AN EXAMINATION OF THE THERAPEUTIC ALLIANCE AND TREATMENT

OUTCOME FOR MARGINALIZED POPULATIONS

A Dissertation

by

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ABSTRACT

Although evidence demonstrates that most clients benefit from psychotherapy, evidence of mental health disparities in treatment outcome persist among marginalized populations. Research has yielded limited and inconsistent findings to explain why they exist. Recently, it has been suggested that the therapeutic alliance is key to addressing disparities in outcomes with clients from varying cultural backgrounds. This study reviewed existing data collected from a community mental health clinic in Bryan, Texas to address disparities, particularly for rural and socioeconomically disadvantaged adults and adolescents.

Multiple linear regression used the Session Sample ($n = 1,046$) to predict treatment response (measured by the Outcome Rating Scale) with the therapeutic alliance (measured by the Session Rating Scale) and client demographic variables (age, gender, race/ethnicity, rurality, poverty). The results yielded significant findings for all variables except for race/ethnicity. Yet, the alliance was found to be the strongest predictor. This suggested that clients who were female, adults, at or below the federal poverty line, and resided in rural areas had worse treatment outcomes than their counterparts. Multiple regression was also used to assess the predictive value of the independent alliance domains (relationship, goals/topics, approach/method, and overall), but revealed that no domain by itself was significant.

Logistic regression was used with a Client sample ($n = 119$) to predict a Good alliance, *Therapist Appraisal* of sufficient progress, and *Client-Therapist Agreement* on treatment outcome. Results found that client gender was the only significant predictor of the therapeutic alliance, suggesting that women were more than four times as likely than men to report

experiencing a Good alliance. Additionally, *Client Age Group* and the *Last Total ORS* (final treatment outcome score) were the only significant predictors of receiving a *Therapist Appraisal* of sufficient progress. This suggested that being an adolescent increased the likelihood of receiving a positive *Therapist Appraisal*. Finally, the overall model predicting *Client-Therapist Agreement* was not found to be significant based on the variables included in this study, and therefore not interpreted. Moreover, the present study sought to increase our understanding of the alliance and outcomes for marginalized populations to address disparities and the provision of culturally competent care.

DEDICATION

This dissertation is dedicated to my loving, supportive, and ever-patient partner, Donald August Kleine-Kracht. This dissertation never could have been completed without all of your encouragement, reassurance, bootcamp-style guidance, and overall faith in me. I dream of this dissertation being completed and to the many years we have ahead where we can laugh (and possibly cry) about this being a distant but fond memory. I love you.

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CHAPTER I

INTRODUCTION

The 2010 United States Census data demonstrated increasing diversification of the U.S.

population with notable growth in minority groups. Regrettably, these demographic shifts

occur alongside persistent disparities in health and health care across a broad range of

dimensions and reflect a complex set of individual, social, and environmental factors including

race/ethnicity, socioeconomic status, age, geographic location, gender, disability status, gender

identity, and sexual orientation (Ubri & Artiga, 2016). Under these complex and interactive

groups, certain populations are particularly vulnerable to health and health care disparities. The

2016 National Healthcare Quality and Disparities Report documented areas where quality of

care is improving and disparities are decreasing. However, significant concerns continue to

exist for health care quality, access to treatment, and the effectiveness of treatment, which

remain suboptimal and are even worsening among rural populations, racial and ethnic

minorities, older adults, individuals with limited English proficiency, and even more so for the

uninsured, low-socioeconomic status groups (U.S. Department of Health and Human Services,

2017). Similarly, disparities in mental health care continue to exist across race and ethnicity,

geographic regions, and socioeconomic domains where marginalized groups are at a

disproportionate risk of being uninsured, lacking access to care, and experiencing worse

treatment outcomes (Ubri & Artiga, 2016). In response, the Federal Collaborative for Health

Disparities Research (FCHDR) was formed, and concluded that research on mental health

disparities requires "immediate national research attention" (Safran et al., 2009).

Rural and Low-income Disparities

According to the 2010 Census Bureau, approximately 21% (i.e., roughly 65 million

people) of the total U.S. population live in rural areas. Unfortunately, rural communities are

plagued by a vast range of disparities characterized by numerous socioeconomic disadvantages

including high rates of poverty, inadequate housing and transportation, geographic isolation,

lower rates of insurance, poorer health, low-socioeconomic status, and shortages in health care

(Crosby, Wendel, Vanderpool, & Casey, 2012; Stamm et al., 2003; Wagenfeld, 2003; McCord,

Elliott, Brossart, & Castillo, 2012). As a result of the higher levels of environmental and

systemic stressors, these disadvantaged groups often exhibit more acute or chronic mental

health problems ranging from depression, suicidal ideation, PTSD, and trauma, which is

compounded by other indicators of poor health including diabetes, substance abuse, and

chronic pain. These unique stressors greatly impact psychological wellbeing as indicated by

considerably higher rates of psychological dysfunction among rural populations in comparison

to urban populations (Hauenstein et al., 2006; Smalley et al., 2010; Stamm et al., 2007;

McCord et al., 2012).

Individuals living in poverty and rural areas are not only burdened by mental health

disparities, but also underserved, as mental health care services remain scarce or unavailable to

rural communities which comprise more than 85% of Mental Health Professional Shortage

Areas (MHPSAs) in the U.S (Bird, Dempsey, & Hartley, 2001). Worse yet, when they do

receive mental health care, it is more likely to be poor in quality. As previously stated,

significant disparities in health care quality, access to treatment, and the effectiveness of

treatment continue to worsen for rural and low-income populations (U.S. Department of Health

and Human Services, 2017). Given these concerning findings, this study aimed to address gaps

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in the literature to help reduce mental health disparities and improve treatment outcomes for these populations.

Understanding Disparities

While disparities are well-documented, they are not well understood (Liburd, 2015). A majority of the literature on mental health care disparities focuses on evidence documenting and defining existing disparities (the "*what*") or implementing strategies and treatment interventions (the "*how*") that aim to reduce mental health care disparities (e.g., overreliance on flawed evidence-based treatments, attempting to enhance multicultural competence in clinical training). However, the vital and missing component that is of utmost priority is *"why"* these disparities persist, an area within mental health disparity research that continues to remain largely unknown. More specifically, we continue to have a poor understanding of the mechanisms underlying and contributing to differences in mental health status, disparities in mental health care, and existing barriers that negatively influence the delivery and success of therapeutic treatment interventions (Barrett et al., 2008). This is compounded by our limited knowledge of the individual, community, provider, and health system domains that influence mental health care disparities (NIMH, 2014).

In response to the demands for research on disparities, a crucial objective of this study was to reduce gaps in the literature by gaining a better understanding of the underlying factors contributing to and perpetuating poor treatment outcomes. In doing so, this study aimed to expand on existing literature that suggests focusing these efforts on the therapeutic alliance as one of the strongest predictors of treatment outcomes. This is predicated on the notion that clinicians are able to increase the effectiveness of their work by increasing their understanding of the therapeutic alliance and client change (Gelso & Carter, 1994; Lambert & Ogles, 2004).

Therefore, this study explored the influence of the therapeutic alliance as it relates to treatment outcome for disadvantaged populations. It is hoped that these findings will have important implications for clinical practice and training.

Purpose Statement

The purpose of this study was to explore potential mental health disparities, particularly the disparities in treatment outcome that may impact rural and low-income populations adversely. In doing so, this study investigated underlying factors contributing to clients' treatment response in psychotherapy (as measured by the Outcome Rating Scale; ORS) such as therapeutic and demographic variables. In other words, this study examined significant differences between marginalized and non-marginalized client groups according to the therapeutic alliance (as measured by the Session Rating Scale; SRS), therapist appraisal of client progress, and client-therapist agreement on treatment outcome. This information seeks to contribute to our understanding of *"why"* disparities in outcomes continue to exist for underserved populations.

To accomplish this, this study used de-identified and archival data at a community mental health clinic in the Brazos Valley of Texas between August 2015 to May 2017. Multiple linear regression and logistic regression were utilized to analyze data from a Client sample made up of 119 unique psychotherapy clients and a Session sample of 1,046 psychotherapy sessions. The independent variables of interest in this study were: *Client Age Group, Client Gender, Client Racial/Ethnic Status, Client Poverty Status, Client Rurality Status, Total SRS*, and the SRS domains (*Relationship, Goals and Topics, Approach or Method, and Overall*). The dependent variables of interest were: *Total ORS* (treatment

response), *Alliance Cutoff* (a therapeutic alliance variable), *Therapist Appraisal*, and *Client-Therapist Agreement*.

Research Questions

The study sought to answer the following research questions:

1. Which variable (clients' age, gender, race/ethnicity, poverty level, rurality status, or therapeutic alliance) most strongly predicts treatment response?

   - Hypothesis 1: The therapeutic alliance will be the strongest predictor of treatment response.

2. Which domain of the therapeutic alliance (Relationship, Goals and Topics, Approach or Method, or Overall) most strongly predicts treatment response?

   - Hypothesis 2: The Relationship domain of the therapeutic alliance will most strongly predict treatment response.

3. Which variable (clients' age, gender, race/ethnicity, poverty level, or rurality status) most strongly predicts a good therapeutic alliance?

   - Hypothesis 3: The clients' gender will most strongly predict a good therapeutic alliance.

4. Which variable (clients' age, gender, race/ethnicity, poverty level, rurality status, last session treatment outcome score, reliable change score, or average therapeutic alliance score) most strongly predicts a therapist appraisal of sufficient treatment progress?

   - Hypothesis 4: The reliable change variable will most strongly predict a therapist appraisal of sufficient treatment progress.

5. Which client variable (age, gender, race/ethnicity, poverty level, or rurality status) most strongly predicts client-therapist agreement on treatment progress?

- Hypothesis 5: The clients' rurality status will most strongly predict client-therapist agreement on treatment progress.

CHAPTER II

LITERATURE REVIEW

Mental Health Disparities

Health disparities have been uniquely defined by several prominent agencies. These

definitions are largely dependent on the aim of the agency and their purpose (Braveman, 2006).

The National Institute of Mental Health (NIMH), Substance Abuse and Mental Health Services

Administration (SAMHSA), and the Office of Women's Health all utilize working definitions

of health disparities that include a broad range of categorical variables such as prevalence,

morbidity, mortality, survival rates, quality of services, and outcomes. Identifying disparities

involves comparing variables from a specific population (e.g., racial, ethnic, gender,

geographic, and economic) to the general population (Safran et al., 2009) to assess any

potential differences or disparities that may exist for marginalized populations. Braveman

(2006) suggests that disparities and inequalities should be reflected and measured between

"advantaged" and "disadvantaged" groups. Once identified, the information gathered on

inequalities is then able to be addressed through public policies in an effort to amend the social

discrimination against a disadvantaged population (Braveman, 2006).

Furthermore, mental health disparities have been conceptualized and defined in various

ways depending on the focus and expertise of the entity, the purpose, and the context of the

definition (Safran et al., 2009). Nonetheless, a majority of the definitions agree that mental

health disparities consist of disparities of health, health services, or health determinants (Safran

et al., 2009). The Centers for Disease Control and Prevention (CDC) provides the most

comprehensive definition by identifying three categories mental health disparities can fall into:

(a) disparities between the attention given to mental health in comparison to other public health issues of comparable magnitude, (b) disparities between the health of individuals with mental illness in comparison to those without, or (c) disparities between populations pertaining to mental health service accessibility, quality, and treatment outcomes. Social determinants, such as employment, income, or housing, are also known to influence mental health and access to care (Safran et al., 2009). This study aimed to contribute to mental health disparity research by examining potential factors that influence mental health care for several demographic and cultural identities, but particularly in examining treatment outcomes for rural and low-income populations.

Understanding Mental Health Disparities

One of the leading contemporary theories as to why mental health disparities exist belongs to Penchansky and Thomas (1981). This theory posits that mental health disparities are caused and exacerbated by treatment access barriers that fall in four distinct, yet interconnected dimensions: Availability barriers (e.g., "I do not have the time in my schedule to attend treatment"), Accessibility barriers (e.g., "I don't have access to transportation to get me to treatment"), Affordability barriers (e.g., "I do not have insurance" or "the cost of treatment is too high"), and Acceptability barriers (e.g., "Others will judge me if I seek treatment"). More recently a fifth dimension has been added to this theory, Awareness barriers ("I don't know where I would go to get treatment"; Saurman, 2016).

The limited research studying the impacts of barriers interfering with accessing, utilizing, or obtaining positive outcomes for mental health services has yielded inconsistent findings. In addition to treatment access barriers, the literature suggests that obstacles to client engagement, retention, and successful outcomes are indicative of a complex array of cultural,

attitudinal, systemic, and experiential differences between therapists and clients (e.g., Garfield, 1994; Illovsky, 2003; Prilleltensky, 2003; U.S. Department of Health and Human Services [DHHS], 1999). One critique that has been raised within the literature is that diminished effectiveness of mental health treatment to rural and low-income populations is attributed to therapists' social biases (e.g., Lorion, 1974, 1978) and a lack of culturally-sensitive treatment considerations (Adler, Pritchett, & Kauth, & 2013; Safran et al., 2009).

Other theories have posited that cultural factors may influence client perceptions of their initial encounters of therapy (McCabe, 2002; Sue, Zane, & Young, 1994). Evidence supporting this theory was demonstrated in a study that found a negative correlation between therapists who have negative beliefs and attitudes towards economically disadvantaged individuals and the likelihood of client dropout and negative treatment outcomes (Brill & Storrow, 1960; Lorion, 1974). These findings suggest that therapists are hindered in their ability to effectively treat clients when they hold unexamined assumptions about social class (Smith, 2005). Additional issues that have been identified include clinicians' lack of awareness of cultural issues, bias, or inability to speak the client's language, therapists low in perceived multicultural competence, and client's fear and mistrust of treatment (Anderson, 2015; The U.S. Department of Health and Human Services, 2001). Moreover, limited research and a lack of concrete findings have restricted our understanding of the relationship between multicultural competence and the alliance. This has prevented the field from obtaining the information necessary to implement culturally sensitive and logistically feasible interventions that increase client engagement and rates of therapeutic success (Lo & Fung, 2003).

As previously suggested, one of the contemporary rationales for mental health disparities in outcomes is due to a lack of multicultural competence on behalf of the therapist.

Research must continue to aid clinicians in understanding how to appropriately tailor interventions and the alliance to meet the needs of each individual's intersecting cultural identities. Training and enhancing clinician's multicultural competence is likely to improve the effectiveness of treatment, reduce rates of premature termination, and ultimately, eliminate mental health disparities.

Efficacy and Effectiveness Gap in the Literature and Practice

Another potential rationale contributing to mental health care disparities and negative treatment outcome is illustrated by the efficacy and effectiveness gap in the literature and in practice. "Efficacy" refers to treatment outcomes that are obtained under optimal circumstances in a highly controlled research setting. On the other hand, "effectiveness" refers to treatment outcomes that are obtained in "real world" clinical practice settings (U.S. Department of Health and Human Services, 2001). Although numerous studies have demonstrated the efficacy of psychotherapy in randomized clinical trials (RCT; Duncan, Miller, Wampold, & Hubble, 2010; Lambert, 2013), a majority of this research evaluates client outcomes in psychotherapy largely from samples consisting of middle-to-upper class White populations (Ridley, 2005).

As a result of the well-established lack of diversity within the research, a significant portion of the U.S. population has been underrepresented. This renders the external validity of existing studies to be questioned when applied to minority populations (Atkinson, Bui, & Mori, 2001; Hall, 2001; Garland, Hurlburt, & Hawley, 2006; Weisz, Jensen, & McLeod 2005). This alarming gap between research and practice for minority groups poses a direct threat to the claim that evidence-based treatments are best practice for diverse cultural populations across mental health settings (U.S. Department of Health and Human Services, 2001).

Several negative ramifications occur as a result of these disparities. For example, third-party payers have been known to inappropriately rely on RCTs to determine evidence for the treatment of chronic conditions that are often exhibited by understudied populations. Consequently, a lack of evidence from well-controlled RCTs of mental health interventions in rural areas serves as a rationale for third-party payers to deny coverage to individuals who would greatly benefit from these much-needed services (McCord et al., 2012). Initiatives to address these disparities are echoed by the National Institutes of Health (NIH). They have asserted that clinical trials evaluating treatment must incorporate a strongly diverse population to ensure that the results of the trials apply broadly to all populations, including minorities (National Institutes of Health, 2000).

Rural Populations

Rurality has proven to be a difficult construct to define as various criteria have been utilized to determine urban/rural classification. Although there is a lack of consensus on what defines rural versus non-rural communities, the most common and established conceptualizations of rurality indicate that it exists on a continuum and considers factors such as distance from an urban point, population and housing density, total population, and various other socioeconomic factors (HAC, 2011). Another pivotal consideration of rurality revolves around its unique cultural values and characteristics, which can vary considerably based on differing factors such as the regional locations. For example, rural South has been found to have higher rates of poverty and poor physical health while rural West is associated with higher rates of suicide and substance abuse (Morgan, 2002).

One of the most commonly accepted definitions of rurality comes from the Housing Assistance Council (HAC; 2011), which considers measures of distance commuting and

housing density as more precise measures of rurality. This definition also aligns with more recent definitions of rurality that focus on population density. For example, based on this information, Texas is considered to be one of the states with the largest rural populations (HAC, 2011). More recently, and using an overlapping sample with this study, research explored rurality factors (e.g., distance travelled versus population density) to predict disparities in treatment outcome, and found that the strongest predictor was population density at the block level (Kleine-Kracht, 2019).

Despite differences in rurality's definition, it is evident that there are substantial rural-urban disparities that exist in mental health treatment (Freiman & Zuvekas, 2000; Li, Proctor, & Morrow-Howell, 2005; Reschovsky & Staiti, 2005; Wang et al., 2005). Rural residents are considered to be a diverse and at-risk group plagued by high rates of poverty, substandard life opportunities, and stigmatized social status (Riebschleger, 2007). Research has further elaborated on these disparities through findings indicating that rural communities experience higher rates of illiteracy, depression, substance abuse, suicide, and traumatic stress while also having lower rates of formal education, limited mental health resources, and experiencing overall poorer physical and mental health compared to those living in urban areas (Gale & Deprez, 2003; Riebschleger, 2007; Stamm, 2003; Stamm, Metrick, et al., 2003). However, research has also shown that rural residents are faced with distinct and substantial barriers to mental health treatment (Bischoff, Hollist, Smith, & Flack, 2004; Fortney, Thill, Zhang, Duan, & Rost, 2001; Fox, Blank, Rovnyak, & Barnett, 2001; Reschovsky & Staiti, 2005). While each rural community has its own unique challenges, some of the most commonly experienced barriers include distance and geographical difficulties, insufficient resources and mental health providers, isolation and concerns of privacy, and especially pervasive mental health stigma and

mistrust of health providers (Kennedy, Mathis, & Woods, 2007). These barriers are compounded by rural cultural beliefs and attitudes including individualism, self-reliance (Kemppainen et al., 2009), self-abnegation (Slama, 2004), more traditional gender and generational role expectations (Slama, 2004), and being encouraged not to express emotions or discuss emotional problems (Slama, 2004). While many researchers have focused on exploring mental health disparities, there is continued need to examine the disparities, barriers, and interventions that are specific to rural communities (Aeby et al., 2015).

Low-Income and Economically Marginalized Populations

Socioeconomically disadvantaged children and adults comprise a relatively large and stable proportion of the U.S. with over 48 million individuals living in low-income working families (e.g., approximately $25,000 a year for a family of four) and more than 10.3 million earning less than 200% of the poverty level (e.g., approximately $50,000 a year for a family of four; U.S. Department of Commerce, 2015). However, it has also been found that socioeconomic status (SES) has historically been neglected in psychological literature, both theoretically and methodologically (Buboltz, Miller, & Williams, 1999; Lee, Rosen, & Burns, 2013; Reimers & Stabb, 2015). This lends to the need and advocacy for more adequate representation of this underserved population in research studies (Reimers & Stabb, 2015). A reason behind this research disparity is due to economic marginalization being a complex and multifaceted social issue which can be studied in many, often unstandardized, ways. For example, an ongoing issue is related to its complexity combined with a lack of common terminology, constructs, or measures (APA, 2019). More recently, APA (2019) guidelines for psychological practice for people with low-income and economic marginalization has suggested using the term "low-income and economic marginalization (LIEM)" to incorporate the multiple facets of economic

oppression including limited financial resources and social class marginalization. Attending to these variables within the literature is crucial for developing and building multicultural competency with LIEM populations (APA, 2019).

An important consideration is to recognize the effect of intersectionality with other identities (e.g., age, race/ethnicity, sexual orientation, gender, religion, language, ability status, geographic disadvantages such as rural clients, etc.). Those that are marginalized in other identities have also been found to be highly correlated with lower SES (Cole, 2009). For instance, individuals at both ends of the age spectrum (i.e., children and older adults; Bruner, 2017; DeNavas-Walt & Proctor, 2014), people of color (Bruner, 2017), women (likely due to sustained gender gaps in pay and wages according to Graf, Brown, & Patten, 2018), LGBTQ+ communities (Badgett, Durso, & Schneebaum, 2013), immigrants (documented and undocumented statuses; Loria & Caughy, 2018; Passel & Cohn, 2009), and individuals with disabilities (Palmer, 2011) are more likely to experience poverty. Moreover, these findings emphasize the importance of psychologists working with LIEM populations to consider how social class, income, SES, and wealth may intersect with one or more other marginalized identities, which is likely to exacerbate experiences with discrimination and other oppressive occurrences that affect ones' mental health (APA, 2019).

An understanding of the combined impacts of poverty and other marginalized identities on accessing and using mental health services continues to be relatively limited (Garfield, 1994; Sue, Zane, & Young, 1994). Research has demonstrated limited access to mental health treatment and a tendency to receive lower quality care which contributes to disparities (Adler et al., 2016). Initially, researchers have indicated that therapists' social biases affect treatment outcomes (e.g., Lorion, 1974, 1978), but more recent studies have suggested that barriers to

client engagement and retention are indicative of a complex array of cultural, attitudinal, and experiential differences between both mental health providers and consumers (e.g., Garfield, 1994; Illovsky, 2003; Prilleltensky, 2003). Therefore, this leads to a lack of consensus on how to best address the mental health needs of LIEM groups which is compounded by the frequent presence of poor health literacy and stigma surrounding mental illness in these communities (Adler et al., 2016; APA, 2019).

Demographic Disparities and Treatment Outcome

Research on moderators and predictors of treatment outcome have shown to be primarily focused on psychological presentation or clinical characteristics rather than demographic variables (Hilbert et al., 2012). However, in the studies that have examined the effect client demographics have on treatment have found that lower client engagement and treatment adherence have been associated with younger age, being unmarried, lower socioeconomic status, being unemployed, and having less education (Defife et al., 2010; Fenger et al., 2011). Thus, research investigating the relationship between treatment outcome and underexamined minority or disadvantaged client populations including age, gender, race/ethnicity, rurality, and poverty status would provide valuable insight.

Age

While the psychological field has substantially contributed to efforts promoting child, adolescent, and adult mental and behavioral health, much remains to be done (APA, 2019a). Studies have found that some of the most common mental disorders have an onset in childhood or adolescence (Kessler & Wang, 2008), with the peak incidence most often occurring during adolescence (Paus, Keshavan, & Giedd, 2008). Furthermore, several interacting risk factors have been found to influence critical periods of development (Frick, 2016) which can lead to

an increased risk of developing psychological disorders (e.g., Reiss, 2013; Russell, Ford, Williams, & Russell, 2016; Yoshikawa, Aber, & Beardslee, 2012) and have been found to negatively impact treatment outcome (Frick, 2016). Some of these environmental risk factors include low socioeconomic status (SES; e.g., lower household income, educational status, and poverty), adverse and risky environmental conditions, and limited educational opportunities (Albert, Chein, & Steinberg, 2013; Dunn et al., 2011; Smith, Chein, & Steinberg, 2013; Tercyak, 2010). However, research has also shown that the impact of environmental risk factors can be reduced or even prevented through building resilience (Masten, 2014), which can be effective in the prevention and intervention of mental health disorders (Center on the Developing Child, 2015; Leslie et al., 2016).

Race/Ethnicity

Vulnerable populations that continue to experience higher rates of mental illnesses include racial/ethnic minorities, sexual orientation and gender identity minorities, and immigrants (APA, 2011; Chatterji, Alegría, & Takeuchi, 2009; Fredriksen-Goldsen et al., 2014; Kessler et al., 2005). The U.S. Surgeon General's Report on Mental Health, Culture, Race, and Ethnicity (2001) recognized that racial and ethnic minority populations are often underserved and ineffectively treated by mental health professionals. For example, the Institute of Medicine (IOM, 2002) found that African-American and Hispanic clients reported higher rates of dissatisfaction with their relationship with providers and perceived poorer quality of care. Another study found that compared to White mental health clients, Asian-American clients reported being less satisfied with services, having lower confidence in their provider, and having higher levels of psychological distress that they attributed to a lack of culturally sensitive and responsive treatment (Zane, Enomoto, & Chun, 1994).

In light of these findings, along with many other studies, the importance of race and ethnicity as cultural identities are crucial to the therapeutic process. In response, therapists have been encouraged to practice multicultural competence, which includes having an open dialogue about the intersecting and unique cultural identities of both the therapist and client. It has been suggested that therapists who demonstrate a willingness to engage clients in these conversations promote a therapeutic environment of trust and understanding that benefits the treatment process. In turn, this is more likely to lead to a stronger therapeutic alliance which could reduce the occurrence of premature termination (Sue, 1988) and the underutilization of mental health services (Cheung & Snowden, 1990) that have often been observed among racial/ethnic minority clients.

It is worth noting that this study along with past research (e.g., Myer & Zane, 2013; Cardemil & Battle, 2003) utilizes the constructs *race* and *ethnicity* collectively and inclusively. Traditional definitions have been ambiguous as indicated by the terms being used interchangeably at various times (Atkinson, Morten, & Sue, 1998; Bhui, 2002; Helms & Cook, 1999). Although there is a lack of consistency in psychological literature (Cokley, 2007; Helms, Jernigan, & Mascher, 2005), historical definitions of *race* have historically focused on physical or biological characteristics (Atkinson et al., 1998; Betancourt & Lopez, 1993). However, the construct of *race* has more recently been proposed to be a sociopsychological construct (Smedley & Smedley, 2005). This has important implications as it relates to its saliency for racial and ethnic minorities as well as in the context of disparities and the experience of discrimination (Comas-Dıaz & Jacobsen, 1991; Helms, 2007; Wright and Littleford, 2002). *Ethnicity* is often denoted by historical cultural patterns and collective identities shared by groups of individuals from particular geographic regions (Betancourt &

Lopez, 1993; Cardemil & Battle, 2003; Helms & Cook, 1999). While *race* and *ethnicity*

significantly overlap in various ways, they cannot be considered to be the same constructs

(Alvidrez, Azocar, & Miranda, 1996; Betancourt & Lopez, 1993). However, given the lack of

consistent language that promotes discussions that are both inclusive and sensitive to the

multiple ways that identities are conceptualized, *race/ethnicity* will be discussed collectively.

This is with full awareness that this definition may be more applicable to conceptions of *race*

while at other times more applicable to *ethnicity*.

Gender

Similar to race and ethnicity, gender also serves as a determinant of mental health.

During childhood, males are more likely to be associated with and be treated for externalizing

symptoms (e.g., aggressive, oppositional, delinquent, hyperactive). On the other hand, females

are more likely to be associated with internalizing symptoms (e.g., anxious, depressive,

withdrawn), which are more likely to be unrecognized and left untreated, often the result of

gender bias (Merikangas et al., 2011; Seedat et al., 2009; World Health Organization,

International, 2018). Females are also more likely to experience mental health concerns caused

by gender-based violence, low-income and income inequality, lower social rank, and

socioeconomic disadvantages (Mendelson et al., 2008; World Health Organization,

International, 2018). Conversely, males have been found to be less likely to access treatment or

seek help due to stigma, which is even more exacerbated for male racial/ethnic minorities

(Lindsey, Joe & Nebbitt, 2010). As implied in these findings, it is crucial to consider the

magnified effects of intersectionality, particularly those involving multiple minority status

(e.g., being a female person of color or being an immigrant with a disability; APA 2019a).

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For these oppressed groups, disparities in access (e.g., less likely to seek or receive services, fewer mental health resources), acceptability (e.g., mental health stigma), and utilization of effective treatment continue to persist (APA, 2011; APA, 2017; Alegría, Green, McLaughlin, & Loder, 2015; Austin & Wagner, 2010). While cultural factors may influence client perceptions of initial encounters in therapy (McCabe, 2002; Sue, Zane, & Young 1994), disadvantaged populations are still less likely to receive quality care compared to advantaged populations. Given the lack of definitive answers, continued efforts in research are necessary to inform the development of culturally appropriate and effective mental health promotion, prevention, and early intervention programs (Alegría, Green, McLaughlin, & Loder, 2015; National Research Council and Institute of Medicine of the National Academies, 2009).

Treatment Outcome Disparities

Although there is considerable evidence supporting the effectiveness of psychotherapy, (Lambert & Ogles, 2004), there is also evidence suggesting that as many as 50% of clients who terminate prior to achieving reliable improvement in functioning (Miller et al., 2016). There is also a large proportion of clients who appear to leave therapy worse off than when they first began treatment (Lambert, Bergin & Collins, 1977; Barlow, 2010). This implies that there is a continued need for studies evaluating disparities in treatment response, particularly for marginalized populations. While limited, the research that has been conducted on treatment outcome reveals alarming findings.

Psychotherapy outcome research conducted at traditional community mental health centers have found that approximately 5 to 10% of adult patients and more than 20% of child and adolescent clients experienced deterioration and yielded a mean effect size near zero (Lambert & Bergin, 1994; Lambert & Ogles, 2004; Mohr, 1995; Warren, Nelson, &

Burlingame, 2009; Weisz, 2004). Similarly, when evaluating the effectiveness of treatment in a community mental health center (CMHC), a study conducted by Hansen, Lambert, and Forman (2002) reported deterioration rates at 10.2%, lack of change for 60.7% of clients, client improvement rates (reliable change index (RCI)) at 20.5%, and a mere 8.6% recovery rate (clinically significant change). These findings presented evidence that clients served at community mental health centers produced notably worse treatment outcomes in comparison to four other outpatient settings. However, the other outpatient settings also revealed moderate to high rates of negative treatment outcomes and signifies a much bigger problem that exists in treatment effectiveness (Hansen et al., 2002). Results from these studies are consistent with previous findings on the rates of poor treatment outcomes for children, adolescents, and adults in community mental health settings (Warren, Nelson, Mondragon, Baldwin, Burlingame, 2010).

Another therapeutic element that has been found to relate to and predict poor outcomes is that of premature termination (also known as dropout, attrition, or early treatment withdrawal) (Pekarik, 1986; Prinz & Miller, 1994; Saatsi, Hardy, & Cahill, 2007). Research has estimated rates of premature termination to occur roughly 47% of the time across various treatment settings (Garfield, 1994; Lorion & Felner, 1986; Sparks, Daniels, & Johnson, 2003; Wierzbicki & Pekarik, 1993) and client populations (Baekeland & Lundwall, 1975). Notably, these rates of premature termination are even worse for marginalized population groups such as racial and ethnic minorities, low-socioeconomic populations, and rural populations (Baekeland & Lundwall, 1975; Garfield, 1994). Unfortunately, community mental health clinics have not significantly alleviated rates of client dropout given that clients continue to disengage from mental health services at a rate comparable to that found over 50 years ago (Rogers, 1951).

This is particularly alarming given that the primary purpose of community clinics is to provide much needed mental health services to minority and economically disadvantaged people who are more likely to disengage from treatment (Barrett, Chua, Crits-Christoph, Gibbons, & Thompson, 2008; Hollingshead & Redlich, 1958; Lorion & Felner, 1986; Rennie, Srole, Opler, & Langner, 1957).

Additionally, attrition poses a significant burden on limited mental health resources (Klein, Stone, Hicks, & Pritchard, 2003; Tantam & Klerman, 1979). Research has suggested that disadvantaged populations receiving psychological services at community mental health clinics may not be receiving the adequate "dosage" of treatment, which significantly reduces the probability of achieving desired symptomatic relief and obtaining meaningful treatment gains (Hansen et al., 2002; Barrett, Chua, Crits-Christoph, Gibbons, & Thompson, 2008). This is especially relevant as underserved marginalized populations suffer from higher rates of severe psychopathology and need effective treatment the most.

Studies that have yielded promising results found that the implementation of interventions designed to improve the quality of mental health care and minority treatment outcomes improved care significantly. Examples of these efforts included providing professionally translated materials to Spanish-speaking clients, training therapists to include information on cultural beliefs and overcoming barriers in therapy, and developing and implementing interventions tailored to specific minority groups (Areán et al., 2005; Miranda et al., 2003; Wells et al., 2004). These studies suggest that improving the quality mental health care in general is likely to benefit disadvantaged client populations who have access to treatment. Therefore, it can be concluded that quality improvement strategies have the potential to reduce disparities.

In response to the demands for research on disparities, a crucial objective of this study was to reduce gaps in the literature by gaining a better understanding of the underlying factors contributing to and perpetuating poor treatment outcomes. Existing literature points to focusing these efforts on the therapeutic alliance as one of the strongest predictors of treatment outcomes. Therefore, this study explored the influence of the therapeutic alliance as it relates to treatment outcomes for disadvantaged populations. This information sought to contribute to our understanding of *why* disparities in treatment continue to exist for disadvantaged communities, and more specifically, rural and low-income populations. Furthermore, this study's findings may yield implications in clinical practice and training. This is supported by researchers who assert that clinicians can increase their effectiveness and overall therapeutic skills when they understand the concepts and relationship between the therapeutic alliance and meaningful change (Gelso & Carter, 1994; Lambert & Ogles, 2004).

A Statistical Method of Defining Treatment Outcome

For psychotherapeutic interventions within a clinical setting to be considered effective, clients should experience a meaningful, noticeable, and quantifiable change. As a result, Jacobson, Follette, & Revenstorf (1984) introduced the concept of reliable change (RC) and clinically significant change (CSC), the most widely used and accepted measures of treatment outcome. Both clinically significant change and reliable change can provide valuable information that distinguishes and quantifies the amount of therapeutic change that occurs and helps ascertain the effectiveness of treatment. These constructs are obtained through the use of standardized outcome measures that quantify therapeutic change through stringent criteria. Clinically significant change is indicated when clients' scores on a standardized outcome measure: (a) reliably reflect meaningful change in the clients' improvement and (b) indicate

movement from a clinical dysfunctional level to a functional level of psychological distress (Jacobson et al., 1984; Jacobson & Truax, 1991). Respectively, reliable change (measured by the Reliable Change Index (RCI)) occurs when a client attains therapeutic change that is statistically reliable and therefore is confidently usable to determine that the change is greater than measurement error, chance, or maturation (Jacobson, 1988; Jacobson, Follette, & Revenstorf, 1984; Lambert & Hill, 1994). In other words, client improvement that signifies clinically significant change differs from reliable change in that it requires a change score that goes from a clinical level of functioning to a nonclinical level of functioning (crossing over the clinical cutoff). Therefore, reliable change is considered a less stringent operationalization of treatment progress that may be more sensitive to change while simultaneously being indicative of a real and substantial change in functioning.

Generally, researchers have found that roughly two thirds of clients in routine clinical practice recover or improve using clinically significant change and reliable change criteria following participation in psychotherapy (Hansen, Lambert, and Forman, 2002; Lambert, 2010a). Furthermore, a majority of clients do not achieve positive reliable change (roughly 9% exhibiting reliable change; Hansen, Lambert, & Forman, 2003), do not benefit, or even worsen (approximately 5% to 10% showing deterioration; Hansen et al., 2002) at termination (Lambert, 2010a).

Therapeutic Alliance

A large body of clinical research has identified a strong and positive relationship between the therapeutic alliance and treatment outcome. In fact, the alliance–outcome relationship is so strong that it appears across treatment modalities, clinical presentations, and psychotherapies (including those that do not emphasize the importance of the alliance such as cognitive

behavioral therapy; Castonguay & Beutler, 2005; Constantino et al., 2002; Norcross, 2011).

While there is currently no single agreed upon definition of the alliance, there is an increasing

consensus of its conceptualization and the elements that it is comprised of. As previously

indicated, Bordin's (1979) pantheoretical definition of the therapeutic alliance has been one of

the commonly utilized and adopted definitions. Under this conceptualization, the therapeutic

alliance is comprised of four components: (a) the relational bond; (b) the degree of agreement

on the goals, meaning, topics discussed, or purpose of treatment; (c) the degree of agreement

on the methods and techniques employed in care; and (d) the degree of agreement on the

overall approach of therapy (Bertolino, Bargmann, & Miller, 2012; Bordin, 1979; Bordin,

Horvath, & Greenberg, 1994; Constantino, Castonguay, & Schut, 2002; Castonguay,

Constantino, & Holtforth, 2006; Horvath & Bedi, 2002; Miller & Bargmann, 2012).

Relationship Between Alliance and Outcome

Over 1,100 studies have documented the therapeutic alliance as one of the best

predictors of treatment outcomes and one of the most powerful predictors of therapeutic

success, which lends to the alliance being one of the most evidence-based concepts in

psychotherapy (Castonguay & Beutler, 2005; Constantino, Castonguay, & Schut, 2002;

Horvath & Bedi, 2002; Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000; Orlinsky,

Rønnestad, & Willutzki, 2004; Norcross, 2002; Wampold, 2001). Notably, the alliance–

outcome relationship is so strong that it appears across treatment models, clinical presentations,

and psychotherapies (including those that do not emphasize the importance of the alliance such

as cognitive behavioral therapy) (Castonguay & Beutler, 2005; Constantino et al., 2002;

Norcross, 2011).

The amount of therapeutic change attributable to the quality of the therapeutic alliance and relationship between therapist and client is referred to as alliance effects (Bertolino, Bargmann, & Miller, 2012). Depending on the study being cited, these alliance effects are roughly five to nine times greater than that of any specific treatment models or techniques (Bertolino, Bargmann, & Miller, 2012; Horvath & Symonds, 1991; Martin et al., 2000; Norcross, 2011; Wampold, 2001). Variables that contribute to the alliance primarily focus on therapist and client contributions. For therapists, those who are able to effectively engage clients in collaborative and purposeful work tend to be more likely to form strong alliances in therapy. For clients, their ability to form a collaborative relationship is often influenced by their attachment style and social competencies (Mallinckrodt, 2000). As such, variability is often exhibited based on unique dynamic factors in therapy. However, numerous studies have shown that clients who reported a stronger therapeutic alliance were less likely to terminate prematurely and experienced higher rates of statistically and clinically significant change over the course of treatment (Sharf, Primavera, & Diener, 2010). On the other hand, clients with weaker alliances and those who were dissatisfied with treatment demonstrated higher rates of client dropout and poorer treatment outcomes (Hubble, Duncan, Miller, & Wampold, 2010; Kokotovic & Tracy, 1987; Lambert, 2010; McNeill et al., 1987).

Due to the significance of these alliance effects, therapists should strive to facilitate, monitor, and maintain a positive relational bond and a strong level of collaboration with their clients throughout treatment (Castonguay, Constantino, & Holtforth, 2006). This is particularly true early in the therapy process based on research illustrating that clients tend to view the alliance as stable over time, and therefore, are more likely to view the alliance as positive at termination if their initial assessment was positive (Martin, Garske, & Davis, 2000). This is

important given that client ratings of the alliance are most predictive of outcome and may differ from therapists who tended to exhibit changes in their ratings of the alliance over time (Martin et al., 2000). Another consideration that has been noted in the literature relates to ruptures in the alliance where some have explained the alliance patterns that strengthen over time to be attributed to therapists' ability to successfully manage and repair ruptures that occur in the relationship (Safran & Muran, 2000). Despite the differing, and at times inconsistent findings on alliance patterns and its specific relation to outcomes, it remains that the substantial evidence supporting the significance of a strong alliance on obtaining successful outcomes makes a valid argument that it would be unethical to not attend to the quality of the alliance throughout the course of treatment.

Client and Therapist Perspective of Outcome and Alliance

As previously indicated, a large body of clinical research has illustrated that the therapeutic alliance is at the center of successful counseling (Norcross, 2010; Wampold, 2001). While the counseling relationship has been identified as one of the most potent therapeutic factors, it has also been found that therapists are not as accurate as they believe at understanding client perspectives in therapy (Greenberg, Watson, Elliot, & Bohart, 2001; Orlinsky, Grawe, & Parks, 1994).

In an effort to expand on this, research has investigated the alliance from the perspective of clients and therapists. These studies have consistently and reliably found that the best predictor of treatment outcome is not the therapists' views, but instead, the clients' perspective of the counseling experience, especially as it relates to clients' evaluation of the alliance (Bachelor & Horvath, 1999; Bertolino, Bargmann, & Miller, 2012; Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000; Norcross, 2010; Norcross, 2011). In fact,

second only to the client's level of functioning at intake, the clients' rating of the alliance is the best predictor of treatment outcome and retention in treatment (Bertolino, Bargmann, & Miller, 2012). As such, the client's evaluation of the therapeutic alliance is vital, and several findings suggest that it is most predictive of outcome in the early stages of therapy (Baldwin et al., 2009; Horvath & Bedi, 2002).

The alliance is also the biggest predictor of client engagement and involvement in the therapeutic process (Baldwin, Wampold, & Imel, 2007; Horvath & Bedi, 2002; Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000; Orlinsky, Rønnestad, & Willutzki, 2004). This has significant implications as clients' engagement in therapy is paramount to improving outcomes. Thus, a strong alliance is instrumental to client engagement, and therefore, achieving greater benefits from therapy (Orlinsky, Rønnestad, & Willutzki, 2004).

Several studies have concluded that clinicians' perception of counseling often differs from clients' perceptions in important ways (Hill, Nutt-Williams, Heaton, Thompson, & Rhodes, 1996; Kivlighan & Shaughnessy, 1995; Safran, Crocker, McMain, & Murray, 1990; Swift, Callahan, & Levine, 2009). For instance, psychotherapists tend to believe that they are able to accurately judge the quality of the therapeutic alliance and outcomes, but those who assume or intuit their clients' perceptions of the alliance, empathy, relationship satisfaction, session impact, treatment goals, expectations of therapy, and treatment success have been found to be inaccurate in their judgments that diverge from their clients' views (Hill et al., 1996; Safran et al., 1990). This is especially true during the initial phase of therapy (Hannan, Lambert, Harmon, Nielsen, Smart, & Shimokawa, & Sutton, 2005; Horvath & Bedi, 2002; Lambert, 2005; Lorion & Felner, 1986; Miller et al., 2005; Shaw & Murray, 2014; Walfish, McAlister, O'Donnell, & Lambert, 2012).

For these reasons, there is a danger posed to therapists who solely rely on their clinical judgment when reflecting on the therapeutic alliance or other treatment decisions. This likely contributes to low levels of client-therapist agreement on treatment. Research has demonstrated that therapists tend to exhibit self-assessment bias, or an overly positive, but also inaccurate assessment of their clinical abilities. For example, a study conducted by Walfish, McAlister, O'Donnell, and Lambert (2012) found that on average, therapists rated their overall clinical skills and effectiveness at the 80th percentile when compared to other clinicians with similar credentials; only 4% considered themselves average, and none of the participants in the study rated his or her performance to be below average. Consistent with these findings, therapists tend to overestimate their rates of client improvement and underestimate their rates of client deterioration (Hannan, Lambert, Harmon, Nielsen, Smart, & Shimokawa, & Sutton, 2005; Walfish, McAlister, O'Donnell, & Lambert, 2012). Arguably of even greater concern, is how therapists are so confident in their own clinical judgment that they may dismiss evidence that does not support their perspective (via client-report feedback; Lambert, 2007; Lambert, Harmon, Slade, Whipple, & Hawkins, 2005).

These findings clearly question the ability of clinicians to successfully deliver mental health services. On the other hand, successful treatment outcomes are more likely to occur when clients and therapists agree on the quality of the therapeutic relationship (Kivlighan & Shaughnessy, 1995). This finding is fundamental to Bordin's (1979) conceptualization of the alliance that emphasizes the quality and strength of the collaborative relationship between the client and therapist (Baldwin, Wampold, & Imel, 2007; Bertolino, Bargmann, & Miller, 2012; Norcross, 2010).

In spite of the robust evidence emphasizing the importance of clients' perspective on

the alliance and wellbeing, a vital and often dismissed aspect of the literature is the client's voice, particularly those of marginalized identities (Gabbard & Freeman, 2006). This study aimed to privilege population groups that are particularly vulnerable, particularly those in rural communities and of low-income backgrounds, by examining their experiences, preferences, and realities in therapy.

Ultimately, the voices of both the therapist and client are important to recognize and incorporate in research, which will allow the field to expand our understanding of how the therapeutic alliance influences treatment outcome. The bridge between research and practice can be reduced by examining the client's and therapist's perception and level of agreement regarding the alliance and outcome. This will result in a better understanding of the therapeutic factors that account for client improvement.

The Need for Feedback-Informed Treatment

Hatchet and Park (2003) suggested that researchers and clinicians should develop more reliable methods to assess and quantify treatment outcomes, which is based on the low levels of agreement between clients and therapists. More specifically, they indicated that the most reliable and valid way to evaluate the effectiveness of treatment would be through the utilization of standardized measures. It is also believed that the most effective way to improve psychotherapy outcome is through the use of session-by-session measures that assess client progress routinely and to use that information to inform treatment (Howard, Moras, Brill, Martinovich, and Lutz; 1966).

Based on the need to standardize therapy outcomes and the therapeutic alliance along with the well-established findings from outcome literature, feedback-informed treatment (FIT) was created. FIT utilizes a pantheoretical approach for evaluating and improving the quality

and effectiveness of psychotherapy. This system involves routinely and formally soliciting feedback from clients regarding the therapeutic alliance and treatment outcome, and utilizing this feedback to inform and tailor service delivery. According to the International Center for Clinical Excellence (ICCE; 2012), FIT is both consistent with and operationalizes the American Psychological Association's (APA) definition of evidence-based practice in psychology. This involves "the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences" (APA Task Force on Evidence-Based Practice, 2006, pp. 276-277). Additionally, monitoring client progress and changes in their functioning or wellbeing may suggest or require treatment adjustment (e.g., attending to alliance ruptures, altering treatment goals and interventions; Lambert, Bergin, & Garfield, 2004). FIT provides clinicians with a wide array of client information such as alerting clinicians when clients are plateauing in treatment, deteriorating, or at risk for dropping out (Lambert, 2010; Lambert, Hansen, & Finch, 2001).

Research reveals that the use of routine and ongoing client feedback provides valuable information for clinicians and researchers by providing a simple, practical, and meaningful measure of the effectiveness of treatment (Bertolino, Bargmann, & Miller, 2012). Research has found that routine monitoring of outcome and feedback: a) as much as doubles the "effect size" (based on reliable and clinically significant change criteria); b) improves treatment outcomes by up to 65%; c) cuts dropout rates by as much as half; d) decreases risk and rates of deterioration by 33%; e) reduces hospitalizations and shortens the length of stay by 66%; and f) significantly reduces cost of care in comparison to non-feedback groups (which increased costs) (Miller, 2011; Miller, Hubble, & Duncan, 2007. These findings are substantial and have significant implications for clinicians and researchers. However, while there are several

potential benefits of using Feedback-Informed Treatment, few clinicians elect to use them.

Partners for Change Outcome Management System (PCOMS)

This study sought to understand the therapeutic process through the Partners for Change Outcome Management System (PCOMS), an evidence-based Feedback-Informed Treatment method that routinely and formally obtains client feedback on a session-by-session basis through the use of two brief instruments, the Outcome Rating Scale (ORS) and the Session Rating Scale (SRS; Miller & Bargmann, 2012). These measures track clients' response to treatment by evaluating the client's perception of the therapeutic process in relation to their response to treatment (e.g., wellbeing, functioning, distress) and the therapeutic alliance. By utilizing these routine and ongoing client feedback measures, both clinicians and researchers in the field have been provided with valuable information on the effectiveness of treatment in a way that is simple, practical, and meaningful (Bertolino, Bargmann, & Miller, 2012).

By using the ORS and SRS, therapists consistently invite clients to provide feedback, which also encourages counselors to actively understand the clients' perspective and empowers clients to tailor their counseling experience (Shaw & Murray, 2014). The benefits of obtaining feedback on the alliance and client progress include empowering clients, promoting collaboration, making necessary adjustments to therapy, and enhancing outcomes (Lambert, 2005). This client-focused, process-oriented, paradigm empowers and privileges the clients' voice, which has profoundly improved the therapeutic alliance and treatment outcome in numerous studies (Duncan et al., 2010).

Although promising as a quality improvement strategy, it should be noted that formal feedback processes are only as useful as the way they are presented and used. In doing so, therapists are cautioned to avoid mechanistic, reductionist, and power-propagating stances.

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This error can be particularly harmful to clients (e.g., rural communities, low-income populations) who may come from cultural backgrounds that tend to defer to authority figures. To avoid the misuse of these measures, therapists are encouraged to ensure that there is clear informed consent when asking the client to participate in the formal feedback process. Thus, practicing with humility and openness in ways that privilege the client's perspective is most effective in creating a culture of feedback (Shaw & Murray, 2014).

PCOMS has not been systematically evaluated in a public behavioral health setting, particularly with rural and low-income populations. As such, the results of this study expanded the literature on the effect of PCOMS and increase the fields' understanding of the therapeutic process and outcome, and what may be contributing to treatment disparities for disadvantaged client populations. This information is vital for developing effective treatment interventions that are culturally-sensitive with the intention of reducing mental health disparities for disadvantaged populations.

Initiatives to Eliminate Disparities

The last two decades have brought increased attention to mental health disparities, which has led to several initiatives and agencies focusing on the reduction of disparities (Safran et al., 2009). Notably, the primary focus of more recent efforts has been to promote research that expands our knowledge of disadvantaged groups. The hope has been that this will aid in the elimination of health disparities and guide effective public health policies (Safran et al., 2009). Yet, in spite of the long-standing evidence of the disparities existing in rural areas, these communities continue to be plagued by pervasive disparities in access, availability, and perceived acceptability of mental health care services (Health Resources and Services Administration, 2005). Therefore, this study aimed to address these disparities by expanding

our knowledge as to *why* these disparities continue to exist for rural and low-income

populations.

CHAPTER III

METHODS

Procedure

This study utilized archived, de-identified client data from the Texas A&M University Counseling and Assessment Clinic (CAC). The CAC operates as a non-profit research and training clinic for students enrolled in the Counseling Psychology and School Psychology doctoral programs at the Department of Educational Psychology at Texas A&M University. The clinic is located in the Bryan-College Station Community Health Center, a federally qualified healthcare center that serves communities surrounding or residing in the Brazos Valley of Texas. According to the 2016 U.S. Census Bureau, the Brazos County Metropolitan area consists of Bryan and College Station (combined population of roughly 220,417) as well as other smaller cities and towns. Other surrounding rural communities served at the CAC include Burleson County (17,760), Grimes County (27,671), Madison County (13,987), Robertson County (16,751), and Washington County (35,056); a combined population of an estimated 111,225. Within Brazos county, roughly 26% of individuals live below the federal poverty line, a percentage that is significantly above the national average of 13.1%.

As a community mental health clinic, the CAC serves children, adolescents, and adults from diverse ethnic and socioeconomic backgrounds. Eligibility for receiving services is initially determined during a brief telephone screening conducted by a trained CAC staff member. Procedures for this screening are utilized to gather each prospective client's background and demographic information (e.g., age, gender, race/ethnicity, income, geographic location) as well as to determine eligibility for services to ensure therapists can

adequately address the client's presenting concerns. This information is captured in client charts on the Telephone Screening Evaluation and Intake Questionnaire- Adolescent and Adult Personal History forms. Individuals presenting with more severe psychopathology (e.g., active psychosis, imminent suicidal or homicidal ideation) are typically deemed inappropriate for services offered at the training clinic, and are therefore referred to better suited treatment facilities. Clients who are seen at the CAC present with a wide range of mental health and psychosocial concerns such as depression, anxiety, stress-related issues, attention deficit/hyperactivity disorder (ADHD), post-traumatic stress, grief, family-of-origin concerns, and relationship difficulties.

Consistent with the clinic's mission of increasing access to affordable and high-quality psychological services, the CAC operates using a sliding fee scale, which is obtained during the initial phone screening and calculated according to the client's reported annual income and household size (see Appendix E). The sliding fee scale determines the fee amount clients pay per session. When recording the information obtained for the sliding fee scale in the client chart, it is coded on the client's unique B-CODE in a way that denotes whether or not clients are at or below the federal poverty level (information that is pertinent to the analyses of this study). While individuals of any income level are eligible for receiving services at the CAC, the sliding fee scale seeks to increase access to those who are uninsured or have limited income. Therefore, many clients who are provided services at the CAC meet the criteria of being at or below the federal poverty line based on the U.S. federal poverty guidelines. After the phone screening, each client is assigned a unique B-CODE which denotes the client's age, poverty level, race/ethnicity, and area of residence. In this study, the B-CODE was utilized to code clients' poverty level status as well as demographic information.

Once individuals are considered eligible for services during the initial phone screening, CAC standard procedures require them to complete an intake session with their assigned therapist. During the intake session, clinicians review the clinic's policies and procedures, HIPAA consent forms, and obtain informed consent from clients to use data collected during counseling sessions for research purposes. Counselors emphasize that receiving treatment is not dependent on signing the informed consent forms for the purpose of research, and that they can withdraw their participation at any time. Adult clients who are 18 years of age and older complete their own informed consent. For adolescent clients (age 13 to 17), informed consent is completed by the client's parent or legal guardian, and verbal assent is provided by the adolescent. Only data from adolescents and adults (age 13 and older) were considered for the analyses in this study.

Therapists at the clinic are Texas A&M University Counseling Psychology and School Psychology doctoral students enrolled in practicum. This supervised training experience serves to establish students' basic competency in the provision of psychological services. Though still in training, for the purposes of this study, these students are referred to as clinicians, therapists, or counselors. Clinicians practiced under the supervision of licensed psychologists, and in an effort to ensure close monitoring of the services provided at the CAC, clinicians participated in weekly 1-hour individual and 2-hour group supervision meetings that integrated didactic components and reviewed each counselor's caseload.

In addition to being trained in the provision of psychotherapy, therapists were trained by CAC service coordinators (graduate assistant employees) to provide routine outcome measures during their clinic orientation process as part of standard operating procedures at the CAC. These include the Outcome Rating Scale (ORS) and Session Rating Scale (SRS) which

were initially implemented in September of 2015. Following the initial training, CAC service coordinators were encouraging of any follow-up questions and made readily available at the clinic. Additionally, service coordinators review these assessments for every client at least twice a semester to ensure that the instruments were properly administered and completed. Furthermore, therapists are given a clinic handbook that entails the ORS and SRS management procedures. Following training, each student clinician is instructed to systematically monitor and assess client treatment progress and the alliance for each client every session. For the purpose of this study, the ORS was used to measure clients' treatment response and outcome, while the SRS was used to measure the therapeutic alliance.

Upon completing the required consent forms, counselors discuss the purpose and use of the ORS and SRS with each client. In doing so, therapists emphasize the collaborative nature of treatment and the importance of the client's active participation. Next, therapists show clients how to properly fill out the ORS and SRS and provide clients with the opportunity to ask any questions or express any concerns they may have. Then therapists explain to the client that they will complete the ORS assessment at the beginning of each subsequent session while the client is in the lobby before their appointment. At the beginning of each counseling session, therapists review the completed ORS form and discuss any fluctuations in the scores related to indications of distress. Counselors then explain the SRS administration which is completed towards the end of each counseling session (at least five minutes). The SRS is completed in the treatment room which allows time for the therapist and client to review and discuss the client's responses (e.g., assess for indicators of potential alliance ruptures) prior the session ending. Counselors are instructed to use the ORS and SRS to monitor client treatment response, but also to effectively manage the therapeutic alliance.

As an outpatient facility, the clinic receives payment per session and clients are typically offered open-ended psychotherapy with no predetermined number of sessions. As such, the duration and form of treatment varies according to each client's unique needs and presentation as well as the clinical judgment of the therapist and their clinical supervisor. Theoretical orientations and approaches to counseling differ by provider and may be based on the clinical supervisor's recommendations. Some of the theoretical orientations utilized at the training clinic include cognitive-behavioral, psychodynamic, interpersonal, feminist, multicultural, and family-systems. Clients typically receive weekly 50-minute therapy sessions, although there may be exceptions depending on clinician and supervisor clinical judgment and client presentation. For the adolescent clients in this study, parents or legal guardians are involved throughout the treatment process as is expected in treatment as usual models.

Upon termination with clients, CAC standard protocol requires counselors to complete a termination report for each client that provides a summary of their treatment. The report also includes the therapist's clinical judgement as to whether or not they perceived the client to have made sufficient progress in treatment or not. For the purpose of this study, this clinical judgment on client progress reported in the treatment summary is designated as the *Therapist Appraisal* variable. Termination reports are then reviewed and signed by the therapists' clinical supervisors who are licensed psychologists. The termination report was stored electronically, but was also printed out in the client's physical file. According to clinic policy, a client's file cannot be closed unless the termination report is completed, signed by the counselor, and signed by the counselor's supervisor. Only clients who had been terminated and successfully closed their files were eligible for this study.

Participants

Between 2015 and 2017 (the years in which data were utilized for this study), the CAC provided services to approximately 280 individual clients with roughly 3,680 individual sessions. As a community health clinic, the CAC primarily serves low-income clients with an estimated 72% designated as being at or below the federal poverty level. Approximately 58% of this population identified as White, 25% Hispanic, 12% African-American, 6% Asian, and 2% as Other (e.g. multiracial). In regard to gender, 56% of this client population identified as female and 44% as male. Client age demographics were as follows: 26% between the ages of 2 and 12, 19% between the ages of 13 and 18, and 58% that are 18 years or older. As previously stated, this study only utilized data from adolescents and adults (age 13 and older) as these clients were eligible for being administered the SRS and ORS. Additionally, the client's geographic location was obtained during the initial telephone screening process, which denotes whether a client resides in Bryan, College Station, or a residence outside of this area. Based on clinic data collected between 2010 and 2017, an estimated 38% of clients resided in Bryan, 44% resided in College Station, and 18% resided outside of these areas.

Data Eligibility

As previously indicated in standard CAC protocol, participants in this study completed the necessary paperwork for HIPAA and research consent forms. Data were obtained from terminated counseling files for adolescent and adult clients who were age 13 and older at the start of their treatment at the CAC between August 2015 and May 2017. The study utilized the Outcome Rating Scale (ORS) and Session Rating Scale (SRS) to measure treatment response and the therapeutic alliance respectively. For research questions one, two, and three in this study, sessions that had incomplete or incorrectly administered ORS and SRS measures were

omitted from the analyses. For research questions four and five, analyses for this study required at least two completed assessment administrations of the ORS and SRS in order to capture treatment response. Lastly, clients with missing demographic data pertaining to their age, gender, race/ethnicity, income/poverty status, and residence were not included.

This study utilized two samples to answer the research questions. Initially, to analyze research questions four and five, the first sample (Client sample) consisted of 145 clients, but 26 of these clients had incomplete or partial data (i.e., only attended one session, missing client demographic data, and/or incomplete assessments) and were therefore excluded from the analyses. As such, the analyses used data from 119 unique clients. The second sample (Session sample) utilized to analyze research questions one, two, and three consisted of 1,046 unique sessions which were attended by the 119 clients who completed ORS and SRS measures.

Measures

Partners for Change Outcome Management System (PCOMS)

The Partners for Change Outcome Management System (PCOMS; Duncan, 2012; Duncan & Reese, 2015) was established in an effort to provide a pantheoretical feedback-informed treatment (FIT) system that routinely and formally obtains client feedback to encompass the many facets of change and the therapeutic alliance throughout the course of psychotherapy (Miller, Duncan, Sorrell, & Brown, 2005). PCOMS has been endorsed as an evidence-based practice by both the Substance Abuse and Mental Health Services Administration (SAMHSA) and the National Registry of Evidence-based Programs and Practices (NREPP; Duncan, 2012). The systematic feedback measure emerged from clinical practice to fulfill the demand for simple and brief methods that are also comprehensive enough to provide valuable insight into the client's experience of therapy (Duncan, 2012). PCOMS

employs two, four-item scales to solicit client feedback assessing the quality of the therapeutic alliance (the Session Rating Scale [SRS]; Duncan et al., 2003), and the client's functioning as a measure of treatment response (Outcome Rating Scale [ORS]; Miller, Duncan, Brown, Sparks, & Claud, 2003). Both the ORS and SRS have been translated into more than 20 different languages and are available in both electronic version and paper and pencil format (Miller & Bargmann, 2012). The SRS is also available in group version (Group Session Rating Scale), but this study only used the individual therapy version. The current study also only utilized the ORS and SRS English versions in paper and pencil format (see Appendices A and B).

The primary advantage of these scales are their brevity, simplicity, and ease of understanding, administering, and scoring (Miller & Bargmann, 2012). Each instrument typically requires less than five minutes to be administered, scored, and discussed (Duncan, 2014). Versions of the ORS and SRS are available for children, adolescents, and adults. This study only utilized the instruments designed and normed for adolescents (age 13-17) and adults (age 18 and older). Flesch/Flesch-Kincaid tests on the readability of the adult versions of the ORS and SRS indicate that the measures fall at a 6th grade reading level (Tilsen, Maeschalck, Seidel, Robinson, & Miller, 2012).

A growing body of research indicates that the scales are valid, reliable, and practical for assessing client's perception of their progress and the alliance across a wide range of clients and presenting concerns (Miller & Bargmann, 2012). Several studies have documented concurrent, discriminative, criterion-related and predictive validity, test-retest reliability, and internal-consistency reliability for both the ORS and SRS (e.g., Anker, Duncan, & Sparks, 2009; Bringhurst et al., 2006; Campbell & Hemsley, 2009; Duncan et al., 2003; Duncan et al., 2006; Miller et al., 2003; Reese et al., 2009). Similarly, the significant impact of utilizing these

measures to enhance treatment outcome and service delivery has been well-documented by numerous researchers (e.g., Anker et al., 2009; Miller et al., 2006; Reese, Norsworthy, & Rowlands, 2009).

Session Rating Scale (SRS)

The Session Rating Scale (SRS; Duncan et al., 2003) is a client-rated, four-item visual analogue measure that captures the client's perspective of the therapeutic alliance (Miller & Bargmann, 2012). The SRS is administered towards the end of each session (at least 5 minutes) to allow ample time to discuss the client's responses. The SRS uses four 10-cm visual analog subscales that each represent a different aspect of the therapeutic alliance. These four interacting elements of the alliance are based on Bordin's (1979) classic definition that includes the quality of the relational bond as well as the degree of agreement between the client and therapist on the goals, methods, and overall approach of therapy. For each subscale, clients are instructed to place a "hash mark" (or "X") on each item line where lower, or more negative responses are depicted on the left, and more positive responses are indicated on the right (Duncan et al., 2003). Thus, higher scores reflect a good or stronger therapeutic alliance.

The SRS subscale items are as follows: (a) *Relationship* (on a continuum from "I did not feel heard, understood, and respected" to "I felt heard, understood, and respected"), (b) *Goals and Topics* (on a continuum from "We did not work on or talk about what I wanted to work on and talk about" to "We worked on or talked about what I wanted to work on and talk about"), (c) *Approach or Method* (on a continuum from "The therapist's approach is not a good fit for me" to "The therapist's approach is a good fit for me"), and (d) *Overall,* a global evaluation of the treatment session (on a continuum from "There was something missing in the session today" to "Overall, today's session was right for me"). In short, these subscales are

labeled and are referred to as the following variables examined in the present study: (a) *Relationship*, (b) *Goals and Topics*, (c) *Approach or Method*, and (d) *Overall*.

The SRS was scored with a ruler by measuring the distance in centimeters (to the nearest millimeter) between the left pole and the client's "hash mark" on each individual subscale item, and then adding the four scores together to obtain the *Total SRS* score, the therapeutic alliance score for the session, which can range from 0 to 40-points (Miller & Bargmann, 2012). When interpreting SRS scores, Duncan and Miller (2008) propose that *Total SRS* scores fall into three categories including: Poor alliance (scores between 0 and 34), Fair alliance (scores between 35 and 38), and Good alliance (scores between 39 and 40). Further, the SRS includes an alliance cutoff which is a score at or below nine on each SRS subscale item and 36 or below on the *Total SRS* (Miller & Duncan, 2004). Given that the alliance cutoff is valuable for research purposes and treatment considerations, this study included an *Alliance Cutoff* variable which separated clients into two categories: (a) Good alliance (*Average Total SRS* score of 37 or more) and (b) Fair/Poor alliance (*Average Total SRS* score of 36 or below).

Considering the psychometric properties, the SRS has demonstrated evidence of reliability and validity. As an indicator of reliability, the average internal consistency of the SRS across five studies equaled .92 (Cronbach's alpha range from .88 to .96; Gillaspy & Murphy, 2011; Miller & Duncan, 2004; Reese et al., 2009). Comparable with other alliance measures, the SRS demonstrates an overall test-retest reliability of .64 ($p < .01$) with a Pearson's *r* of .70 when the estimate is limited to the first and second administrations (Duncan et al., 2003). Given that measures of the alliance tend to change over time, lower test-retest reliability occurring over multiple sessions has not been surprising. The SRS also exhibits moderate evidence of concurrent validity with longer alliance measures including the Helping

Alliance Questionnaire–II (HAQ-II; $r = .48$; Duncan et al., 2003, Luborsky et al., 1996), the

Working Alliance Inventory (WAI; $r = .63$; Campbell & Hemsley, 2009), and the WAI–Short

Revised (WAI-SR; $r = .65$; Reese et al., 2013). Research has confirmed that the SRS has

demonstrated a relationship to treatment outcome similar to other established alliance

measures. For example, Duncan et al. (2003) found a correlation of 0.29 ($p < .01$) between the

second or third session SRS scores and the final session ORS scores. More recently, Anker,

Owen, Duncan, and Sparks (2010) reported third session SRS scores predicted treatment

outcome beyond early symptom change.

Moreover, as previously stated, the present study examined the SRS utilizing the

following variables: scores from each individual domain of the SRS (*Relationship*, *Goals and

Topics*, *Approach or Method*, and *Overall)*, *Total SRS*, *Average Total SRS* (i.e., the average of

all *Total SRS* scores for each client over the course of treatment), and *Alliance Cutoff.*

Outcome Rating Scale (ORS)

The Outcome Rating Scale (ORS; Miller & Duncan, 2000; Miller et al., 2003) is a

client-rated, four-item visual analogue scale that measures the client's subjective experience of

their individual, interpersonal, social, and overall wellbeing over the course of psychotherapy

on a session-by-session basis (Bargmann & Robinson, 2012). The ORS has been proven to be

sensitive to therapeutic change and was developed as a brief clinical alternative to the Outcome

Questionnaire-45.2 (OQ-45.2; ; Lambert, Burlingame, Umphress, Hansen, Vermeersch,

Clouse, & Yanchar, 1996) which is commonly criticized for being too long, time consuming,

and burdensome on clients and therapists (Miller et al., 2003).

The ORS was administered at the beginning of the session and asks clients to think

back over the prior week (or since the last visit) and place a "hash mark" (or "X") on four

different subscale lines (each line is 10 cm. long), each representing a different area of functioning. The ORS subscales assess four dimensions: (a) *Individually* (personal wellbeing or symptomatic distress), (b*) Interpersonally* (relational distress or how well the client is getting along in intimate relationships and with family), (c) *Socially* (the client's view of satisfaction with work/school and relationships outside of the home including friendships), and (d) *Overall* (a global evaluation of daily functioning and general sense of well-being; Reese et al., 2017). Scoring involves determining the distance in centimeters (to the nearest millimeter, e.g., "6.3") between the left pole and the client's "hash mark" on each individual subscale item, and then adding the four scores together to obtain the *Total ORS* score (Miller et al., 2003). The lower (more left) the marked score is, the more negative the client's perceive their wellbeing or functioning (i.e., higher level of distress). Accordingly, higher scores on the ORS reflect a good level of wellbeing and functioning.

Similar to the SRS, the ORS was designed and normed for adults and adolescents (age 13+). Despite the brevity of the ORS compared to lengthier outcome measures, multiple studies have demonstrated its reliability and validity (Bringhurst, Watson, Miller, & Duncan, 2006; Campbell & Hemsley, 2009; Miller et al., 2003). Miller et al. (2003) found that the measure has high internal consistency (Cronbach's coefficient alpha range from .87 to .96) and moderate test-retest reliability (range from Pearson's r of .49 to .66). The ORS demonstrated evidence of moderate to strong concurrent validity with other outcome measures; range of $r =$ .53 to $r =$ .74 with the OQ-45.2 (Gillaspy & Murphy, 2011); $r =$ .57 with the Symptom Checklist-90–Revised (Derogatis, 1992); and $r =$ .72 with the Patient Health Questionnaire 9 (Kroenke, Spitzer, & Williams, 2001).

For the purpose of this study, the variables examined within this measure include: *Total ORS* (range from 0 to 40-point scale) and the *Last Total ORS* (i.e., the score obtained during the client's last session or administration of the ORS; used as a single session measure of treatment outcome; scores range from 0 to 40-point scale).

Reliable Change

Reliable Change (RC) is a psychometric criterion used to evaluate whether a change in client's treatment response (i.e., the difference between any two scores) is considered statistically significant, and therefore, such change can be attributed to nonrandom, substantial changes in wellbeing (Jacobson, 1988; Jacobson, Folette, & Revenstorf, 1984; Lambert & Hill, 1994). This is based on the premise that scores on the ORS should increase over time when treatment is successful. With regard to the ORS, the RCI was computed using a diverse sample of 34,790 participants who were primarily of low socioeconomic status; the reliable change index for the ORS was determined to be 5-points (Duncan, 2012; Miller, Duncan, Brown et al., 2003). Therefore, as a metric to gauge meaningful therapeutic change, the present study used the *Reliable Change* variable (based on the RCI; Jacobson, 1988; Jacobson, Folette, & Revenstorf, 1984; Jacobson & Truax, 1991; Lambert & Hill, 1994). In doing so, *Reliable Change* was assessed by measuring the difference between each client's pre- (first *Total ORS* score*)* and post-treatment (*Last Total ORS* score) scores. Next, the *Reliable Change* variable became dichotomous and was coded into either (a) positive reliable change (five or more points improvement between pre- and post-treatment scores) or (b) no positive reliable change (including no change and/or deterioration of five or more points between pre- and post-treatment scores). As such, this variable, and the analyses that utilize this variable required clients to have attended at least two sessions with completed ORS measures.

Alliance Cutoff

As previously indicated in the Session Rating Scale (SRS) measure, interpretation of scores on each subscale (0 to 10-point scale) and of the *Total SRS* (0 to 40-point scale) offers valuable information to both researchers and clinicians. When interpreting SRS scores, it is important to attend to the alliance measure cutoff, which is a score at or below nine on each SRS subscale item and 36 or below on the *Total SRS* (Miller & Duncan, 2004). A visual illustration of the SRS alliance cutoff as well as the ORS clinical cutoff can be seen in Figure 2. Therapists should be particularly alert to the cutoff point as a score that is 36 or below is likely indicative of a potential rupture or failure of the working relationship. By attending to single-point declines and the alliance cutoff scores on the SRS from session-to-session, clinicians are able to identify therapeutic relationships that are at a statistically greater risk for client drop out or experiencing a negative or null treatment outcome. This is evidenced by less than 24% of clients' *Total SRS* scores being below 36 (Bargmann & Robinson, 2012; Miller & Duncan, 2004; Miller, Hubble, & Duncan, 2007). Based on these findings, this study created the *Alliance Cutoff* variable which considered each clients' *Average Total SRS* score over the course of psychotherapy and separated participants into the following dichotomous groups: (a) Good alliance (*Average Total SRS* score being at or above 37-points) and (b) Fair/Poor alliance (*Average Total SRS* score being at or below 36-points).

Therapist Appraisal

As previously discussed in clinic protocol procedures, therapists are required to complete a termination summary report (see Appendix C) following each client's final counseling session as part of standard CAC administrative procedures. In this summary, therapists provide an overview of the client's treatment and the associated progress from the

first to the last session. With regard to the present study, the report included the clinicians' assessment of whether or not they perceived that the client made sufficient progress over the course of treatment. On the summary report, this is formatted by two categories: "sufficient progress made in treatment" or "not sufficient progress made in treatment." The current study used this information as a measure of the therapist's clinical judgement regarding client progress. As such, the dichotomous *Therapist Appraisal* variable was coded into the two following categories: (a) Therapist appraisal of sufficient progress made in treatment or (b) Therapist appraisal of sufficient progress not made in treatment. Although *Therapist Appraisal* was based on the clinicians' judgment (and therefore entailed subjectivity), the present study examined the variable in an effort to further examine the level of agreement between the therapist's and client's perception of treatment progress.

Client-Therapist Agreement

The *Reliable Change* (RC) and *Therapist Appraisal* variables were utilized to inform the *Client-Therapist Agreement* variable. This variable was developed by first determining the *Reliable Change* variable and then comparing this to the *Therapist Appraisal* variable. For the purpose of this study, and for clarity in the analyses, *Client-Therapist Agreement* was considered to have occurred when there was a match between the *Reliable Change* and *Therapist Appraisal* variables. In other words, a match was determined to occur when both *Reliable Change* was present and the *Therapist Appraisal* indicated that client made sufficient progress over the course of treatment. On the other hand, client-therapist disagreement was determined to occur when there was not a match between the *Reliable Change* and *Therapist Appraisal* variables. In doing so, the *Client-Therapist Agreement* dichotomous variable was coded into the following categories: (a) Agreement (i.e., match between *Reliable Change* and

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Therapist Appraisal) or (b) Disagreement (i.e., mismatch between *Reliable Change* and *Therapist Appraisal*).

Client Age Group

Client age was self-reported and documented during the initial telephone screening process as previously discussed in the CAC standard protocol procedures. This study only used clients who were 13 years or older at the start of treatment, and data for clients who turned 18 over the course of treatment remained in the adolescent group. Clients were separated by age at treatment onset and coded as a dichotomous variable in the analyses of this study as follows: (a) Adolescent group (age 13-17) and (b) Adult group (age 18 and older).

Client Gender

The gender of a client was also collected during the screening process. The data from this study did not include any clients who identified as transgender or Other. No clients identified as such. For the analyses, clients were coded and categorized by their self-identified gender as either male or female.

Client Racial/Ethnic Status

Racial/ethnic information was also collected during the initial telephone screening process. Clients were able to self-identify their race/ethnicity (e.g., White, Hispanic, Black, Asian, Native American, Pacific Islander, multiracial, etc.), and for this study, race/ethnicity was separated into a dichotomous category of either (a) Non-marginalized (i.e., White) or (b) Marginalized (i.e., non-White, Black, Hispanic, Asian, etc.) ethnicity subsamples. While it is important to distinguish between race and ethnicity, for the purposes of this study and its scope, race and ethnicity were discussed collectively and inclusively, similar to other studies (e.g., Cardemil & Battle, 2003, Meyer & Zane, 2013). Furthermore, the aggregation of the

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various ethnic minority groups (i.e., marginalized) was partially due to the small sample sizes for each race/ethnicity which prevented separate ethnic group analyses given that this would lead to limitations in the statistical analyses. This procedure has been employed in previous research that has similarly categorized race/ethnicity variables to prioritize statistical integrity as well as to enhance our understanding of the ethnic minority experience with treatment in general rather than for any one particular group (Meyer & Zane, 2013).

Client Poverty Status

The CAC utilizes a sliding fee scale to determine a client's poverty status. This fee scale is regularly adjusted for inflation and considers a client's self-reported annual income and household size (see Appendix E). The sliding fee scale therefore determines if a client is at or below the federal poverty line, which is further categorized in each client's unique B-CODE. For this study, clients were separated into two groups: (a) being at or below the federal poverty line or (b) being above the federal poverty line.

Client Rurality Status

Clients are further required to provide their home or resident address in the screening process. This address is then coded by CAC staff into three categories: (a) residing in College Station, (b) residing in Bryan, or (c) residing in Other. For this study, Bryan, TX and College Station, TX groups were coded together to distinguish a more urban/suburban category. These areas are comparative in size and are both noted as being small metropolitan areas. The "Other" category was used to identify a rural category. Rural counties surround this area and the closest metropolitan area is Houston, TX (over 100 miles away from the clinic). Therefore, it is safe to conclude that clients labelled "Other" are categorically rural. For this study, clients were separated as follows: (a) Urban/suburban residence, or (b) Rural residence. This is

supported by past research at this counseling clinic (Kleine-Kracht, 2019), which geocoded

CAC client addresses onto 2010 US Census maps to ensure rurality status based on two

criteria: (a) distance to an urban point, and (b) rurality based on population.

Table 1.

Research Variables

	Variable	Measurement
Independent	Client Age Group	Clients separated by age at treatment onset. Dichotomous variable: Adolescent group (13-17 years) and adult group (18+ years)
Independent	Client Gender	Clients separated by self-identified gender. Dichotomous variable: Male and female group
Independent	Client Racial/Ethnic Status	Clients separated by marginalized and non-marginalized race/ethnicity groups. Dichotomous variable: Marginalized (e.g., Hispanic, African-American, Asian, Native American, Pacific Islander, multiracial) and non-marginalized (White)
Independent	Client Rurality Status	Clients separated by residence. Dichotomous variable: Urban/suburban residence (Bryan/College Station) and rural residence (Other).
Independent	Client Poverty Status	Clients separated by the federal poverty line standards. Dichotomous variable: Those at or below the federal poverty line and those above the federal poverty line (based on self-reported annual income and household size)
Independent	SRS Relationship	An SRS domain subscale score measuring the quality of the Relationship between therapist and client reported by the client. Interval scale ranging from 0 to 10. Measured every session.
Independent	SRS Goals and Topics	An SRS domain subscale score measuring the agreement on therapeutic goals and topics between therapist and client reported by the client. Interval scale ranging from 0 to 10. Measured every session.
Independent	SRS Approach or Method	An SRS domain subscale score measuring the approach or method of the therapist's interventions reported by the client. Interval scale ranging from 0 to 10. Measured every session.
Independent	SRS Overall	An SRS domain subscale score measuring the Overall therapeutic alliance as reported by the client. Interval scale ranging from 0 to 10. Measured every session.
Independent	Total SRS	The sum of the four SRS domains measuring the quality of the therapeutic alliance. Interval scale ranging from 0 to 40. Measured every session
Independent	Total SRS Average	The average of a unique clients Total SRS' scores. Interval scale ranging from 0 to 40. Calculated once per client.
Independent	Last Total ORS	The last session Total ORS score. Measuring treatment outcome across four domains (Individual, Interpersonal, Social, and Overall) as reported by the client. Interval scale ranging from 0 to 40. Calculated once per client at the end of treatment.
Independent	Reliable Change	Treatment response variable found by comparing pre- and post-treatment Total ORS scores. Dichotomous variable: positive reliable change group (marked by meeting or exceeding a difference of 5 or more points between their first and last sessions) and no positive reliable change (marked by clients who exhibited no change and/or deteriorated by 5-points or more between their first and last sessions). Calculated once per client at the end of treatment.
Dependent	Total ORS	The sum of the four ORS domains measuring treatment outcome as reported by the client. Interval scale ranging from 0 to 40. Measured every session.
Dependent	Alliance Cutoff	Determined from the Average Total SRS score. Dichotomous variable: Good alliance group (Average Total SRS score of 37 or more) and Fair/Poor alliance group (Average Total SRS score of 36 or below)
Dependent	Therapist Appraisal	The therapist's clinical judgment decided post-treatment. Dichotomous variable: Client made sufficient progress or client did not make sufficient progress in treatment
Dependent	Client-Therapist Agreement	A termination agreement variable between client and therapist. Determined when a client's Therapist Appraisal matched their Reliable Change marker or not. Dichotomous variable: Agreement or disagreement on sufficient progress/treatment response

Data Analysis

The analyses of this study were aimed to answer the research questions in Chapter I. The independent/predictor variables are: *Client Age Group, Client Gender, Client Racial/Ethnic Status, Client Poverty Status, Client Rurality Status*, the four domains of the SRS (*Relationship*, *Goals and Topics*, *Approach or Method*, and *Overall)*, the *Total SRS, Total SRS Average,* the *Total ORS*, the *Last Total ORS, and Reliable Change.* There are four primary dependent variables that were of interest**:** the *Total ORS* (treatment response), the *Alliance Cutoff*, *Therapist Appraisal*, and *Client-Therapist Agreement*. The analyses of the study were performed in Stata version 14.

Preliminary Analyses

The data were tested and analyzed prior to completing the primary analyses to ensure that the assumptions of the analyses were not violated. As such, correlational analyses were conducted for the variables used in this study to explore potential issues of multicollinearity. Only one issue was found between the variables including the *Last Total SRS* and the *Total SRS Average* ($r = .85$). Due to this potential issue of multicollinearity, the *Last Total SRS* variable was excluded from the model that included the *Total SRS Average,* which appeared to be a better indicator of the therapeutic alliance. Lastly, the percentage of *Client-Therapist Agreement* was calculated prior to the final analyses being completed to provide a rough estimate of the overall level of agreement between clients and therapists as it relates to treatment outcome.

Multiple Linear Regression

Multiple linear regression (MLR) was used to test the first and second research questions. Multiple linear regression, also known as multivariate linear regression or more simply, multiple regression, is a statistical method that uses several explanatory variables to predict the outcome of a response variable (Wampold & Freund, 1987). The goal of MLR is to model the linear relationship that exists between multiple (two or more) explanatory/independent variables and a single response (dependent) variable. Using this technique, the overall variance explained by the model (R_2) and the unique contribution (strength and direction) of each independent variable can be obtained (Wampold & Freund, 1987). The current study used multiple regression to predict the treatment response (Total ORS) from various independent and demographic variables.

Logistic Regression

Research questions three, four, and five were analyzed using logistic regression models. Logistic regression is a statistical method that relies on the natural logarithm of odds to predict the occurrence of an outcome. As such, logistic regression requires that the dependent variable be dichotomous. For this study, logistic regression assessed how the independent variables (e.g., *Total SRS Average*, *Last Total ORS*, *Client Rurality Status*, etc.) influenced the likelihood/probability of an outcome described by the dependent variable occurring (e.g., Good alliance by the *Alliance Cutoff*, Sufficient Progress made in treatment by the *Therapist Appraisal*, and Agreement from the *Client-Therapist Agreement*). Logistic regression also allows for multiple independent variables to predict the odds of the dependent variable occurring. Since this method relies on probability and maximum likelihood, it does not require the same assumptions of multiple linear regression (i.e., normality of residuals). Furthermore, a

ratio of ten subjects to each independent variable with at least 50 unique observations is suggested (Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996; Peng, Lee, & Ingersoll, 2002). In this study, the most complex model considered eight independent variables with a sample of 119, which exceeded the recommendations.

Goodness of Fit Tests

Certain goodness-of-fit tests were selected to ensure that the data in the analyses did not violate any assumptions and to determine that the data fit the models appropriately. For multiple linear regression, R^2 values were calculated to statistically determine how the data fit the regression line. Additionally, a Variance Inflation Factor (VIF) was calculated to ensure that no issues of multicollinearity were occurring between the independent variables after the analyses was performed. For logistic regression, maximum likelihood methods were used to determine goodness-of-fit. The Pseudo R^2, while similar to the R^2 value used in OLS analyses, is different in that it considers the deviance value (i.e., how much worse the model predicts the outcome than an absolute perfect model; Coxe, West, and Aiken, 2009). For the models that utilized this method, likelihood ratio chi-square tests were used to determine the overall significance of the model, while Wald chi-square tests were used to determine the overall significance of the independent variables. As a final way to ensure that the observed data matched the expected data, Hosmer-Lemeshow tests were also completed. For this test, if statistical significance was found, it would indicate that the data was likely due to chance.

Statistical Models

1) *Client Age Group + Client Gender + Client Racial/Ethnic Status + Client Poverty Status + Client Rurality Status + Total SRS = Total ORS*

2) *Client Age Group + Client Gender + Client Racial/Ethnic Status + Client Poverty Status + Client Rurality Status + SRS Overall + SRS Relationship + SRS Goals and Topics + SRS Approach or Method = Total ORS*

3) *Client Age Group + Client Gender + Client Racial/Ethnic Status + Client Poverty Status + Client Rurality Status = Alliance Cutoff*

4) *Client Age Group + Client Gender + Client Racial/Ethnic Status + Client Poverty Status + Client Rurality Status + Reliable Change + Total SRS Average + Last Total ORS = Therapist Appraisal*

5) *Client Age Group + Client Gender + Client Racial/Ethnic Status + Client Poverty Status + Client Rurality Status = Client-Therapist Agreement*

CHAPTER IV

RESULTS

Descriptive Statistics of the Sample

The analyses for this study considered two separate samples from archival charts at the

Texas A&M CAC community health center. Research questions three, four, and five utilized

one sample (i.e., Client sample) which consisted of 119 unique psychotherapy clients who had

attended at least two therapy sessions (to determine a pre- and post-treatment effect and assess

client progress) and successfully completed the Outcome Rating Scale (ORS) and Session

Rating Scale (SRS). Research questions one and two used another sample (i.e., Session

sample) that consisted of 1,046 unique psychotherapy sessions attended by the 119 clients.

This Session sample also required the ORS and SRS be successfully administered and

completed by the client. These separate samples will be referred to as the Client sample and the

Session sample for clarity.

Demographic Characteristics

Within the Client sample, a total of 119 clients met inclusion criteria for the analyses.

The age of participants ranged from 13 to 74 years with an average of 28.3 years ($SD = 14.8$),

and for this study, clients were separated into two age categories consisting of 39 adolescents

(32.8%; 13 to 17 years) and 80 adults (67.2%; 18 years and older). There were 41 self-

identified client male participants (34.5%) and 78 self-identified female participants (65.5%).

Clients who self-identified as White made up a majority of the sample consisting of 68

participants (57.1%) followed by 32 Hispanic (26.8%), 15 African-American (12.6%), and 4

clients who were categorized as Other (3.3%; e.g., Asian, Native American, Pacific Islander,

multiracial). For the analyses, participants' race/ethnicity were categorized into two groups. Clients who identified as White were categorized into the non-marginalized group (57.1%) while clients who identified as any other race/ethnicity (e.g., Hispanic, African-American, Asian, Native American, Pacific Islander, multiracial) were categorized into the marginalized group (42.9%). It should be noted that while there are considerable differing cultural experiences between and within non-marginalized and marginalized race/ethnicities, this study was limited by the low sample sizes of minority race/ethnicities. Therefore, this study examined race/ethnicity as a dichotomous variable (marginalized and non-marginalized). This was also done in an effort to focus specifically on the mental health care disparities between marginalized and non-marginalized race/ethnicities in psychotherapy.

Within the total Client sample, 97 clients resided in an urban/suburban area (85.8%; Bryan, TX and College Station, TX), while 23 clients reportedly resided in "Other" surrounding areas (19.3%). Past research has shown that these "Other" surrounding areas have significantly lower population density as well as greater distances from an urban point; these areas are therefore more synonymous with rurality status (Kleine-Kracht, 2019). As such, the client participants were separated into the following categories: (a) urban/suburban residence (Bryan/College Station) or (b) rural residence (Other). Lastly, 71 of the clients were identified as being at or below the federal poverty level (FPL; 59.7%), while 49 were identified as being above the FPL (41.2%).

Clinical Characteristics

This study analyzed *Reliable Change, Alliance Cutoff, Therapist Appraisal*, and *Client-Therapist Agreement* constructs. From the Client sample, 70 clients experienced positive reliable change (58.8%; indicated by the Reliable Change Index) as measured by meeting or

exceeding at least a 5-point improvement between their pre- and post-treatment *Total ORS*

scores. However, 41.2% of clients (49 individuals) either did not achieve positive reliable

change, experienced no change, or experienced reliable deterioration (i.e., deteriorated at least

5-points between pre- and post-treatment *Total ORS* scores). The *Alliance Cutoff* measure was

developed to reflect SRS alliance cutoff scores (i.e., score of 36 or below) and separated the

Client sample based on their *Average Total SRS* score in treatment. This sample had 42 clients

who had an *Average Total SRS* score of 36 or below, which was categorized as the Fair/Poor

alliance group (35.3%), while 77 clients had a score of 37 or higher, which was categorized as

the Good alliance group (64.7%). Within the Client sample, 41 participants received a

Therapist Appraisal of sufficient progress made in treatment (34.5%), while 78 clients received

a *Therapist Appraisal* of not making sufficient progress in treatment (65.5%). Lastly, 83

therapists agreed with their client's self-reported treatment progress (69.7%; as indicated by the

presence or absence of *Reliable Change* on the ORS), while 36 therapists did not agree with

their clients' reporting of treatment progress (30.2%).

For the Session sample ($n = 1,046$) the median number of sessions attended by a client

was five, while the average number of sessions per client was 8.2 ($SD = 8.9$). This average

number of sessions was influenced by six clients who had attended more than 30 sessions each

as well as one client who attended 51 sessions (i.e., maximum number of sessions for one

client in this sample). A total of 178 sessions were excluded from the analyses as they had

either missing or incomplete ORS, SRS, or both. An additional 33 sessions were excluded as

these participants did not meet the inclusion criteria of attending at least two session (i.e.,

clients had only attended one session). This study only examined attended sessions, and

therefore, did not measure or report the number of no-show, cancelled, or rescheduled

appointments held by these clients. However, past research at this clinic exploring no-show appointments found an average no-show percentage for adult clients to be at 16.21% (Kleine-Kracht, 2019).

When examining the therapeutic alliance for the Session sample, the analyses utilized the Session Rating Scale (SRS) including the scores obtained by the four SRS domains (*SRS Relationship*, *SRS Goals and Topics*, *SRS Approach or Method*, and *SRS Overall*; range of 0 to 10-point scale) and the *Total SRS* (range of 0 to 40-point scale). The average *SRS Relationship* score per session was 9.3 (*SD* = .96), *SRS Goals and Topics* was 9.2 (*SD* = 1.0), *SRS Approach or Method* was 9.3 (*SD* = 1.0), and *SRS Overall* was 9.3 (*SD* = .99). The average *Total SRS* was 37.12 (*SD* = 3.6). When examining treatment outcome, this study utilized the Outcome Rating Scale (ORS) including the *Total ORS* scores (range of 0 to 40-point scale). The average *Total ORS* score per session was 26.71 (*SD* = 10.19), with an average of 20.6 (*SD* = 8.64) on the first session *Total ORS* score, and an average of 28.1 (*SD* = 10.5) on the *Last Total ORS* session score. As evidenced, there was an average difference of 7.5-points between the first *Total ORS* and *Last Total ORS* scores.

Multiple Linear Regression

Model 1

Model 1 consisted of the independent variables including *Client Age Group*, *Client Gender*, *Client Racial/Ethnic Status*, *Client Poverty Status*, *Client Rurality Status*, and *Total SRS*. These variables were analyzed as predictors to calculate treatment response as measured by the *Total ORS* score for each client session (paired with the corresponding *Total SRS* session score). This model used the Session sample (*n* = 1,046) and was found to be

statistically significant ($F(6, 1039) = 28.38$, $p < .001$) with an R^2 of 0.14. The results are presented in Table 2.

A multiple linear regression was calculated to predict the *Total ORS*, and found that *Client Age Group*, *Client Gender*, *Client Poverty Status*, *Client Rurality Status*, and the *Total SRS* were statistically significant predictors of the *Total ORS*. The only nonsignificant predictor in the analysis was *Client Racial/Ethnic Status* ($p = .54$). The *Total SRS* (paired with the corresponding *Total ORS* session score) was identified as being the strongest predictor of the *Total ORS* ($\beta = .21$, $t = 7.20$, $p < .001$). This finding suggests that 1-point of the *Total SRS* is associated with an increase of 0.59-points on the *Total ORS*. The *Client Rurality Status* demonstrated similar, but slightly less statistical strength when predicting the *Total ORS* ($\beta = -.21$, $t = -6.88$, $p < .001$). Therefore, clients who resided in rural areas had *Total ORS* scores that were 5.41-points below clients who resided in the urban/suburban areas. Additionally, for *Client Age Group*, the adult group was associated with a lower *Total ORS* score by 3.27-points compared to the adolescent group ($\beta = -.16$, $t = -4.96$, $p < .001$). For *Client Gender*, clients who self-identified as female were associated with a lower *Total ORS* score by 2.94-points compared to the male group ($\beta = -.15$, $t = -5.16$, $p < .001$). Lastly, for *Client Poverty Status*, clients who were at or below the FPL had lower *Total ORS* scores by 2.48-points than those above it ($\beta = -.12$, $t = -3.75$, $p < .001$).

When considering goodness-of-fit of the model, R_2 was found to be 0.14 suggesting that the predictor variables explained 14% of the Total ORS scores. The Session sample (n = 1,046) further meets the criteria of the Central Limit Theorem where the normality of the residuals can be assumed (see Appendix D for a histogram of the residuals). A Variance Inflation Factor (VIF) was performed to ensure that each independent variable was statistically independent, which also revealed that the variables were not correlated (*VIF* = 1.15; see Appendix F for a table of the correlations between variables in Model 1 and 2).

Table 2.

Summary of Multiple Regression Analysis for Variables Predicting Treatment Outcome

Source	Model 1					Model 2				
	B	*SE* B	β	t	*p*	B	*SE* B	β	t	*p*
Client Age Group	-3.27	.66	-.16	-4.96	.00***	-3.24	.66	-.16	-4.88	.00***
Client Gender	-2.95	.57	-.15	-5.16	.00***	-2.96	.57	-.15	-5.16	.00***
Client Racial/Ethnic Status	-.39	.64	-.02	-0.61	.54	-0.38	.64	-.02	-0.59	.56
Client Rurality Status	-5.41	.79	-.21	-6.88	.00***	-5.44	.79	-.21	-6.89	.00***
Client Poverty Status	-2.48	.66	-.12	-3.75	.00***	-2.51	.66	-.12	-3.78	.00***
Total SRS	0.59	.08	.21	7.20	.00***					
SRS Relationship						0.40	.56	.04	0.71	.48
SRS Goals and Topics						0.72	.47	.08	1.54	.13
SRS Approach or Method						1.01	.54	.10	1.87	.06
SRS Overall						0.24	.57	.02	0.42	.68
R2			.14					.14		
R2Adjusted			.14					.13		
F			.00***					.00***		

Note: ***$p < .001$, ** $p < .01$, *$p < .05$.

Model 2

Model 2 consisted of *Client Age Group, Client Gender, Client Racial/Ethnic Status, Client Poverty Status, Client Rurality Status*, and the four domains of the SRS (*SRS Relationship, SRS Goals and Topics, SRS Approach or Method*, and *SRS Overall*) as they predicted the *Total ORS* of the session. This model used the Session sample ($n = 1,046$) and multiple linear regression to explore if and which SRS domain(s) was the strongest predictor of the *Total ORS*. While the overall model was found to be statistically significant ($F(9, 1036) = 18.88, p <. 001$) with an R^2 value of 0.14, none of the SRS domains were found to be statistically significant. The results are presented above in Table 2.

Similar to Model 1, *Client Age Group, Client Gender, Client Poverty Status*, and *Client Rurality Status* all remained significant predictors of the *Total ORS* when the *Total SRS* was separated into the four SRS domain subscale scores. While none of the SRS domains were found to be significant predictors of the *Total ORS*, the *SRS Approach or Method* domain was found to be the strongest predictor ($\beta = .10, t = 1.87; p = .06$) of treatment response. This suggests that the *Total SRS* has the most statistical strength when predicting the *Total ORS* over the independent domains.

When considering goodness-of-fit of this model, the R^2 value was found to be 0.14 and of similar fit to Model 1. However, this model found a higher VIF of 2.13, suggesting that this model contains independent variables that are moderately correlated with one another (see Appendix F).

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Logistic Regression

Model 3

Model 3 aimed to further investigate predictors of the therapeutic alliance as this was the strongest predictor of the *Total ORS*. Therefore, this model used logistic regression to predict a Good therapeutic alliance as determined by the *Alliance Cutoff* measure based on the following independent variables: *Client Age Group, Client Gender, Client Racial/Ethnic Status, Client Poverty Status*, and *Client Rurality Status.* The model used the Client sample (n = 119) and was found to be significant by the Likelihood Ratio test (χ^2 = 13.95, df = 6, p < .02). The following results are presented in Table 3.

The results of this model suggested that *Client Gender* was the only significant predictor of a Good alliance, while *Client Age Group*, *Client Rurality, Client Income*, and *Client Racial/Ethnic Status* were not. For *Client Gender*, the odds-ratio indicated that being a female increased the likelihood of having a Good alliance, as determined by the *Alliance Cutoff* measure, by an average multiple of 4.12. Essentially indicating that females were more than four times as likely as males to report that they had a positive therapeutic alliance with their therapists.

The goodness-of-fit for Model 3 was adequate as the Pseudo R_2 (.09) suggested that the predictor variables improved the model over a null model with no predictor variables. The Hosmer-Lemeshow test was also in acceptable ranges (χ^2 = 7.03, df = 9, p = .43) suggesting that the distribution of the data was not due to chance.

Table 3.

Logistic Regression Analysis of Variables Predicting Good Therapeutic Alliance

Predictor		B	SE β	z-score	Wald (p)	Odds-Ratio
Intercept		0.12	.51	0.31	.76	1.17
Client Age Group						
	Adolescent Group	(base)				
	Adult Group	-0.43	.49	-0.88	.38	0.65
Client Gender						
	Male	(base)				
	Female	1.42	.42	3.36	.00***	4.12
Client Racial/Ethnic Status						
	Non-marginalized	(base)				
	Marginalized	0.16	.45	0.36	.72	1.17
Client Poverty Status						
	Above the FPL	(base)				
	At or Below the FPL	-0.36	.48	-0.75	.46	.70
Client Rurality Status						
	Urban/Suburban	(base)				
	Rural	0.12	.53	0.23	.82	1.13

Model χ^2	=	13.95, $p = .02$*
Pseudo R^2	=	.09
Hosmer-Lemeshow test	=	7.03, $p = .43$

Note: ***$p < .001$, ** $p < .01$, *$p < .05$.

Model 4

Model 4 consisted of the following independent variables: *Client Age Group, Client Gender, Client Racial/Ethnic Status, Client Poverty Status, Client Rurality Status, Reliable Change, Average Total SRS*, and *Last Total ORS*. This model used the Client sample ($n = 119$) and analyzed the data through logistic regression to predict the probability of obtaining a *Therapist Appraisal* of sufficient progress made in treatment. The overall model was found to be significant by the Likelihood Ratio test ($\chi^2 = 31.19$, $df = 10$, $p < .001$). The results are presented in Table 4.

The results of Model 4 show that the *Last Total ORS* ($B = 1.11$, $\chi^2 = 3.04$, $p < .001$) and *Client Age Group* ($B = 0.27$, $\chi^2 = -2.54$, $p = .01$) were the only significant predictors of receiving a mark of sufficient progress as indicated by the *Therapist Appraisal*. The *Average Total SRS, Reliable Change, Client Poverty Status, Client Rurality Status*, and *Client Gender* variables were not significant and were therefore not interpreted. For the *Last Total ORS,* the odds-ratio revealed that with every point increase in the *Last Total ORS*, the odds of receiving a *Therapist Appraisal* of sufficient progress in treatment increased by a multiple of 1.11. Additionally, for *Client Age Group*, the odds-ratio suggested that being an adult decreases the odds of a *Therapist Appraisal* sufficient progress by an average multiple of 0.27. This result indicated that adolescents were significantly more likely to receive a *Therapist Appraisal* of sufficient progress than adults.

Table 4.

Logistic Regression Analysis of Variables Predicting Therapist Appraisal of Sufficient Progress

Predictor		*B*	*SE* β	z-score	*Wald (p)*	Odds-Ratio
Intercept		-2.41	2.52	-.95	.34	.09
Client Age Group						
	Adolescent Group	(base)				
	Adult Group	-1.29	.51	-2.54	.01*	.27
Client Gender						
	Male	(base)				
	Female	0.26	.53	.49	.63	1.29
Client Racial/Ethnic Status						
	Non-marginalized	(base)				
	Marginalized	-.91	.50	-1.81	.07	.40
Client Poverty Status						
	Above the FPL	(base)				
	At or Below the FPL	0.37	.51	.73	.47	1.45
Client Rurality Status						
	Urban/Suburban	(base)				
	Rural	0.75	.59	1.28	.20	2.11
Last Total ORS		0.11	.04	3.04	.00**	1.11
Average Total SRS		-0.01	.07	-.17	.87	.99
Reliable Change						
	Positive Reliable Change	(base)				
	No Positive Reliable Change	-0.52	.58	-.90	.37	.59

Model χ^2	=	31.11, $p < .001$***
Pseudo R^2	=	.20
Hosmer-Lemeshow test	=	6.03, $p = .64$

*Note: *$p < .05$. **$p < .01$*

The goodness-of-fit for Model 4 was found to be adequate as the Pseudo R_2 (.20) suggested that the predictor variables improved the model over a null model with no predictor variables. Additionally, the Hosmer-Lemeshow test was in acceptable ranges (χ^2 = 7.45, df = 9, p = .49) suggesting that the distribution of the data was not due to chance.

Marginal effects were further explored in this model to identify the change in the probability of *Therapist Appraisal* of sufficient progress across 5-point increments on the *Last Total ORS*. These effects are illustrated in Figure 1, which visually represented all of the demographic variables, and Figure 2, which visually represented only the statistically significant *Client Age Group* variable.
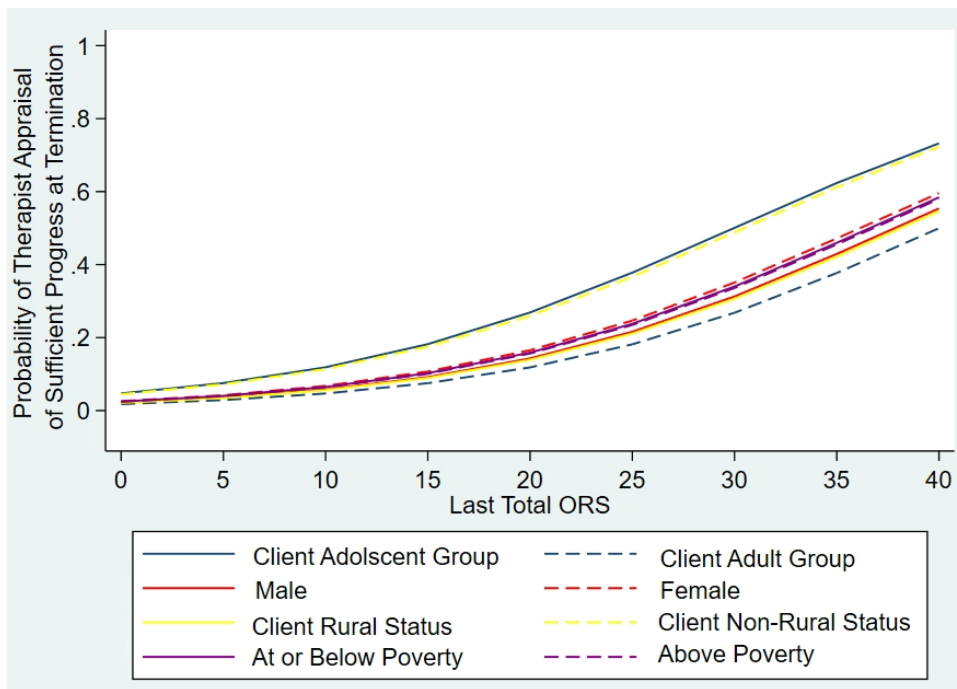
Figure 1. Predicted Sufficient Progress of Therapist Appraisal Separated by Age, Gender, Race/Ethnicity, Poverty Status, and Rural Status Expressed over Last Total ORS, n = 119
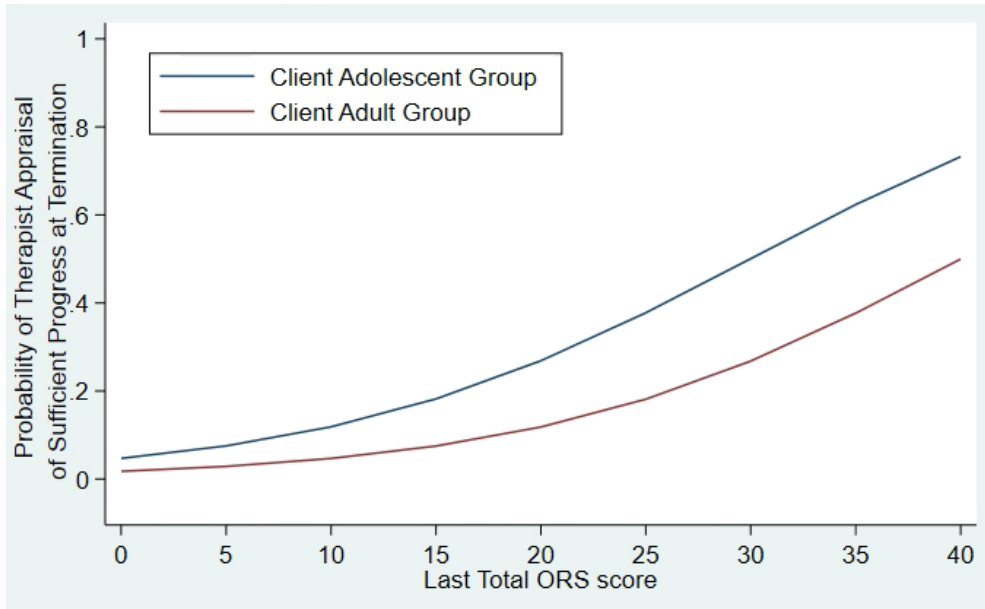
Figure 2. Predicted Sufficient Progress of Therapist Appraisal Separated by Age Expressed over Last Total ORS, *n* = 119

Model 5

Model 5 consisted of the following independent variables: *Client Age Group, Client Gender, Client Racial/Ethnic Status, Client Poverty Status,* and *Client Rurality Status*. These variables served as predictors of the *Client-Therapist Agreement* variable. Logistic regression was used to predict an agreement between the *Therapist Appraisal* variable (sufficient progress or not sufficient progress) and *Reliable Change* variable (positive reliable change or no positive reliable change). The overall model was not found to be significant (χ^2 = 1.89, *df* = 6, *p* = .86) and there were no significant predictor variables. Therefore, the model was not interpreted. However, the percentage of client-therapist agreement on treatment progress was calculated and found that while 53.78% agreed, 46.22% disagreed. The results of the logistic regression are presented in Table 5.

Table 5.

Logistic Regression Analysis of Variables Predicting Client-Therapist Agreement

Predictor		*B*	*SE* β	z-score	*Wald (p)*	Odds-Ratio
Intercept		0.02	.47	.04	.97	1.02
Client Age Group						
	Adolescent Group	(base)				
	Adult Group	-0.39	.44	-.88	.38	0.68
Client Gender						
	Male	(base)				
	Female	0.35	.39	.89	.38	1.42
Client Racial/Ethnic Status						
	Non-marginalized	(base)				
	Marginalized	-0.02	.41	-.04	.97	0.98
Client Poverty Status						
	Above the FPL	(base)				
	At or Below the FPL	0.19	.44	.44	.66	1.21
Client Rurality Status						
	Urban/Suburban	(base)				
	Rural	0.31	.49	.64	.52	1.37

Model χ^2	=	1.89, *p* = .86
Pseudo R^2	=	.01
Hosmer-Lemeshow test	=	9.38, *p* = .23
*Note: *p* < .05. **p* < .01*	=	9.38, *p* = .23

Summary of Analyses Results

This study utilized data from the Session sample ($n = 1,046$) to answer research questions one and two with multiple linear regression. Additionally, logistic regression used data from the Client sample ($n = 119$) to answer research questions three, four, and five. These research questions are illustrated in Chapter I. The analyses sought to predict several dependent variables including: *Total ORS, Total SRS, Alliance Cutoff, Therapist Appraisal*, and *Client-Therapist Agreement*.

The results for Model 1 found that the *Client Age Group, Client Gender, Client Poverty Status, Client Rurality Status*, and the *Total SRS* were all significant predictors of the *Total ORS*. These findings suggested that being an adult, female, being at or below the FPL, and/or residing in a rural area were associated with lower *Total ORS* scores in comparison to clients who were adolescent, male, above the FPL, and/or residing in an urban/suburban area. Furthermore, Model 1 found that the therapeutic alliance as measured by the *Total SRS* was the strongest predictor of treatment response as measured by the *Total ORS*. Yet, this was closely followed by the next strongest predictor, *Client Rurality Status*.

Model 2 further explored the findings in Model 1 by examining the predictive strength of each SRS domain (*Relationship, Goals and Topics, Approach or Method*, and *Overall*). The results from this model suggested that no domain by itself was a statistically significant predictor of the *Total ORS*. However, the *SRS Approach or Method* had the strongest predictive strength among the four domains. This would indicate that the *Total SRS* (with its combined domains) had the best utility and predictive strength of treatment outcome (*Total ORS*). Lastly, client demographic variables (*Client Age Group, Client Gender, Client Poverty Status*, and *Client Rurality Status*) remained significant predictors of the *Total ORS* in Model 2.

As determined in Model 1, the *Total SRS* was the strongest predictor of the *Total ORS*. Therefore, Model 3 used logistic regression to explore which independent variables predicted the likelihood of having a Good alliance based on the *Alliance Cutoff* variable. The following independent variables were used in this analysis: *Client Age Group, Client Gender, Client Racial/Ethnic Status, Client Poverty Status,* and *Client Rurality Status*. Results of this analysis suggested that *Client Gender* was the strongest predictor of the *Alliance Cutoff*. This finding suggested that females were over four times more likely to indicate they have a Good therapeutic alliance than males.

Model 4 utilized logistic regression to determine the likelihood or odds of a client receiving a *Therapist Appraisal* of sufficient progress in treatment. This model was found to be statistically significant and revealed that the *Last Total ORS* and *Client Age Group* were both significant predictors of the *Therapist Appraisal*. More specifically, there was an increased likelihood of receiving a *Therapist Appraisal* of sufficient progress in treatment when a client reported higher scores on the *Last Total ORS*. Additionally, there was an increased likelihood for adolescents to receive a sufficient progress appraisal at termination compared to adults.

In an attempt to explore agreement on treatment progress between client and therapist, Model 5 utilized logistic regression to predict the likelihood of a match between therapists' and clients' perceptions of treatment progress (*Client-Therapist Agreement*). The overall model was not found to be statistically significant. While it is possible that there is no relationship between the independent variables in predicting *Client-Therapist Agreement*, it is also possible that there were not enough observations in the model for significance to be found, or that there are other variables not measured that would aid this model in achieving significance.

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CHAPTER V

DISCUSSION AND CONCLUSIONS

Summary

Despite national attention to disparity reduction, mental health disparities have continued to exist across race and ethnicity, geographic regions, and socioeconomic domains where marginalized groups are at a disproportionate risk of experiencing worse treatment outcomes (Liburd, 2015; Safran et al., 2009; Ubri & Artiga, 2016). While these disparities have been well-documented, research on the underlying mechanisms and barriers that negatively influence the delivery and success of treatment interventions have been poorly understood (Barrett et al., 2008). To support these efforts, the research questions in this study sought to expand the field's knowledge of treatment with disadvantaged adult and adolescent client populations by exploring underlying therapeutic process and outcome variables.

The client-therapist alliance has been long been recognized as being a crucial component of the therapeutic process. Many studies have found that the therapeutic alliance, particularly the clients' view of the alliance (Bachelor & Horvath, 1999; Bedi et al., 2005; Horvath & Bedi, 2002; Horvath & Symonds, 1991; Wampold, 2001), is one of the strongest predictors of therapeutic outcomes (Wampold, 2001). While there is an abundance of research examining the significance of the alliance in therapy, there is limited research that has examined the predictive value of the unique alliance domains (i.e., relationship, goals and topics, approach or method, and overall) on outcome. In an effort to address these gaps in the literature, the present study sought to expand on research findings by considering differences in the therapeutic alliance and its individual domains between advantaged and disadvantaged

groups (rurality, income, race/ethnicity, age, and gender) on how this predicts treatment outcome. Clients' self-reported scores of the alliance were measured on the Session Rating Scale (SRS) while treatment outcome and progress were measured through client's self-reported wellbeing on the Outcome Rating Scale (ORS).

Additionally, there is evidence in the literature that therapists' views of treatment progress and the therapeutic alliance are often inaccurate and/or do not match the views of the client (Hannan et al., 2005; Lambert & Ogles, 2004; Norcross, 2002; Norcross, 2010; Shaw & Murray, 2014; Stewart & Chambless, 2007). While client and therapist converging perspectives have been associated with positive treatment outcomes (e.g., stronger alliance, higher treatment success rates; Bachelor, 2013; Clemence et al., 2005, Hatcher, 1999; Kivlighan & Shaughnessy, 1995), divergent views have been found to have a negative impact (e.g., disagreement about therapeutic tasks and goals, less treatment interventions, premature termination, poor outcomes, alliance ruptures; Bachelor, 2013; Clemence et al., 2005; Hatcher & Barends, 1996; Hill et al., 1996; Safran, Crocker, McMain, & Murray, 1990) Therefore, this study sought to further predict therapist appraisals of client treatment progress from a number of demographic and treatment variables. The final research question then attempted to predict the likelihood of client and therapist agreement on treatment progress (between the therapist's appraisal and the client's self-reported change in treatment outcome).

In short, the aim of this study's research questions were to explore: (a) predictors of treatment outcome, (b) the predictive utility of the separate domains of the therapeutic alliance on treatment outcome, (c) demographic predictors of a good therapeutic alliance, (d) predictors of the therapist appraisal of sufficient treatment progress, and (e) client demographic as predictors of agreement between client and therapist on treatment progress. To answer these

questions, this study utilized pre-existing and archival data collected at the Texas A&M University Counseling and Assessment Clinic (CAC) in Bryan, Texas. The CAC is a university-based training community mental health clinic that serves low-income and rural populations. For this study, a Client sample made up of 119 unique clients who were seen at the CAC between August 2015 and May 2017 and had a total of 1,046 psychotherapy sessions (Session sample). Multiple linear regression was used for the first two research questions to predict treatment outcome from the following independent variables: *Client Age Group, Client Gender, Client Racial/Ethnic Status, Client Poverty Status, Client Rurality Status, Total SRS*, and the SRS domains (*Relationship, Goals and Topics, Approach or Method, and Overall*). Additionally, logistic regression was used for the final three research questions to predict a Good therapeutic alliance, a therapist appraisal of sufficient progress, and client-therapist agreement on treatment progress from the following independent variables: *Client Age Group, Client Gender, Client Racial/Ethnic Status, Client Poverty Status, Client Rurality Status, Last Total ORS, Reliable Change,* and *Average Total SRS*.

Research Question One: Which variable (clients' age, gender, race/ethnicity, poverty level, rurality status, or therapeutic alliance) most strongly predicts treatment response?

The aim of research question one was to explore which variables predicted clients' treatment response and to distinguish from those variables which had the strongest predictive strength. It was hypothesized that the therapeutic alliance as measured by the *Total SRS* would be the strongest predictor of treatment response as reflected by the *Total ORS*. This hypothesis was supported in the results and is consistent with pre-existing literature as previously discussed (Wampold, 2001). The effect of this predictor suggested that for every 1-point on the

Total SRS, the *Total ORS* increased by 0.59-points (see Table 2). Furthermore, the following variables were statistically significant and are listed from highest to lowest effect size: *Client Rurality Status, Client Age Group, Client Gender*, and *Client Poverty Status*. The only variable that was not found to be statistically significant was the *Client Racial/Ethnic Status*.

Research Question Two: Which domain of the therapeutic alliance (Relationship, Goals and Topics, Approach or Method, or Overall) most strongly predicts treatment response?

The aim of research question two was to explore if and/or how strongly each unique domain of the therapeutic alliance as measured by the SRS would predict client treatment response as measured by the *Total ORS*. Similar to the first research question, client demographic variables were included to control for any underlying effects and assess whether they remained significant when the *Total SRS* was separated by domains. It was hypothesized that the *SRS Relationship* domain would be the strongest predictor of client treatment response given that clients may value the therapeutic relationship more than other aspects of the alliance. However, this hypothesis was not supported by the results in this study. While none of the SRS domains were statistically significant, the *SRS Approach or Method* domain was the strongest predictor of treatment response followed by the *SRS Goals and Topics, SRS Relationship*, and *SRS Overall* (see Table 2).

Research Question Three: Which variable (clients' age, gender, race/ethnicity, poverty level, or rurality status) most strongly predicts a good therapeutic alliance?

Given that the therapeutic alliance was the strongest predictor found to predict treatment response, research question three sought to further explore which client demographic

variable was the strongest predictor of experiencing a good therapeutic alliance. It was

hypothesized that the clients' gender would most strongly predict a good therapeutic alliance

with the rationale that a majority of therapists and clients identified as female. Therefore, it was

assumed that matching based on gender may result in achieving a stronger therapeutic alliance.

The results of this study supported the hypothesis given that *Client Gender* was the only

significant predictor (see Table 3). These findings indicated that women were more than four

times as likely than men to report a Good therapeutic alliance (based on exceeding the SRS

alliance cutoff score).

> **Research Question Four: Which variable (clients' age, gender, race/ethnicity,**
>
> **poverty level, rurality status, last session treatment outcome score, reliable change**
>
> **score, or average therapeutic alliance score) most strongly predicts a therapist**
>
> **appraisal of sufficient treatment progress?**

The purpose of research question four was to investigate which client or therapeutic

variables predicted a therapist appraisal of sufficient treatment progress, and determine which

of these had the strongest statistical strength. It was hypothesized that the *Reliable Change*

variable would most strongly predict a therapist appraisal of sufficient treatment progress given

that *Reliable Change* considers a client's pre- and post-treatment outcome scores, and would

therefore be most representative of clients' overall therapeutic change or treatment progress.

This hypothesis was not supported by the results in this study. Instead, the last session

treatment outcome score (as measured by the *Last Total ORS* score) was the strongest predictor

(see Table 4). This indicates that for every 1-point on the *Last Total ORS* the odds of achieving

a *Therapist Appraisal* of sufficient progress in treatment increased by a multiple of 1.11. In

short, the higher the *Total ORS* score on a clients' last treatment session, the more likely a

therapist would indicate that the client had achieved sufficient progress. The only other significant predictor found was the *Client Age Group* which revealed that adolescents were significantly more likely than adults to receive a *Therapist Appraisal* mark of sufficient progress.

Research Question Five: Which client variable (age, gender, race/ethnicity, poverty level, or rurality status) most strongly predicts client-therapist agreement on treatment progress?

The aim of the final research question was to determine which, if any, client variable most strongly predicts a *Client-Therapist Agreement* on treatment progress. It was hypothesized that clients' rurality status would most strongly predict this agreement based on the assumption that rural clients face more barriers and mental health disparities which is also known to be associated with higher levels of distress and premature termination, which provide more apparent and clear indicators to both clients and therapists. The overall model was not significant, and therefore, not interpreted (see Table 5). One possibility is that there was no identifiable pattern based on the independent variables used in this analysis to predict *Client-Therapist Agreement*. However, it is also possible that there were either (a) not enough observations to yield significant results, (b) variables that would have led to significant findings were not included in the analysis (e.g., client information not obtained or used in this study, therapist demographic characteristics), or (c) the way that the variables were constructed did not adequately capture an agreement/disagreement on treatment progress between clients and therapists .

Explanation of Findings

Client Rurality Status

The results of this study found that Client Rurality Status was a significant predictor of treatment response as measured by the *Total ORS*. Notably, and unexpectedly, rurality was only slightly less predictive of treatment outcome than the therapeutic alliance in this study. Furthermore, these findings suggested that clients who lived in a rural area had significantly poorer treatment outcomes (i.e., less than 5.41-points on the *Total ORS*) when compared to individuals who resided in urban/suburban areas. This is noteworthy as it suggests that there is a significant impact on treatment response based on rurality, and in fact, rurality had the largest effect on treatment response compared to the other client demographic variables. These results support pre-existing literature on mental health disparities that have found rural residents to have poorer outcomes when compared to urban residents (Fischer et al., 1996; Rost et al., 2002).

When further considering potential underlying contributors of these findings several explanations may account for this effect including: (a) experiencing accessibility barriers related to transportation challenges, greater distances to the clinic, cost of treatment, or work schedule conflicts (Defife et al., 2010; Grunebaum et al., 1996; Templeman & Mitchell, 2002); (b) considerable stigma related to mental illness, clients' misconceptions about therapy, negative attitudes (Martin et al., 2005; Slama, 2004); (c) rural clients may have attended fewer sessions, experienced higher rates of missed appointments, or were more likely to prematurely terminate prior to achieving meaningful change (Defife et al., 2010; Fenger et al., 2011; Mooney & Johnson, 1992); (d) rural clients entered treatment with more severe and disabling symptomology (Wagenfeld et al., 1994), or (e) rural clients were less likely to have a strong

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working alliance which has been found to be particularly important when working with this population as they are often distrusting of outsiders, and especially mental health providers (Hanrahan & Andersen, 2010; Slama, 2004).

While some of these explanations could not be tested in this study and could not be ruled out, follow-up analyses were able to provide support against some of these possibilities. Independent samples t-tests were conducted to explore differences between the number of therapy sessions and initial levels of psychological distress. Based on the results of the follow-up analysis (see Appendix H and I), it was not supported as no significant difference between rural and suburban/urban clients' total number of sessions was found. In fact, contrary to previous studies, many of the rural clients had a higher frequency of psychotherapy sessions (i.e., 41 sessions was the max number of sessions for a rural client). Furthermore, while it was thought that rural clients may be entering into treatment with higher levels of distress, this was also not supported as there was no significant difference between rural and urban/suburban clients' first *Total ORS* scores. Lastly, it was presumed that rural clients may have had a Fair/Poor alliance compared to urban/suburban clients which would then explain the differences in outcome. However, this too was not supported given that the results obtained in research question three did not find *Client Rurality Status* to be a significant predictor of a Good alliance.

While it is possible that the statistical limitations of the sample (i.e., smaller rural sample size than suburban/urban sample), it is unlikely that this impacted the results of the present study. Instead, it is more likely that this disparity in outcomes exhibited by rural populations can be better explained by an assortment of the interconnected yet distinct underlying mental health barriers. For example, rural clients are more likely to experience

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treatment access barriers (e.g., lacking transportation/driving further distances), acceptability

barriers (e.g., negative stigma pertaining to mental health concerns), affordability barriers (e.g.,

paying for sessions/transportation), availability barriers (e.g., not having the time or flexibility

to attend sessions), and/or awareness barriers (e.g., having knowledge of mental health

concerns and where to seek treatment). Additionally, it may also be that there are barriers that

occur within the therapeutic process (e.g., therapist bias, cultural misunderstandings,

ineffective treatment interventions).

Client Poverty Status

This study found that Client Poverty Status significantly predicted treatment response

as measured by the *Total ORS*. These results suggested that on average, clients who live at or

below the federal poverty level (FPL) reported worse treatment response scores compared to

clients who live above the FPL. In fact, this income-related effect was associated with a

decrease on the *Total ORS* by 2.48-points. This suggests that poverty status, when controlling

for rural status, continues to have a significant impact on treatment response, albeit a smaller

impact than *Client Rurality Status*. This finding supports the literature suggesting that clients

experiencing poverty negatively impacts treatment response, but further builds upon past

findings by distinguishing this effect of poverty from potential confounding effects of rurality.

Aside from treatment response, *Client Poverty Status* was not found to be a significant

predictor of any of the other outcome variables examined in this study.

When seeking to understand these findings, several potential reasons were considered.

Some researchers have suggested that psychologists hold biases toward individuals from low-

income and economic marginalization backgrounds (e.g., Appio et al., 2013; Ballinger &

Wright, 2007; Bullock, 2004; Lott, 2002; Smith, 2005). Furthermore, Thompson, Cole, and

Nitzarim (2012) found that lower-income clients expressed beliefs that their therapists could not identify with their problems or unique stressors due to differences in social class. Another potential consideration is that lower-income clients may have worse symptom severity at the onset of their treatment as evidenced by research (Baum et al., 1999; Gilman et al., 2002; Lorant et al., 2003)

The possibility that low-income clients experienced a poorer alliance was not supported given that the results from research question three did not find *Client Poverty Status* to predict a Good therapeutic alliance compared to higher-income clients (i.e., clients who reported living above the FPL). Next, it was thought that those living above the FPL may attend more sessions (e.g., more likely to afford therapy, less likely to have multiple jobs) than those living at or below the FPL which could then increase the likelihood of better therapeutic outcomes. Follow-up analyses were conducted to determine if there were any differences in the number of sessions or initial symptom severity between these income groups (see Appendices H and I). However, the results of the follow-up analyses did not support these considerations. In fact, regardless of their poverty status, clients presented to therapy at roughly similar levels of distress.

As other possibilities have been ruled out, it is more likely that clients' living in poverty experience worse outcomes due to an assortment of underlying treatment access barriers that were not captured in this study. Some examples may be affordability barriers that directly impact the therapeutic process (e.g., cost of therapy, cost of transportation/gas), but there may also be indirect affordability barriers impacting psychological distress (e.g., financial burdens, stress from multiple jobs) that may not be alleviated in treatment. This may further support the

notion that more traditional forms of therapy may not serve this client population well (Miranda et al., 2003; Sue & Sue, 1990).

Client Age Group

This study found that there was a significant difference between the adolescent and adult age groups on treatment response, such that on average, adults had a worse treatment response than adolescents as indicated by their scores on the *Total ORS*. This effect illustrated that adults had lower (i.e., higher levels of distress) or worse response to treatment compared to adolescents as measured by the *Total ORS* (3.27-points lower than adolescents). Relatedly, it was found that therapists were significantly more likely to give adolescents a sufficient progress appraisal at the end of treatment in comparison to adults. Therefore, these findings suggest that therapists were able to accurately appraise client treatment progress for adult and adolescent clients. However, these results also suggest that therapists were only able to demonstrate accurate judgment of treatment progress based on clients' age and not the other demographic variables examined in this study (e.g., gender or rurality status, treatment outcome scores, reliable change, average alliance score, etc.) or other unexamined variables.

When exploring the reasons behind these findings in the follow-up analysis (see Appendices H and I), it was found that there was a significant difference between adolescents and adults in their first *Total ORS* scores. This supports the explanation that adults may be entering treatment with worse symptom severity than adolescents. Additionally, the number of sessions between adolescents and adults was also significant, such that adolescents attended on average 13 sessions, while adults attended an average of nine sessions. Since *Client Age Group* was not a significant predictor of a Good therapeutic alliance, it is likely that this treatment

response effect is due to adolescents entering treatment with lower symptom severity and attending more sessions compared to the adult group.

When reflecting on the possible factors underlying this effect (i.e., less initial symptom severity and more attended sessions), important consideration should be made in regard to the experiences of adolescents in treatment. For example, adolescents may not be initially seeking mental health treatment, but are instead participating in therapy as directed by their parents/guardians. This may explain why adolescents report lower levels of distress upon entering treatment, which may differ from the caregivers' perception of their child's distress. It may also be that the caregiver had other reasons that prompted them to seek therapy for their child (e.g., parents may be in the process of divorce, child may be demonstrating a decline in their academic performance). Additionally, parents/guardians may keep adolescents in treatment longer due to overinterpretation or concern for their perceived symptom severity or because therapy for minors often requires more sessions given that it tends to utilize interventions from a family-systems approach where treatment is most effective when each family member participates and makes changes that aim to effect positive change for the clients' wellbeing. A final consideration pertaining to this finding is that there may be other factors that were not examined in this study but exacerbated this *Client Age Group* effect. For example, at this training clinic, therapists primarily working with the adolescent group were enrolled in the School Psychology program, while those treating adults were enrolled in the Counseling Psychology program. One possible explanation might lie in the differential treatment emphases across the two applied specialties. This may also explained by the differences in the training, supervision, and experiences between therapists from each doctoral

program, and thus influences this effect. Research at this clinic, would benefit from considering these possibilities in future studies.

Client Gender

Another significant predictor of treatment response in research questions one and two was *Client Gender*. The results found that clients who self-identified as female, on average, did worse on the *Total ORS* than self-identified males by 2.95-points. This was surprising given that *Client Gender* was also a significant predictor of a Good therapeutic alliance in research question three indicating that women were more than four times as likely as men to report a Good alliance.

There are several possible explanations to these findings. When reflecting on the gender effect on treatment response, it is possible that women may be more open than men in reporting their symptom distress as men are more likely to report acceptability barriers to treatment (e.g., negative stigma around mental health). For example, men may underreport their actual symptom severity in fear of being perceived as weak or as a treatment failure, while women may overreport the severity of their symptoms to ensure that their concerns are being taken seriously by their provider. While this possibility wasn't supported by a follow-up analysis that assessed if there was a significant difference between gender on the first *Total ORS* score, these reporting styles on the ORS may have been a general trend over the course of treatment. Additionally, follow-up analysis did not find a significant difference in the number of attended sessions based on gender, ruling out the possibility that men attended more sessions than women.

The finding that women were more than four times more likely to report a good alliance than men is surprising. While it is possible that women did in fact have significantly better

therapeutic alliances than men, this possibility is unlikely. There is abundant research, including this study that shows the therapeutic alliance is the strongest predictor of treatment outcome (Norcross, 2010), so we would therefore expect women in this study to have a significantly better treatment response than men. However, this was not the case. A possibility as to this discrepancy is that men were, on average, more direct and honest in their reporting on the alliance measure, as men are traditionally socialized to be forthcoming and assertive with feedback (Miller & Bargmann, 2011). On the other hand, women may have, on average, been more positive and optimistic in their reporting on the *Total SRS* with the knowledge that their therapists would be reviewing the measure. This possibility is supported by noting women are, on average, socialized to be less direct than men and more sensitive to the needs of others (Miller & Bargmann, 2011).

Client Racial/Ethnic Status

Client Racial/Ethnic Status was not found to be a significant predictor of treatment outcome, therapeutic alliance, therapist appraisal, and client-therapist agreement. One potential explanation as to the lack of findings, is that there may simply not be a racial/ethnic disparity in treatment outcome or alliance for this clinic. The therapists in this study have diverse backgrounds and are also trained to be multiculturally sensitive and competent in their treatment. Both the School and Counseling Psychology doctoral programs at Texas A&M University emphasize multicultural treatment considerations and identify their multicultural training as strengths of their programs. It is therefore possible that their multicultural training diminishes potential negative treatment outcome disparities that racial/ethnic minorities are prone to.

While this initial interpretation of the lack of findings is optimistic, it may also be possible that this is due to limitations within how the race/ethnicity variable was constructed and measured. In order to account for the small sample sizes of certain ethnicities, this variable was categorized into nonmarginalized and marginalized groups. Therefore, the marginalized group consisted of several different and unique ethnicities, which may have confounded the results. However, this was not necessarily supported by the follow-up analyses, which explored treatment outcome differences between the Hispanic subsample to the White subsample and African-American subsample to the White subsample. In both cases, there were no significant differences based on race/ethnicity on the *Total ORS*. These findings were surprising and are not traditionally supported by disparity research, and therefore, future research at this clinic should attempt to further explore the effect of race and ethnicity in psychotherapy.

Treatment Outcome (Last Total ORS and Reliable Change)

Treatment outcome, as measured by the *Last Total ORS* and *Reliable Change* variables, was used to predict a *Therapist Appraisal* of sufficient progress in the fourth research question. The *Last Total ORS* was used as a single session measure of treatment outcome that reflects clients' symptom severity in their final session. On the other hand, *Reliable Change* was used as a measure of the overall treatment progress over the course of therapy.

The results of this study found that clients' *Last Total ORS* score was the most significant predictor of *Therapist Appraisal*. Surprisingly, *Reliable Change* was not found to be a significant predictor. These findings were unexpected as it was presumed that the presence or absence of *Reliable Change* would be the strongest predictor of treatment progress and would be reflected by the *Therapist Appraisal*. Although these findings may be indicative of errors in therapist perception, a likely possibility to explain the results is that therapists are over-valuing

a client's presentation in their final session when determining whether or not they had made sufficient progress. Another possibility is that the *Therapist Appraisal* construct of treatment progress is unstandardized or unclear to therapists, and therefore, may not always rely on statistical measures of therapeutic change (e.g., reliable change). Instead, therapists may not be interpreting this appraisal as a determination of overall treatment progress or they may base their judgment on other clinical factors focusing on a client's last session such as whether or not they terminated at a clinical level of distress. It may also be that a client demonstrated positive reliable change during treatment, but terminated therapy at a clinical level of distress that therapists found was evidence of insufficient progress. While appraising client progress may not be a grave error on behalf of the therapist, it may be indicative of other concerns related to judgment, and is at the least not ideal as single session presentations at termination are not accurate depictions of clients' overall progress in therapy.

Therapeutic Alliance (Total SRS and SRS Domains)

Results of this study found that the therapeutic alliance was the strongest predictor of treatment outcome. This information lends support to the numerous studies indicating that the alliance impacts psychotherapy treatment (Horvath & Symonds, 1991; Martin et al., 2000; Sharf et al., 2010). To expand on these findings, the study further explored each unique domain of the SRS to determine if there was a specific aspect of the therapeutic alliance (i.e., relationship, goals and topics, approach or method, or overall) that was more predictive of treatment outcome. This outcome was not found or supported by the results, as no domain score was statically strong enough on its own to predict treatment outcome. Instead, these findings give support to the interpretation that the therapeutic alliance includes several

components and is best utilized when considering it as the sum of these unique but intersecting domains.

Client-Therapist Agreement

Client-Therapist Agreement was the final variable explored in the analysis. Unfortunately, no conclusions could be drawn due to the insignificance of the model. This likely occurred given that there was no identifiable pattern based on the clients' demographic variables (age, gender, rurality, poverty status, or race/ethnicity) used in the analysis. Given the lack of conclusions obtained from the logistic regression analysis, a follow-up on the percentage of agreement and disagreement between clients (based on client self-reported scores indicating the presence or absence of positive reliable change on *Total ORS* pre- and post-treatment scores) and therapists (based on therapist appraisal of client treatment progress deemed to be sufficient or not). In doing so, it was found that clients and therapists only agreed on treatment progress 53.78% and disagreed 46.22% of the time. In light of this disparity, one may conclude that it is indicative of faulty clinical judgment. However, given the lack of standardized guidance for what constitutes sufficient progress, it may be that therapists use other clinical factors to determine whether treatment was successful even in the absence of reliable change Another interpretation of these findings is that the therapists' perspectives on progress simply did not align with clients' perspectives of their wellbeing and/or the statistical measures used to assess therapeutic change.

Furthermore, therapists at this training site are typically in the earlier years of their doctoral training experience which could impact their clinical judgment skills. This has been supported by findings in a meta-analysis of clinical judgment indicating that less experienced clinicians are not as accurate in their clinical judgment as those who are more experienced

(Spengler et al., 2009). Nevertheless, this degree of disagreement is alarming given that research emphasizes the importance of client-therapist agreement on treatment when it comes to overall treatment outcome (Bachelor, 2013). Additionally, therapists often hold considerable power in the therapeutic process such as determining when termination is appropriate, deciding which treatment interventions to use, or altering treatment when there is no change or deterioration occurring. As such, it would be beneficial for future research to explore the factors therapists consider when making treatment/progress appraisals as well as research that further explores the discrepancy or low level of agreement found between therapist appraisals and reliable change rates.

Implications of Findings

Implications drawn from this study should be considered with the awareness of the limitations of this study, the analyses, and of the variables used. There is further caution about generalizing these findings to other clinical settings and populations. With these considerations, the findings in this study may have implications for clinical research and mental health provision.

Mental Health Disparity Research

Mental health research has considered numerous outcomes when it comes to exploring disparities based on race/ethnicity, gender, age, rurality, and poverty status. This includes exploring disparities in attendance rates, dropout, and treatment outcome. This study aimed to add to the literature base by exploring disparities in treatment outcome, the therapeutic alliance, therapist appraisal, and client-therapist agreement based on a client's belongingness to a marginalized or nonmarginalized group.

As previously stated, this study supported previous findings illustrating the importance of the therapeutic alliance in predicting treatment outcome, but also provided additional insight into the dynamics of the alliance. Additionally, this study did find a disparity based on gender in the strength of the therapeutic alliance, such that women were more than four times more likely to report a good alliance than men, despite reporting statistically worse treatment outcomes. This has implications for future research, which should explore potential gender differences in treatment, particularly when utilizing self-report measures. In other words, research should consider that men may be more likely to be direct and forthcoming with their feedback on alliance measures, while women may be more likely to not report negative feedback in an effort to preserve the alliance.

Additionally, implications can be found for mental health disparity research when reflecting on predictors of the therapist appraisal measure. Adolescents were more likely to receive a sufficient progress appraisal than adults, which aligned with the disparity found between adolescents and adults on their treatment outcome. However, no significant findings were found on this therapist appraisal measure for the other variables (rurality status, poverty status, and gender) which were all significant predictors of treatment outcome. This suggests that more often than not, therapists (who are early in their clinical training and have less experience) inaccurately judged clients' progress as evidenced by the lack of significant differences between rurality status, poverty status, and gender. While this finding has been found before (e.g., Spengler et al., 2009), this still holds important implications for future research that aim to explore how therapist judgments and treatment decisions contribute to mental health disparities.

Finally, this study took important steps in exploring underlying mechanisms contributing to rural and low-income treatment disparities. An important implication is that the quality of the therapeutic alliance does not seem to be the driving force behind treatment outcome disparities for rural and low-income populations. Instead, these disparities likely exist due to potential treatment access barriers and external factors that may be outside of the control of the individual therapist (e.g., negative stigma on mental health, access to transportation, financial burdens, etc.). Future research should continue to explore these access barriers and to investigate effective solutions.

Mental Health Providers

The findings in this study have implications for all mental health providers, but particularly those that treat rural and low-income populations. A surprising finding was that one of the strongest predictors of treatment outcome was rurality status. Therefore, rural health providers should take careful consideration of the disparities within the unique rural culture they are treating. The rural clients they serve may be at risk for experiencing considerable access barriers that should be relieved when possible. For example, offering telecounseling when available to alleviate transportation and access barriers (McCord et al., 2012). *Poverty Status* was related to negative treatment outcome, but not to the same degree as *Rurality Status*. These outcome disparities support continued education and training for therapists to promote culturally appropriate treatment interventions for rural and low-income populations.

Mental health providers should consider that adolescents presented to therapy with lower levels of psychological distress, had better treatment outcomes as a whole, and had more sessions on average than adults. Since the parents/guardians of these adolescents are likely the driving force behind them seeking and remaining in treatment, providers should value and

consider the perspective of the adolescent client when it comes to their treatment decisions. Furthermore, as parents/guardians play a vital role in treatment, the quality of the alliance between therapists and these caregivers is also important to consider (e.g., encourage adolescents' treatment adherence in between sessions, treatment interventions focusing on parents/guardians making changes to positively influence adolescent; Kelley, Bickman, & Norwood, 2010; Shirk & Karver, 2003). Therefore, this would be beneficial to examine this in future studies. Additionally, mental health providers should also consider different reporting styles of their client based on gender. Women were more likely to report positive alliances, yet report worse treatment outcomes than men, while men were more likely to report worse alliances, but better treatment outcomes. A likely implication of this, is that men and women are more forthcoming and honest on different treatment variables (outcome versus alliance).

Limitations

This study had limitations with varying degrees of severity. These limitations are categorized in the following way: (a) limitations of data gathering, (b) clinical limitations, (c) variable limitations, and (d) analysis limitations.

A primary concern of this study had to do with data integrity and how the data was gathered. The data gathered for this study was not collected with the primary intention of research, but of providing feedback to clients in treatment. An estimated 26 clients had incomplete assessments, missing client demographic information, or only attended one counseling session and therefore could not be used for the study; this was roughly 18% of the original data sample. While the clients used in this study were verified through paper and electronic files, it is possible that some client data may have been entered or recorded in error. While missing, inaccurate, or incomplete SRS and/or ORS data were not used in the analyses,

this posed slight concerns as this may have been indicative of therapists not being properly trained or supervised in the use of the measures or possibly not effectively administering and integrating the measures in treatment. While these data gathering limitations are possible, they are not significant concerns of this study.

When reflecting on the clinical limitations of this study, one main concern arose. This study relied solely on preexisting, archival data and therefore was limited by the available data and variables. This study could not adequately control for other confounding variables that may have influenced the results, such as counselor demographic factors, theoretical orientations, clinical interventions used with the clients, presenting concerns, diagnoses, medications of the client, spiritual/religious beliefs of the client, education of the client, employment status, marital status, and sexual orientation of the client. It is possible that some of these variables significantly impact treatment outcome, therapeutic alliance, and therapist appraisal measures and may be related or lurking variables underneath rurality status, poverty status, race/ethnicity, gender, and/or age variables. Therefore, when interpreting the effects and results in this study, caution is recommended.

An additional limitation regarding data exclusion criteria pertains to the analyses in this study that required only one session (including the completion of the ORS and SRS instruments). While this study did not seek to examine therapeutic interventions or the effectiveness of therapy conducted at this clinic, it is worth noting that this was done for a few reasons. First, doing so would increase the sample size and improve statistical analysis measures. Second, research examining the effect of single sessions or doses of treatment have demonstrated positive outcomes. For example, one study found that a single session was sufficient to reduce client distress to manageable levels (Slive, McElheran, & Lawson, 2008).

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In another study, 58% of clients did not require additional sessions, and of these clients, 88% reported improvement when they were contacted three to 12 months later (Hoyt, Rosenbaum & Talmon, 1992; Talmon, 1990). However, the literature yields inconsistent findings regarding single sessions as noted by Hansen, Lambert, and Forman (2002) who found that optimal treatment "dosage" necessary for a majority of clients to achieve meaningful change (e.g., reliable or clinically significant improvement) occurred by 12 sessions on average. Therefore, analyses that only required one session in this study may pose certain limitations.

Another concern of this study was the measurement of variables. Many of the variables were dichotomized due to the nature of the analyses (i.e., race/ethnicity having small samples) or for the requirements of the logistic regression (i.e., *Alliance Cutoff*), but this may have led to an oversimplification of the variables. For example, separating clients by adolescent and adult age groups revealed an unequal distribution of age ranges (e.g., 13 to 17-years old compared to 18 to 85+ -years old). One significant limitation may exist within the *Client-Therapist Agreement* variable, which was constructed from two separate variables (*Reliable Change* and *Therapist Appraisal*). It was assumed that both of these variables were measuring the same construct (client treatment progress), but from different perspectives (the client and the therapist). However, this may not have been a safe assumption given the lack of standardized guidance provided to therapists when determining what constitutes sufficient progress. For example, therapists may use other clinical factors to determine whether treatment was successful even in the absence of reliable change (e.g., client terminated in a nonclinical level of distress, treatment goals were met, ORS subscale scores, information obtained from other outcome measures, etc.). Furthermore, the appraisals may have been influenced by additional factors (e.g., pressure from being evaluated on their clinical performance, supervisor's clinical

judgment, data from other outcome measures used at the clinic). Nevertheless, this was not able to be confirmed given that the rationale behind therapist appraisals was not provided or obtained for this study. Additionally, the clients were not knowingly reporting their opinion on treatment progress, but instead reported a pre- and post-assessment score on their current wellbeing, which was then used as a determination on their perspective on treatment progress. While this may pose limitations, it may also serve as an advantage given that it may be a more accurate representation of outcome.

Similarly, another limitation of this study revolves around the classification and dichotomized grouping of *Client Poverty Status* (i.e., clients who are at or below the FPL group and the clients who are above the FPL group). The individuals living above the FPL range from those who barely did not meet criteria for being at 100% poverty level to those who were more financially stable or could even be living above the 200% and higher levels. While the TAMU CAC typically serves low-income and poor working individuals, it also serves individuals who may not meet this criteria. For the purposes of this study, data on exact family incomes was not obtained, and instead was gathered based on what household income category each client was designated during the telephone screening process as indicated by the Sliding Fee Schedule in Appendix E. In doing so, client income levels were separated into four groups by percentage multipliers of the designated poverty level including those who live at or below 100% poverty level, 150%, 185%, and 200% or higher. Therefore, clients living 200% above poverty level are clustered together which poses certain limitations. Furthermore, when making a dichotomous variable, it is likely that many group members designated as being above the FPL in the study's analyses still likely experience various levels of financial distress and the barriers and oppression faced by this marginalized population. Lastly, as noted throughout this

dissertation, the importance of intersectionality cannot be underscored, and it is crucial to recognize that individuals who have one or more disadvantaged statuses are increasingly likely to experience higher levels of oppression in various forms. While this was not considered in the study and is a limitation, future research that investigates the impact or predictive nature of intersectionality of clients' marginalized and non-marginalized statuses on treatment would be highly beneficial and additive to the present study.

Last, limitations may have existed in the statistical analyses used in this study. An initial concern existed within the rurality variable, which only consisted of 22 clients. However, since the analysis using the rural Client sample ($n = 119$) relied on logistic regression, this issue is believed to be minimal. There were also concerns with the ORS and SRS measures, which are prone to ceiling effects. Careful consideration was therefore made on which regression analysis to use to answer the research questions. When predicting the ORS, the normality of the residuals was slightly left-tailed skewed (see Appendix D), yet this was minimal, and due to the large sample size ($n = 1,046$), central limit theorem could be assumed. It was initially hoped that research question three could utilize a similar analysis with multiple linear regression to predict alliance. However, the assumption of normality was violated due to the high ceiling effect (e.g., the tendency for clients to provide elevated SRS scores), which prevented this analysis from being used. Instead, the SRS measure had to be dichotomized for the *Alliance Cutoff* measure (between a Fair/Poor and Good alliance), so that logistic regression could be used (which does not require the normality of residuals). While this was not ideal and not initially anticipated, logistic regression is an adequate substitute and did not seem to hinder statistical effects. Another statistical limitation in this study is related to using a pre-established Reliable Change Index score on the Outcome Rating Scale to determine if

clients achieved positive reliable change or not in treatment. This was measured by establishing the difference between pre- and post-treatment *Total ORS* scores, and as a result, this change score may not be a reliable statistical measure.

Future Directions

Future research can build on the findings of this study in several notable ways. First, research should carefully consider the significant impact of rurality on treatment outcome and continue to explore which treatment access barriers in particular have an adverse effect on these clients. Therefore, it is important for research to continue to explore potential solutions for these issues (e.g., research on primary prevention and interventions that have been found to work). For example, continued research that examines the effectiveness of telecounseling in reducing barriers, and therefore, mental health disparities, would be beneficial to the field.

Additionally, research should continue to explore predictors of the therapeutic alliance, and if those of different cultures and identities form alliances of similar strength and/or in similar ways. This is most important when considering the impact of the alliance on treatment outcome. Drawing from this, it is also recommended that research explore gender and age differences in reporting styles on these process and outcome measures. This may have important implications for providers who interpret and draw conclusions from these self-report measures to inform treatment.

A final recommendation for future research is to continue to examine the clinical judgments of therapists and their supervisors to determine if their judgments accurately reflect the client's perspective. Since the literature emphasizes the importance of client-therapist agreement, research should take steps in attempting to predict this occurrence or lack thereof, particularly with marginalized populations. This is of the utmost importance in helping

providers become more aware of potential blind spots in their clinical decision-making based on a number of client and therapeutic variables.

While the findings in this study offer some guidance and insight for future mental health researchers, it is evident that there remain considerable gaps in our understanding of mental health disparities and of the therapeutic processes that influence them. It is consequently, with much optimism, that with growing knowledge of these issues and continued effort on behalf of the researchers and providers, strides will be made to eliminate these pervasive mental health treatment disparities.

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OUTCOME RATING SCALE (ORS)

Outcome Rating Scale

Client Name:_____   Date:_____

Looking back over the last week, including today, help us understand how you have
been feeling by rating how well you have been doing in the following areas of your life,
where marks to the left represent low levels and marks to the right indicate high levels.
*If you are filling out this form for another person, please fill out according to how you
think he or she is doing.*

Individually
(Personal well-being)

I---I

Interpersonally
(Family, close relationships)

I---I

Socially
(Work, school, friendships)

I---I

Overall
(General sense of well-being)

I---I

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SESSION RATING SCALE (SRS)

Session Rating Scale

Please rate today's session by placing a mark on the line nearest to the description that best fits your experience.

Relationship

I did not feel heard, understood, and respected.

I--I

I felt heard, understood, and respected.

Goals and Topics

We did *not* work on or talk about what I wanted to work on and talk about.

I--I

We worked on and talked about what I wanted to work on and talk about.

Approach or Method

The therapist's approach is not a good fit for me.

I--I

The therapist's approach is a good fit for me.

Overall

There was something missing in the session today.

I--I
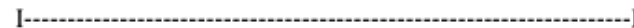
Overall, today's session was right for me.

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TERMINATION SUMMARY REPORT

Texas A&M Counseling and Assessment Clinic
Note

Name: Oliver Twist	**ID:** 00000
Type: Termination/Transfer Summary	
Counselor: Carly McCord	**Date and time:** 08/19/2013

Narrative:

Is this a Transfer? _____

Is this a Termination? _____

If Terminating, please mark the appropriate selection with an 'X'
__Mutual Agreement to terminate   __Sufficient progress made   OR __Not sufficient progress made
__Therapist-initiated termination   __Sufficient progress made   OR __Not sufficient progress made
__Client-initiated termination   __Sufficient progress made   OR __ Not sufficient progress made in treatment

SUMMARY OF SERVICES

1. Most Recent Counseling Service Provided (Adult Individual, Child/Adolescent Individual, Couples):
Most Recent Counselor:
Begin Date:
End Date:
# of Sessions:
# of No-Shows:
Total # of Sessions to date:
Total # of No-Shows to date:

2. Previous Counseling Service Provided (Adult Individual, Child/Adolescent Individual, Couples):
Previous Counselor:
Begin Date:
End Date:
# of Sessions:
# of No-Shows:

INITIAL REASON FOR REFERRAL:

SUMMARY OF COUNSELING PROGRESS (For clients seen <4 sessions with no intake report, provide a summary of contacts and history):

REASON FOR TERMINATION OR TRANSFER:

FOLLOW-UP, REFERRALS, OR NEED FOR FURTHER TREATMENT:

INITIAL DIAGNOSTIC CONSIDERATIONS:

TERMINATION/TRANSFER DIAGNOSTIC CONSIDERATIONS:

Signatures:

William A. Rae, PhD, Supervisor 08/25/2013

Page 1
8/25/2013 5:11 PM
Oliver Twist FILENO

HISTOGRAM OF RESIDUALS

Model 1
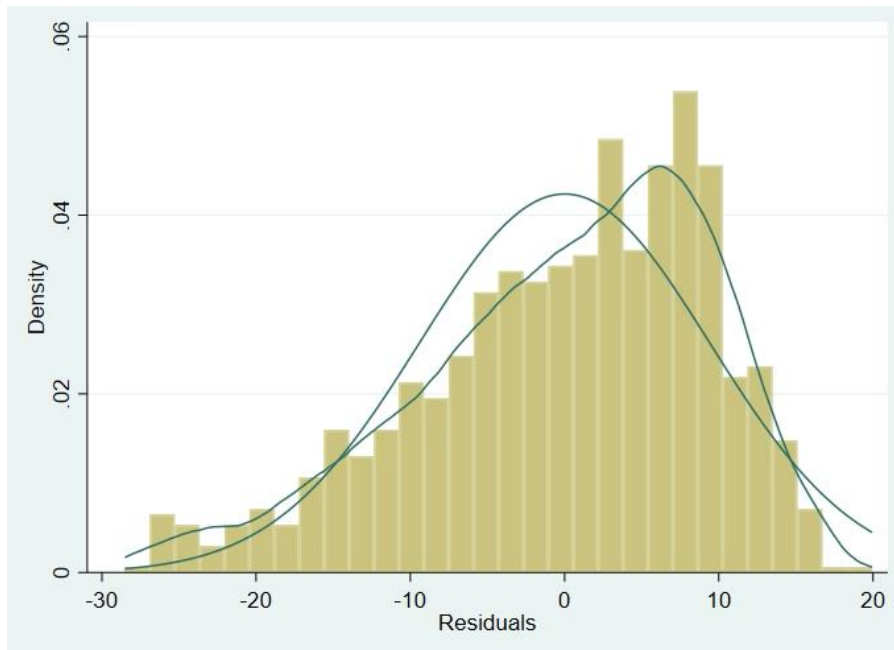
Model 2
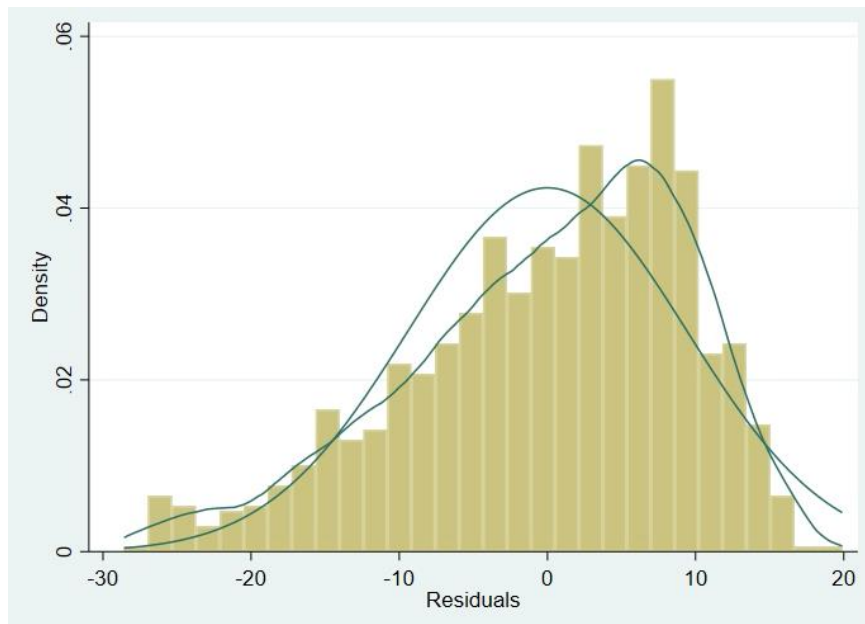
CAC SLIDING FEE SCALE

Sliding Fee Schedule
Effective 9/1/17

All services provided by the CAC are billed at $90.00 per hour. Part of this fee may be absorbed by the Clinic based on the client's financial status. Our sliding fee scale for therapy is based on ability to pay and is correlated to the Federal poverty guidelines and correlated with the current copay rate for services in the Community Health Center. All family income is calculated at an annual rate.

Family Size	$6.00 Copay 100%	$10.00 Copay 150%	$12.00 Copay 185%	$14.00 Copay 200%	$18.00 Copay 300%	$20.00 Copay 400%	$30.00 Copay	$50.00 Copay	$70.00 Copay	$90.00 Copay
1 Up to	12,060	18,090	22,310	24,120	36,180	48,240	60,000	90,000	130,000	160,001+
2 Up to	16,240	24,360	30,045	32,480	48,720	64,960	75,000	100,000	140,000	180,001+
3 Up to	20,420	30,630	37,780	40,840	61,260	81,680	95,000	120,000	160,000	190,001+
4 Up to	24,600	36,900	45,510	49,200	73,800	98,400	115,000	145,000	185,000	220,001+
5 Up to	28,780	43,170	53,245	57,560	86,340	115,120	135,000	160,000	200,000	240,001+
6 Up to	32,960	49,440	60,975	65,920	98,880	131,840	155,000	185,000	220,000	250,001+
7 Up to	37,140	55,710	68,710	74,280	111,420	148,560	175,000	210,000	250,000	280,001+
8+ Up to	41,320	61,980	76,440	82,640	123,960	165,280	190,000	250,000	280,000	300,001+

CORRELATION MATRIX OF VARIABLES IN MODELS 1 AND 2

```
. corr Age Rurality Gender Marginalized Income TOTALORS TOTALSRS SRSSHIP SRSGOALS SRSAPPROACH OVERALLSRS
(obs=1,046)
```

	Age	Rurality	Gender	Margin~d	Income	TOTALORS	TOTALSRS	SRSSHIP	SRSGOALS	SRSAPP~H	OVERAL~S
Age	1.0000										
Rurality	-0.1141	1.0000									
Gender	-0.0139	-0.1076	1.0000								
Marginalized	-0.2164	0.0790	0.0083	1.0000							
Income	0.3064	-0.1894	-0.1101	0.1920	1.0000						
TOTALORS	-0.1774	-0.1748	-0.0697	-0.0330	-0.1391	1.0000					
TOTALSRS	-0.0590	-0.1155	0.2171	-0.0341	-0.1012	0.2270	1.0000				
SRSSHIP	-0.0373	-0.0959	0.1794	-0.0297	-0.0834	0.1932	0.9010	1.0000			
SRSGOALS	-0.0221	-0.1105	0.1811	-0.0324	-0.0846	0.2047	0.8963	0.7527	1.0000		
SRSAPPROACH	-0.0942	-0.0899	0.2191	-0.0286	-0.0975	0.2135	0.9027	0.7219	0.7529	1.0000	
OVERALLSRS	-0.0588	-0.1224	0.2001	-0.0350	-0.0969	0.2016	0.9102	0.7913	0.7168	0.7899	1.0000

CORRELATION MATRIX OF VARIABLES IN MODELS 3, 4, AND 5

```
. corr Age Gender Marginalized Income Rurality APPRAISAL LASTORS SRSAVG LASTSRS RC2 RATE
(obs=119)
```

	Age	Gender	Margin~d	Income	Rurality	APPRAI~L	LASTORS	SRSAVG	LASTSRS	RC2	RATE
Age	1.0000										
Gender	0.0212	1.0000									
Marginalized	-0.0827	0.0562	1.0000								
Income	0.3515	-0.0070	0.3176	1.0000							
Rurality	-0.0364	-0.1102	-0.0625	-0.0581	1.0000						
APPRAISAL	-0.3603	-0.0325	-0.0919	-0.1377	0.0647	1.0000					
LASTORS	-0.3697	-0.0821	0.0706	-0.2146	-0.1090	0.3749	1.0000				
SRSAVG	-0.0991	0.2824	-0.0180	-0.1145	-0.0767	0.1051	0.2403	1.0000			
LASTSRS	-0.2076	0.2494	0.0411	-0.0519	-0.0916	0.1669	0.3103	0.8527	1.0000		
RC2	-0.1476	0.2198	-0.0000	-0.1520	0.0466	0.1395	0.5230	0.1406	0.1712	1.0000	
RATE	-0.0727	0.0727	0.0195	0.0096	0.0507	0.2110	-0.1829	-0.0212	-0.0512	-0.3304	1.0000

INDEPENDENT SAMPLES T-TEST (First Total ORS)

First Total ORS by Gender

```
. ttest FIRSTORS, by(Gender)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	41	22.61463	1.380268	8.83803	19.82501	25.40426
1	78	19.54744	.951688	8.405081	17.65238	21.44249
combined	119	20.6042	.7924003	8.644067	19.03503	22.17337
diff		3.067198	1.650376		-.2012845	6.335681

```
    diff = mean(0) - mean(1)                               t =   1.8585
Ho: diff = 0                            degrees of freedom =       117

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9672       Pr(|T| > |t|) = 0.0656         Pr(T > t) = 0.0328
```

First Total ORS by Age Group

```
. ttest FIRSTORS, by(Age)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	39	23.15897	1.240286	7.745583	20.64815	25.6698
1	80	19.35875	.9871431	8.829277	17.39389	21.32361
combined	119	20.6042	.7924003	8.644067	19.03503	22.17337
diff		3.800224	1.658559		.515535	7.084914

```
    diff = mean(0) - mean(1)                               t =   2.2913
Ho: diff = 0                            degrees of freedom =       117

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9881       Pr(|T| > |t|) = 0.0237         Pr(T > t) = 0.0119
```

First Total ORS by Race/Ethnicity

```
. ttest FIRSTORS, by(Marginalized)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	68	19.58529	.9887343	8.153312	17.61177	21.55882
1	51	21.96275	1.283118	9.163295	19.38553	24.53996
combined	119	20.6042	.7924003	8.644067	19.03503	22.17337
diff		-2.377451	1.59296		-5.532225	.777323

```
    diff = mean(0) - mean(1)                              t =  -1.4925
Ho: diff = 0                          degrees of freedom =      117

   Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
Pr(T < t) = 0.0691      Pr(|T| > |t|) = 0.1383        Pr(T > t) = 0.9309
```

First Total ORS by Rurality Status

```
. ttest FIRSTORS, by(Rurality)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	97	20.86701	.9063585	8.926596	19.0679	22.66612
1	22	19.44545	1.564649	7.338855	16.19159	22.69932
combined	119	20.6042	.7924003	8.644067	19.03503	22.17337
diff		1.421556	2.045729		-2.629904	5.473015

```
    diff = mean(0) - mean(1)                              t =   0.6949
Ho: diff = 0                          degrees of freedom =      117

   Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
Pr(T < t) = 0.7557      Pr(|T| > |t|) = 0.4885        Pr(T > t) = 0.2443
```

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```
. ttest FIRSTORS, by(Income)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	47	22.0766	1.022278	7.008387	20.01886	24.13434
1	72	19.64306	1.117958	9.486192	17.41391	21.8722
combined	119	20.6042	.7924003	8.644067	19.03503	22.17337
diff		2.43354	1.612266		-.7594688	5.626549

```
    diff = mean(0) - mean(1)                              t =   1.5094
Ho: diff = 0                            degrees of freedom =      117

    Ha: diff < 0              Ha: diff != 0                Ha: diff > 0
Pr(T < t) = 0.9331      Pr(|T| > |t|) = 0.1339       Pr(T > t) = 0.0669
```

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APPENDIX I

INDEPENDENT SAMPLES T-TEST (NUMBER OF SESSIONS)

Number of Sessions by Gender

```
. ttest NUMBEROFTOTALSESSIONS, by (Gender)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	41	9.268293	1.323348	8.47356	6.593707	11.94288
1	78	10.41026	1.096939	9.687904	8.225972	12.59454
combined	119	10.01681	.8495232	9.267204	8.334519	11.69909
diff		-1.141964	1.792168		-4.691259	2.407332

```
    diff = mean(0) - mean(1)                              t =  -0.6372
Ho: diff = 0                             degrees of freedom =      117

    Ha: diff < 0                   Ha: diff != 0                  Ha: diff > 0
Pr(T < t) = 0.2626         Pr(|T| > |t|) = 0.5252         Pr(T > t) = 0.7374
```

Number of Sessions by Age Group

```
. ttest NUMBEROFTOTALSESSIONS, by(Age)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	39	12.82051	1.566291	9.781486	9.649722	15.9913
1	80	8.65	.9777752	8.745487	6.703787	10.59621
combined	119	10.01681	.8495232	9.267204	8.334519	11.69909
diff		4.170513	1.776212		.6528181	7.688208

```
    diff = mean(0) - mean(1)                              t =   2.3480
Ho: diff = 0                             degrees of freedom =      117

    Ha: diff < 0                   Ha: diff != 0                  Ha: diff > 0
Pr(T < t) = 0.9897         Pr(|T| > |t|) = 0.0206         Pr(T > t) = 0.0103
```

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Number of Sessions by Race/Ethnicity

```
. ttest NUMBEROFTOTALSESSIONS, by(Marginalized)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	68	10.01471	1.164761	9.604869	7.689832	12.33958
1	51	10.01961	1.245066	8.891547	7.51882	12.5204
combined	119	10.01681	.8495232	9.267204	8.334519	11.69909
diff		-.004902	1.723974		-3.419142	3.409338

```
    diff = mean(0) - mean(1)                              t =  -0.0028
Ho: diff = 0                              degrees of freedom =      117

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
Pr(T < t) = 0.4989         Pr(|T| > |t|) = 0.9977         Pr(T > t) = 0.5011
```

Number of Sessions by Rurality Status

```
. ttest NUMBEROFTOTALSESSIONS, by(Rurality)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	97	10.1134	.9340215	9.199045	8.259384	11.96742
1	22	9.590909	2.08339	9.771967	5.258262	13.92356
combined	119	10.01681	.8495232	9.267204	8.334519	11.69909
diff		.522493	2.197193		-3.828932	4.873918

```
    diff = mean(0) - mean(1)                              t =   0.2378
Ho: diff = 0                              degrees of freedom =      117

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
Pr(T < t) = 0.5938         Pr(|T| > |t|) = 0.8125         Pr(T > t) = 0.4062
```

149

```
. ttest NUMBEROFTOTALSESSIONS, by(Income)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	47	11.78723	1.545468	10.59519	8.676369	14.8981
1	72	8.861111	.9615669	8.159166	6.943801	10.77842
combined	119	10.01681	.8495232	9.267204	8.334519	11.69909
diff		2.926123	1.724146		-.4884586	6.340704

```
    diff = mean(0) - mean(1)                              t =    1.6971
Ho: diff = 0                             degrees of freedom =       117

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9538       Pr(|T| > |t|) = 0.0923        Pr(T > t) = 0.0462
```