However, the effects of MI on treatment retention and outcome are described in these studies as considerable in most cases. A conservative (medium = .30) effect size was therefore deemed appropriate for the power analysis. Power for this analysis was set at .80, resulting in a need of 64 participants each for the experimental and control groups. These groups are composed of individuals in the Precontemplation and Contemplation Stages of Change based on URICA scores. Examination of previous studies (DiClemente et al., 1991; McConnaughy et al., 1989; McConnaughy et al., 1983; Smith et al., 1995; Velicer et al., 1995) suggests that between 40 and 79% of participants fall within these stages of change. However, proportions are heavily sample-dependent, and many of these participants were actively recruited to smoking cessation programs. Motivation for change in this sample might be lower than that for adults self-referred for outpatient psychotherapy. For the purpose of estimation, similar SOC proportions in the present study would result in a total sample size of between 164 and 325 participants, with the higher estimate more likely.

Data Treatment and Analysis

Questionnaires will be scored by hand. Demographic data for subjects will be analyzed using measures of central tendency, as will the duration in minutes of the telephone treatment intervention. Post hoc comparison of PT incidences across demographic and diagnostic categories will employ chi square analyses. Assessed stage of change at intake will similarly be examined post hoc to help determine whether SOC differs across diagnostic categories.

Differences in the incidence of PT between the treatment and control conditions will be analyzed using an analysis of covariance (ANCOVA). This analysis will incorporate PT as a continuous, rather than dichotomous, variable representing total number of sessions completed. A one-way ANCOVA is appropriate for a posttest-only control group design that employs one independent variable with two levels. This design meets appropriate statistical assumptions for use of the one-way ANCOVA; including independence of scores, normal distribution of scores, and homogeneity of variances (Shavelson, 1996, pp. 377-379). Additionally, the ANCOVA allows for variables to be taken into account that could potentially impact PT, such as age, ethnicity, or SES. This will be done in lieu of ad hoc matching on these variables between the control and experimental groups. Such ad hoc matching procedures would be impossible in the present study given that participants will accrue to the sample over an extended period of time, and must be assigned to experimental condition (and receive the experimental intervention if appropriate) almost as soon as they are assigned.

The incidence of PT across assessed stages of change will be assessed post hoc

including all of the sample, excluding those assigned to the treatment condition. Participants' stage of change will be identified based on their highest URICA subscale score. This analysis will incorporate the 2-session PT cutoff discussed above. A 4 x 2 chi-square goodness-of-fit test will be conducted to examine the likelihood of PT across the four URICA subscales (i.e. Precontemplation, Contemplation, Action, and Maintenance). This statistic will allow for comparison of actual PT frequencies with expected frequencies based on the proportion of PT which would be expected for each stage of change in a chance distribution (Shavelson, 1996, p. 553).

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APPENDIX I

Informed Consent

UNIVERSITY OF OKLAHOMA

CONSENT TO PARTICIPATE IN RESEARCH

Title: Application of the Transtheoretical Model to Reduce Dropout from Outpatient Psychotherapy.

Study Description: My name is James Wright. I am a doctoral student in counseling psychology at the University of Oklahoma, and work as a psychology intern at Prairie View, Inc. I am studying ways to improve completion rates in outpatient psychotherapy. You are invited to participate in this study by completing the accompanying orange questionnaire. This questionnaire should take no more than 5 to 10 minutes of your time, and could significantly aid Prairie View in improving services to its clients.

An estimated 15% of participants may be contacted by telephone based on their responses to this questionnaire. This telephone contact should take from 10 to 12 minutes, and will occur only once.

Each questionnaire is numbered to keep track of participant responses. Lists matching participant names with code numbers will be protected during data collection and then destroyed upon completion. Please do not put your name or other personally identifying information on this questionnaire. Data will be stored in the researcher's office for one year, and will then be destroyed. Participation in this project is completely voluntary, and you will not be compensated for your participation. Whether you choose to participate or not will not affect the quality of or your access to services at Prairie View. Please cal the Office of Research Administration at (405) 325-4757 if you have questions regarding your rights as a research participant.

If you choose to participate, please read and sign one copy of the consent form. Complete the orange questionnaire and return it, along with the signed copy of your consent form. Keep one copy of the consent form for yourself. If you have any questions about the study, please contact me at (316) 634-1812. Thank you.

I agree to participate in the research study described above and, if selected, to participate in the follow-up telephone survey.

_____

Signature **Date**

_____

Print

APPENDIX II

Stages of Change Questionnaire

Motivational Interview Semi-Structured Format

STAGES OF CHANGE QUESTIONNAIRE

Please take a few minutes to complete this questionnaire. Complete **both sides**, and consider each question as it applies to the primary problem or issue that brought you in to therapy. If you were referred for therapy by another party, refer to the problem or issue for which that party referred you. Fill in the blanks corresponding to each question with a number ranging from 1 to 5 using the following scale:

1 = Strongly Disagree (Certainly Does Not Apply to Me)
2 = Disagree (Generally Does Not Apply to Me)
3 = Neutral
4 = Agree (Generally Applies to Me)
5 = Strongly Agree (Certainly Does Apply to Me)

1. As far as I am concerned, I don't have any problems that need changing. ____
2. I think I might be ready for some self-improvement. ____
3. I am doing something for the problems that had been bothering me. ____
4. It might be worthwhile to work on my problem. ____
5. I'm not the problem one. It doesn't make sense for me to be here. ____
6. It worries me that I might slip back on a problem I have already changed, so I am here to seek help. ____
7. I am finally doing some work on my problems. ____
8. I've been thinking that I might want to change something about myself. ____
9. I have been successful in working on my problem but I'm not sure I can keep up the effort on my own. ____
10. At times my problem is difficult, but I am working on it. ____
11. Being here is pretty much a waste of time for me because the problem doesn't have to do with me. ____
12. I'm hoping this place will help me to better understand myself. ____
13. I guess I have faults, but there's nothing that I really need to change. ____
14. I am really working hard to change. ____
15. I have a problem, and I really think I should work on it. ____
16. I am not following through with what I had already changed as well as I had hoped, and I'm here to prevent a relapse of the problem. ____

17. Even though I'm not always successful in changing, I am at least working on my problem. ____

18. I thought once I had resolved the problem I would be free of it, but sometimes I still find myself struggling with it. ____

19. I wish I had more ideas on how to solve my problem. ____

20. I have started working on my problems, but I would like help. ____

21. Maybe this place will be able to help me. ____

22. I may need a boost right now to help me maintain the changes I've already made. ____

23. I may be part of the problem, but I don't really think I am. ____

24. I hope that someone here will have some good advice for me. ____

25. Anyone can talk about changing; I'm actually doing something about it. ____

26. All this talk about psychology is boring. Why can't people just forget about their problems. ____

27. I'm here to prevent myself from having a relapse of my problem. ____

28. It is frustrating, but I feel I might be having a recurrence of a problem I thought I had resolved. ____

29. I have worries but so does the next person. Why spend time thinking about them? ____

30. I am actively working on my problem. ____

31. I would rather cope with my faults than try to change them. ____

32. After all I have done to try to change my problem, every now and again it comes back to haunt me. ____

MOTIVATIONAL INTERVIEW SEMI-STRUCTURED FORMAT

Introductory Script: Hello, my name is James Wright, and I am conducting a research project under the direction of the University of Oklahoma and Prairie View, Inc. You completed a consent form and orange questionnaire during your most recent visit to Prairie View for outpatient therapy. Based on your responses to the questionnaire, you were selected for a brief telephone interview. Please allow me to remind you of your rights as a research participant, if you choose to continue with this interview. Your participation in this project and this telephone interview is completely voluntary. You may withdraw your consent to participate at any time during or after this interview. Whether you choose to participate or not will not affect the quality of or your access to services at Prairie View. Anything you say is completely confidential, and your name is not connected with any verbal or written material you provide. Any data connected with this study will only be reported in aggregate form, and will not include your name. Do you have any questions? May I proceed with this interview?

1. Introduction of interviewer as researcher and clinical staff member.
2. Introduction of purpose for call (e.g. to talk about your treatment at Prairie View).
3. Reminder of consent to participate in study.
4. Reminder of confidentiality.
5. Verbal consent to participate in telephone interview.

6A. Elicit brief description of client's reason for treatment, presenting problem, symptoms, reasons for deciding to come in for treatment, etc.

6B. Why they are concerned about this situation.

7. Paraphrase client's description.
8. Feedback of client's SCS results. Incorporate client problem description.
9. Describe client's heightened risk for leaving therapy prematurely.
10. Describe importance of remaining in therapy at least 6 to 8 sessions.
11. Client asked open-ended question about benefits of current behaviors or of making no behavior change.
12. Client asked open-ended question about costs of maintaining current behaviors or of not changing.
13. Interviewer advises that behavior change may be necessary, given their description.
14. Client's responsibility for changes is emphasized (in a supportive manner).
15. Interviewer examines with client options for treatment.
16. Client encouraged to share preferences with therapist.
17. Interviewer reviews:
    - Client problem description.
    - Client's risk for premature termination.
    - Importance of client committing to make changes.
    - Indispensability of client behavior change to treatment efficacy.
    - Importance of client committing to remain in therapy.
18. Interviewer elicits client commitment to remain in therapy at least 6 to 8 sessions.