WHAT MATTERS IN THE LONG RUN:

PREDICTING LONGEVITY BASED ON INITIAL CLIENT FACTORS

by

EMILY SHAY BRYANT

(Under the Direction of Alan Stewart)

ABSTRACT

Research has consistently demonstrated that a significant number of clients who initiate psychotherapy services terminate prematurely: as many as 40-60% of clients terminate therapy before it is recommended by their mental health professional. Research on attrition and retention has yielded equivocal results: findings are inconsistent in regard to factors that predict attrition/retention. The purpose of this study was to explore potential demographic and psychological factors that contribute to the longevity/utilization of services within a Counseling Psychology department's community and training mental health facility. Data were collected via chart review of terminated psychotherapy clients. Data were analyzed using SPSS 22. Hierarchical multiple regression indicated that a model containing overall readiness for change, level of education, and sexual orientation significantly predicted longevity of psychotherapy treatment. Clinical and training implications, future directions, and limitations are discussed.

INDEX WORDS: Retention, Attrition, Longevity of psychotherapy treatment, Demographic variables, Symptom severity, Psychotropic medication status, Readiness for change, Managed care, Mandated clients

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DEDICATION

To Mom, Dad, and KB, for your never-ending support of my personal and professional growth. I love you a million early morning fishing trips + a million beach vacations + a million margaritas + a billion cheese cubes. At the end of this journey, your honorary PhDs in Counseling Psychology and a death-by-chocolate cake await you.

MEMORIUM

In memory of my brother, David Thomas Bryant, for his unending love and encouragement. I miss you every single day, Big Brother. No one wanted me to have this degree more than you, and I know you would have been the first to call me Doctor.

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CHAPTER ONE

Introduction

The first chapter begins by introducing the topic of interest and providing the context within the field of Counseling Psychology. This is followed by the statement of the problem, purpose, assumptions, and research questions of the study. This study seeks to identify initial client factors (i.e. demographic and psychological factors) that predict longevity (e.g, number of sessions attended) of psychotherapy treatment in a university-based community service provider with a dual focus of service provision and training. The next section provides definition of keys terms relevant to the study. The chapter concludes with the significance of the study as well as the organizational structure of the study.

Context within Counseling Psychology

Research has consistently demonstrated that a significant number of clients who initiate psychotherapy services terminate prematurely. A review of the outcome literature reveals that premature termination continues to plague the mental health profession: as many as 40-60% of clients terminate therapy before it is recommended by their mental health professional (Baekeland & Lundwall, 1975; Wierzbicki & Pekarik, 1993; Barrett, Chua, Crits-Christoph, Gibbons, Casiano, & Thomspon, 2008). Some research estimates that as many as 57% of clients who present for an initial consultation appointment do not return for additional sessions (Brogan, Prochaska, & Prochaska, 1999). Even more alarming is that this rate of attrition has not improved despite decades of research

examining factors that contribute to early termination (Barrett et al., 2008). In a field where positive outcomes are strongly correlated with attendance (Condelli & De Leon, 1993), attrition rates of approximately 50% are cause for concern and additional scrutiny. Researchers persist in efforts to identify factors that influence either the clients' likelihood of terminating therapy before recommended or their probability of completing the suggested course of therapy. Developing models that consistently and accurately predict client retention in therapy continues to be a difficult task.

Determining which characteristics will predict early termination has long been the focus of research (Tate, Mrnak-Meyer, Shriver, Atkinson, Robinson, & Brown, 2011; Coastworth, Duncan, Pantin, & Szapocznik, 2006; and Brogan, Prochaska, & Prochaska, 1999). Researchers have explored a variety of factors believed to influence the rate of retention and/or longevity of psychotherapy treatment. These factors include but are not limited to the following variables: gender, socioeconomic status, race/ethnicity, severity of presenting problem, therapy modality, family factors, environmental factors, and developmental status of client (Miller, Southam-Gerow, & Allin, 2008; Brogan, Prochaska, & Prochaska, 1999; and, Coatworth, Duncan, Pantin, & Szapocznik, 2006). The research has yielded disappointing results: after conducting a meta-analytic review of 125 studies spanning three decades, Wierzbicki and Pekarik (1993) concluded that variables researched most often (i.e. client, therapist, and problem variables) are not strongly associated with premature termination. More recent research conducted by Barret et al (2008) provided additional support for the reality that conditions that yield successful psychotherapy outcomes remain poorly understood. Other research suggests that dynamic (i.e. readiness or motivation for change, therapeutic alliance, or

psychological distress) rather than static factors (e.g. race/ethnicity, socio-economic status, or gender) have greater value for predicting retention (Condelli & DeLeon, 1993; Martin, Garske, & Davis, 2000; Hopko, Robertson, & Coleman, 2008; Nysaeter, Nordahl, & Havik, 2010).

In a now classic study, Smith and Glass (1977) completed the first meta-analytic review establishing the efficacy of therapy: after reviewing 375 controlled evaluations of psychotherapy, these authors concluded that the average therapy client was 75% better off than non-clients. Additionally these authors did not find statistical differences in effectiveness between behavioral psychotherapies (i.e. systematic desensitization or behavioral therapy) and non-behavioral psychotherapies (e.g. psychodynamic or transactional analysis). These authors concluded that psychotherapy is effective regardless of theoretical underpinnings (Smith & Glass, 1977). Research support for the effectiveness of psychotherapy is vast and convincing (i.e. Martin, Garske, & Davis, 2000; Lambert & Bergin, 1994; Stiles, Shapiro, & Elliot, 1986; Smith, Glass, & Miller, 1980; Smith & Glass, 1977). Psychotherapy is beneficial for clients. This reality (and the supporting body of research) forms a strong foundation for the study of longevity, retention, and attrition: if psychotherapy is effective, it is imperative to identify both the factors that enhance and discourage psychotherapy attendance.

The study of retention, attrition, and longevity is central to the field of Counseling Psychology for numerous reasons. Counseling Psychology is a diverse field with three central roles: remediation, prevention, and education (Gelso & Fretz, 2001). The remediation and prevention of mental health issues such as depression is directly related to the historical values of the profession (Delgado-Romero, Lau, Shullman, 2012; Brown

& Lent, 2008). A better understanding of the reasons and factors that influence clients to remain in psychotherapy lays a foundation for more efficacious clinical work: as clinicians gain more insight into the nuances of client retention and longevity, interventions can be tailored and individualized to maximize factors that cause clients to continue psychotherapy and minimize aspects that promote client drop-out. Counseling psychologists adhere to a science-practitioner model: psychologists create and use scientific research to inform their practice (Whitely, 1984). Bieschke, Fouad, Collins, & Halonen (2004) outline five components associated with competent scientific practice: 1) assess and apply current scholarship regularly and appropriately; 2) add to knowledge of field; 3) stringently evaluate interventions and resulting outcomes; 4) remain sensitive and vigilant to the influence of sociocultural variables on clinical practice and research; and 5) habitually subject work to the scrutiny of colleagues, stakeholders, and the public. The science practitioner model and the rigor inherent in said model makes the field of Counseling Psychology uniquely poised to study the relationship between client factors and attrition, retention, and longevity in psychotherapy treatment.

Statement of Problem

The positive relationship between significant therapeutic gains and psychotherapy attendance is well documented in the literature (Boggs et al, 2004; Prinz & Miller, 1994; Condelli & de Leon, 1993; Hubbard et al., 1989; Killapsy, Banerjee, King, & Lloyd, 2000). Across treatment modalities, settings, and populations, the general consensus appears to be that a strong positive correlation exists between attendance and positive outcomes: clients tend to experience larger and longer-lasting gains if they attend more psychotherapy sessions. In a field where positive outcomes are predicated on attendance,

dropout rates of approximately 50% are a reason for concern among both research and clinical personnel (Barrett et al., 2008; Berghofer et al., 2002; Wierzbicki & Pekarik, 1993). Client drop out is not only detrimental for clients, but for clinicians and agencies as well (Bados, Balaguer, & Saldana, 2007; Baekland & Lundwall, 1975).

Research on attrition and retention has yielded equivocal results: findings are inconsistent in regard to factors that predict attrition/retention (Morlino et al., 1992; Grunebaum et al., 1996; Coles, Turk, Jindra, & Heimberg, 2002; Oei & Kazmierczak, 1997). The lack of consistent findings has been attributed to methodological problems in the research designs (Issakidis & Andrews, 2004). The primary criticism is the definition of both terms but particularly attrition (Barrett et al., 2008; Issakidis & Andrews, 2004). Retention has primarily been the focus of studies that have a predetermined number of sessions, for example manualized treatment for smoking cessation or inpatient facilities to treat drug/alcohol dependence or eating disorders (Condelli & de Leon, 1993; Mulder et al., 2009; Curtin, Brown, & Sales, 2000; Rienecke et al, 2007). In settings or programs with a definitive ending point, retention is defined as completion of all sessions. Very few studies have examined retention in the absence of standardized treatments, and in such instances, researchers have focused their attention on attrition.

Definitions of attrition utilized in research demonstrate much variability (Barrett et al., 2008; Issakidis & Andrews, 2004). This variability influences the outcomes (Barrett et al 2008) and poses the possibility that different constructs are being explored and inaccurately compared (Hatchett & Park, 2003). Researchers lack agreement on the definition of attrition and comparing research studies yields mixed results about the prevalence of and factors contributing to client drop out. A second source of problems in

methodology stems from the difference in client and therapist expectations regarding the length of therapy required for positive gains (Hansen, Lambert, & Forman, 2002; Hynan, 1990; Todd et al., 2003). Pekarik and Finney-Owens (1987) discovered that clients anticipate shorter timelines for therapy than do psychotherapists. More telling is the research finding that the length of psychotherapy is more closely related to the client's expectations than those of the therapist (Pekarik, 1985).

Demographic Factors

Researchers studying factors associated with adequate psychotherapy attendance have typically begun by investigating demographic factors. These factors include but are not limited to the following variables: gender, age, socioeconomic status, education level, sexual orientation, occupation, and race/ethnicity. Studies that have examined demographic factors as predictors of retention/attrition have yielded mixed results. For example, numerous studies have failed to demonstrate a relationship between client retention and either age or gender (Issakidis & Andrews, 2004; Condelli & De Leon, 1993; Craig & Huffine, 1976). Other researchers have found that self-identified male gender and younger age (i.e. 25 years old or younger) were predictors of premature psychotherapy drop-out (McCarthy et al., 2007; Thormahlen, Weinryb, Noren, Vinnars, Bagedahl-Strindlund, & Barber, 2003; Edlund et al., 2002).

Other demographic factors have yielded more consistent results. Race seems to be consistently associated with retention in psychotherapy treatment. Minority status tends to consistently predict premature psychotherapy termination (Sue, Fujino, Hu, Takeuchi, & Zane, 1991; McCarthy et al., 2007; Miller, Southam-Gerow, & Allin, 2008; Gibbons et al., 2011). Additionally low socioeconomic status has also been associated with

premature termination (Garfield, 1994; Nysaeter, Nordahl, & Havik, 2011). While each of these variables have been shown to affect the attrition rate in psychotherapy, little research has explored the interaction of race/ethnicity and socioeconomic (occupational) status (Sue, Zang, & Young, 1994; Barret et al., 2008). While early researchers attributed attrition of minority individual to social biases and prejudice (Lorion, 1974), more recent research has suggested that obstacles to treatment represent a combination of cultural, attitudinal, and experiential differences (Prilleltensky, 2003; Illovsky, 2003). Although little is known about the interaction present between these variables, research clearly indicates that these demographic variables are usually correlated with the length of time of client chooses to remain in psychotherapy.

Although other demographic variables (i.e., location and distance traveled to access mental health care, delay from initial contact to initial appointment, and referral source) have been examined for their correlations to retention and attrition one variable remains conspicuously absent in the retention and attrition literature: client's sexual orientation. Few, if any, articles explore the impact of this demographic variable in predicting client retention and attrition (e.g. Barrett et al., 2008, Gibbons et al., 2011). According to estimates provided by The Williams Institute, the percentage of individuals who identify as LGBTQ (i.e. Lesbian, Gay, Bisexual, Transgender, or Questioning) in the United States ranges from 1.7% in North Dakota to 10% in the District of Columbia (Gates & Newport, 2013). This important aspect of identity likely impacts the decision to remain in psychotherapy treatment and should be considered as a factor in longevity of psychotherapy treatment prediction. Given the historic nature of oppression against individuals belonging to this community (e.g. Fouad, Gerstein, & Toporek, 2006; Munley

et al., 2004) understanding the barriers to mental health service and delivery is crucial to the social justice mission that undergirds the field of Counseling Psychology.

Psychological Factors: Depressive Symptomology

Depression remains a significant problem in modern society: a simple internet search using the keyword 'depression' yielded 59,500,000 results. The National Institute of Mental Health reported a 12-month prevalence rate of 6.7% for the adult population in the United States (Kessler, Chiu, Demler, &Watlers, 2005). The lifetime prevalence rate for depression is 16.6% (4th ed, text rev.; *DSM-IV-TR*, American Psychiatric Association, 2000); this percentage is higher than any other disorder in the Diagnostic and Statistical Manual of Mental Disorders (Lydecker, Tate, Cummins, McQuaid, Granholm, & Brown, 2010). Depression severity in particular has been found to be a significant predictor of attrition (Issakidis & Andrews, 2004 and Curran, Kirchner, Worley, Rookey, & Booth, 2002): the more severe depression symptoms a client reports, the more likely they are to terminate therapy prematurely. This finding has been significant in studies investigating co-morbid substance-dependence and depression (Tate et. al., 2011), HIV-infected individuals enrolled in a prevention trial (Johnson, et. al, 2008), and in smoking cessation research (Curtin, Brown, & Sales, 2000). There is a strong body of research that supports the hypothesis that increased levels of depression are correlated with fewer number of psychotherapy sessions attended. Assessing depression scores at the beginning of therapy seems crucial to effective treatment.

Psychological Factors: Readiness for Change

The Transtheoretical Model (TTM) conceptualizes a client's readiness for change (McConnaughy, Prochaska, & Velcier, 1983). A client's readiness to seek change has

been shown to be related to how the length of time they remain in psychotherapy: clients with higher scores in early stages, particularly the precontemplative stage, tended to terminate therapy prematurely (Brogan, Prochaska, & Prochaska, 1999; Derisley & Reynolds, 2000; Soler, et. al, 2008; Wade, Frayne, Edwards, Robinson, & Glichrist, 2009). Clients who believe they do not have problems are not interested in pursuing psychotherapy to improve or resolve their problems and thus often terminate therapy earlier than advised by the therapist. The TTM proposes that change processes are differentially effective across the stages of change (Norcross, Krebs, & Prochaska, 2011). For this reason it is important to discern what stage of change the client endorses at the beginning of therapy in order to select stage-appropriate processes of change (Davidson, Roe, Andres-Hyman, & Ridgway, 2010). Unfortunately many therapists approach psychotherapy with the expectation that all clients are in the contemplative or action stages (Prochaska & DiClemente, 1982; Polaschek & Ross, 2010). A result of this misperception is mismatched therapeutic interventions: therapists and clients do not agree about the course of therapy and as a result clients decide to discontinue services. Readiness for change appears to play a strong role in engagement in the therapeutic process.

Psychotropic Medication Status

Recent decades have impacted the mental health field in two important ways: 1) the influence of third party payers in the form of session limits and reimbursable fees, and 2) the development of a new generation of antidepressants (i.e. serotonin reuptake inhibitors and serotonin-norepinephrine reuptake inhibitors) (Olfson, Marcus, Druss, Elinsou, Tanielian, & Pincus, 2002). These related trends have provided consumers with

an effective and perhaps less complicated option to psychotherapy (Murlow, Williams, & Trivedi, 1999), greatly impacting the outpatient treatment of mental health disorders, particularly Major Depressive Disorder (Gibbons et al. 2011). Compounding the impact of session limits and efficacious anti-depressant medication are the differing views of the leading professional mental health organizations, the American Psychological Association and the American Psychiatric Association. The American Psychological Association lists a number of evidence-based psychotherapies for the treatment of Major Depressive Disorder (MDD), while the American Psychiatric Association states that MDD can only be treated with anti-depressant medication (Gibbons et al. 2011). Because of these developments, researchers are beginning to examine the impact psychotropic medication has on psychotherapy attendance.

As with other predictors of retention and attrition, the results from studies examining the correlation between psychotropic medication status and continued attendance to psychotherapy are mixed. Several authors reported that not taking psychiatric medication is associated with greater psychotherapy attendance (Laudet, Magura, Cleland, Vogel, & Knight, 2003). Other researchers disagree, stating that taking psychiatric medication was not associated with fewer psychotherapy sessions attended (Olfson et al., 2002). Olfson and colleagues compared psychotherapy attendance across a decade (1987-1997) and discovered the following trends: 1) psychotherapy usage fell from 71% to 61%; 2) psychiatric medication usage rose from 37% to 75%; and 3) the use of concurrent psychiatric medication and psychotherapy increased from 23% to 45%. While the overall psychotherapy usage decreased, psychiatric medication was not a clinically significant variable in the relationship. Other authors have found similar results:

medication does not appear to negatively impact psychotherapy attendance, and most consumers use concurrent medication and psychotherapy to treat mental illness (Gibbons et al., 2011; Arnow, et al., 2007; Edlund et al., 2002). The research literature provides strong support for combination treatment (e.g. psychiatric medication and psychotherapy). Additional support for this hypothesis would be beneficial as research exists that contradicts it.

Purpose of the Study

Retention and attrition are complex phenomena that have long been the subject of scientific scrutiny; psychologists committed to improved service delivery have explored factors that contribute to increased/decreased utilization of mental health care services. However, the majority of studies on these topics have methodological problems (i.e. lack of agreement and consistency regarding definitions and thus measurement) (Barrett et al., 2008; Hatchett & Park, 2003). Secondly most studies fail to examine retention in open-term models of therapy. Retention is most often examined in settings and studies that use a standardized model of therapy, for example smoking cessation, therapeutic communities for drug and alcohol rehabilitation, and inpatient facilities for treatment of disordered eating (Lee, Hayes, McQuaid, & Borrelli, 2010; Hoste, Zaitsoff, Hewell, le Grange, 2007). Retention is defined and measured in an all or nothing manner, and there is little research exploring retention without pre-determined lengths of therapy. Given that the term retention is used when discussing a pre-determined course of treatment, a more appropriate term to describe psychotherapy attendance in an open-term model might be longevity (i.e., the number of sessions attended).

With this in mind, the proposed study seeks to expand the body of literature regarding longevity, retention, and attrition by examining demographic and psychological factors that contribute to the longevity/utilization of services within a Counseling Psychology department's community and training mental health facility. This study adds to previous research by exploring the predictive relationship between factors initially reported by clients at the beginning of psychotherapy and the actual number of psychotherapy sessions attended. Developing a model that may predict how many sessions a client with particular profile (i.e. constellation of demographic and/or psychological factors) will remain in psychotherapy may provide a foundation for defining retention in agencies lacking a pre-defined number of sessions.

Assumptions

The present study examined the relationships between demographic variables (e.g., gender, age, socioeconomic status, race/ethnicity, level of education, psychotropic medication status, and sexual orientation), psychological variables (i.e., readiness for change, depression severity), and longevity of services in a community clinic and training facility administered by a research university. More specifically, the study identified factors that predict longevity of psychotherapy service use. The proposed study was based on two underlying assumptions:

1. Demographic variables influence retention in psychotherapy treatment (Di Leone, Vogt, Gradus, Street, Giasson, & Resick, 2013; Austin & Wagner, 2010; Sayre, Schmitz, Stotts, Averill, Rhoades, & Grabowski, 2002; Richmond, 1992); and

2. Psychological variables (i.e., symptom severity, readiness for change, and psychotropic medication status) (Tate et al., 2011; Trivedi, Nieuwsma, & Williams, 2010; Johnson et al., 2008; Arnow et al., 2007; Brogan, Prochaska, & Prochaska, 1999) influence attrition and retention in psychotherapy treatment. That is, certain client profiles are likely to predict the longevity of psychotherapy service use (Barrett et al., 2008).

Research Questions

The following research questions are based on a review of relevant literature on longevity, retention, and attrition in psychotherapy service:

1. Do significant relationships exist between client demographic factors (i.e., gender, age, socioeconomic status, level of education, race/ethnicity, psychotropic medication status, and sexual orientation) and the longevity of psychotherapy treatment?

   Null Hypothesis 1: There will be no significant relationships between client demographic factors and the longevity of psychotherapy treatment.

2. Do significant relationships exist between client psychological factors (e.g., depressive symptomology and readiness for change) and the longevity of psychotherapy treatment?

   Null Hypothesis 2: There will be no significant relationships between client psychological factors and the longevity of psychotherapy treatment.

3. If significant relationships exist between demographic and/or psychological factors, do these significant relationships predict longevity of psychotherapy treatment?

Null Hypothesis 3: Significant relationships between demographic and/or

psychological factors will not predict longevity of psychotherapy treatment.

Hypotheses and Statistical Analyses

To meet study objectives the statistical analysis will be accomplished in two parts. The first part is a correlation matrix to address the following hypotheses:

1. Gender will be positively correlated with longevity;

2. Age will be positively correlated with longevity;

3. Socioeconomic status will be positively correlated with longevity;

4. Level of education will be positively correlated with longevity;

5. Readiness for change will be positively correlated with longevity;

6. Psychotropic medication status will be positively correlated with longevity;

7. Sexual orientation will be negatively correlated with longevity;

8. Race/ethnicity will be negatively correlated with longevity;

9. Symptom severity will be negatively correlated with longevity.

The second part of the statistical analysis will be to conduct a hierarchical regression to create a model that will predict longevity of psychotherapy treatment. The hypotheses for the hierarchical regression are as follows:

1. Demographic variables (i.e. gender, age, race/ethnicity, socioeconomic status, level of education, and sexual orientation) will significantly predict longevity of psychological treatment);

2. Psychotropic medication status will significantly predict longevity above and beyond demographic variables;

3. Symptom severity will significantly predict treatment longevity above and

beyond demographic variables and psychotropic medication status;

4. Readiness for change will significantly predict longevity above and beyond

demographic variables, psychotropic medication status, and symptom severity.

Definitions

The following terms will be used frequently throughout this study and thus the definitions

are provided below:

Retention	Completion of a course of treatment of pre-determined length
Attrition	Client-initiated termination of therapy before termination is recommended by the therapist (i.e. premature termination)
Longevity	Number of psychotherapy sessions attended in an open-term (e.g., no pre-determined length) model of psychotherapy.
Demographic Variables	Client's self-reported answers on the following dimensions: gender, age, socioeconomic status, race/ethnicity, level of education, and sexual orientation
Depressive Symptom Severity	Depressed mood or a loss of interest/pleasure in daily activities for more than two weeks; measured by Beck Depression Inventory-II
Readiness for Change	An individual's readiness (i.e. willingness and commitment) to enact new behaviors, particularly new mental health behaviors; measured by the University of Rhode Island Change Assessment
Psychotropic Medication Status	Presence of and compliance with psychotropic (e.g. antidepressant, anti-anxiety, or anti-psychotic) medication prescription

Significance of Study

Retention, attrition, and longevity of psychotherapy use continue to be highly

relevant foci of research within the fields of Counseling and Clinical Psychology. 48% of

households report a member of the household seeking mental health services in a given

year (Chamberlin, 2004). More people are seeking mental health care but attrition rates

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are comparable to those reported fifty years ago (Barett et al., 2008). The current literature estimates attrition rates to be approximately 50% (Baekeland & Lundwall, 1975; Wierzbicki & Pekarik, 1993; Brogan, Prochaska, & Prochaska, 1999). This means that in the United States approximately 28,806,701 people initiate mental health care but terminate pre-maturely. This translates into 10% of the total population not receiving needed mental health care services after they have been initiated (U.S. Census Bureau, 2014).

Because of the cost of attrition, both individually and systemically, researchers have attempted to identify factors that predict retention and attrition. The results of such studies have been inconclusive with some studies providing evidence for factors that contribute to early termination (Issakidis & Andrews, 2004; Curtin, Brown, & Sales, 2000; Coatsworth, Duncan, Pantin, & Szapocznik, 2006) and other studies yielding evidence against such factors (Morlino et al., 1992; Grunebaum et al., 1996; Coles, Turk, Jindra, & Heimberg, 2002; Oei & Kazmierczak, 1997). As the population of the United States continues to grow and mental health needs increase and stigma decreases, efforts must be made to elucidate factors that impact retention and attrition.

Attrition research has been wrought with methodological problems (i.e. definition, measurement, and utility in open term therapy settings) that have complicated the interpretation of the outcomes. A question that arises from a review of the literature is how can retention and attrition be calculated and studied when a session-limit does not exist? These topics have been well researched in a variety of settings (inpatient units, manualized treatments, and therapeutic communities) that have a pre-determined number of sessions. In treatment settings such as community mental health clinics, training

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facilities, and private practice much less attrition and retention research exists. In settings lacking a definition of a course of treatment it seems more appropriate to use the term longevity as retention is defined as the completion of a pre-determined amount of psychotherapy. Using this the term retention does not make sense in setting that lack pre-determined session limits. This study proposed to explore if longevity or utilization of psychotherapy services can be predicted based on self-reported demographic and psychological factors collected during the intake procedure. As the mental health field continues to be plagued by startling rates of attrition, it is imperative to explore longevity and attrition in settings that do not utilize a manualized treatment modality.

Organization of the Study

The proposed study includes a review of the literature, description of research methodology, summary of the results, and discussion of the findings. Chapter Two, the review of the literature, is organized topically: definitions of retention and attrition and resulting methodological challenges, outcomes of attrition, demographic factors researched in retention and attrition literature, the Transtheoretical Model and readiness for change, and depressive symptomology. In Chapter Three I will explain the research design and hypotheses, describe the study's sample, and outline the data analysis plan. In Chapter Four I will present the sample descriptive statistics and the model fit statistics and address the main results of the study in relation to the research questions. Implications for future research, clinical practice, and training as well as study limitations will be discussed in Chapter Five.

CHAPTER TWO

Review of the Literature

In preparation for this research project, a literature review was conducted on the topics of interest. Of particular importance to this study were the following areas of literature: retention and attrition, demographic variables (i.e. gender, socio-economic status, level of education, sexual orientation, psychotropic medication status, and race/ethnicity) hypothesized to influence retention and attrition, readiness for change and the Transtheoretical Model, and symptoms of depression. This chapter includes a summary of the literature regarding these topics.

Retention and Attrition: Definitions and Methodological Challenges

Despite decades of research on attrition and retention, clients continue to disengage from mental health services at a rate (approximately 50%) comparable to that found more than 50 years ago (Barret et al., 2008). It is therefore essential to continue research in this area and to prioritize disseminating findings to clinicians to improve the delivery of mental health services.

Retention and attrition are related concepts: the study of one is invariably the study of the other. Many research studies tend to approach the topic from the attrition angle as it seems easier to define (Andrews, 2004, Curtin, Brown, & Sales, 2000; Miller, Southam-Gerow, & Allin, 2008). Retention is typically explored and discussed in contexts that have a finite and well defined end point. Some examples include manualized treatments (Lee, Hayes, McQuaid, & Borrelli, 2010; van der Waerden,

Hoefnageis, Jansen, & Hosman, 2010) drug rehabilitation in therapeutic communities (Mulder, Frampton, Peka, Hampton, & Marsters, 2009; Condelli & de Leon, 1993), and inpatient clinics for disordered eating (Hoste, Zaitsoff, Hewell, le Grange, 2007). In these situations there is a finite end point making retention easy to define: retention is completion of the standardized protocol. In clinical settings lacking a finite endpoint, retention is more difficult to define because it will vary with client, presenting concern, and therapeutic conceptualization. For these situations, defining and exploring attrition is a more concrete and manageable task.

The definition of attrition, while easier to operationalize than retention, creates methodological problems in research (Barret et al., 2008). Attrition has been defined in the literature in numerous ways: 1) the client discontinuing therapy before the therapist recommends termination (Garcia & Weisz, 2002; Klein et al. 2003); 2) the client missing a scheduled session (Wierzbicki & Pekarik, 1993); 3) the client failing to complete a specific number of sessions (Kazdin & Mazurick, 1994; Sigqueland et al., 2002); and 4) a combination of the previous listed criteria (Wierzbicki & Pekarik, 1993). Based on the various definitions of attrition used, studies in clinical settings estimate that only 50 to 70% of those scheduled for treatment actually complete treatment (Kessler, Berglund, & Bruce 2001; Egland et al., 2002). The variability in definitions influences the findings. Depending on how attrition is defined alters the reported results, varying from 36 to 48% percent (Barret et al., 2008). Additionally at least one study has shown that differing definition actually represent different constructs (Hatchett & Park, 2003).

A second factor related to the challenges of operationalizing and measuring attrition is the expectations and perceptions of both client and clinician (Barret et al.,

2008). The perceived duration of therapy affects how premature termination is defined. Research has shown that in general therapists expect treatment to last significantly longer than clients (Garflied, 1994; Pekarik & Finney-Owens, 1987). More recent research supports this idea: in a study conducted by Rabinowitz and Noa (1997) indicated that psychotherapists predicted treatment to last 9.7 months whereas treatment lasted only 6.6 months. These researchers also found that psychotherapists could only accurately predict treatment length in 26% of clients and accuracy increased as a function of age (Rabinowitz & Noa, 1997). Pekarik (1985) found that the client beliefs are more important: client estimates of treatment are more consistent with the actual duration of therapy. Clients expect therapy to last a predetermined amount of time and chose to end therapy when that time has elapsed. From the client perspective terminating after that amount of time has passed likely would not be categorized as early termination. Discrepancies between the treatment length expectations of counselors and clients raise the following question: which should be trusted more, the expertise of the clinician counselor or the self-knowledge of the client? The current body of literature does not address this question, and the absence makes it a clear and important direction for future study.

There are numerous possible reasons clients may elect to end psychotherapy before the counselor-recommended length of treatment. Firstly clients may end therapy because 'enough' relief has been obtained, whether or not criteria for 'significant' improvement has been attained (Hynan, 1990; McKenna & Todd, 1997; Todd, Deane, & Bragdonet, 2003). Clients primarily begin psychotherapy to address problems and pain. When the pain subsides, some clients opt to discontinue treatment even though the source

of distress may not have been fully resolved. Additionally, clients may elect to terminate

therapy because they recognize a lack of improvement and display little confidence that

additional sessions will be helpful (Hunsley, Aubry, Verstervelt, & Vito, 1999). Research

has suggested that clients also elect to end therapy prematurely because they lack the self-

efficacy or competence beliefs in their abilities to affect change (Deci & Ryan, 1985;

Bandura, 1996; Ryan, Lynch, Vansteenkiste, & Deci, 2010). In other words, some clients

lack the belief that they can implement and maintain new patterns of behavior and thus

choose to prematurely end psychotherapy. Perceived competence is a pre-requisite for all

intentional action (Deci & Ryan, 1985; Heider, 1958).

In summary, therapists expect therapy (and the resulting outcomes) to require

more time than do clients. Clients anticipate that progress will be timelier and are more

likely to terminate therapy in line with their preconception time needed for improvement.

Many times clients have unrealistic expectations for the rate of improvement, believing

that they will receive more relief more quickly than is actually the case. A future

direction for research lies in clinicians adequately preparing the client for counseling.

Clients also may be prompted to terminate based on 'enough' perceived improvement or

a perceived lack of improvement. A third reason clients terminate early is a lack of self-

efficacy regarding abilities to change. The literature clearly indicates that the discrepancy

in treatment length expectations between counselors and clients complicate predicting

how long clients will remain in treatment.

Managed Care

The term managed care has become part of the vernacular of mental health

services. For over three decades managed health care has rapidly expanded: over 75% of

Americans with health insurance are enrolled in managed care plans (Cohen, Marecek, & Gillham, 2006). Managed care can be understood in several ways including "a way of provide care, a philosophy of care, a way to finance care, and a way to control costs" (Talbot, 2001, pg.279). To contain costs, types and amounts of treatment are limited or excluded from reimbursement (Chambliss, 2000; Cohen, Marecek, & Gillham, 2006; Wilcoxon, Magnuson, & Norem, 2008). The two most common forms of managed care of HMOs and PPOs. HMOs involve a primary physician who authorizes speciality treatment (including psychotherapy) and receives financial compensation for limiting these referrals. PPOs permit consumers to choose providers from a network of pre-approved professionals. The PPO providers typically must agree to accept a reduced fee for services and outside review as well (Cohem, Marecek, & Gillham, 2006).

Unsurprisingly managed care has imposed numerous changes on the provision of mental health services particularly psychotherapy (Karon, 1995; Daniels, 2001; May, 2003; Wright, Simpson-Young, & Lennings, 2012). The vast majority of mental health professionals feel that managed care has negatively impacted their work: in a nationwide survey of 15,918 clinical psychologists, 79% reported that managed impact had detrimentally impacted the quality of the care provided to clients (Phelps, Eisman, & Kohout, 1998). A survey of 442 psychologists in independent practice yielded similar results: 86% indicated that managed care had negatively impacted their work (Murphy, DeBenardo, & Showemaker, 1998). Karon (1995) stated that the owners of managed care companies care about cost containment as a route to profitability and patient needs are considered secondary with health-care professionals concerns about quality of care and long-term outcomes a distant third. Other researchers and practitioners agree with this

point of view (Coleman, 2003; Lawless, Ginter, & Kelly, 1999). In this context neither

clients nor practitioners determine the length of treatment, which calls into question how

much client needs are actually considered during treatment planning (Lambert, 2007;

Wright, Simpson-Young, & Lennings, 2012).

Mental health professionals report the following problems (from most frequent to

least frequent) that arise from managed health care: 1) limits to the number of sessions, 2)

decreased influence of clinical judgment, 3) termination before clients achieve clinically

significant improvement, 4) decreased time allowed for assessment, 5) restrictions of

which clients can be seen, 6) increased pressure to make medication referrals, 7)

requirements that specific treatment protocols be followed, and 8) demands that clinicians

work from theoretical frameworks other than the primary orientation of the clinician

(Murphy, DeBarnardo, & Shoemaker, 1998; Karon, 1995; Wilcoxon, Magnuson, &

Norem, 2008; Wright, Simpson-Young, & Lennings, 2012; Cohen, Marecek, & Gillham,

2006; Apfel, 2003). Research provides support from the qualitative report from

clinicians: therapy occurring within some managed care paradigms has found poorer

outcomes are associated with artificially timed therapy (Segilman, 1995). Other research

has found little evidence for time-limited therapy outside of controlled clinical trials

(Wolgast, Lambert, & Puschner, 2003; Carey, 2006; Carey, Rickwood, & Baker, 2009).

Other research has found that uniform time-limits to all patients does not adequately

serve patients' needs (Baldwin, Berkeljon, Atkins, Olsen, & Nielsen, 2009).

Related to the more obvious concerns previously mentioned, managed health care

poses ethical challenges to mental health care professionals (Daniels, 2001; Cohem,

Marecedk, & Billham, 2006; Wilcoxon, Magnuson, & Norem, 2008). At least 75% of

mental health counselors reported ethical challenges because of managed care (Danzinger & Welfel, 2001). Specifically, mental health professionals express concern about violations of confidentiality (Chambliss, Pinto, & McGuigan, 1997; Cooper & Gottlieb, 2000) and imposed changes to fundamental treatment philosophy (i.e. activities, practices, and social relations) (Donald 2001; Cushman & Gilford, 2000). Other researchers and practitioners have expressed concern that members of minority groups will experience the harm of discrimination and prejudice when subject to a predetermined (typically Westernized) course of mental health treatment (Wilcoxon, Magnuson, & Norem, 2008). The oppression of managed health care policies lies in the failure of such policies to consider the powerful nature of cultural and ethnic group differences (Bhul, 2007).

Managed health care is an external factor that influences how long a person remains in mental health care treatment by limiting the amount and types of services consumers are eligible to receive. Typically managed health care companies fund 20 sessions of psychotherapy per fiscal year (Karon, 1995; Jones, 2008). Psychotherapy clients who require more treatment than allotted by the managed care provider are forced to choose between remaining in psychotherapy and assuming liability for the full cost or discontinuing treatment and continuing to suffer (Wilcoxon, Magnuson, & Norem, 2008). It is possible that psychotherapy clients choose to terminate therapy based on managed care polices rather completion of or dissatisfaction with psychotherapy services. Additionally, Brown and Jones (2005) found clients who receive effective treatment tend to not over-utilize services. Although managed care for mental health services emerged in part as a reaction against the expense of psychoanalysis (Jones, 2008), research suggests

that uniform time-limits for psychotherapy is not the solution to cost-cutting in mental health services (Baldwin, et al., 2009, Apfel, 2003; Wright, Simpson-Young, & Lennings, 2012; Wilcoxon, Magnuson, & Norem, 2008; Brown & Jones, 2005).

Complicating this clinical picture is the pressure mental health professionals experience to refer clients for medication evaluation (Daniels, 2001; Cohen, Marecek, & Gillham, 2006). In 1999, there were 9.7 million medical doctors' visits for depression (Cherry, Burt, & Woodwell, 2001). More recent figures estimate 11% of people over the age of 12 take an antidepressant medication (Pratt, Brody, & Gu, 2011). As managed care companies limit the diagnoses and treatment plans for which mental health professionals are reimbursed, psychotropic medication looks to be a viable (and reimbursable) and inexpensive alternative option. Studies continue to show that treatment outcomes are maximized by a combination of psychotherapy and psychotropic medication (Apfel, 2003; Wampold & Brown, 2005). Other research indicates that the majority of clients preferred psychotherapy to psychotropic medication (Apfel, 2003; Chivers, et al., 2001; Hall & Robertson, 1998). Managed care has limited client options and client choice and these two factors contribute to how long a client remains in treatment and what kind of treatment they initially select.

Outcomes of Attrition

Clinicians and researchers alike have an enduring interest in the relationship between therapeutic outcome and time: how many psychotherapy session are required for significant improvement to occur? Research suggests that early termination of therapy leads to an attenuation of outcomes (Boggs et al, 2004; Prinz & Miller, 1994). One of the first studies to examine this relationship demonstrated that the greatest amount of

therapeutic gain occurred for patients remaining in therapy for at least 20 sessions (Seeman, 1954). Other researchers of the era yielded consistent and supportive results (Cartwright, 1955; Standal & van der Veen, 1957; Strassberg, Anchor, & Cunningham, 1977): these studies demonstrated that therapeutic benefit is positively linked to the number of psychotherapy sessions. As research methodology in this area improved other researchers continued to explore the relationship between the number of sessions and therapeutic outcome. A classic oft-cited study conducted by Howard, Kopta, Krause, and Orlinsky (1986) suggested that therapy improvement exists on a dose-response curve: 50% of clients are improved after 8 sessions and 75% of clients are improved after 26 sessions. This study also demonstrated differential responsiveness to therapy for different diagnostic categories: clients' diagnoses with depression required fewer sessions to evidence improvement while clients with borderline personality disorder or psychotic tendencies required a larger dosage of therapy (Howard, Kopta, Krause, & Orlinsky, 1986). Additional studies provide support for the dose-response curve and the differential responsiveness of different diagnoses (Barkham, Rees, Stiles, Shapiro, Hard, & Reynolds, 1996; Lueger, Howard, Martinovich, Lutz, Anderson, & Grissom, 2001; Stulz, Lutz, Leach, Lucock, & Barkham, 2007; Barkham, Rees, Stiles, Hardy, & Shapiro, 2010). Other researchers have estimated the number of sessions required for significant and reliable improvement to range from 8 sessions to 21 session for 50% of clients to evidence improvement (Kadera, Lambert, & Andrews, 1996; Lueger, et al., 2001; Lambert, Hansen, & Finch, 2001; Hansen, Lambert, & Forman, 2002; Lambert, 2007). Some studies estimate that as many as 40 sessions are needed for 75% of patients to meet criteria for clinically significant improvement (Lambert, Hansen, & Finch, 2001).

Much of the research conducted to explore the relationship between outcome and number of session has occurred via carefully controlled and implemented treatments (Hansen, Lambert, & Forman, 2002). Examining naturalistic data from over 6,000 patients reveals that the average number of sessions a client attends is less than five, and the rate of improvement for this sample was approximately 20% (Hansen, Lambert, & Forman, 2002). Even by the most conservative estimate the average psychotherapy client terminates therapy too soon. Thus, clients who terminate therapy early are not receiving an "adequate dose" (pg. 247, Barret et al., 2008) such that the likelihood of obtaining the sought-after symptomatic relief is diminished. Research has well established that attrition negatively impacts client outcomes.

Additionally it is generally accepted that psychotherapy drop-out causes problems not only for the client but the therapist and the agency as well (Bados, Balaguer, & Saldana, 2007; Baekland & Lundwall, 1975; Barret et al., 2008): attrition wastes limited mental health resources. A single missed appointment can have far reaching consequences in terms of staff salaries, overhead, lost revenue, financial staff losses, staff losses due to declining morale, denying access to others in need, and limiting the number of people an agency can serve (Klein, Stone, Hicks, & Pritchard, 2003; Tantam & Klerman, 1979; Joshi, Maisami, & Cole, 1986). It is clear that attrition impacts clinicians, service providers, agency personnel, and agencies at least as much as it affects clients. The many problems of attrition for clients, providers, and agencies at large has prompted researchers to explore factors that might predict both retention and attrition.

Assorted studies have attempted to identify characteristics correlated with treatment attrition to determine if certain factors predispose clients to attrition and should

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therefore be targeted early in the treatment process to increase the likelihood of such

clients completing therapy (e.g. Issakidis & Andrews, 2004; Curtin, Brown, & Sales,

2000; Coatsworth, Duncan, Pantin, & Szapocznik, 2006). The factors considered in

research studies varied by type of setting: research-oriented clinic and community clinic

setting (Miller, Southam-Gerow, & Allin, 2008). Research clinics tended to focus on the

following factors: socioeconomic status, race/ethnicity, severity of presenting concern,

parent stress, and single parent status. Community clinics cited ethnicity, problem

severity, and age as factors examined by research (Miller, Southam-Gerow, & Allin,

2008). Research in the area of attrition/retention has been complicated by the reality that

not all psychotherapy is voluntarily initiated. The next session provides a review of the

literature for clients who are mandated for treatment.

Mandated Clients

Mental health treatment has long been dichotomized: voluntary and mandated

treatment. A large body of research has questioned the advisability of applying the same

set of theoretical principles and treatments to these different populations (e.g. Harris &

Watkins, 1987). Most researchers who have studied mandated clients generally agree that

these clients begin treatment with greater resistance to therapy and less motivation than

client who enter treatment voluntarily (Begun et al., 2003; Chamberlain, Patterson, Reid,

Kavannaugh, & Forgatch, 1984; Lehmer, 1986; Ronney, 1992; Miller & Rollnick, 1991;

Taft, Murphy, Elliot, & Morrel, 2001; Snyder & Anderson, 2009; Ackerman, Colapinto,

Scharf, Weinshel, & Winawer, 1991; Bowen & Gilchrist, 2004). Other researchers have

found that increased resistance had been correlated with poorer outcomes and greater

attrition (Miller & Sovereign, 1989; Chamberlain et al., 1984). While this is the

prevailing stance, other researchers have suggested that mandated clients' responses to treatment is a normal reaction to compulsory treatment, as resistance is a natural reaction to the loss of freedom, independence, and choice (Weakland & Jordan, 1990; Woody & Grinstead, 1992).

Another potential contribution of mandated-client resistance the disproportionate representation of minority groups among court-mandated clients (O'Hare, 1996; Rooney, 1992). Lack of cultural awareness and competence often results in clients being viewed through a mismatching cultural-lens, resulting in clinicians multiplying the expected resistance of mandated clients and triggering the clinician's personal feelings of defensiveness that accompanies unreceptive or unmotivated clients (Abu Baker, 1999; Falikov, 1988; Cingolani, 1984; Rooney, 1992; Marlowe, Merikle, Kirby, Festinger, & McLellan, 2001).

Resistance, in both voluntary and mandated clients, is being increasingly viewed as amenable to therapeutic intervention (Donovan & Rosengren, 1999; Miller & Rollnick, 1991). Additionally research suggests that *initial* motivation is not strongly associated with successful outcome (Bastien & Adelman, 1984; Satel, 2000). Numerous studies have shown that the length of treatment is strongly positively correlated with successful outcomes (Collins & Allison, 1983; Marlowe et al., 2001) across a variety of mandated treatments including domestic violence and battering (Babcock & Steiner, 1999; Taft el al., 2001), child abuse (Dawson, De Armas, McGrath, & Kelly, 1980), and substance abuse (Collins & Allison, 1983; Miller & Flaherty, 2000). Research clearly indicates that length of treatment affects outcomes, and mandated clients tend to stay in treatment longer than voluntary clients (De Leon, Melnick, & Tims, 2001; Satel, 2000;

Goldsmith & Latessa, 2001). Research has also indicated that legal pressure does not

adversely affect therapeutic outcome (Collins & Allison, 1983), and fact the more

coercion applied the better (Synder & Anderson, 2009). For example, in a study of court-

referred and voluntary substance abusers the success rate nearly double (43% compared

to 22%) for mandated clients compared to voluntary clients (Synder & Anderson, 2009).

Finally the research literature indicates that what mandated clients initially lack in terms

of motivation may be compensated for by their tendency to remain in treatment (Synder

& Anderson, 2009).

Demographic Variables

Studies of attrition and retention have long included demographic variables as

potential predictors of the length of mental health care (e.g. Richmond, 1992; Sayre,

Schmitz, Stotts, Averill, Rhoades, & Grabowski, 2002; Warden et al., 2009: Austin &

Wagner, 2010; Di Leone, Vogt, Gradus, Street, Giasson, & Resick, 2013). The

demographic variables most often included in research included age, gender,

socioeconomic status, race/ethnicity, level of education, and marital status. Some of the

demographic variables have more consistently predicted attrition and retention while

others have yielded equivocal results. A brief summary of the literature for each variable

will be presented.

Numerous studies have identified age to be a significant predictor of premature

drop out from psychotherapy (Edlund, Wang, Berglund, Katz, Lin, & Kessler, 2002;

Laudet et al., 2003; Crabb & Hunsley, 2006; Warden et al., 2010; Gibbons et al., 2011).

These studies have found that individuals who are younger (age 25-35) prematurely

terminate with greater frequency than their older counterparts. Other studies have not

found age to be a predictor of attrition/retention (McCaul, Svikis,,& Moore, 2001; Issakidis & Andrews, 2004; Robertson & Colman, 2008). Research examining gender as a predictor of attrition/retention has yielded similarly equivocal results. A few studies have indicated that females are less likely to prematurely terminate psychotherapy than their male peers (Van Der Veen, Van Der Meer, & Penninx, 2009; Gibbons et al., 2011) while other researchers have provided evidence that males are more likely to remain in therapy (McCaul, Svikis, & Moore, 2001; Sayre et al., 2002). The majority of the literature indicates that gender is not a significant predictor of attrition/retention (Laudet, Magura, Cleland, Vogel, & Knight, 2003; Issakidis & Andrews, 2004; McCarthy et al., 2007; Robertson & Colman, 2008; Martino, Menchetti, Pozzi, & Berardi, 2012). The demographic variables of age and gender, while frequently included in initial regression models, are generally not considered robust predictors of attrition/attention.

A third demographic variable evaluated for its ability to significantly predict attrition/retention is socioeconomic status. The research literature paints a more consistent picture in regards to socioeconomic status and attrition. In general, attrition/retention are significantly and inversely correlated with socioeconomic status: as income decreases, attrition increases (Baekeland & Lundwall, 1975; Wiezrbicki & Pekarik, 1993; Edlund et al., 2002; Warden et al., 2009). A few recent studies (Tate el al., 2011; Di Leone et al., 2013) have provided contradictory evidence by failing to find the inverse relationship between socioeconomic status and rate of attrition (i.e. socioeconomic status was not predictive of attrition/retention).

Level of education has been frequently included in models attempting to predict attrition. Congruent with other demographic variables that have been considered, results

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regarding the usefulness of level of education to predict psychotherapy retention have been mixed, with some authors finding that the number of years of education significantly predicts attrition (Edward, 1992; Sayre et al., 2002; Wilansky-Traynor et al., 2010) and others reporting the amount of education does not significantly predict how long a client will remain in psychotherapy (McKay, McLellan, Alterman, Cacciola, Rutherford, & O'Brien, 1998; O'Toole, Pollini, Ford, & Bigelow, 2006; Tate et al., 2011).

Race/ethnicity has been and continues to be an important societal issue. In psychotherapy, as a microcosm of life, consideration of race and ethnicity is of paramount importance. For this reason, race/ethnicity has been emphasized in the attrition/retention literature (i.e. Greenspan & Kulish, 1985; Sue, Fujino, Hu, Takeuchi, & Zane, 1991; McCaul, Svikis, & Moore, 2001; Barret et al., 2008; Di Leone et al., 2013). The dominant theme in attrition/retention literature continues to be that members of ethnic minority groups (i.e. non-White individuals) prematurely terminate therapy more frequently than their majority peers (Greenspan & Kulish, 1985; Sue, Fujino, Hu, Takeuchi, & Zane, 1991;McCaul, Svikis, & Moore, 2001; McCarthy et al., 2007; Fortuna, Alegria, & Gao, 2010; Gibbons et al., 2011). While the research consistently demonstrates disparities between ethnic majority and ethnic minority individuals in mental health treatment usage, the literature also highlights disparities among different ethnic minority groups. Individuals who identity as African American are more than twice as likely to prematurely terminate psychotherapy as there Latino/a counterparts (Austin & Wagner, 2010). Other research has identified African American women as the most likely group to terminate psychotherapy prematurely (McCaul, Svikis, & Moore,

2001). Some authors have found that even when insurance coverage and availability of services are not an issues, disparities remain in the types and length of treatments received by members of ethnic minority populations (Gibbons et al., 2011). Finally, one research study has shown that some racial/ethnic groups (e.g. Native American, Asian, Pacific Islander, Native Alaskan, Native Hawaiian, and mixed ethnicity) are unlikely to initiate mental health treatment (Lee et al., 2012) and therefore the likelihood of these individuals of completing treatment is unknown. Unlike other demographic variable, race/ethnicity is repeatedly found to be predictive of early termination from mental health treatment.

Symptom Severity

Symptom severity has also been explored as a predictive variable in attrition/retention studies (Richmond, 1992; Turner et al., 1996; Cottraux & Albusson, 2000; Johnson et al., 2008; Tate et al., 2011). Unlike demographic variables, symptom severity has been consistently correlated with attrition/retention. While symptom severity continues to be correlated with the length of time spent in psychotherapy, the direction of the correlation has not been consistent in the literature. Some researchers have found that symptom severity is positively correlated with retention: the more severe the symptoms the longer a client will remain in treatment (Laudet, Magura, Cleland, Vogel, & Knight, 2003; Johnson et al., 2008; van der Waerden, Hoefnagels, Jansen, & Hosman, 2010). Other researchers have found a negative correlation: greater symptom severity reduces the amount of time spend in treatment (Hopko, Robertson, & Colman, 2008; Wilansky-Traynor et al., 2010; Tate et al., 2011).

Psychotropic Medication Status

A recent meta-analysis demonstrated that matching patients to preferred treatment conditions (i.e. psychotherapy, psychopharmacology, and the combination of both) is associated with decreased attrition and improved outcomes (Swift, Callahan, & Vollmer, 2011). Clients have more options for treating their mental health problems than at any other time in history. The development of a new generation of more effective psychotropic medications (Olfson et al., 2002) has greatly impacted the outpatient treatment of mental health disorders (Murlow, Williams, & Trivedi, 1999; Gibbons et al., 2011). These medications are generally known as antidepressants but are in fact used to treat other mental health disorders as well including anxiety and other mood disorders (Insel, 2011).

A recent study released by the Centers for Disease Control reported that 11% of United States population over the age of 12 take antidepressant medication (Pratt, Brody, & Gu, 2011). The authors also found that the rate of increase in antidepressant use was nearly 400% between 1988 and 2008. Additionally, 14% of Americans have taken an antidepressant for over 10 years and less than 1/3 of persons taking an antidepressants have seen a mental health professional in the last year (Pratt, Brody, & Gu, 2011). Other research found that nearly 80% of antidepressant prescriptions are written by medical professionals other than psychiatrists (Mark, Levit, & Buck, 2009). The National Institute of Mental Health provides the following supporting data: in the year 2010 antidepressants second only to drugs used to lower cholesterol in numbers of written prescriptions: an estimated 254 million prescriptions for antidepressant medication were written in the United States alone (IMS Health National Prescription Audit PLUS).

Antidepressant medication has clearly become part of the mental health landscape in the United States.

The rise of managed care and psychotherapy session limits and the availability of psychotropic medication have clearly impacted the outpatient treatment of mental health disorders, but these factors have been compounded by the competing messages from the leading professional mental health organizations, the American Psychological Association and the American Psychiatric Association. The treatment of Major Depressive Disorder (MDD) can be used a case example to illuminate the differences in stated effective treatments. The American Psychological Association lists a number of evidenced-based psychotherapies for the treatment of MDD while the American Psychiatric Association states that MDD can only be treated with antidepressant medication (Gibbons et al., 2011). Additionally, there is a growing body of research that indicates that the most efficacious treatment is a combination of psychotherapy and psychotropic medication (e.g. Reynolds et al., 1999; TADS Team, 2007; Trivedi, Nieuwsma, & Williams, 2010). Other research indicates that many individuals prefer a combination treatment plan. In a study conducted by Steidtmann and colleagues (2012), only 10% of participants preferred psychotropic medication only while a large majority (67.7%) preferred a combination (psychotherapy and medication) treatment plan. These developments have caused researchers to examine the impact of psychotropic medications on psychotherapy.

The literature exploring the correlation between psychotropic medication status and retention in psychotherapy has yielded mixed results much like other potential predictors of attrition and retention. Some authors have reported that people who do not

take psychotropic medication attend psychotherapy longer (Laudet, Magura, Cleland, Vogel, & Knight, 2003). More studies have reported the opposite: patients/clients who were taking a psychotropic medication were more likely to remain and engage in treatment (Bech, Lucas, Amir, Bushnell, Martin, & Buesching, 2003; Fortuna, Alegria, & Gao, 2010). A study conducted by Olfson and colleagues (2002) compared psychotherapy attendance over a 10 year span, from 1987-1997 and found the following trends: 1) psychotherapy usage declined from 71% to 61%; 2) psychotropic medication usage rose from 37% to 75%; and 3) the combination of psychotherapy and medication increased from 23% to 45%. Olfson found that while the overall usage of psychotherapy decreased, psychotropic medication status was not a significant variable in the relationship. Other researchers reported similar results: psychotropic medication status does not significantly impact psychotherapy usage in either direction (Edlund et al., 2002; Arnow et al., 2007; Gibbons et al., 2011).

Readiness for Change and the Transtheoretical Model

The Transtheoretical Model (TTM) was initially developed and applied to changing health behaviors, but has proven useful in conceptualizing and guiding the change process that occurs in psychotherapy (Norcross, Krebs, & Prochaska, 2011). The TTM has three core dimensions: processes, stages, and levels of change (Prochaska & Norcross, 2010). Research has focused predominantly on the processes and stages of change and has not explored the levels of change. A brief definition of each of the three dimensions will be presented but the stages and processes of change will be the focus. The processes of change delineate how people change (i.e. the covert/overt activities people engage in to change thinking, emotions, behavior or relationships) whereas the

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stages represent a period of time as well as corresponding tasks (Norcross, Krebs, & Prochaska, 2011). Prochaska and Norcross (2011) defined the levels of change as a "hierarchal organization of five distinct but interrelated levels of psychological problems that can be addressed in psychotherapy: 1) symptoms/situational problems; 2) maladaptive cognitions; 3) current interpersonal conflicts; 4) family/systems conflicts; and 5) intrapersonal conflicts" (pg. 502).

The Transtheoretical Model of change views clinical interventions as procedures involving a distinct sequence of changes as a function of time (McConnaughy, Prochaska, & Velicer, 1983). Four stages of change were initially identified: pre-contemplation, contemplation, action, and maintenance (McConnaughy, Prochaska, & Velcier, 1983). In the pre-contemplation stage there is no intention to change behavior in the foreseeable future: clients are unaware or under-aware of problems, but significant others are aware that a problem exists. During the contemplation stage clients are aware problems exist and are seriously considering taking action to change but have not yet made a commitment to action. The action stage is characterized by modification of behavior, thoughts, emotions, experiences, and/or environment to overcome problems. Individuals in the maintenance stage work to prevent relapse and strengthen and stabilize gains made during the action stage (Norcross, Krebs, & Prochaska, 2011). While the stages are presented in a linear format from a theoretical perspective, the stages are not presumed to be linear, discrete, unidirectional, or successive (McConnaughy, Prochaska, & Velicer, 1983). Clients are not simply in one stage at a time, but demonstrate patterns of "differential involvement" (McConnaughy, Prochaska, & Velicer, 1983, pg. 374) in all

of the stages. Clients move between the stages in various ways: change is conceptualized as a cycle and not a straight line.

In addition to the stages of change the TTM identifies processes of change (i.e. the how aspect of change). Norcross, Krebs, and Prochaska (2011) posit that despite the existence of over 400 different theories of psychotherapy there are only 8-10 different processes of change based on principle component analysis (Prochaska & DiClemente, 1983). Other research also identifies a common and finite set of change processes across diverse disorders (Prochaska, DiClemente, & Velicer, 1985). The TTM proposes that change processes are differentially effective across the stages of change (Norcross, Krebs, & Prochaska, 2011). Research from the fields of behavioral medicine and psychotherapy support this claim: different processes of change are differentially effective in certain stages of change (Rosen, 2000). In a meta-analytic review it was shown that behavioral processes were most effective in the Action stage, and cognitive-affective processes demonstrated the largest affect in Contemplative and Preparation stages (Rosen, 2000). For this reason it is important to discern what stage of change the client endorses at the beginning of therapy in order to select stage-appropriate processes of change (Davidson, Roe, Andres-Hyman, & Ridgway, 2010). Unfortunately many therapists approach psychotherapy with the expectation that all clients are in the contemplative or action stages (Prochaska & DiClemente, 1982; Polaschek & Ross, 2010). Psychotherapists want their clients to want to participate in treatment and often assume this is the case (Sue & Sue, 2008). Additionally, changes in the health care climate with managed care imposed session lessons increase the pressure to achieve positive outcomes in shorter courses of treatment (Ryan, Lynch, Vansteenkiste, & Deci,

2010). This pressure can and likely does influence the clinician's perception of client readiness for change and motivation.

Stage of Change Outcome Research: Predictive of Retention

Psychotherapy, unlike pharmacotherapy, may require more active engagement from the client and thus treatments might be most effective when tailored to fit the client's readiness to change (Lewis et al, 2009). A client's readiness to change has been not only correlated with therapy attendance but has been used to predict clients who will terminate early and those who will continue therapy: based on clients' readiness to change scores, 75% of individuals initiating therapy can be correctly identified as early terminators (Brogan, Prochaska, & Prochaska, 1999). Some research suggests that client internal motivation, including readiness for change, is not only a significant predictor of retention/attrition but is actually a more important predictor than demographic variables (Joe, Simpson, & Broome, 1998).

The general theme in psychotherapy research is that clients with higher scores in early stages tended to terminate therapy pre-maturely (Brogan, Prochaska, & Prochaska, 1999; Derisley & Reynolds, 2000; Soler, et. al, 2008; Wade, Frayne, Edwards, Robinson, & Glichrist, 2009). Individuals that reported higher pre-contemplation stage scores are more likely to focus externally and attempt to change the environment or others and tend to overestimate the cost of change while underestimating the benefits of change (Brogan, Prochaska, & Prochaska, 1999; Martino, Menchetti, Pozzi, & Berardi, 2012). Other research has demonstrated that in addition to high pre-contemplation scores, predicting early termination, the other scale scores also have predictive value. One study demonstrated that high maintenance scores can also predict client drop out (Mander,

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Teufel, Keifenheim, Zipfel, & Giel, 2013). Other researchers have found that high action

scores are predictors of both attendance and positive outcome (Lewis et al., 2009;

Mander et al., 2012). This body of research supports the idea that therapy will be most

efficacious when the client's readiness for change is considered as a key factor in the

treatment planning process. Each stage requires a different body of interventions and

therapeutic involvement (Norcross & Hill, 2004). For each stage of change different

relational stances and interventions work together to produce optimal progress, for

example a client who endorses a precontemplative outlook will likely reject action-

oriented interventions because she/he believes there is not a problem and therefore no

reason to take action to change.

Depression

Depression remains a significant problem in modern society: a simple internet

search using the keyword 'depression' yielded 59,500,000 results. The World Health

Organization (WHO) ranks Major Depressive Disorder as the 4th leading cause of

disability worldwide (Murray & Lopez, 1996). Additionally the WHO predicts Major

Depressive Disorder will be the second leading cause of disability worldwide by the year

2020 (Murray & Lopez, 1996). The DSM-IV-TR defines depression as depressed mood

or a loss of interest and/or pleasure in daily activities for more than two weeks that

represents a change from the person's baseline functioning, and causes impairment in

social, occupational, or educational realms (4th ed., text rev.; DSM-IV-TR; American

Psychiatric Association, 2000). The National Institute of Mental Health reported a 12-

month prevalence rate of 6.7% for the adult population in the United States (Kessler,

Chiu, Demler, & Walters, 2005). The lifetime prevalence rate for depression is 16.6%

(4th ed.; DSM); this percentage is higher than any other disorder in the Diagnostic and Statistical Manual of Mental Disorders (Lydecker, Tate, Cummins, McQuaid, Granholm, & Brown, 2010).

Costs of Depression: Individual

Depression is a debilitating condition with significant costs to both the individual and society (Kessler, 2012). Individuals who suffer from early on-set of major depressive disorder are 60% less likely to complete secondary education as compared with their non-depressed counterparts (Breslau, Lane, Sampson, & Kessler, 2008; Lee et al., 2009). Education has been consistently positively correlated with increased earning potential: the greater the level of education the higher the yearly income. The U.S. Department of Labor reports that a person with a bachelor's degree earns an additional $414 each as compared with a person who only has a high school diploma (U.S Department of Labor, 2013). Based on this information a college graduate earns approximately $20K more than a high school graduate. The income gap becomes more dramatic as level of education increases: a person with a doctorate out earns a high school graduate by at least $50K each year. Educational attainment is also negatively correlated with unemployment. The unemployment rate for persons with only a high school diploma is 8.3%, while the unemployment rate for college graduates is 4.5% (U.S. Department of Labor, 2013). These statistics underscore the importance of educational attainment. Depression in suppressing educational achievement severely limits a person's lifetime economic potential.

One of the most striking costs for individuals who experience major depressive disorder is earning potential: individuals diagnosed with depression earn significantly less

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income than individuals without this diagnosis (Insel, 2008; Levinson et al., 2010; McMillian et al., 2010). According to a 2008 article in the American Psychological Association's *Monitor on Psychology* individuals who suffer from severe mental illness such as depression make approximately $16,603 less per year than individuals who do not experience severe impairment resulting from mental illness (APA, 2008). This translates into $193 billion annually of lost income for individuals who suffer from severe mental health disorders, including depression.

Additionally researchers have demonstrated that depression impacts marriage. Research investigating the presence of pre-marital mental disorders and marriage outcomes indicates that pre-marital mental disorders are positively associated with early age (before age 18) marriage (Forthofer et. al, 1996). Early age of marriage is known to be associated with negative outcomes (i.e. future poverty, lower levels of education, and increased number of children earlier in life, Dahl, 2010). This association is generally the same for men and women (Kessler, 2012) but the implications of marriage at a young age likely disadvantage women more than men because of the child-bearing responsibilities assumed by women (Dahl, 2010). Depression, particularly early onset, may influence adolescents to make detrimental decisions regarding the decision to marry before the age of 18. Not only does depression correlate significantly with early age of marriage and the negative implication thereof, research also has provided evidence that marital dissatisfaction is significantly associated with depression (Culp & Beach, 1998; Whisman, 1999). Individuals who report elevated levels of depression are also likely to report decreased levels of marital satisfaction. Finally, research has demonstrated that a pre-marital history of mental disorders, particularly depression, predicts divorce

(Butterworth & Rodgers, 2008; Kessler, Walters, & Forthofer, 1998). Depression has been shown to have an overall negative impact on marriage.

Further individual costs associated with depression are negative parenting behaviors (Lovejoy et al, 2000; Wilson & Durbin, 2010). Hoffman, Crnic, and Baker found that depressed mothers were less effective at providing emotional, motivational, and technical scaffolding for their preschool age children (2006). This ineffectual scaffolding resulting in greater emotion dysregulation and more behavioral problems in the preschool-age children: preschool is a key developmental time and maternal depression is a risk factor for reduced emotional and behavioral competence. Davis et al. found that depressed fathers were less likely to read to their children and were more likely to use corporal punishment (i.e. spanking) than fathers who did not report elevated levels of depression (2010). Additional research examined how maternal depression impacted adolescents. Elevated levels of maternal depression resulted in a greater number of both internalizing and externalizing behaviors in adolescents (Robila & Krishnakumar, 2006). Middleton, Scott, and Renk also found that parental depression is an important predictor of ratings of externalizing behavior problems of children (2009). Not only does the research support the idea that depression negatively impacts development and behavior, but it also indicates that maternal depression is significantly correlated with insecure attachment (Carter et al., 2001). The negative impact of parental depression has been well documented in the literature and continues to be an important focus for research.

The association between depression and poor physical health has been well established in the literature; depression has been significantly correlated to numerous

chronic physical disorders including but not limited to cancer, cardiovascular disease, diabetes, and chronic pain (Anderson et al., 2001; Chapman, Perry, & Strine, 2005; Nemeroff, Mussleman, & Evans, 1998; Scott et al., 2007). Specifically, co-morbid depression is associated with a worse course of treatment for the physical disorder (Gillen et al., 2001; Mancuso et al., 2001; Peyrot & Rubin, 1997). Depression, while enough of a challenge alone, complicates the course of chronic physical disorders. Researchers have explored a number of reasons why depression worsens the course of the physical disorder, but the reason that is most consistently supported in the literature is that elevated levels of depression significantly correlate with non-adherence to treatment regimens (Ziegelstein et al., 2000; Breitbart et al., 2000; Cluley & Cochrane, 2001). Given the symptoms of depression (i.e. diminished concentration, fatigue, loss of interest in activities, and disrupted sleep patterns) it is not surprising that depression negatively impacts treatment adherence. A final piece of evidence supporting the connection between depression and poor physical health is the reality that people who experience severe mental distress and impairment access health care providers much more frequently than people do not suffer from mental disorders and distress (Gill & Sharp, 1999; Grabe et al., 2005). A poignant example is provided by Williams et al. (2001). This study found that frequent presenters at hospital emergency departments have an 8-fold increase in mental health disorders. Also, Grabe et al. (2005) found that individuals with increased mental distress had higher total health care costs, more annual outpatient visits, increased number of inpatient days, and higher inpatient costs. The literature paints a clear picture: people who experience chronic illness are more likely to experience co-morbid

depression, experience a more difficult course of their illness because of the co-morbid depression, and incur increased health care cost as well.

This review of the literature sends an important and unmistakable message: the individual cost of depression is staggering and far-reaching, potentially affecting all areas of the person's life. Depression, if left untreated, impacts educational attainment, earning potential, marital satisfaction, parenting practices and outcomes, and physical health. It is essential that research and clinical practice continue to strive to discover ways to mitigate (and hopefully prevent) this costly condition.

Costs of Depression: Organizational and Societal

To quote Catherine Rampell of the New York Times, " Mental illness has been an increasingly significant health concern over the past several decades, but it's now becoming an economic one too...an estimated 11.5 million American adults with a debilitating mental illness, on whom the country spends about $150 billion annually in direct medical costs (2013)." The societal cost of depression is not just a topic of interest for academia: the government, businesses, and more importantly the general public are expressing interest and concern regarding this debilitating condition.

Studies of the economic impact of depression in the workplace yield similar results (Russell, Paterson, & Baker, 1998; Carta et al., 2003). According to the research depression increases rates of absenteeism and decreases productivity (Russell, Patterson, & Baker, 1998). From an economic standpoint one of the most influential findings is that employers bear at minimum 50% of all costs related to depression in terms of increased absenteeism and decreased productivity (Greenberg et al., 1996). Conti, Burton, and Wayne (1994) found that the disability duration of a depressive disorder was 40 days as

compared to 37 days for heart disease, 27 days for hypertension, and 26 days for diabetes. People who suffer from depression are absent from work more often than individuals who suffer from serious chronic physical illness. Although depression causes significant absenteeism, effectively treating depression reduces the number of work days missed by 80% (Russell et al., 1997). Absenteeism, and the resulting economic loss, due to depression is a serious problem, but with effective depression treatment can be mitigated.

Additionally, depression has been shown to decrease productivity when workers are present at employment sit (Warshaw, 1989; Russell, Patterson, & Baker, 1998). Workers from a variety of companies indicated that as few as 16% and as many as 56% of employees suffered from mental health problems. Workers also provided information regarding complaints made by depressed colleagues. The most common complaints were difficulty concentrating, loss of energy, and loss of interest in work (Warshaw, 1989). It is not surprising given these complaints of depressed employees that decreased productivity is strongly correlated with depression.

Most of the research regarding the societal cost of depression has been conducted in business or corporate settings. The research has focused predominantly on the economic cost as it relates to loss resulting from absenteeism and decreased productivity. The broader societal cost has not been studied as formally, but is typically estimated to exceed $150 billion dollars each year. It is abundantly clear that depression is costly at all levels: individual, family, community, and society.

Depression and Attrition

Research on depression and other mental health disorders indicated that of individuals who receive treatment between 16 and 23% terminate treatment early

(Kessler, Berglund, &Bruce, 2001; Bebbington, Meltzer, & Brugha, 2000; Edlund, Wang, Berglund, Katz, Lin, & Kessler, 2002). Because nearly a quarter of these clients who seek mental treatment terminate early, researchers have focused their efforts on determining which, if any factors, predict attrition. Such studies have yielded equivocal findings (Wierzbicki & Perkarik, 1993). For example, some studies have reported that sociodemographic characteristics (Kessler, Berglund, & Bruce, 2001, Campbell, Staley, & Matas, 1991; Centorrine, Hernan, & Drago-Ferrante, 2001) and symptom severity (Turner, Beidel, Wolff, Spaulding, & Jacob, 1996, and Cottraux, Note, & Albusson, 2000) are predictors of early termination. Other studies have reported no effect for these variables (Coles, Turk, Jindra, & Heimberg, 2002, Hunt & Andrews, 1992, and Oei & Kazmierczak, 1997).

Depression severity has been the focus of numerous studies examining attrition (Curran et al., 2002; Tate et al., 2011; Frojd, Kaltiala-Heino, & Marttuen, 2010). Depression in particular has been found to be a significant predictor of attrition (Issakidis & Andrews, 2004 and Curran, Kirchner, Worley, Rookey, & Booth, 2002): the more severe depression symptoms a client reports, the more likely they are to terminate therapy prematurely. This finding has been significant in studies investigating co-morbid substance-dependence and depression (Tate et. al., 2011), HIV-infected individuals enrolled in a prevention trial (Johnson, et. al, 2008), and in smoking cessation research (Curtin, Brown, & Sales, 2000). Because of the body of research that supports depression severity as a significant predictor of early termination it is important to access depression severity at the beginning of treatment.

Development of Research Questions

The research questions and hypotheses proposed in this study were based on previous research findings. The body of literature addressing longevity, retention, and attrition in psychotherapy treatment provides compelling rationale for hypothesizing that significant relationships will exist between demographic variables and longevity of psychotherapy treatment: the demographic variables considered in this study are well researched and the proposed relationships are congruent with existing literature. Additionally, the review of the relevant literature provides ample support that the psychological variables present in this study have significant relationships to longevity of psychotherapy treatment. The hypothesized relationships between the psychological variables and longevity of psychotherapy treatment align with previous research findings. As there is strong evidence for the existence of significant relationships between the independent variables and the dependent variable, exploration of a predictive model for the longevity of psychotherapy treatment is appropriate.

Summary

As previously stated despite decades of research, attrition from psychotherapy continues to be problematic. Researchers continually report attrition rates approaching 50% (e.g. Barret et al., 2008). It remains unclear why some people choose to engage in therapy while others decide to terminate early. Studies examining factors related to retention/attrition have yielded ambiguous results: some studies indicate that demographic variables (i.e. gender, SES, race/ethnicity, age, level of education, and marital status) and psychotropic medication use are predictive of retention while other studies have not found significant correlations between these variables and retention in

psychotherapy. A promising area of future research is the examination of dynamic rather than static client factors. Included in these dynamic factors are clients' readiness for change and personal experience of symptom severity. The purpose of this research study is to explore these factors in a community and training mental health agency, which has over-site by a research-intensive university.

CHAPTER THREE

Research Methodology

The purpose of the present study was to examine demographic and psychological factors that influence the longevity of psychotherapy treatment. This chapter begins with a review of authorization and oversight for the study and is followed by a description of selection criteria for participants. The next section provides detailed information regarding research procedures and instruments used in the study. The chapter closes with research design, hypotheses, and statistical analyses.

Study Approval

Permission to use data collected by the Center for Counseling and Personal Evaluation (CCPE) was first obtained from the director of the clinic, a faculty member in the department of Counseling and Human Development Services. After securing the CCPE director's consent, a formal application was submitted to the Institutional Review Board (IRB) at the University of Georgia. The study, a chart review including waivers of consent and authorization, has been approved by the IRB at the University of Georgia.

Agency Description

The Center for Counseling and Personal Evaluation (CCPE) is a mental health agency that seeks to provide affordable and quality mental health care and to train competent mental health care practitioners. The CCPE does not accept third-party payment, instead using a sliding fee scale. The absence of third-party payers means that

clients are not subject to session limits: clients can choose to remain in treatment for as long as they desire without experiencing increases in the costs of services.

Participants

Participants in the study were individuals who voluntarily presented for psychotherapy services and provided informed consent allowing their data to be used for research purposes of the clinic. The research setting was a community and training mental health clinic with oversight from a research university; the clinic maintains a dual focus of offering quality mental health services from a social justice perspective to the community and providing excellent training for future professionals at both the master's and doctoral level. 595 individuals met the inclusion criteria (described in the next section) and were included in the study.

Selection

Selection of participants was based on the following inclusion criteria:

1. They were no longer active clients at the clinic,

2. They completed the Beck Depression Inventory-II (BDI-II) and the University of Rhode Island Change Assessment (URICA) during the intake procedures.

Participants were excluded from the study if they maintained an active status at the clinic because aim of the study is to examine a hierarchal regression of longevity of psychotherapy treatment; clients who remained actively involved in therapy do not have a finite number of session from which to examine correlational patterns between demographic and psychological variables with longevity of psychotherapy treatment.

Procedures

Data used in this study were obtained as part of a psychological screening assessment procedure for adults seeking treatment between the years of 2006 - 2013. An informed consent process was completed with each client individually before services began. The consent process included the limits to confidentiality, the necessity of digitally recording client sessions within the training model of the counseling center, and consent for information gathered during psychotherapy to be used for research purposes. Clients agreeing to the informed consent process and wishing to continue with therapy signed the informed consent agreement; this agreement was maintained in client files. All clients completed a detailed clinical interview with either a master's or doctoral clinician in training and a battery of instruments including some of the following instruments: the Beck Depression Inventory-II (BDI-II), the Beck Anxiety Inventory (BAI), the Beck Hopelessness Scale (BHS), the Brief Symptom Inventory (BSI), and the University of Rhode Island Change Assessment (URICA). While these instruments are given at intake, they were not all included in the study due to clerical and recording errors and inconsistencies. During data collection, all identifying information was removed from the data set.

Instruments

BDI-II

The Beck Depression Inventory-II (BDI-II) (Beck et al., 1996) is a 21-item self-report measure of depressive symptoms that can be administered in a written or oral manner. This instrument can be used with individuals aged 13 and above. Each item on the BDI-II is rated on a 4-point Likert scale (0-3). The classification ranges are defined as

follows: scores 0-13 indicate no to minimal depression; scores 14-19 suggest mild depression; scores 20-28 signify moderate depression; and scores exceeding 29 indicate severe or major depression. The psychometric properties (including split-half and test-rest reliability and criterion and construct validity) of the BDI-II have been deemed excellent by a number of independent researchers (Leigh & Anthony-Tolbert, 2001, Arnua et al., 2001, and Sprinke et al., 2002, and Dozois, Dobson, and Ahnberg, 1998).

The BDI-II has been researched in a number of populations including college students (Beck et al., 1996, Sprinkle et al., 2002), racial minorities (Sashidharan, Pawlow, & Pettibone, 2012), the deaf (Leigh & Anthony-Tolbert, 2001), and primary care patients (Arnua, Meagher, Norris, & Bramson, 2001). The psychometric properties (including split-half and test-rest reliability and criterion and construct validity) of the BDI-II have been deemed excellent by a number of independent researchers (Leigh & Anthony-Tolbert, 2001, Arnua et al., 2001, and Sprinke et al., 2002, and Dozois, Dobson, and Ahnberg, 1998). Cronbach's alpha (α) scores for this measure range from .817 to .900 (Beck, Steer, & Brown, 1996; Steer, Rissmiller, & Beck, 2000; Dutton, Grothe, Jones, Whitehead, Kendra, & Brnatley, 2004; Carney, Ulmer, Edringer, Krystal, & Krauss, 2009). The reliability of the 21-item BDI-II scale was calculated for this particular study. The Cronbach's alpha value was calculated from item level data. The Cronbach's alpha value was 0.908 for this study indicating that the scale has strong internal consistency.

URICA

The University of Rhode Island Change Assessment (URICA: McConnaughy, DiClemente, Prochaska, & Velicer, 1989) is a 32-item self-report measure that can be administered by written or oral means. The questionnaire yields separate scores on four

continuous scales: precontemplation, contemplation, action, and maintenance. The questionnaire has a 5-point Lickert scale format, in which a score of 1 indicates strong disagreement and a score of 5 shows strong agreement. Because the scale is continuous in nature, participants can report high scores on multiple subscales (McConnaughy, Prochaska, & Velicer, 1983).

The original research indicated that the four scales accounted for 51% of the variance (McConnaughy, DiClemente, Prochaska, & Velicer, 1989). These researchers also found evidence supporting relatedness of the 4 subscales: the highest Pearson correlation coefficients occurred between adjacent stages, indicating that the items in each subscale are related but not redundant (McConnaughy, DiClemente, Prochaska, & Velicer, 1989; Soler et al., 2008). A meta-analysis of 39 studies revealed that stages of change reliably predict outcomes in therapy ($d = .46$): the amount of change clients make in treatment tends to be a function of their pretreatment self-reported stage of change (Norcross, Krebs, & Prochaska, 2011).

Other research on the instrument has indicated that particular processes of change are most effective with clients working in particular stages of change, premature termination is related to the client's stage of change at the initiation of treatment, and matching stage to appropriate processes of change optimizes psychotherapy (McConnaughy, Prochaska, & Velicer, 1983). The URICA has been researched with several populations including individuals with chronic anorexia nervosa (Mander, Teufer, Keifenheim, Zipfel, & Geil, 2013), diabetes prevention (Helitzer, Peterson, Sanders, & Thompson, 2007), depression and somatoform disorders (Manders, et. al, 2012), and smoking cessation (DiClemente, Prochaska, Fairhurst, Velicer, Velasquez, & Rossi,

1991; Armitage & Arden, 2008). A meta-analysis of 39 studies revealed that stages of change reliably predict outcomes in therapy (d = .46): the amount of change clients make in treatment tends to be a function of their pretreatment self-reported stage of change (Norcross, Krebs, & Prochaska, 2011). The psychometric properties (including split-half and test-rest reliability and criterion and construct validity) of the URICA have been deemed adequate by a number of independent researchers (Rosen et al., 2001; Dozios, Westra, Collins, Fung, & Garry, 2004; Nidecker, DiClemente, Bennett, & Bellack, 2008). Cronbach's alpha scores for this measure range from 0.790 to 0.930 (Dozios, Westra, Collings, Fung, & Garry, 2004; Zemore, 2012). The reliability of the URICA scale was calculated for this particular study from item level data. The Cronbach's alpha value was .826 indicating that the scale has strong internal consistency.

Research Design

The present study examined the relationship between demographic variables (e.g., gender, age, socioeconomic status, race/ethnicity, level of education, psychotropic medication status, and sexual orientation), readiness for change, depression severity, and longevity of psychotherapy services in a community clinic and training facility administered by a research university. More specifically, the study identified factors that predict longevity of service use. The proposed study will follow a correlational cross-sectional design. The proposed study will examine the model diagramed below.
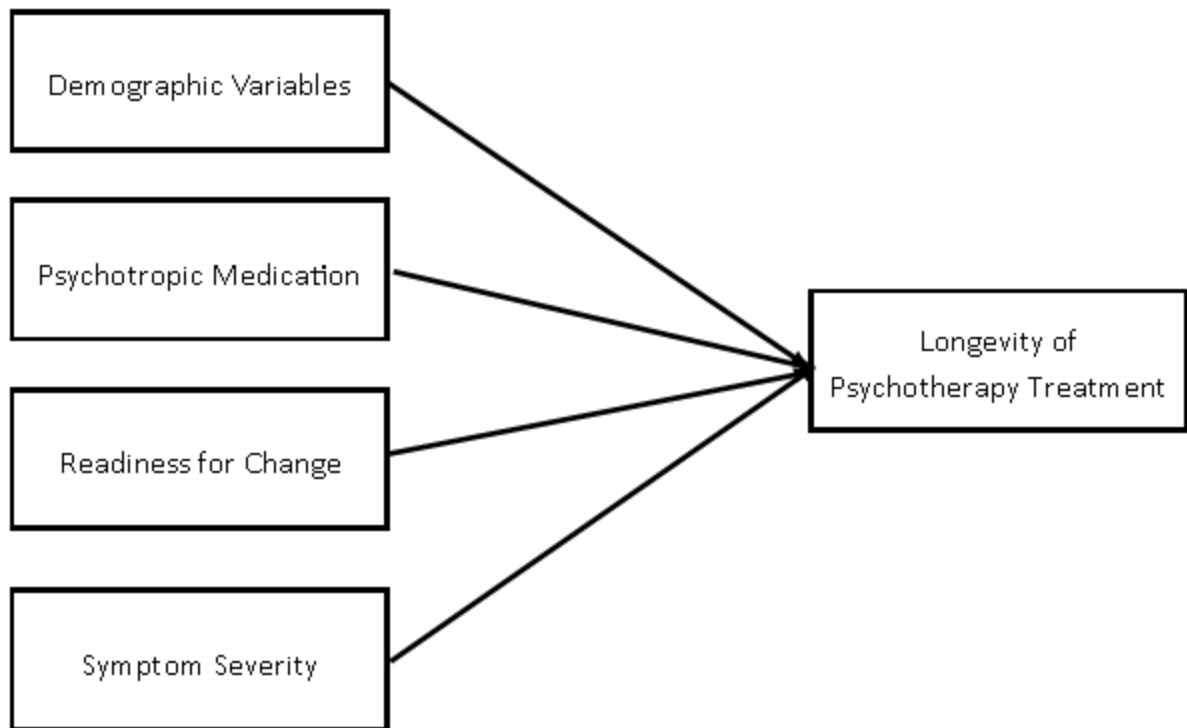
The following hypotheses was tested in a two-phase statistical analysis, the development of a correlation matrix followed by hierarchical regression:

Correlation Matrix Hypotheses

1) Gender, age, socioeconomic status, level of education, readiness for change, and psychotropic medication status will be positively correlated with longevity

2) Sexual orientation, race/ethnicity and symptoms severity will be negatively correlated with longevity

Hierarchical Multiple Regression Hypotheses

1) A model containing demographic variables (i.e. gender, age, race/ethnicity, socioeconomic status, level of education, and sexual orientation) will help predict longevity of psychological treatment;

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2) A model including psychotropic medication status will predict longevity above and beyond demographic variables;

3) A model including symptom severity will predict treatment longevity above and beyond demographic variables and psychotropic medication status; and

4) A model including readiness for change will predict longevity above and beyond demographic variables, psychotropic medication status, and symptom severity

The statistical analyses are explained in greater detail in the next section. A rationale for the use of hierarchical regression modeling will also be discussed in the next section.

Statistical Procedures

The present study examined the relationship between demographic variables (e.g., gender, age, socioeconomic status, race/ethnicity, level of education, and sexual orientation), readiness for change, depression severity, and longevity of services in a community clinic and training facility administered by a research university. More specifically, the study identified factors that predict longevity of psychotherapy service use. The proposed study is based on two underlying assumptions:

1. Demographic variables influence retention in psychotherapy treatment (Di Leone, Vogt, Gradus, Street, Giasson, & Resick, 2013; Austin & Wagner, 2010; Sayre, Schmitz, Stotts, Averill, Rhoades, & Grabowski, 2002; Richmond, 1992); and

2. Psychological variables (i.e., symptom severity, readiness for change, and psychotropic medication status) (Tate et al., 2011; Trivedi, Nieuwsma, &

Williams, 2010; Johnson et al., 2008; Arnow et al., 2007; Brogan, Prochaska, & Prochaska, 1999) influence attrition and retention in psychotherapy treatment. That is, certain client profiles are likely to predict the longevity of psychotherapy service use (Barrett et al., 2008).

To meet study objectives a two-phase statistical analysis was completed. The first phase of the statistical analysis was a correlation matrix which explored the following hypotheses:

1. Gender, age, socioeconomic status, level of education, readiness for change, and psychotropic medication status will be positively correlated with longevity

2. Sexual orientation, race/ethnicity and depressive symptom severity will be negatively correlated with longevity

To examine whether or not demographical and psychological variable can predict treatment longevity a hierarchical multiple regression was conducted. The hypotheses for the hierarchical regression are as follows:

1. A model containing demographic variables (i.e. gender, age, race/ethnicity, socioeconomic status, level of education, and sexual orientation) will help predict longevity of psychological treatment);

2. A model including psychotropic medication status will predict longevity above and beyond demographic variables;

3. A model including symptom severity will predict treatment longevity above and beyond demographic variables and psychotropic medication status;

4. A model including readiness for change will predict longevity above and beyond demographic variables, psychotropic medication status, and symptom severity.

CHAPTER FOUR

Results

The purpose of the present study was to examine demographic and psychological factors that influence the longevity of psychotherapy treatment. This chapter begins with a detailed description of the sample in this study. This is followed by a detailed description of findings from data distribution analysis, descriptive statistics, correlation matrix, ANOVA analyses, Chi-square analysis, Spearman's rank order correlations, and hierarchical linear regression. Data analysis took place in seven steps. First, descriptive statistics were analyzed for categorical and continuous demographic variables. This step was followed by univariate normality assessments. Normality was established by removing outliers from the data set according to accepted statistical practices. The presence of outliers within the sample suggest that clusters of similar clients exist within the data. To examine this possibility, differences in cluster means were examined via analysis of variances statistics as exploratory analyses.

A correlation matrix was created to look at the relationship between main study variables. The correlation matrix indicated that some of the independent variables were correlated with the dependent variable, longevity of psychotherapy treatment. Additionally the correlation matrix revealed a number of significant correlations between independent variables in the study. Exploratory post-hoc Chi-square analyses and Spearman Rank Order correlations were conducted to further examine the relationships between independent variables. After correlations were examined, four linear regression

models were examined via hierarchical regression. All statistical analyses were conducted via SPSS 22 (IBM, 2013). The chapter concludes with a summary of the results.

Participant Characteristics

For the current study baseline data was collected for all participants (N = 595). A majority of participants self-identified as female (n = 378, female; n = 218, male). The sample was predominantly White/Caucasian (73.7% White/Caucasian, 9.4% Black/African American, 3.0% Biracial, 2.9% Asian, 2.5% Latino/A, 0.7% Other, 0.3% Japanese, 0.2% Russian, 0.2% Zimbabwean, 0.2% Caucasian/South African, 0.2% Haitian, and 4.5% did not provided information regarding race/ethnicity.) The average age of the sample was 27.87 (SD = 10.256, range = 17 - 67). Additionally, 7.2% of participants identified as a sexual minority (i.e. LGBTQ). The majority of the sample, 85.2%, reported a median annual income between $0-24,999. In terms of educational attainment, 43.9% of the sample reported having obtained a college/university degree while an additional 14.5% reported graduate degrees. 24.1% of participants reported compliance with a psychotropic medication prescription at intake. The majority of the sample (82%) attended fewer than 20 sessions with nearly half of the sample (48.1%) attending fewer than 10 psychotherapy sessions. The average number of sessions for participants in this sample was 13.71 sessions (SD = 19.78, range 1 – 192 sessions). See Table 1 for more information regarding demographic information of the sample.

Table 1

Demographic Characteristics of Participants

N = 595

Characteristics	N	%
Gender		
Female	377	63.4
Male	218	36.6
Race		
White/Caucasian	438	73.7
Black/African American	56	9.4
Latino/a	15	2.5
Middle Eastern	6	1.0
Biracial	18	3.0
Japanese	2	0.3
Asian	17	2.9
Other	4	0.7
Indian	8	1.3
Russian	1	0.2
Zimbabwean	1	0.2
Caucasian/South African	1	0.2
Haitian	1	0.2
Race/Ethnicity Not Reported	27	4.5
SES		
$0 – $14,999	440	74.0
$15,000 – $24,999	50	8.4
$25,000 – $35,999	35	5.9
$36,000 – $45,999	14	2.3
$46,000 and above	36	9.6
SES Not Reported	20	3.4

Psychotropic Medication Status

Not Prescribed Psychotropic Medication	433	72.8
Prescribed Psychotropic Medication	138	23.2
Medication Status Not Reported	24	4.0
Age		
17 - 20	136	23.1
21 – 30	290	48.8
31 - 40	86	14.5
41 - 50	53	8.9
51 – 60	21	3.5
61 and above	7	1.2
Did Not Report Age	2	0.3
Level of Education		
Less than High School Diploma	16	2.7
High School Diploma	148	24.8
Vocational/Technical Certificate	27	4.5
Community/Junior College Degree	38	6.4
College/University Degree	241	40.6
Master's or Professional Degree	55	9.2
Doctoral Degree	25	4.2
Did Not Report Level of Education	45	7.6
Sexual Orientation		
Straight/Heterosexual	534	89.8
Gay	14	2.3
Lesbian	8	1.3
Bisexual	18	3.0
Queer	1	0.2
Questioning	3	0.5
Did Not Report Sexual Orientation	17	2.9

Longevity of Psychotherapy Treatment

1 Session	87	14.6
2 – 10 Sessions	285	48.1
11 – 20 Session	115	19.3
21 – 30 Sessions	38	6.4
31 – 40 Sessions	28	4.7
More than 40 Sessions	41	6.9

Descriptive Statistics

The means and standard deviations of the BDI-II, URICA, and URICA subscales (Pre-contemplation, Contemplation, Action, and Maintenance) are shown in Table 2. Approximately half of the sample (48.6%, $n = 238$) reported moderate to severe/major depressive symptomology (BDI-II scores exceeding 20). An additional 16.8% of participants reported mild depressive symptomology ($n = 95$), indicating that 65.4% of the sample reported experiencing depressive symptoms.

The mean URICA score for the participants was 9.942 (SD = 1.621). 92.2% ($n = 530$) reported Pre-contemplation scores below 2.50, indicating that the majority of the sample did not disclose anti-change attitudes at the beginning of psychotherapy treatment. 77% of participants ($n = 462$) indicated they believed they had problems and were considering changing, as evidenced by Contemplation scores between 4 and 5. The majority of the sample (86.2%, $n = 528$) reported they had already begun to take action to change (Action scores above 3). 23.5% ($n = 194$) reported Maintenance scores 4 or greater, indicating they were working to sustain change efforts that had already been implemented.

Table 2

Mean and Standard Deviations for Baseline Scores BDI-II, URICA, and URICA
Subscales (Pre-contemplation, Contemplation, Action, and Maintenance
N = 595

	Total	
	Mean	*SD*
URICA	9.942	1.621
Pre-contemplation	1.729	0.539
Contemplation	4.284	0.468
Action	3.781	0.617
Maintenance	3.606	0.676
BDI-II	19.920	11.169

Distribution Analysis

The first step of the analysis was a distribution analysis of the dependent variable,

longevity of psychotherapy treatment. This analysis indicated that longevity of

psychotherapy treatment was positively skewed and also had a high kurtosis value

(skewness = 3.726, kurtosis = 20.119). See Histogram 1 below for distribution of the

longevity of psychotherapy treatment.

Histogram 1

Distribution of Longevity of Psychotherapy Use
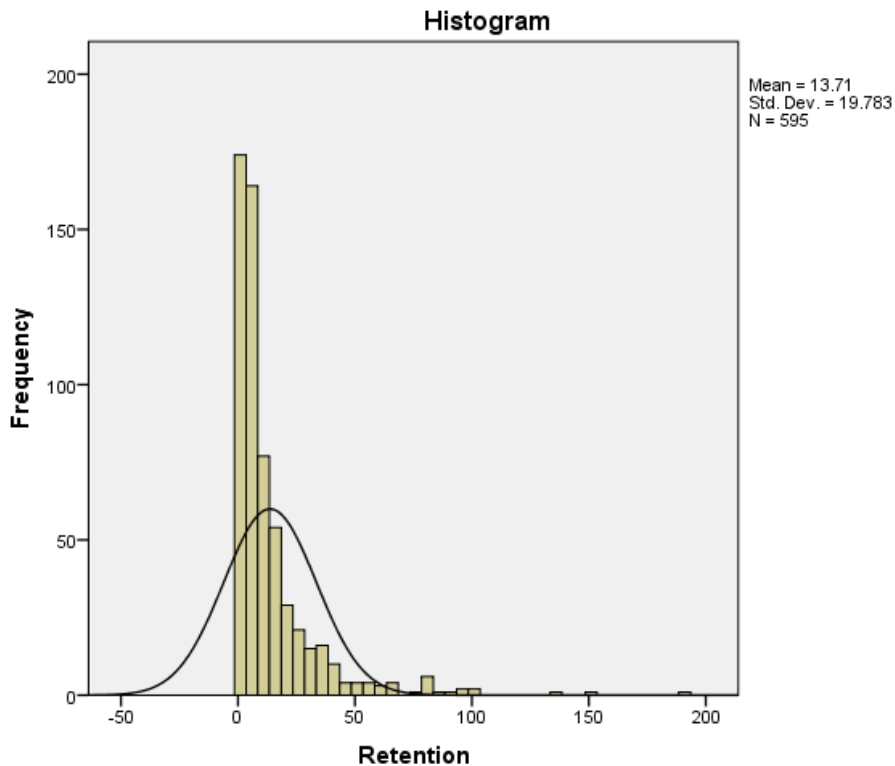
Skewness, the measure of the lack of symmetry of the data, is zero when the data is normally distributed. Given that this data set had a lower bound of 1 as it is not possible to have a negative value for psychotherapy attendance, a positive skew is expected. However the skewness value (3.726) still suggested that the data does not follow a normal distribution. Kurtosis, or the measure of the peak of the data distribution, indicated that the data had a high peak with rapidly declining tails. Data that follows a normal distribution has a kurtosis value of 3. The calculated kurtosis value (20.119) for this study provided further evidence that the data was not normally distributed and thus required transformation.

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In order to meet normality assumptions needed for linear models, the data was examined for outliers (e.g., observations that fall an abnormal distance from the other data points). This was accomplished by converting the dependent variable (longevity of psychotherapy treatment) to standardized z-scores. At the .05 significance level, z-score greater than 1.96 are considered to be outliers (Field, 2013), and these data points were removed from the data set and not considered in additional analyses. The majority of the participants in this data set attended between 2 and 40 sessions. Individuals who attended more than 40 session and fewer than two session were excluded from the analyses. After the outliers were removed the data set was no longer positively skewed and the kurtosis value indicated an approximate normal distribution (skewness = 1.32, kurtosis 1.06). See Histogram 2 for a visual representation of the skew and kurtosis after removing the outlying data points.

Histogram 2

Distribution of Longevity of Psychotherapy Treatment with Outliers Removed
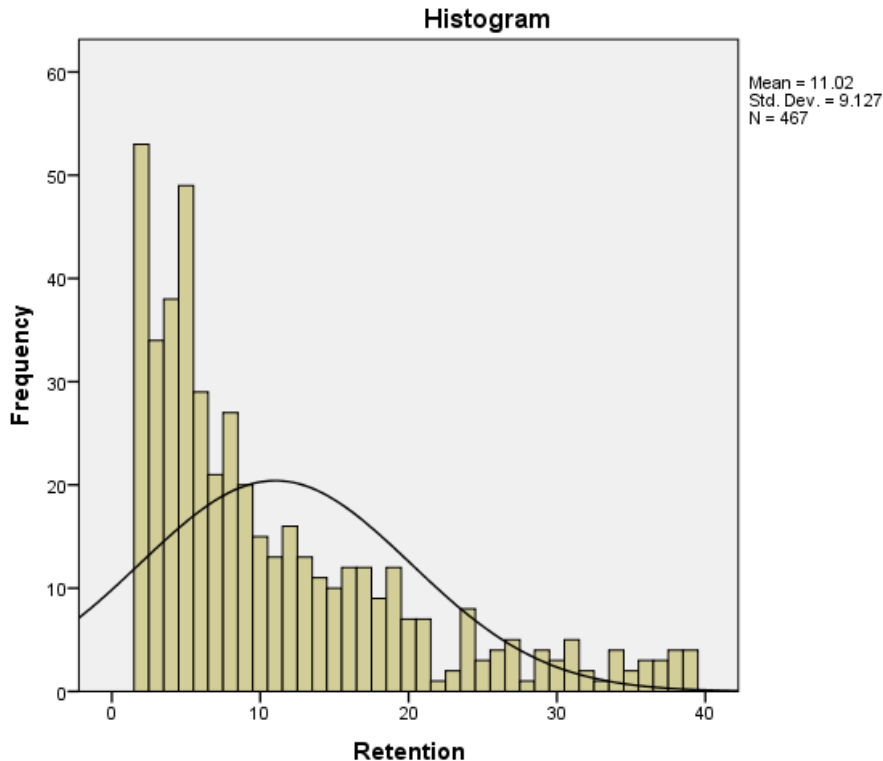
The presence of outliers suggested potential subcategories of clients: for example,

clients who attend only one session of psychotherapy treatment are likely to have

different demographic and psychological characteristics than clients who engage in short

to midrange therapy (e.g., 2-40 sessions) and clients who engage in long-term

psychotherapy (i.e., more than 40 sessions). Given the possibility that distinct groups of

client exist in the sample provided a strong rational for conducting exploratory analysis

of variance tests to examine this possibility. Exploratory post-hoc analyses were

conducted as follow up to investigate the possibility that outliers represented individuals

who were categorically different than those considered in the main analyses.

Analysis of Variance

The normality analyses suggested that the data could be divided into clusters of clients with potential differences between the clusters of clients (i.e., clients who only attended an intake session might be significantly different on demographic and psychological variables than either clients who attended $2 - 40$ sessions or those who attended more than 40 psychotherapy sessions). Analysis of variance (ANOVA) tests for potential differences in the means of two or more groups and was thus an appropriate choice to explore possible difference between clusters of clients. The purpose of including this exploratory analysis was to provide more detailed descriptions of clusters of clients.

An ANOVA was run to describe the frequencies of each independent variable (e.g., demographic variables, psychotropic medication status, depressive symptomology, and readiness for change) by clusters of longevity of psychotherapy treatment. The clusters were defined as follows: 1 sessions, 2-10 sessions, 11-20 sessions, 21-30 sessions, 31-40 sessions, and more than 40 sessions. A one-way ANOVA compared the mean estimates for the six groups of longevity of psychotherapy treatment on gender, race/ethnicity, age, socioeconomic status, psychotropic medication status, level of education, sexual orientation, depressive symptomology, and readiness for change scale and subscales.

Four of the one-way ANOVAs had significant results: race/ethnicity, psychotropic medication status, sexual orientation, and readiness for change. The test result for race/ethnicity was significant with $F(5,563) = 2.59$, $p = .025$. Tukey HSD indicated significant difference on race/ethnicity for individuals attending 21-30 sessions

(M = 1.19, SD = .462) than individuals attending 31-40 sessions (M = 2.64, SD = 2.56). The results indicated that African American/Black clients attended fewer sessions that White clients.

The test result for psychotropic medication status was significant with F(5,566) = 3.83, p = .002. The follow up Tukey HDS test indicated that psychotropic medication status approaches significance (p = .052) for individuals that attended one session (M = .35, SD = .48) and individuals who attended 2 – 10 sessions (M = .20, SD = .399).

The test result for sexual orientation was significant with F(5,572) = 2.43, p = .034. The follow up Tukey HSD test did not reveal any significant between group differences for the retention clusters previously defined. The test result for readiness for change was significant with F(5,569) = 2.58, p = .025. The follow up Tukey HSD indicated that readiness for change was significantly different for individuals who attended 1 session (M = 9.83, SD = 1.63), individuals who attended 21-30 sessions (M = 10.82, SD = 1.68), and individuals who attended more than 40 sessions (M = 9.70, SD = 1.67).

Correlation Matrix

First, to determine if significant positive relationships exist between gender, age, socioeconomic status, level of education, readiness for change, and psychotropic medication status and longevity of psychotherapy treatment and significant negative relationships between sexual orientation, race/ethnicity, and depressive symptom severity and longevity a two-tailed bivariate correlation (N = 467) was conducted. The significance values were set at (p≤ .05). This analysis revealed significant correlations between some of the independent variables and between some of the independent

variables and the dependent variable (longevity of psychotherapy treatment). See Table 3

for a summary of correlations. Chi-square (X^2) and Spearman rho (r_s) correlation analyses

were conducted to further explore the nature of the significant relationships between

independent variables in the study. The following sections will present the relevant

findings from the correlation matrix analysis.

Table 3

Pearson Correlations for Gender, Age, SES, Level of Education, Readiness for Change, Psychotropic Medication Status, Longevity of Psychotherapy Service Use, Sexual Orientation, Race/Ethnicity, and Depressive Symptom Severity at Baseline of Psychotherapy Treatment

(N=467)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender	-	.08	-.02	-.13**	.04	.01	.03	.12*	-.13**	.10*	.03	.06	.11*	-.01
2. Race/Ethnicity		-	-.04	-.05	-.07	.06	.08	-.03	.09	-.04	-.06	.02	-.06	.02
3. Age			-	.31**	.07	-.02	-.10*	.05	.10*	.00	.07	.06	.02	-.03
4. SES				-	.00	.04	-.11*	.04	.04	-.04	.01	-.05	-.04	-.08
5. Medication					-	-.18**	-.01	.09	-.07	.08	.08	.13**	.13**	.02
6. Education						-	.07	-.07	-.15**	.06	-.08	-.02	.03	.11*
7. SexualOrient							-	.07	-.07	.06	-.04	.04	.04	.13**
8. BDI-II								-	-.19**	.32**	-.12*	.30**	.23**	-.02
9. Precont.									-	-.50**	-.18**	-.22**	-.64**	-.11*
10. Contemplation										-	.41**	.44**	.79**	.07
11. Action											-	.32**	.68**	.08
12. Maintenance												-	.73**	.09
13. URICA Total													-	.12**
14. Longevity														-

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Chi-Square (X^2)

       Exploratory post-hoc chi-square analyses were run to explore the significant

relationships between categorical independent variables. The chi-square statistic

measures whether distributions of categorical variables are significantly different from

each other. As some of the independent variables are categorical data using the chi-square

statistic was appropriate to further explore the suggested Pearson correlations for the

categorical variables.

       According to the correlation matrix a significant relationship existed between the

variables gender and socioeconomic status, ($r = -.126 \, p = .007$). The chi-square (X^2) test

indicated that no significant differences existed between females and males in

socioeconomic status, X^2 (2, $N= 467$) $= 7.593, p = .108$. A second correlation between

sexual orientation and socioeconomic status ($r = -.111 \, p = .019$) also existed. The chi-

square (X^2) test revealed that no significant differences existed between individuals who

identified as a sexual majority and those who identified as a sexual minority in terms of

socioeconomic status, X^2 (2, $N= 467$) $= 12.456, p = .899$. A final correlation between

level of education and psychotropic medication status ($r = -.177 \, p = .000$). The chi-square

analyses indicated there were significant differences in psychotropic medication use

across levels of educational achievement, X^2 (2, $N= 467$) $= 13.961, p = .030$.

Spearman's Rank Order (r_s)

       Exploratory post-hoc Spearman's Rank Order correlation (*rho*) analyses were run

to further explore the significant Pearson correlations between the nominal and ordinal

independent variables. The Spearman *rho* statistic describes the relationship between

rank-ordered variables and was thus used to further explore the potential significance of

relationships between the rank-ordered independent variables in this study. Spearman's

Rank Order correlation results are presented as clusters (i.e., all relationships related to

psychotropic medication status are discussed together) and delineated with headings. See

Table 4 for a summary of Spearman Rank Order correlations.

Psychotropic Medication Status

Study results revealed that individuals who reported maintenance attitudes and

behaviors (e.g, continuing changes that had already been implemented) tended to also be

prescribed and compliant with psychotropic medication prescriptions than individuals in

other stages of change ($r_s = .137$ $p = .001$). A related finding indicated that individuals

taking psychotropic medication also reported higher overall readiness for change scores

($r_s = .149$ $p = .000$).

Gender

Gender was significantly correlated with several other variables in the study. The

first significant correlation was between gender and the readiness for change measure of

pre-contemplation. The results of the study indicated that men were more likely to report

higher pre-contemplation attitudes at the beginning of psychotherapy treatment than

women ($r_s = -.103$ $p = .014$). A second significant correlation existed between gender and

overall readiness for change. Based on the results in this study, women were more likely

to report higher readiness for change attitudes ($r_s = .084$ $p = .045$) than their male

counterparts.

Age

The first significant correlation examined via Spearman's rho was the correlation

between age and sexual orientation. Based on the results of the study, younger

participants were more likely to identify as LBGTQA than older participants ($r_s = -.088$ $p = .028$). A significant correlation was also found between age and socioeconomic status: older participants reported higher yearly income than did younger participants ($r_s = .297$ $p = .000$). The correlation matrix indicated that a significant correlation existed between age and pre-contemplation attitudes. When this relationship was examined by Spearman's rho no significant differences existed across age on pre-contemplation attitudes ($r_s = -.036$ $p = .388$).

Socioeconomic Status and Education

The results of this study found that individuals who identified as a sexual minority reported less income than those people who identified as a sexual majority ($r_s = -.129$ $p = .002$). A significant correlation was also found between level of education and pre-contemplation attitudes: individuals with more educational achievement reported less pre-contemplation attitudes ($r_s = -.166$ $p = .000$).

BDI-II

A significant correlation examined via Spearman's rho was the correlation between gender and depression symptomology (i.e., BDI-II score). Based on the results of this study, women were more likely to report increased depression symptoms at the onset of treatment ($r_s = .099$ $p = .028$) than were men. The study results revealed significant correlations between depressive symptomology and readiness for change. Individuals who reported higher depressive symptomology endorsed lower levels of pre-contemplation attitudes ($r_s = -.204$ $p = .000$), higher levels of contemplation attitudes and behaviors ($r_s = .286$ $p = .000$), higher levels of maintenance attitudes ($r_s = .326$ $p = .000$), and higher overall readiness for change scores ($r_s = .253$ $p = .000$). The only subscale that

did not have a significant correlation with depressive symptomology was the action

subscale ($r_s = -.070$ $p = .125$). In summary, individuals who reported the most depressive

symptomology were also the individuals who reported the highest readiness for change

attitudes and behaviors.

Table 4
Spearman Rank Order Correlations Gender, Age, SES, Level of Education, Readiness for
Change, Psychotropic Medication Status, Longevity of Psychotherapy Service Use,
Sexual Orientation, Race/Ethnicity, and Depressive Symptom Severity at Baseline of
Psychotherapy Treatment
(N=467)

Variable 1	Variable 2	r_s	p
Age	Sexual Orientation	-.088*	.034
Gender	BDI-II	.099*	.028
Gender	Pre-contemplation	-.103*	.014
Gender	URICA total	.084*	.045
Age	SES	.297**	.000
Age	Pre-contemplation	-.036	.388
SES	Sexual Orientation	-.129**	.002
Medication	Maintenance	.137**	.001
Medication	URICA total	.149**	.000
Education	Pre-Contemplation	-.168**	.000
BDI-II	Pre-Contemplation	-.204**	.000
BDI-II	Contemplation	.286**	.000
BDI-II	Action	-.070	.125
BDI-II	Maintenance	.326**	.000
BDI-II	URICA total	.253**	.000

* Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

Significant Correlations: Independent and Dependent Variables

A two-tailed bivariate correlation ($N = 467$) was conducted. The significance values were set at ($p \leq .05$). Based on this criterion, three of the independent variables were significantly and positively correlated with longevity of psychotherapy service use: level of education ($r = .113$ $p = .018$), sexual orientation ($r = .134$ $p = .004$), and the overall readiness for change score ($r = .123$ $p = .009$). No significant relationships were found between longevity of psychotherapy use and gender, age, socioeconomic status, and psychotropic medication status. One of the independent variables demonstrated a significant negative correlation with longevity of psychotherapy treatment, the pre-contemplation subscale of the readiness for change measure ($r = -.108$ $p = .021$). Based on the results of the correlation analysis, longevity of psychotherapy treatment was not significantly and negatively correlated with either of the variables race/ethnicity or depressive symptomology. See Table 3 for these results.

Hierarchal Regression

Based on previous research the following hypotheses were proposed for the hierarchal regression analysis of this study:

1. A model containing demographical variables (i.e. gender, age, race/ethnicity, socioeconomic status, level of education, and sexual orientation) will help predict the longevity of psychotherapy treatment;

2. A model including psychotropic medication status will predict longevity of psychotherapy treatment above and beyond demographical variables;

3. A model including depressive symptom severity will predict psychotherapy treatment longevity above and beyond demographical variables and psychotropic medication status; and

4. A model including the variable readiness for change will predict longevity of

psychotherapy treatment above and beyond demographic variables, psychotropic

medication, and depressive symptom severity.

Based on the results of the two-tailed bivariate correlation analysis, only four of

the independent variables (sexual orientation, level of education, overall readiness for

change score (URICA total score), and the pre-contemplation subscale of the URICA

instrument) demonstrated statistically significant correlations with the dependent

variable, longevity of psychotherapy services. Including the independent variables that

are not correlated to the dependent variable will not add meaning to the hierarchical

multiple regression analysis and, therefore were not included in additional analyses. The

hypotheses for the hierarchical multiple regression analysis were amended to reflect the

significant correlations revealed by the present study. The hypotheses also reflect the

literature related to retention, attrition and longevity of psychotherapy treatment:

variables entered into the model first have more support in the research literature than

variables entered later in the model. The updated hypotheses tested via hierarchical

multiple regression are as follows:

1. A model including overall readiness for change (URICA total score) will help

predict the longevity of psychotherapy service;

2. A model including the URICA pre-contemplation subscale score will help

predict the longevity of psychotherapy service above and beyond above and

beyond overall readiness for change (URICA total score);

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3. A model including level of education will predict longevity of psychotherapy

services above and beyond overall readiness for change and the pre-contemplation

subscale score; and

4. A model including sexual orientation will prediction longevity of

psychotherapy treatment above and beyond overall readiness for change, pre-

contemplation subscale score, and level of education.

The independent variables found to be significant in the previous correlation

(overall readiness for change, pre-contemplation subscale score, level of education, and

sexual orientation) were entered into a hierarchical multiple regression analysis to

determine if they would significant lypredict the longevity of psychotherapy treatment.

When the overall readiness for change score (URICA total score) was entered

alone (i.e. model 1), it significantly predicted longevity of psychotherapy treatment, (F(1,

409) = 6.776, p = .010, adjusted R^2 = .014). This variable alone accounted for 1.4% of

variance of longevity of psychotherapy treatment. The standardized coefficient, beta (β=

.128), reflects a moderate effect size (Keith, 2006). These results indicated that for every

one-point increase in overall readiness for change, there is an expected .128 increase in

longevity of psychotherapy treatment.

The results of the second model (i.e., overall readiness for change/URICA total

and URICA Pre-contemplation subscale regressed on longevity of psychotherapy

treatment) in the hierarchical regression indicated that Pre-contemplation does not

significantly predict longevity of psychotherapy treatment above and beyond overall

readiness for change, (F(2, 408) = 3.591, p = .028, adjusted R^2 = .012). Adding the Pre-

contemplation subscale to the model does not explain additional variance, standardized

coefficient beta (β = -.041). According to Keith (2006) this value falls below the .05

significance level, which is considered small but meaningful.

The third model (e.g., overall readiness for change/URICA total and URICA Pre-

contemplation subscale, and level of education) significantly predicted the dependent

variable, longevity of psychotherapy treatment, above and beyond the previous models,

($F(3, 407) = 3.890$, $p = .009$, adjusted $R^2 = .021$). This model accounted for 2.1% of the

variance of longevity of psychotherapy treatment. The standardized coefficient beta ((β =

.104) reflects a moderate effect size (Keith, 2006).

The final model (e.g., overall readiness for change/URICA total and URICA Pre-

contemplation subscale, level of education, and sexual orientation) significantly predicted

the dependent variable, longevity of psychotherapy treatment, above and beyond the

previous models, ($F(4,406) = 4.455$, $p = .002$, adjusted $R^2 = .033$). The full model

explained 3.3% of the variance in longevity of psychotherapy treatment, and represents a

moderate effect size, standardized coefficient beta (β = .120). These results indicated

increased overall readiness for change score, greater educational achievement, and

identifying as a sexual minority at baseline (i.e., initiation of psychotherapy treatment)

significantly predicted how long a person will remain in psychotherapy treatment (e.g,

longevity of psychotherapy treatment). See Table 5 for the summary of these results.

Table 5

Hierarchical Multiple Regression Analysis of the Overall Readiness for Change (URICA), URICA Pre-contemplation subscale, Level of Education, and Sexual Orientation Predicting Longevity of Psychotherapy Treatment (N= 411)

Variable	B	SEB	β	R^2	ΔR^2
Step 1				.016	.014
URICA Total	.725	.279	.128		
Constant	3.736	2.816			
Step 2				.017	.012
URICA Total	.578	.361	.102		
Pre-contemplation	-.680	1.054	.041		
Constant	6.389	4.987			
Step 3				.028	.021
URICA Total	.664	.361	.113		
Pre-contemplation	.-.298	1.065	-.018		
Level of Education	-.591	.281	1.04		
Constant	2.631	5.277			
Step 4				.042	.033
URICA Total	.643	.359	.113		
Pre-contemplation	-.167	1.060	-.010		
Level Education	.552	.279	.098		
Sexual Orientation	1.431	.584	.120		
Constant	2.279	5.247			

Poisson Regression

      The final analysis conducted for this study was a Poisson Regression. This type of regression is used when data is numerical but in the forms of counts (i.e., the number of psychotherapy sessions attended by a client). A Poisson regression analysis assumes the data follows a Poisson distribution expresses the probability of a given number of events occurring in a fixed interval of time and/or space if these events occur with a constant rate per time unit and independently of the time since the last event (Haight, 1967). The Poisson regression analysis did not yield a better fitting model than the hierarchical multiple regression model, and for that reason the hierarchical multiple regression results are discussed in the next chapter.

CHAPTER FIVE

Discussion

The purpose of the present study was to examine demographic and psychological factors that influenced the longevity of psychotherapy treatment. This chapter begins with a summary of the study and is followed by an overview of the statistical analyses: analysis of variance, statistically significant correlations, and the hierarchical multiple regression. Conclusions that can be drawn from the study will be addressed next. Sections addressing the implications of the findings, limitations present in the current study, and recommendations for future research directions will follow the conclusions.

Summary of the Study

Premature termination from psychotherapy treatment continues to be a problem for clients and mental health professionals; research consistently demonstrates that positive outcomes are strongly correlated with attendance. Given these realities researchers have focused on identifying variables that predict attrition, retention, and longevity in psychotherapy treatment. This body of literature has yielded mixed results, providing some support for models of prediction that included demographic and psychological variables. The studies are mostly conducted in settings that use standardized models of therapy (i.e. predetermined number of sessions) and retention is determined in an all or nothing manner. In open-term models of psychotherapy treatment, the length of treatment is tailored to the individual needs of a client and not defined as a finite number of psychotherapy sessions. For settings with this type of treatment model,

exploring the longevity of psychotherapy treatment rather than retention provides more useful information regarding factors that influence how long clients remain in psychotherapy treatment. There is little research exploring longevity in an open-therapy model. The purpose of this study was to explore variables that influence longevity of psychotherapy treatment in a Counseling Psychology department's community and training mental health facility. Accurately predicting longevity of psychotherapy treatment improves treatment planning, implementation, and evaluation: treatments can be customized in order to maximize the benefits received by clients.

This study had several research questions:

 1. Is there a statistically significant positive relationship between gender, age, socioeconomic status, level of education, readiness for change, psychotropic medication status and the longevity of psychotherapy treatment?

 2. Is there a statistically significant negative relationship between sexual orientation, race/ethnicity, and depressive symptom severity and the longevity of psychotherapy treatment?

 3. Does a model containing demographic variables (i.e. gender, age, race/ethnicity, socioeconomic status, level of education, and sexual orientation) help predict longevity of psychotherapy treatment?

 4. Does a model including psychotropic medication status help predict longevity of psychotherapy treatment above and beyond demographic variables?

 5. Does a model including depressive symptom severity help predict longevity of psychotherapy treatment above and beyond demographic variables and psychotropic medication status?

6. Does a model including readiness for change predict longevity of

psychotherapy treatment above and beyond demographic variables, psychotropic

medication status, and depressive symptom severity?

Overview of Analysis of Variance (ANOVA)

The initial presence of numerous outliers (i.e., individuals who only attended the

initial consultation session as well as individuals classified as long-term psychotherapy

clients) in the data suggested that clusters of clients likely existed in the sample. For

example clients who only attended one session are likely significantly different in terms

of both demographic and/or psychological profile than clients who attended 2-10 sessions

or 31-40 sessions. The large number of outliers and the implied clusters of clients

provided strong rationale for conducting exploratory post-hoc ANOVA analyses to

explore both the existence of different clusters of clients and the differences between

these groups. One-way ANOVAs were run to describe the frequencies of each

independent variable (e.g., demographic variables, psychotropic medication status,

depressive symptomology, and readiness for change) by clusters (1 sessions, 2-10

sessions, 11-20 sessions, 21-30 sessions, 31-40 sessions, and more than 40 sessions) of

longevity of psychotherapy treatment.

Four of the one-way ANOVAs had significant results: race/ethnicity,

psychotropic medication status, sexual orientation, and readiness for change. Post-hoc

analyses confirmed statistically significant between group means for the following

independent variables: race/ethnicity, psychotropic medication status, and overall

readiness for change scores. These results suggest that it is important to consider these

variables at the onset of psychotherapy to inform treatment planning and implementation.

Individuals who initially report both psychotropic medication use and low readiness for change scores would likely benefit from receiving psychoeducation regarding expectations and benefits psychotherapy during the initial consultation appointment as the results of this study indicated that these individuals were more likely to terminate psychotherapy treatment after the initial consultation appointment. Including psychoeducation about the benefits of therapy in the initial consultation appointment might increase the likelihood of these clients returning for additional appointments by preemptively addressing their possible resistance and skepticism about psychotherapy.

Higher readiness for change scores suggest client commitment to the therapeutic process and positively correlated with longevity of psychotherapy treatment: clients who reported more change attitudes and behaviors stayed in psychotherapy longer than individuals who reported fewer readiness for change attitudes and behaviors. This is an important finding for a mental health facility that has a training focus as it provides guidance for how clients should be assigned to trainees within the facility. Assigning clients with higher readiness for change scores to novice clinicians might be a method that promotes clinical skill development as these clients have disclosed a commitment to the change process and thus likely tolerate the necessary skill-building efforts of beginning clinicians and not prematurely terminate psychotherapy.

According to the results of this study and congruent with other attrition, retention, and longevity research individuals who identify as a sexual minority are more likely to remain in treatment than their heterosexually-identified peers. These individuals likely experience societal oppression which can result in more mental health concerns. Given that they tend to remain in treatment longer highlights the complexity of problems that

LGBTQ individuals experience; these clients likely understand that addressing a core and fundamental aspect of identity is likely a long-term process. Continual and intentional efforts to create a safe, affirming, and therapeutic atmosphere should be enacted to amplify the psychotherapeutic benefit received by these clients. Additionally, clinicians must continue to develop their cultural competence along this dimension of diversity because the research continually demonstrates that members of the LGBTQ community remain in psychotherapy treatment and thus clinicians will most likely be providing services to them.

Overview of Correlation Analyses

The current study explored the relationships between self-reported initial client factors and the longevity of psychotherapy treatment. The independent variables included in the study are demographic variables (e.g. gender, race/ethnicity, age, SES, level of education, and sexual orientation) and psychological variables (i.e. psychotropic medication status, readiness for change, and depressive symptoms severity). The results were mixed supporting some but not all of the original hypotheses: some of independent variables (i.e., overall readiness for change, pre-contemplation/anti-change behaviors and attitudes, level of education, and sexual orientation) were significantly correlated with the dependent variable. Additionally the Pearson correlation matrix indicated significant relationships existed between some of the independent variables. To further examine the nature of these relationships exploratory post-hoc Chi-square (X^2) and Spearman's Rank Order correlation (r_s) analyses were conducted. These results and the results of the Pearson correlations (r) will be discussed in the following sections.

Chi-Square (*X²*) Discussion

The initial correlation calculations suggested that statistically significant

relationships existed between the following sets of variables: gender – socioeconomic

status, sexual orientation – socioeconomic status, and level of education – psychotropic

medication status. Chi-square (*X²*) analysis are used to describe the strength of

relationships between categorical variables. Chi-square analyses only supported the

statistically significant relationship between level of education and psychotropic

medication status, indicating that individuals with more educational achievement are

more likely to address mental health concerns with psychotropic medication than

individuals with less education. Increased education achievement is likely to be

associated with reduce mental health stigma and greater access to health insurance

coverage that includes mental health treatments including psychotropic medication.

Spearman's Rank Order (*rₓ*) Correlations

The Pearson correlation matrix suggested significant relationships between rank-

order independent variables. These relationships were explored using the Spearman Rank

Order (*rho*) correlations. Spearman Rank Order correlations are non-parametric statistics

which describe the strength of relationships between rank-order variables. The results of

the Spearman correlations found statistically significant relationships between some of

the rank-ordered independent variables included in the study. Table 4 provides a

summary of these results.

Gender, depressive symptomology, and psychotropic medication status were also

significantly correlated with overall readiness for change. This finding suggests that

examining potential interactions and mediations between these variables might provide

more clarity regarding how the interplay of these variables influence longevity of

psychotherapy treatment. A second significant correlation that might warrant further

consideration is the relationship between depressive symptomology (BDI-II) and overall

readiness for change (URICA). Study findings indicated that individuals with increased

BDI-II scores tended to have higher URICA scores. Further exploration of the nature of

this relationship seems warranted and might illuminate how the experience of depressive

symptoms enacts the change process. A final correlation that is worth considering in

future exploration is the positive correlation between psychotropic medication status and

level of education. As level of education was significantly correlated with longevity of

psychotherapy treatment, more research into possible interaction, mediation, or

moderation effects between psychotropic medication status and level of education could

provide additional information to guide both training and clinical practice.

Pearson (*r*) Correlations

The following independent variables were significantly correlated with the

dependent variable, longevity of psychotherapy treatment: level of education ($r = .113$),

sexual orientation ($r = .134$), URICA pre-contemplation subscale ($r = -.108$), and overall

readiness for change, URICA total score ($r = .123$). The remainder of the variables

initially included in the study (e.g. gender, age, SES, race/ethnicity, psychotropic

medication status, and depressive symptomology) were not significantly correlated

longevity of psychotherapy treatment and were not included in the hierarchical multiple

regression analysis.

These results indicate that while a few initial client factors influence how long a

client will choose to remain in psychotherapy, the lack of significant relationships

between independent variables and longevity of psychotherapy treatment suggests greater complexity exists in the study of longevity. Other researchers have found similar results (Issakidis & Andrews, 2004; McCarthy et al., 2007; Di Leone et al., 2013), leading some researchers to hypothesize that relational variables (i.e., therapeutic alliance), client expectations, and psychotherapist expectations have more influence on the duration of psychotherapy treatment than static demographic factors (Joe, Simpson, & Broome, 1998; Johansson & Eklund, 2006; Barret et al., 2008). The results of this study and others suggest that research efforts should move away from static demographic factors as predictors of psychotherapy longevity. Although some studies suggest that clients who report a certain profile (from this study: overall readiness for change, pre-contemplation subscale sores, level of education, and sexual orientation) will remain in psychotherapy for more sessions than clients who did not report these characteristics, the demographic variables studied are not robust predictors of longevity of psychotherapy treatment.

Possible explanations for the lack of significant relationships between independent variables with historic predictive value (e.g., race/ethnicity, gender, socioeconomic status, and age) and longevity of psychotherapy treatment include less bias and microaggressions from clinicians who receive better multicultural training, reduced mental health stigma in general and especially for men, and affordable mental health care due to the agency's sliding fee scale. These reasons for prematurely terminating psychotherapy have been cited frequently in the attrition/retention research literature (e.g., Lambert, 2007 Barret et al., 2008; Gibbons et al., 2011; Wright, Simpson-Young, & Lennings, 2012). It is possible that these factors have been addressed in terms

of clinical training and therefore no longer represent perceived barriers to psychotherapy treatment.

Overview of Hierarchal Multiple Regression

The current study explored the predictive ability of the independent variables (i.e. overall readiness for change (URICA total score), URICA pre-contemplation subscale, sexual orientation, and level of education) which significantly correlated with the dependent variable, longevity of psychotherapy treatment, via hierarchal multiple regression. The final model (e.g., overall readiness for change/URICA total and URICA Pre-contemplation subscale, level of education, and sexual orientation) significantly predicted the dependent variable, and explained 3.3% of the variance in longevity of psychotherapy treatment, and represents a moderate effect size, standardized coefficient beta ($\beta = .120$). These results indicated increased overall readiness for change score, greater educational achievement, and identifying as a sexual minority at baseline (i.e., initiation of psychotherapy treatment) significantly predicted how long a person will remain in psychotherapy treatment.

Implications

The results of this study suggest that the predictors of longevity of psychotherapy treatment represent a more complex picture than only demographic and psychological factors fully account for. The independent variables included in the final regression model (i.e., overall readiness for change, pre-contemplation subscale, level of education, and sexual orientation) were statistically significant and yet only accounted for approximately 3.3% of the overall variance in the length of psychotherapy treatment. These variables represent a good starting point but clearly do not fully address the

complex construct of psychotherapy longevity. The results of this study contribute to a growing body of literature that suggests the factors influencing how long people will choose to remain in psychotherapy treatment are more complicated than a simple constellation of demographic and psychological variables (Barret et al., 2008).

This study has several clinical and training implications. Given the current analyses, the documented negative outcomes of attrition from psychotherapy research (Prinz & Miller, 1994; Boggs et al, 2004;), and a psychotherapy attrition rate of approximately 50% (Barrett et al., 2008), mental health practitioners would be wise to consider these factors (e.g., overall readiness for change, sexual orientation, and level of education) during initial treatment planning, intervention selection, diagnosis, symptom and progress monitoring, and providing feedback to clients. Accounting for and using these client factors will help mental health clinicians develop treatment plans that will promote longevity of psychotherapy treatment and thus better outcomes for clients. Additionally the findings of this study can be used to strengthen the training focus of blended agencies which strive to offer quality mental health care and train future mental health clinicians.

Overall Readiness for Change

The current study found that individuals who reported higher readiness for change scores attended more psychotherapy sessions than people who reported lower readiness for change scores. In an agency that strives to provide both strong clinical training and development as well as quality service delivery, considering how readiness for change influences longevity of psychotherapy treatment enhanced both of the agency's foci. Motivation and a sense of self-efficacy are crucial characteristics to begin and maintain

the change process (Miller & Rollnick, 2004). Individuals who report lower internal motivation and readiness for change tend to attend fewer psychotherapy sessions and would likely benefit from behavioral activation or motivational interviewing in the initial phases of treatment. These interventions emphasize structured efforts to extend overt behaviors that are likely to increase reinforcing environmental contingencies and corresponding improvements in mood, thoughts, and quality of life (Hopko, Lejuez, Ruggiero, & Eifert, 2003), and focus on benefit from enacting changes rather than remaining the same (Miller & Rollnick, 2004). Even small amounts of client success will likely reinforce change efforts and work to increase readiness for change attitudes and behaviors.

For many clients who voluntarily seek psychotherapy services, they have already demonstrated a commitment to change as seeking treatment represents a change from the status quo. The significant relationship between readiness for change and longevity of psychotherapy treatment serves as a foundation for a strengths-based approach to therapy. Clinicians can highlight how clients have already begun making changes, how small changes can accumulate into larger changes, and the connection between readiness for change and enacting new changes. Additionally this study's results provide clinicians with support to address misconceptions about psychotherapy including the relationship between the number of sessions and the amount of change that can be expected and the difference between symptom reduction and problem resolution.

An important implication of this study's findings is to implement strategies that promote the longevity of psychotherapy treatment. The readiness for change variable can be considered when engaging in collaborative treatment planning with clients, which has

been shown to promote client engagement (Shamir, Szor, & Melamed, 2010). Building on clients' readiness for change attitudes and behavior, clinicians can provide psychoeducation regarding stages and processes of change. Research indicates that involving clients in treatment planning results in a 39% decrease in overall attrition and a 45% decrease in early treatment attrition (within the first 5 sessions) (Warnick, Baearss, Weersing, Scahill, & Woolston, 2014). Individuals with lower baseline readiness for change scores would likely benefit from practical interventions designed to promote engagement in treatment including prompt scheduling of appointments, reminder letters and telephone calls, and soliciting patient commitment to treatment, and helping to resolve attendance ambivalence (Lefforge, Donohue, & Strada, 2007).

Balancing training needs with clinical needs is a challenge of any dual-focus agency. The significant relationship between readiness for change and longevity of psychotherapy treatment has additional training implications. Given that individuals who report increased baseline readiness for change scores tend to remain in psychotherapy treatment for more sessions suggests that pairing these clients with novice clinicians might result in successful training and clinical outcomes. Clients who report higher readiness for change scores are likely to be committed to the process of therapy as evidenced by the results that they tend to stay in treatment longer than other clients. This finding suggests that these individuals' commitment to the process may enable them to tolerate the inevitable challenges of working with a novice clinician. Clients who disclose higher motivation for change might be less likely to prematurely terminate psychotherapy due to clinician factors (i.e., lack of skill or confidence) than individuals who have less

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motivation for therapy and might use clinician factors as an excuse for prematurely ending psychotherapy.

Developing into a competent psychotherapist requires formal education, personal exploration and clinical experiences. Novice psychotherapists need time (i.e., direct clinical service hours and uspevision) to develop basic helping skills and comfort with a theoretical perspective before they can effectively perform psychotherapy. The findings of the current study suggest clients who report higher overall readiness for change might remain in psychotherapy treatment long enough to provide novice clinicians with the direct clinical service they need to begin to develop as a psychotherapist. Pairing novice clinicians with clients who have a greater likelihood of remaining in treatment could help to lessen the inevitable pressure to provide quality care experienced by beginning psychotherapists: clinicians do not have the added concern that their ineptness will cause the client to prematurely terminate therapy, thus allowing psychotherapists to have increased patience with their own pace of clinical development. Less perceived performance anxiety and pressure will also likely result in more rapid clinical skill development.

Level of Education

The current study found that individuals with more education were more likely to remain in psychotherapy treatment than people with less educational achievement. In an agency that serves the community beyond the university that provides it oversight, considering how educational level influences premature termination is key to promoting client engagement and retention in psychotherapy. Attitudes and expectations that people hold regarding mental health problems and mental health treatment strongly influence

their treatment seeking behavior (e.g., Edlund et al., 2002). The literature suggests that clarifying treatment processes and expectations as well as a focus on immediate needs and concerns of clients is another method to prevent early termination (McKay, Nudelman, McCadam, &Gonzales, 1996; Nock & Kazdin, 2006).

Individuals with more education likely have more exposure to mental health treatment and therefore may experience less shame and stigma regarding help-seeking behavior. For individuals with less exposure to mental health treatment it is reasonable to assume seeking mental health services might cause increased levels of distress in the form of shame and stigma. Efforts to retain individuals with less education in psychotherapy should include psychoeducation about the expectations, potential outcomes, and confidentiality associated with psychotherapy. Providing this information could help reduce the negative affect associated with mental health treatment to a tolerable level, thus increasing the likelihood they would remain in treatment.

Because of the agency's focus on training as well as service provision, it is important to consider the potential training implications of a significant positive relationship between level of education and longevity of psychotherapy treatment. An important implication for clinical training is the reality that adjustments to psychotherapy provision are likely necessary with individuals who have less educational achievement. Individuals with less educational achievement might see less value in insight-oriented therapy, have different needs (i.e. skills training before moving to insight oriented work), and/or express preferences for behavioral or supportive modalities of psychotherapy. Additionally, graduate students likely hold strong values regarding the importance of educational achievement which may be implicitly communicated to clients as judgment.

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These values and biases should be carefully examined and explored in the context of clinical supervision to avoid offending or harming a client.

LGBTQ Status

The current study found that individuals who identified as a sexual minority member were more likely to remain in therapy than those individuals who identified as a sexual majority member. This finding is congruent with the research literature and clinically important because individuals who identify LBGTQ tend to experience more psychological distress (i.e., depression, self-injurious behavior, suicide attempts, and suicide completions) than their heterosexual counterparts (i.e., Cochran, Sulivan, & Mays, 2003; Haas et al., 2011). Clinicians need to be well-versed in risk assessment as members of the LBGTQ community are 5 times more likely to attempt suicide than their heterosexual peers (Hatzenbuehler, 2011). When working with members of the LGBTQ community clinicians need to routinely and thoroughly assess for suicidal risk. As part of this risk assessment, clinicians need to intentionally explore LGBTQ clients' experiences of prejudice, discrimination, social isolation, and sources of support as many of these individuals experience a null (e.g, non-affirming) environment and have thus learned not to speak of their experiences related to their LGBTQ identity.

A second clinical implication of the current study is consideration of the intersection of the LGBTQ identity with other aspects of identity particularly other minority-status identities. People of Color who also identify as a sexual minority are likely to have vastly different experiences than their White LGBTQ peers. An important focus of psychotherapy is how these individuals multiple identities are salient and reciprocally influence each other. Related to intersectionality is the reality that unlike

some other mental health concerns, identifying as an LGBTQ individual is a core part of self and therefore does not have a clear stopping point: there is no definite conclusion to adjustment. Clinicians must remember that distress related to navigating a heteronormative and homophobic environment likely involves adjustment across numerous phases (i.e., the coming out process, presence or lack of family support, educational and career domains, interpersonal relationships, romantic partnerships, and sexual encounters). Given the complexity and continuing nature of these concerns, clinicians must be open to the reality that the course of psychotherapy is likely to change and broaden during treatment. Clients who identify as LGBTQ members represent a vulnerable population and clinicians need to actively and collaboratively create safe and supportive spaces as a context for LGBTQ clients to address and explore their mental health concerns.

Training implications of the finding that LGBTQ individuals tend to attend more psychotherapy sessions than their heterosexual peers are as important as clinical implications. An important training implication is the necessity of creating an LGBTQ affirming environment. Members of the LGBTQ community often receive silencing messages that implicitly teach them that discussing their minority sexual identity is not acceptable: they learn that being LGBTQ is tolerated but it is never discussed. It becomes imperative that clinicians foster dialogue about this important piece of identity. Clinicians are tasked with communicating affirmation for LGBTQ individuals. Developing an affirming attitude first begins with exploration of clinicians' own values and biases toward LGBTQ individuals. A component of training must be intentional self-exploration and remediation of negative attitudes toward LGBTQ individuals. Acknowledgement of

societally-inherited biases is the critical first step to developing an affirming presence. Continuing to communicate affirmation to LGBTQ people is crucial for providing culturally sensitive psychotherapy services.

Related to the previously stated clinical implication regarding the need for thorough risk assessment with LGBTQ individuals is the need to formally train clinicians in risk assessment procedures. Unfortunately, data suggests that only 40-50% of graduate training programs in clinical and counseling psychology include formal training on suicide risk assessment and management (Bongar & Harmatz, 1991; Reeves, Wheeler, & Bowl, 2004; Cramer, Johnson, McLaughlin, Rausch, & Conroy, 2013). The lack of training is even more pronounced in professional counseling programs with fewer than 6% providing formalized coursework in suicide assessment, prevention, and management (Wozny, 2005). The finding of the current study underscores the need for formalized risk assessment training for future mental health professionals. Because individuals who identify as a sexual minority tend to attend more psychotherapy sessions and they also experience greater distress which increases their risk for suicidal behaviors, clinicians will be providing services for these individuals. This makes formal risk assessment training an imperative aspect of training.

Limitations

Several limitations to the current study should be noted. First, primarily due to the population characteristics in the geographic region of the study, the sample was predominantly White/Caucasian raising concerns about generalizability. Second, the study design was a single observation design. The data collected and analyzed was collected at the initiation of psychotherapy services. Therefore the impact of the

independent variables, particularly the psychological variables, throughout the course of treatment is unknown. For example, the impact of psychotropic medication is unknown as some clients may begin a course of psychotropic medication treatment following the initiation of psychotherapy treatment. The impact of the psychotropic medication is potentially not fully captured in a single observation design. Adding more observations would provide more information about influences of longevity of psychotherapy treatment over time. Third, the study's reliance on self-report data may introduce error as individuals may over- or under-report psychological factors. Fourth, the N-size of clients identifying as a sexual minority is relatively small. The interpretation and application of these findings should be done cautiously. A fifth limitation is the assignment of clients to clinicians. Balancing the demands of clinicians needs (i.e. number of hours) and client needs often requires tradeoffs and may result in less than optimal pairings. Sixth, in this study it is important to note the potential discrepancy between SES and reported income. Many of the participants in this samples are undergraduate and graduate students who likely report income levels that are not congruent with their SES (i.e. reported their income but not the income of their families which likely more accurately reflects their SES). Seventh, the Transtheoretical Stage of Change model has been criticized as combining a number of related but substantially different concepts and thus does not represent a single dimension of motivation to engage in treatment (Drieschner, Lammers, and van der Staak, 2004). Other criticisms of the URICA instrument include socioeconomic distribution of the stages, with more affluent individuals more advanced stages of change (Adams & White, 2007), concerns that the application of the URICA instrument to problems that are characterized by high-frequency behaviors (i.e. smoking

and/or diet/exercise) is appropriate (Derisley & Reynolds, 2000; & McMurran et al., 1998), and there is a difference between readiness to change and readiness for treatment (Freyer, Tonigan, Keller, Rumpf, John, & Hapke, 2005).

Recommendations for Future Research

The prodigious body of research investigating retention and attrition from psychotherapy treatment (e.g., Wierzbicki & Pekarik, 1993; Barret et al., 2008) and the benefits of remaining in psychotherapy treatment (i.e., Condelli & De Leon, 1993; Boggs et al., 2004) underscore the importance of developing models that more accurately predict longevity of psychotherapy treatment. Additional research is needed to enhance ways of identifying individuals who are most likely to prematurely terminate psychotherapy therapy; this is a crucial first step to implementing treatment plans designed to promote increased longevity of psychotherapy treatment and ultimately better clinical outcomes.

A first extension of this research endeavor would be to measure and include therapeutic alliance in the model to predict longevity of psychotherapy treatment. Researchers have consistently demonstrated that therapeutic alliance has a moderate but consistently significant relationship with longevity of psychotherapy treatment (Martin, Garske, & Davis, 2000; Barber et al., 2001). Some researchers have found that client perception of the alliance is more important than the clinician's perception of the alliance (Johansson & Eklund, 2006), notably the clients' expectation for personal commitment, bond, and goal dimensions of the alliance are positively correlated with longevity of psychotherapy treatment (Iacoviello et al., 2007; Patterson, Uhlin, & Anderson, 2008). The current study lacked a measure of therapeutic alliance; such a measure could account

for more variation in the prediction model. Future should studies should include a measure of therapeutic alliance as a psychological factor.

The study design followed a single observation method (e.g. all data was collected during the initial consultation session). A longitudinal design (i.e., completion of clinical instruments during psychotherapy treatment for more observations of the psychological factors included in the model) might provide more information about the trajectory of the longevity of psychotherapy treatment, and thus valuable information regarding treatment planning and outcomes (Shadish, Cook, & Campbell, 2002). Additionally, incorporating collaborative treatment planning based on regularly-scheduled completions of clinical instruments (e.g., BDI-II and URICA) has been demonstrated to positively affect both attendance and outcome (Lambert et al., 2002; Hawkins et al., 2004; Shimokawa, Lambert, & Smart, 2010). Cahill and colleagues (2003) found that clients who completed the mutually agreed upon number of psychotherapy sessions achieved reliable and clinically significant change compared with clients who did not. Studies have shown that providing the clinician with regular feedback about progress leads to improved retention, better outcomes, and faster rates of change (Lambert et al., 2002; Whipple et al., 2003; Hawkins et al., 2004; Shimokawa, Lambert, & Smart, 2010; Nelson, Warren, Gleave, & Burlingame, 2013). A longitudinal research design would create a structure for collaborative treatment planning throughout the course of psychotherapy as well as provide potentially valuable data for predicting clients' longevity in psychotherapy treatment.

Another option for exploring how longevity of psychotherapy treatment might be impacted by clients' perception of progress would be to implement benchmarking

interventions and examine the effect this has on how long clients choose to remain in psychotherapy. Clients tend to remain in psychotherapy until they reach a level of improvement they deem as "good enough" (Stulz, Lutz, Kopta, Minami, & Saunders, 2013). Recent research has suggested that one way to foster clients' engagement and retention in psychotherapy is via benchmarking outcomes. This process involves regularly measuring progressing and sharing this information with the client: process should be measured each session using continuous outcome variables (Krause, Howard, & Lutz, 1998). Treatment can then be adjusted based on progress (Brown & Jones, 2005, Lambert et al., 2003). Clients have a better understanding and more active role in the therapeutic process which suggests they may feel more self-efficacy in the change process. Self-efficacy is a key component in readiness to change attitudes and behaviors. Implementing benchmarking interventions might allow researchers to study more dynamic variables related to longevity of psychotherapy treatment.

Based on the results of this study, future researchers might measure motivation instead of readiness for change as they represent different constructs (Overholser, 2005; Ryan & Deci, 2008). Some researchers have found that some people are not intrinsically motivated to engage in counseling (Ryan, Lynch, Vansteekiste, & Deci, 2010) and using motivational interviewing as a either a prelude to or integrated throughout treatment increases the probability of a person entering, continuing, adhering, and benefitting from psychotherapy treatment (Miller & Rollnick, 2004). Clients who reported higher levels of volitional and autonomous motivation were less distracted during therapy, experienced less tension about therapy, were more satisfied with therapy, and voiced intention to persist (Ryan, Lynch, Vansteekiste, & Deci, 2010). In related research, clients who

reported stronger self-efficacy beliefs related to their abilities to effect change on their own behalf coupled with elevated levels of motivation were more likely to remain in psychotherapy treatment (Longo, Lent, & Brown, 1992; Armitage, 2006).

Another future direction for research would be to include other psychological variables, particularly anxiety and the severity thereof, in a model to predict longevity of psychotherapy treatment. Some researchers have found that anxiety is a barrier to treatment: high levels of anxiety at the outset of treatment correlate to premature termination of psychotherapy treatment (Benningfield et al., 2012). Other research indicates that high levels of anxiety predict early change but not overall outcome (Forand & DeRubeis, 2013), suggesting that initial anxiety might prompt treatment-seeking behavior but is likely to hinder overall outcome. Adding the severity of anxiety as a variable to the longevity prediction model would be a valuable contribution as the research suggests it as a barrier to psychotherapy treatment. Including anxiety would also allow for exploration of the interaction between depression and anxiety. This is particularly relevant as many clients report co-existing symptoms of depression and anxiety and the interaction would likely yield useful data regarding the impact on longevity of psychotherapy treatment.

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