Evaluation of Three Types of Mental Health Treatment Outcome for Asian American Clients

By

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This dissertation is dedicated to

my mother Cheryl S. Tsuru, and grandfather Charles H. Nishimura

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ABSTRACT

EVALUATION OF THREE TYPES OF MENTAL HEALTH TREATMENT OUTCOME FOR ASIAN AMERICAN CLIENTS

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The present study examined several client demographic, clinical, and service provider variables and their relationship to treatment outcome as defined as premature termination in the first month of treatment, treatment length (total number of completed psychotherapy sessions), and change in pre/post-treatment Global Assessment of Functioning (GAF) scores for 1,030 Asian Americans (193 Cambodian, 349 Chinese, 134 Iu Mien, 113 Korean, and 241 Vietnamese) seeking individual psychotherapy from an ethnic-specific mental health service provider.

Results showed that more educated clients, who spoke English as their primary language, were client-therapist Asian language match, or assigned their intake therapist as their primary therapist were less likely to prematurely terminate from treatment. Korean Americans also reported the highest rates of premature termination in this sample.

To account for clients who discontinued treatment in the first month, subsequent analyses on treatment length and pre/post-treatment GAF scores were completed on a smaller sample of 937 Asian Americans (187 Cambodian, 318 Chinese, 127 Iu Mien, 91 Korean, and 214 Vietnamese). Results showed that clients who were women, Cambodian or Iu Mien American, completed more medication consultation appointments, or averaged more therapy sessions per week reported longer treatment lengths. In contrast, clients who were discharged or referred to other facilities by therapists or diagnosed with an adjustment disorder completed shorter treatment lengths.

Results also showed that clients who completed more medication consultation appointments, were discharged or referred to other facilities by their therapists, had longer treatment lengths, or were diagnosed with an adjustment disorder reported a larger difference in pre/post-treatment GAF scores. In contrast, Cambodian Americans and clients who averaged more therapy sessions per week reported with smaller differences in pre/post-treatment GAF scores.

In general, the results of this dissertation study suggest there may be culturally related factors unique to specific Asian American ethnic groups that may influence differential treatment outcome. Furthermore, the findings suggest the need for greater care and consideration in studying how ethnic-specific services are being delivered to various Asian American groups and underscores the importance of evaluating the treatment needs of Asian American groups separately rather than an aggregate whole.

CHAPTER I

INTRODUCTION

Statistics indicate Asian Americans made up 4.2% (or 12 million people) of the total U.S. population in 2000 (U.S. Census Bureau, 2001; U.S. Census Bureau, 2004), nearly doubling in size from 1990 (U.S. Census Bureau, 1993). Reporting the most rapid growth of all the minority groups in the past decade, Asian Americans are no longer a marginal group and more efforts need to be taken to clearly identify and meet the health care demands of this burgeoning population (K. M. Lin & Cheung, 1999). In contrast to this surge in population, Asian Americans still remain one of the most understudied groups in terms of their mental health service needs and utilization patterns (Akutsu, 1997; Chen, Sullivan, Lu, & Shibusawa, 2003).

In response to this problem, a review of the literature of culture, race, and ethnicity on mental health was published as the Supplement to the Surgeon General's Report on Mental Health (U.S. Department of Health and Human Services [U.S. DHHS], 2001). This supplement outlined several important considerations for Asian Americans. First, the overall prevalence of mental disorders in Asian Americans did not significantly differ from other ethnic groups in the U.S. This finding dispelled the misconception that higher levels of economic and social attainment for Asian Americans made them more well-adjusted and psychologically inured against mental illness (S. Sue, D. W. Sue, L. Sue, & Takeuchi, 1995). Second, Asian Americans reported the lowest rates of service

utilization in comparison to other racial groups in the U.S. However, when Asian Americans seek out mental health services, they present with more severe forms of psychological disturbance, suggesting that Asian Americans might be delaying the use of services until their problems become unbearable to both the client and their family. When considering these two points together, it could be construed that the underutilization of mental health services by Asian Americans is not necessarily a reflection of less psychological need, but more likely due to problems in the helpseeking process and delivery of clinical services and treatment (Root, 1985; Uba, 1994; Zane, Hatanaka, Park, & Akutsu, 1994). In fact, when evaluating these issues in the context of their recent population growth, Asian Americans may now, more than ever, present with a strong need for culturally sensitive and appropriate psychological treatment.

This landmark review of the research literature attributed the problem of service underutilization in Asian Americans to cultural factors (e.g., elevated stigma and shame regarding mental illness) and dissimilar beliefs about culturally acceptable treatment in contrast to what is traditionally offered in a Western-based system of health care (U.S. DHHS, 2001). As a result, one of the most significant barriers that Asian Americans may face in accessing treatment is a lack of culturally appropriate services, including therapists trained in culturally sensitive forms of treatments who can provide multilingual services to clients with limited English proficiency. This review indicated that when ethnic or culturally specific forms of treatment were employed, Asian Americans showed increased rates of service use and better treatment outcome.

In conclusion, the Surgeon General's report stated that it was imperative to introduce more culturally and linguistically appropriate mental health services to Asian

Americans (U.S. DHHS, 2001). Specific recommendations emphasized the need for research that could focus more attention on the prevalence rates of mental disorders among Asian American groups. In addition, the report underlined the importance of researching more ethnic-specific forms of treatment and preventive strategies to improve the overall delivery of mental health care to this population. The report also acknowledged the dearth in research on mental health issues with Asian Americans and the limitations without such research for mental health care providers to identify and promote culturally effective programs to better serve this ethnic minority group.

In response to this research mandate, my doctoral dissertation will study several demographic, clinical, and program variables at an Asian-oriented ethnic-specific mental health program to identify which of these factors may contribute to improved service use and treatment outcome. A previous study at this same Asian-oriented mental health program found that certain program features and clinical decisions by mental health staff helped to significantly decrease pre-intake attrition (i.e., a client's failure to attend his/her first intake session) (Akutsu, Tsuru, & Chu, 2004). In my dissertation, I will investigate the post-intake session process for Asian American clients to identify which factors may contribute to premature termination in the first month, longer treatment length (as defined as total number of completed individual sessions), and positive treatment outcome (as defined by the change in pre- versus post-treatment Global Assessment of Functioning (GAF) scores). The findings from this research could then help to inform and develop more culturally competent delivery of mental health services to Asian American communities. While previous research on client-therapist matching have studied Asian American populations as a single aggregate group, a significant contribution of the

current dissertation was the ability to examine Asian American subgroup differences. As a result, within-group differences on premature termination, treatment length, and treatment outcome could be systematically examined among multiple Asian American ethnic groups. This type of research method is valuable because it can help to assist mental health providers and administrators to develop more culturally appropriate service systems for different Asian American groups.

In the following sections, I will first discuss patterns of mental health service utilization for Asian Americans. This review of the literature will critically examine the research that has historically reported low rates of service utilization, the occurrence of greater psychopathology at service inquiry, and cultural factors that affect the delivery of mental health services to Asian Americans. I will also review the psychological literature on treatment outcome, often defined in three specific areas of study: Premature termination, treatment length, and change in pre- versus post-treatment GAF scores. I will discuss client characteristics, clinical factors, and programmatic components which have been reported to increase service use, decrease premature termination, and improve pre/post-treatment GAF scores for Asian Americans. This literature review will then conclude with a discussion of the specific research questions and hypotheses that were studied in my dissertation project.

REVIEW OF THE LITERATURE

Mental Health Service Delivery Problems for Asian Americans

Asian Americans are the most rapidly growing ethnic minority in the United States (U.S. Census Bureau, 2001). As with any burgeoning population, there is a reasonable expectation that the mental health care demands of Asian Americans will concurrently grow. As a result, it has been stated "clinicians can ill afford to remain unfamiliar with issues that are of particular importance in providing care to this population" (K. M. Lin & Cheung, 1999, pp. 774). Yet even with this understanding, there still exists a significant deficiency in the knowledge base regarding the mental health needs of Asian Americans as well as in the number of empirical studies evaluating the effectiveness of psychotherapy for this population (Leong, 1986; Uba, 1994; U.S. DHHS, 2001).

What is currently known is that an estimated 17% of Asian Americans in the community have a diagnosable mental disorder (U.S. DHHS, 2001). In contrast to this number, it was reported that less than 6% of the Asian Americans who sought any type of informal/formal help turned to a mental health provider. These percentages indicate that Asian Americans who could benefit from mental health care are not seeking or receiving proper treatment. In a seminal study on Asian American service utilization patterns, S. Sue (1977) found that only 100 of the 13,198 clients who received mental health services at 17 Seattle-based providers were of Asian American descent. Compared to their European American counterparts and population figures in the community, Asian Americans were grossly underutilizing mental health services in the Seattle-King County area. Numerous studies have since corroborated these findings with over four decades of

research that has consistently reported an underutilization of mental health services by this ethnic group (Abe-Kim et al., 2007; Chen et al., 2003; Cheung & Snowden, 1990; Eisenberg, Golberstein, & Gollust, 2007; Herrick & Brown, 1998; Leong, 1994; Matsuoka, Breaux, & Ryujin, 1997; Soett & Sevig, 2006; S. Sue, Fujino, Hu, Takeuchi, & Zane, 1991; S. Sue, 1977; S. Sue & Morishima, 1982, Zhang, Snowden, & S. Sue, 1998).

One of the earliest theories proposed to explain these low rates of mental health service utilization by Asian Americans was based on the unfounded argument that Asian Americans were hardier and more resilient to mental illness and the prevalence of mental disorders in this ethnic population was assumed to be extremely low (K. M. Lin & Cheung, 1999). This proposal assumed that Asian Americans were a so-called "model minority," with remarkably high levels of social achievement and success (S. Sue et al., 1991). This idea was further supported by reports of low rates of crime, juvenile delinquency, and marital divorce for this ethnic group. However, critical examinations of the treated cases or clients in mental health systems revealed that Asian Americans suffered from comparable rates of mental illness, and oftentimes they presented with more severe and chronic forms of psychopathology (S. Sue, McKinney, & Allen, 1976; S. Sue & Morishima, 1982). Other studies have since reported that Asian Americans commonly present with more severe psychopathology than other racial groups, exhibiting lower scores on psychological functioning and a higher percentage of psychotic disorders at treatment onset (Akutsu, Snowden, & Organista, 1996; Chen et al., 2003; Durvasula & S. Sue, 1996; Flaskerud & Hu, 1992).

To better explain this paradox of low service utilization, yet greater likelihood of severe psychopathology, clinicians and researchers alike have proposed that Asian Americans are significantly delaying their efforts to seek mental health services until they have become extremely ill (Chen et al., 2003; Herrick & Brown, 1998; S. Sue & McKinney, 1975). Specifically, it was suggested that Asian Americans only use mental health services when they have exhausted all other community and social resources and the individual client and his/her family can no longer ignore the dire need for psychiatric help (Leong, Chang, & Lee, 2007; K. M. Lin, Inui, Kleinman, & Womack, 1982; T. Y. Lin & K. M. Lin, 1978). In one study, Asian Americans waited an average of 1,553 days after the initial onset of psychological symptoms before seeking psychiatric care, as compared to an average of 607 days for European Americans and 1,055 days for African Americans (K. M. Lin et al., 1982). A recent study on Asian Americans with a severe mental illness provided a more conservative estimate, reporting that most of these clients sought psychiatric help within six months after the onset of their psychological symptoms (Okazaki, 2000).

In summary, the psychological literature on mental health service utilization for Asian Americans has emphasized three important points. First, Asian Americans have shown a persistent pattern of mental health service underutilization over the past 40 years (Abe-Kim et al., 2007; Chen et al., 2003; Leong, 1994; Matsuoka et al., 1997; Snowden & Cheung, 1990; U.S. DHHS, 2001). Specific findings from community and regional samples as well as national studies point to a persistent under-representation of Asian Americans in the mainstream public mental health system. Second, this problem is further compounded by findings that suggest Asian Americans only seek treatment as a

last resort and present with the most severe forms of psychopathology at admission (Durvasula & S. Sue, 1996; Flaskerud & Hu, 1992). Third, Asian Americans often exacerbate their mental health condition by delaying the use of mental health services for several months or several years after the onset of psychological symptoms (K. M. Lin et al., 1982; Okazaki, 2000). When considering the sum of these points together, it is hard to conclude that consistent under-representation in the mental health service system is a reflection of a lack in clinical need of treatment for Asian Americans (Root, 1985). It is more likely that client reluctance and the cultural responsiveness of mental health care providers play critical roles. Given these unique circumstances, careful consideration must be taken to further study the delivery of mental health services to Asian American groups (S. Sue & McKinney, 1975; U.S. DHHS, 2001).

Ethnic-Specific Programs as the Answer?

Many clinicians and researchers suggest these discrepancies in mental health care access for Asian Americans are due in large part to a failure of the mental health system to provide culturally sensitive forms of treatment (Kagawa-Singer & Chung, 2002; Leong et al., 2007). Specifically, there is a lack of culturally appropriate programs which take into account possible differences in cultural perceptions of the etiology of mental illness, the heightened levels of stigma and shame that Asian Americans associate with mental illness, linguistic incompatibilities, and other cultural factors that may clash with the current traditions of Western-based psychotherapy (Akutsu, Lin, & Zane, 1990; Flaskerud & Soldevilla, 1986; Ho, 1976; Kung, 2004; Leong, 1986; Leong, Chang, & Lee, 2007; Leong & Lau, 2001; Leong, Wagner, & Kim, 1995; Ng, 1997; Root, 1985; S.

Sue et al., 1976; S. Sue & Morishima, 1982; Tata & Leong, 1994; Triandis, Sinha, & Kao, 1988; Uba, 1994; Zane, Nagayama Hall, S.Sue, Young, & Nunez, 2004) .

To address this problem, S. Sue (1977) proposed three possible solutions: 1) Supplement the existing mainstream or traditional service system by hiring more ethnic minority specialists and/or provide greater training in cultural competence for existing non-Asian American staff; 2) Create parallel or ethnic-specific service programs; and 3) Establish non-parallel programs that are tailored to specific ethnic populations. Of these suggestions, the development of ethnic-specific or parallel service programs has received the greatest attention with regard to facilitating increased cultural sensitivity in the mental health service delivery system. The key impetus for developing ethnic-specific or parallel service programs was to provide more effective services to Asian American clients by increasing the number of service providers from the same ethnic group to improve cultural understanding and/or to improve the training of current clinical staff to provide more culturally competent services. This clinical direction would also include the hiring of more bilingual clinicians that could provide psychotherapeutic treatment in a variety of Asian languages or dialects. On a conceptual level, ethnic-specific programs should provide clinical interventions that are a better fit with the cultural backgrounds and lifestyles of ethnic minority clients. It was believed that disparities in mental health care for Asian Americans would be significantly reduced because cultural and linguistic mismatches would decrease between the therapist and the client (S. Sue, 1998).

Over the years, aggressive efforts have been launched to introduce more ethnic-specific or parallel services to Asian American communities. A decade after S. Sue's study on the Seattle-King County community mental health system, O'Sullivan and his

colleagues' (1989) re-examination of the county service data indicated that Asian Americans were faring better in the system with utilization rates that exceeded the catchment area's Asian American population and rates of treatment outcome that were consistent with European Americans. O'Sullivan et al. concluded these results were probably due to the concerted efforts of the Seattle-King County community mental health system (i.e., the hiring of more bicultural/bilingual Asian American staff and introduction of ethnic-specific and more culturally sensitive programs) to meet the growing needs of Asian Americans and other ethnic minorities. It is important to note this study did not empirically examine the effect of ethnic-specific services and merely concluded that improved service delivery was due to assumed changes in the mental health system. Another study published on the State of Washington's Mental Health Management Information System proposed the same conclusions to explain improved findings in the percentage of Asian Americans using public mental health services which were now proportional to the general Asian American population in the geographic area (Maynard, Elreth, Cox, Peterson, & McGann, 1997). Studies that have directly examined the impact of ethnic-specific mental health on service utilization have been generally positive, showing that Asian Americans were significantly more likely to access ethnic-specific services rather than mainstream programs (S. Sue, Fujino, Hu, Takeuchi, & Zane, 1991; Takeuchi, S. Sue, & Yeh, 1995; Zane et al., 1994).

Advocates for the delivery of culturally competent treatments have heralded the success of ethnic-specific programs in increasing service utilization for Asian Americans. Despite these positive findings, the question of whether ethnic-specific services have a positive impact on treatment outcome still remains largely unanswered (Leong et al.,

2007; U.S. DHHS, 2001, Zane et al., 2004). To date, there remains a paucity of studies that have systematically evaluated the treatment process related to service use and treatment outcome for Asian Americans at ethnic-specific mental health services (S. Sue, 1998; U.S. DHHS, 2001). To complicate matters, the little research that has been published has often overlooked the heterogeneity of the Asian American ethnic group. As a result, the findings of these studies are somewhat limited and may be obsolete in light of the rapidly changing sociodemographics of the Asian American population, which has been influenced by an influx of immigrants and refugees over the last two decades (Chen et al., 2003). In response to this demographic shift, researchers have strongly advocated for more "fine-grained" studies that can examine Asian American subgroups to provide a better picture of what issues may be related to positive treatment outcomes for different Asian American groups at ethnic-specific services (Kurasaki, S. Sue, Chun, & Gee, 2000; Leong et al., 2007). Without this knowledge base, clinicians will be hard-pressed to provide the most optimal forms of treatments for different Asian American groups suffering from mental illnesses (U.S. DHHS, 2001).

Given the lack of available data on the psychotherapy process for Asian Americans, researchers have often used information from large clinical or county data sets to identify patterns in treatment outcome (Leong et al., 2007; Zane et al., 2004). These efforts have often focused on two indirect measures of treatment outcome (premature termination and treatment length) and one direct measure of treatment outcome (change in pre-post scores on clinical measures). Although these are substitutes to direct proximal measurements (such as session-by-session evaluations of clinical change), in the absence of such critical data, these measures still can serve as invaluable

tools to help improve our general understanding of the different patterns in the effectiveness of mental health services for Asian Americans.

Indirect Treatment Outcome Measurement: Premature Termination

Premature termination is defined in the psychotherapy literature as the unilateral decision on the client's part to discontinue psychotherapy against the therapist's recommendation for continued treatment, or before the client completes his/her client-therapist agreed-upon treatment goals. Measuring the rates of premature termination in Asian Americans has been a complex issue with findings that have varied across the few studies conducted on this ethnic group. An early study by S. Sue (1977) found that Asian Americans were 60% more likely to prematurely terminate from treatment (defined as a client's failure to return after their first intake session) than European Americans. With the advent of ethnic-specific service programs, the comparative rates of premature termination for Asian Americans have decreased significantly (Chen et al., 2003; O'Sullivan et al., 1989; S. Sue et al., 1991; Zane et al., 1994). When comparing the rates of premature termination (defined as failure to return after the first intake session) between service provider types, it was found that 36% of the clients prematurely terminated at mainstream programs, however a striking 2% of the clients prematurely terminated from ethnic-specific programs (Takeuchi, Sue, & Yeh, 1995). In general, the rates of premature termination at mental health programs have ranged from 10% to 22% in Asian American client populations (Lin, 1994; Zane et al., 1994).

Why is it Important to Study Premature Termination?

In the general psychotherapy literature, premature termination has been viewed as a significant barrier to the efficacy of mental health service delivery and this condition

creates economic, administrative, and clinical problems for both the client and service provider (Lambert & Ogles, 2004; Mennicke, Lent, & Burgoyne, 1988; Ogrodniczuk, Joyce, & Piper, 2005; Pekarik, 1983; Reis & Brown, 1999). Unfortunately, there has been a paucity of research investigating premature termination for Asian Americans and the impact that premature termination may have on the delivery of services to Asian American clients. As such, any information about the possible effects of premature termination on Asian American clients must be gleaned from studies with general clinical populations. It has been suggested that clients who prematurely terminate are rarely in psychotherapy long enough to receive its full benefits (Ogrodniczuk et al., 2005). When surveyed, these clients report with higher psychological distress, poorer outcomes, and less therapeutic progress than clients who continued in treatment (Archer, Forbes, Metcalfe, & Winter, 2000; Mueller & Pekarik, 2000; Pekarik, 1983). These clients also report with higher rates of recidivism or return to treatment, often becoming chronic clients that over-use clinical services over and over again and never stay in treatment long enough to gain its full benefits.

From an administrative perspective, mental health service providers see premature termination as an obstruction to the efficient allocation of limited financial and human resources. When clients fail to attend psychotherapy appointments, they waste the valuable time and energy of clinical and clerical staff that could be treating other clients that are more compatible and inclined to attend their psychotherapy sessions on a regular basis. This high rate of failed attendance can also contribute to longer wait lists in these settings because these clients take time away from clinical services that could be offered to others who are more likely to attend and stay in treatment. Furthermore, mental health

providers cannot reclaim lost revenue or staff time from the failed attendance of psychotherapy sessions by clients who decide to terminate prematurely (Pekarik, 1985a).

While these critical issues of staffing and funding should not take precedence over the crucial needs of potential clients, they are still important factors in managing an effective service delivery system for clinical populations in psychiatric need. This is an important issue for community-based ethnic-specific service providers whose unique services (e.g., ability to provide services in multiple languages) are in high demand, yet often struggle to survive with limited amounts of funding (K. M. Lin & Cheung, 1999).

Problems in the Operational Definition of Premature Termination

One of the most frequently cited problems for developing a better understanding of this concept of premature termination in the mental health literature is the lack of a consistent operational definition that is used to describe this clinical phenomenon (Garfield, 1994; Mennicke et al., 1988; Pekarik, 1985b). In the general psychology literature, premature termination has been described in many different ways including treatment "dropouts," "discontinuation," and "unilateral termination." These terms have often generated confusion, since many researchers use these terms interchangeably and fail to provide a clear definition of premature termination in their respective studies (Tyron & Kane, 1993). This also seems to hold true in the limited research on premature termination for Asian Americans.

Past research on general clinical populations has shown that investigators often employ an arbitrary cut-off point or specify a certain number of completed therapy sessions to define whether a client has prematurely terminated from treatment (Garfield, 1994; Pekarik, 1985b). On face value, the use of a cut-off point or a specified number of

completed sessions could provide a valid and reliable measure to identify premature termination if this definition based on a cut-off point was used in a consistent fashion (Hatchett & Park, 2003). Unfortunately, studies on premature termination with Asian Americans have often differed in their operational definitions and use of cut-off points. For example, premature termination is defined as a failure to return after one session in several studies (Chen et al., 2003; O'Sullivan et al., 1989; S. Sue, 1977; S. Sue et al., 1991; Takeuchi et al., 1995; Zane et al., 1994), but other studies discuss premature termination as a dependent variable without providing an operational definition of this concept or any reference to a specified number of completed sessions (Flaskerud & Liu, 1991). The decision to use different cut-off points to define premature termination from one study to another has contributed to inconsistencies across various studies because clients described as premature terminators in one study using one set of cut-off points may be considered treatment continuers in another study using a different set of cut-off points (i.e., the failure to return after the intake session versus completion of a specific number of therapy sessions) (Garfield, 1994).

In an effort to standardize the operational definition of premature termination and allow direct comparisons to the findings in S. Sue (1977) and O'Sullivan et al. (1985) studies, a large number of recent studies on Asian Americans have adopted the "failure to return after one-session" criteria as a measure of premature termination (Chen et al., 2003; S. Sue et al., 1991; Takeuchi et al., 1995; Zane et al., 1994). What is not clear from these studies is whether the client actually prematurely terminated from treatment. For instance, clients who were classified as having "prematurely terminated" in these studies may have been referred to more appropriate services at another agency or were

deemed by the clinician to not require any further treatment after the first session. So even though the "failure to return after one-session" criteria has been commonly used by recent studies and could provide a more reliable measure of premature termination across these studies, flaws in the studies' research designs and operational definitions suggest that it may not be a valid measure without greater elaboration.

To address this problem, Pekarik (1985b) proposed the use of a therapist's clinical judgment to decide whether a client had prematurely terminated. In his study, it was reported that therapist judgment was more clinically useful and accurate than definitions of premature termination that were based solely on cut-off points or a specific number of completed sessions. Other contemporary researchers that used this clinical judgment criteria tend to support Pekarik's argument that a therapist's assessment of a client "can be a far more sophisticated measure of de-facto progress or *completion*" than reliance on cut-off points (Reis & Brown, 2006, p. 311).

It is important to note, however, that an inherent weakness in the sole use of a therapist's judgment is a lack of a systematic way to guide therapists in these decisions of premature termination. Since therapists have their own personal and idiosyncratic criteria about what constitutes a successful psychotherapy case, their clinical judgment of premature termination can be extremely subjective (Pekarik & Finney-Owen, 1987). Thus, although a therapist's judgment may be a more clinically valid measure of premature termination, the psychology literature suggests that when used as the sole criteria without some type of clear cut-off point regarding therapy sessions, it may lack a certain level of reliability and validity.

Solution to Problems in the Operational Definition of Premature Termination

A possible solution to these problems in the operational definition of premature termination is to use both a cut-off based criteria and the clinician's clinical assessment or input to verify whether a client has prematurely terminated. On an intuitive level, this method suggests a more comprehensive and clear operational definition of premature termination. In addition to this clarity in definition, the researcher should focus more attention on the beginning stages of treatment or the most critical time frame in treatment where the reduction of premature termination is crucial for effective service delivery. For example, researchers may want to focus their efforts on studying the early stages of treatment in the first month rather than just the first intake session to monitor premature termination. This would then create a cut-off score or number of sessions that clearly defined clients that continued beyond four sessions and methodologically provided a reliable or set measure of premature termination. The researcher could then check with the therapist's clinical judgment to make sure that clients who abandoned treatment in the first four sessions were confirmed by the therapist as premature terminators, providing greater validity to the operational definition.

Indirect Treatment Outcome Measurement: Treatment Length

In the psychotherapy literature, treatment length has often been viewed as a sign of compliance and has been commonly defined as the total number of sessions completed by a client during the course of their treatment (Howard, Kopta, & Krause, & Orlinsky, 1986). This definition differs from other temporal measurements of outcome such as treatment duration which usually describes the total amount of chronological time (months, years) that a client has spent in therapy from clinical admission to discharge. In

general, once Asian Americans are in clinical treatment, they tend to complete more therapy sessions than other racial groups. In a study of the Los Angeles County mental health system, Asian Americans completed, on average, 6.3 sessions, followed by Mexican Americans and European Americans at 5.1 sessions, and finally African Americans at 4 sessions (S. Sue et al., 1991). In another study in Los Angeles County, Asian Americans who used ethnic-specific services were found to completed more therapy sessions than those at mainstream services (Takeuchi et al., 1995). Finally, in a study in San Diego County, Asian Americans reported greater length of treatment in both inpatient and outpatient services than other racial groups (Chen et al., 2003).

Why is it Important to Study Treatment Length?

Decades of research suggest that psychotherapeutic treatment is generally beneficial to the client, with the amount of time spent in treatment being positively associated with a better treatment outcome (Howard et al., 1986; Kopta, 1983; Smith, Glass, Miller, 1980). The process by which this takes place has been referred to as the dose-effect relationship (Howard et al., 1986). Based on this theory, a client who is exposed more to the active ingredient of a treatment (or higher dosage) should report with a better treatment outcome or therapeutic effect. This theory is analogous to the use of different levels or dosages of clinical medications in drug trials and thus treatment dosage could be defined as the total number of therapy sessions completed by a particular client. In addition to this, it is believed that longer lengths in treatment will produce stronger therapeutic alliances between the client and the therapist and translate into higher ratings in client's satisfaction with treatment (Orlinsky, Ronnestad, & Willutzki, 2004). All of these variables have been linked to more positive treatment outcomes.

In an extensive review of the psychotherapy process-outcome literature, Orlinsky et al. (2004) found that longer treatment lengths were often related to positive clinical outcomes in comparison to clients with shorter treatment lengths using mental health services. On a study-by-study level, clients with longer treatment lengths showed better outcomes on pre- versus post-treatment scores using both client- and therapist-rated clinical measures (Anderson & Lambert, 2001; Archer, Forbes, Metcalfe, & Winter, 2000; Eaton, Abeles, & Gutfreund, 1993). As such, length of treatment as defined by number of completed therapy sessions can be an adequate indirect measure of treatment outcome.

Problems with the Current Studies that Evaluated Treatment Length

Two important methodological issues need to be considered when evaluating treatment length for Asian Americans at ethnic-specific mental health services. First, although the literature found that Asian Americans reported longer treatment lengths at ethnic-specific programs (Chen et al., 2003; Sue et al., 1991; Takeuchi et al., 1995), any conclusions regarding the success of ethnic-specific programs based solely on these findings would be premature. It is important to note that when Asian Americans finally seek out mental health services, they often present with the most severe forms of psychopathology (e.g., schizophrenia spectrum or psychotic disorders), and by virtue of reporting with more serious diagnoses and conditions, they would be assumed to require longer treatment lengths (Durvasula & Sue, 1996; S. Sue, 1998; Zane et al., 2004). Unfortunately, due to the limitations of the data used by past researchers to evaluate treatment outcome for Asian Americans, detailed analyses controlling for the contribution of multiple types of clinical diagnoses were not performed. Second, the

studies that examined treatment length as a dependent variable often do not account or control for the scheduled frequency of sessions during a set period of time or the length of time in treatment (treatment duration) (Flaskerud & Liu, 1991; S. Sue et al., 1991; Takeuchi, Sue, & Yeh, 1995; Ying & Hu, 1994; Zane et al., 1994). For example, there could be a significant difference in the clinical experience of a client seen once a week or four times in one month versus a client seen once a month for a four-month period. According to the dose-effect relationship, both clients have been exposed to the same amount of treatment, but it is clear that they have been exposed to treatment at drastically different rates in time. Under these conditions, one would question whether treatment length is a valid indirect measure of treatment outcome and comparable across different studies if the treatment duration or scheduled frequency of therapy sessions is significantly different from one study to the next.

Solution to the Problem in the Evaluation of Treatment Length

Any future studies using treatment length as an indirect measure of treatment outcome for Asian Americans should also control for different types of psychiatric diagnoses as well as the scheduled frequency of treatment and treatment duration. Some studies have also included admission scores on a specific measure of psychological functioning (e.g., Global Assessment Scale (GAS)/Global Assessment of Functioning (GAF) scores) in their analyses of treatment length (Flaskerud & Liu, 1991; S. Sue et al., 1991; Takeuchi, Sue, & Yeh, 1995; Ying & Hu, 1994; Zane et al., 1994). This could help to identify and control for the significant impact of the level of severity of psychopathology at clinical admission on varying reports of treatment lengths. Unfortunately, no study with Asian Americans has controlled for treatment duration or

actual time in treatment, warranting further investigations of the appropriateness of using treatment length as an indirect measure of treatment outcome for Asian Americans.

Direct Treatment Outcome Measurement: Global Assessment Scores (GAS) & Global Assessment of Functioning (GAF)

In the psychological literature, few studies have directly examined measures of psychotherapy outcomes for Asian Americans (Leong et al., 2007; S. Sue, 1998; U.S. DHHS, 2001; Zane et al., 2004). In the only study to examine this psychotherapy process for adult Asian Americans at mainstream services, Asian Americans reported with poorer outcomes on client self-reported (e.g., Symptom Checklist) and therapist-reported (e.g., Brief Psychiatric Rating Scale) clinical measures than European Americans, even when controlling for pre-treatment severity of psychiatric symptoms (Zane, Enomoto, & Chun, 1994). Other studies have constructed possible theories about psychotherapy treatment outcomes for Asian Americans that are based on samples from college counseling centers (Leong et al., 2007). As such, these studies are limited in scope vis-à-vis application to the general Asian American client population.

Much of the inadequacies in our knowledge regarding treatment outcomes for Asian Americans come from a lack of research studying this topic and a scarcity in reliable data (S. Sue, 1998). As a result, many studies that have evaluated treatment outcomes for Asian Americans at community-based providers have used more distal direct measures to examine the effectiveness of psychotherapy with this population because they are often secondary analyses of large clinical databases on clients who had terminated treatment. Of these distal clinical measures, the GAS and its updated version, the GAF Scale (DSM-III-R; American Psychiatric Association, 1987; DSM-IV; American Psychiatric Association, 1994; Endicott, Spitzer, Fleiss, & Cohen, 1976) have

been the most frequently studied. Both scales are nearly identical in format (the GAF received minor changes from the GAS) and were designed to evaluate an individual's psychological, social, and occupational functioning in comparison to the severity of the individual's mental illness. These scales provide a single rating by the clinician that can range from a low score of 1, which represents the most seriously disturbed or "sickest" individual, to a high score of 100, which represents the "healthiest" individual. Traditionally, a mental health provider was required to assess the client at admission and discharge within a given episode of clinical treatment and these reported assessments allowed for secondary analyses of these distal treatment outcome measures.

Why is it Important to Study GAS or GAF?

Given the limited amount of data on treatment outcomes for Asian Americans, the few studies that used GAS/GAF score have proven to be important for identifying services that are most effective with this ethnic group and for providing future direction about public policies to benefit the mental health care of this population (U.S. DHHS, 2001). Unfortunately, studies on the treatment outcome of Asian Americans that have used these distal direct measurements have provided mixed results. Several studies have reported no significant differences in the post-treatment GAS scores for Asian Americans at mainstream versus ethnic-specific services (S. Sue et al., 1991; Takeuchi et al., 1991). However, another study of Asian American clients at ethnic-specific services reported significant differences in pre- and post-treatment GAS scores, suggesting these clients at an ethnic-specific program experienced better treatment outcomes than those who attended mainstream services (Lau & Zane, 2000). Some studies that examined ethnic-specific services also found subtle Asian American subgroup differences in pre- and post-

treatment GAS scores (Ying & Hu, 1994), while other studies found no significant differences among Asian American subgroups (Flaskerud & Hu, 1994; Zane et al., 2004). Based on these results, a definitive conclusion regarding the treatment effectiveness of ethnic-specific mental health services for Asian Americans could not be drawn given the limited research and differential findings on this topic.

Problems with the use of GAS or GAF

One reason why there may be conflicting findings in the psychotherapy outcome research for Asian Americans may be due to the various methods that are employed in using GAS scores to assess for treatment outcome. Some studies focus only on post-treatment GAS scores without giving equal consideration or controlling for pre-treatment GAS scores to determine if Asian Americans had benefited from ethnic-specific services (S. Sue et al., 1991; Takeuchi et al., 1991). As mentioned earlier, none of these studies reported significant differences in post-treatment GAS scores for Asian Americans at mainstream versus ethnic-specific services. In the one study that supported Asian Americans benefited significantly from treatment at ethnic-specific services, the researchers focused on the change in pre- and post-treatment GAS scores to evaluate treatment outcome (Lau & Zane, 2000). For studies that evaluated only ethnic-specific service providers, both pre- and post-treatment GAS score differences were found to be instrumental in identifying certain variables that significantly contributed to positive treatment outcome (Ying & Hu, 1994; Zane et al., 1994). For instance, two of the strongest predictors of positive outcome as measured by reported changes in pre- and post-treatment GAS scores were identified as the length of treatment (total number of completed sessions) and pre-treatment severity of psychopathology (pre-treatment GAS

score). In addition to these findings, Ying and Hu (1994) found significant differences in the treatment outcome of various Asian American subgroups, suggesting the importance of examining Asian American group differences that may be due to their heterogeneity.

Solution to the Problems in the use of GAS or GAF

Future studies using GAS/GAF scores should include both pre- and post-treatment scores in their analysis, as this method showed the most promise in identifying significant factors that could contribute to improved treatment outcome for Asian Americans seeking mental health services (Lau & Zane, 2000; Ying & Hu, 1994; Zane et al., 1994). It is also important that future analyses control for the client's length of treatment (as measured by number of completed sessions) and pre-treatment severity of their psychopathology (as measured by pre-treatment GAS/GAF scores to serve as a baseline measure), as these two variables were found to be highly significant in predicting positive differences in pre- and post-treatment GAS scores (Ying & Hu, 1994; Zane et al., 1994). Frequency of visits (i.e., scheduled number of sessions within a given time frame) may also play a very important role in predicting clinical outcome and should be controlled for when examining differences in pre- and post-treatment GAS/GAF scores or treatment outcome. Finally, it is important that future research examine Asian Americans as a heterogeneous racial group and investigate if Asian American subgroup differences are important to differential treatment outcomes (Ying & Hu, 1994).

Factors That Affect Treatment Outcome

In response to the disparities in the access and quality of mental health care for Asian Americans, researchers support the need for more studies on the psychotherapy process and treatment outcome for this population (U.S. DHHS, 2001). A lack of

empirical research and conflicting findings in this research have made it difficult to draw any definitive conclusions about which factors contribute to improved treatment outcome for Asian Americans (Leong et al., 2007; S. Sue, 1998; Zane et al., 2004). Contemporary investigations have indicated that part of the reason for this limited understanding may stem from researchers failing to acknowledge and account for the high level of heterogeneity in this ethnic population (U.S. DHHS, 2001). Asian Americans make up over 28 different Asian ethnic groups that speak over 30 distinct languages (S. Sue, 1999) and each of these Asian ethnic groups has its own unique set of cultural nuances and practices, as well as different history of immigration and reception to the U.S. For example, many of the recent Asian immigrants and refugees in the U.S. are Southeast Asians (e.g., Cambodians, Hmong, Laotian, Iu Mien, and Vietnamese) (U.S. Census Bureau, 2004) and they report with a host of mitigating factors (e.g., limited financial resources and social support, unfamiliarity with Western health services, pre-migration war and war-related trauma) that have been associated with low service utilization and poor treatment outcome (Gong-Guy, 1987; Leong & Lau, 2001). As such, it will be difficult to determine why Southeast Asian Americans may report with the poorest outcomes in psychotherapeutic treatment among Asian Americans unless a more careful investigation of various factors is completed (Ying & Hu, 1994). What this example suggests is there is a critical need to move beyond studying Asian Americans as a homogeneous racial group and to place more attention on the possibility of Asian American subgroup differences to provide a better picture of what issues may be related to positive treatment outcome for various Asian American groups (Kurasaki, S.Sue, Chun, & Gee, 2000; Leong et al., 2007; U.S. DHHS, 2001).

The following section will break down the findings on Asian American mental health treatment utilization and treatment outcome literature by reviewing specific demographic (e.g., age, gender, marital status, immigration/refugee status), clinical (e.g., psychiatric diagnosis, severity/functional impairment, previous psychiatric history, and psychiatric medication evaluation/consultation), and service provider (therapist-client ethnic, gender, and language match, continuity of care or continued treatment with the same clinician) factors that have been studied in the psychotherapy process literature. Each of these factors will be discussed in context to its contribution to premature termination, treatment length, and impact on GAS/GAF scores and these variables' limitations in predicting treatment outcome for Asian Americans seeking mental health services.

Age

Very little has been published on the impact of age on treatment outcome for Asian American clients. In one study in Los Angeles County, older Southeast Asians were found to have attended more therapy sessions than Chinese, Filipino, Japanese, or Korean Americans (Ying & Hu, 1994). For the most part, age has not been a significant predictor of premature termination, treatment length, or change in GAS/GAF scores (Flaskerud & Liu, 1991; Lau & Zane, 2000; Sue et al., 1991; Zane et al., 1994). In another study on pre-intake attrition for Asian American at an ethnic-specific provider in California, older clients were more likely to have attended their first appointments than younger ones (Akutsu et al., 2004). However, it is not clear if this age effect would translate to significant age differences after treatment is initiated.

A review of the general psychology research also failed to report that age is a consistent predictor of treatment outcome (Affleck & Garfield, 1961; Frank, Hoehn-Saric, Imber, Liberman, & Stone, 1978; Heisler, Beck, Fraps, & McReynolds, 1982; Hoffman, 1985; Persons, Burns, & Perloff, 1988; Sledge, Moras, Hartley, & Levine, 1990). In one of the few studies that found a significant relationship, younger clients were at a greater risk for premature termination in long-term psychotherapy than older ones (Greenspan & Kulkish, 1985). Rather than assume age is a direct predictor of treatment outcome, contemporary researchers believe a client's age is more likely to impact therapeutic decisions about the type of clinical services offered to a client (e.g., specific focus and nature of interventions) to assure the treatment is age-appropriate and sensitive to the age-demands of the client (Clarkin & Levy, 2004). As such, age should be considered as a possible covariate in any future analysis of treatment outcome to control for age-related contributions.

Gender

The possibility of gender-specific effects on treatment outcome is another understudied area for Asian Americans. In general, women make up a larger proportion of the Asian American clients in the mental health system (Akutsu et al., 2004; Chen et al., 2003; Zane et al., 1994). Similar to gender effects in the general client population, Asian American men are less likely to seek mental health care than Asian American women (Tata & Leong, 1994). Unfortunately, very few studies have examined the impact of gender on treatment outcome for Asian Americans and the limited findings on this subject found no significant differences in treatment outcome between Asian American males and females (Akutsu et al., 2004; Ying & Hu, 1994; Zane et al., 1994).

The sole exception to these findings was a study of Los Angeles County, which reported that Asian American females at ethnic-specific services showed better post-treatment outcome than other racial groups (S. Sue et al., 1991).

In the general literature, there have been mixed findings with some studies suggesting women are more likely to report with higher rates of premature termination (Baekeland & Lundwall, 1975), while others have concluded men are more likely to report higher rates of premature termination (Brown & Kosterlitz, 1964; Carpenter & Range, 1983). In contrast, the majority of literature on gender tends to mirror the report of non-significant findings with Asian Americans, suggesting there are few significant differences between males and females on measures of treatment outcome (Affleck & Garfield, 1961; Betz & Shullman, 1979; Epperson, 1981; Frank et al., 1978; Greenspan & Kulkish, 1985; Heisler et al., 1982; Krauskopf, Baumgardner, & Mandracchia, 1981; Petry, Tennen, & Affleck, 2000; Sledge et al., 1990). The conclusion of these studies seems to point towards a finding that gender is not a consistent predictor of treatment outcome (Clarkin & Levy, 2004). In the future, studies evaluating mental health issues for Asian Americans should, however, include gender in their research designs to gather more information about whether this variable may impact treatment outcome.

Asian American Ethnicity

Previous psychotherapy outcome research with ethnic minority groups has often combined Asian American subgroups into one single heterogeneous ethnic category (U.S. DHHS, 2001; Zane et al., 2004). By doing so, researchers have risked overlooking possible differences in treatment response and outcome that may be linked to the heterogeneity of Asian American groups. For instance, when evaluating Asian American

subgroups, Southeast Asians (e.g., Cambodian, Iu Mien, Laotians, and Vietnamese) were found to report poorer treatment outcome than other Asian American groups. Southeast Asian Americans also were found to be overrepresented in the public outpatient mental health system (Barreto & Segal, 2005; Ying & Hu, 1994), with the exception of one study on Vietnamese Americans who were less likely to make full use of clinical services (Zane et al., 1994). Furthermore, Southeast Asians reported the highest rates of premature termination and shortest treatment lengths among Asian American groups, even when controlling for the influence of ethnic-specific programs (Barreto & Segal, 2005; Ying & Hu, 1994; Zane et al., 1994). More pointedly, these findings indicate a tendency for Southeast Asians to experience less improvement in psychological functioning from mental health treatment (Ying & Hu, 1994).

Among the East Asian Americans (e.g., Chinese, Japanese, and Koreans) and Filipino Americans, it is often suggested that Filipino Americans may be under-represented in the mental health service system (Ying & Hu, 1994). Another study suggested that Chinese and Japanese Americans could be at greater risk to shy away from mental health services (Leong, 1994). In contrast to these findings, a study on the California Department of Mental Health found Filipino Americans and East Asian Americans utilize outpatient and inpatient services at a higher rate than other racial groups (Baretto & Segal, 2005). Treatment outcome for East Asian Americans and Southeast Asian Americans were also found to be significantly better at ethnic-specific programs than mainstream programs (Lau & Zane, 2000; Takeuchi et al., 1995).

These findings suggest that service use and treatment outcome may vary for Asian American subgroups and intra-group disparities may exist in the delivery of mental health

care to Asian American subgroups. Given this possibility, contemporary researchers have argued that Asian Americans should not be treated as a single homogeneous group and Asian American subgroup differences should be examined whenever possible with regard to psychotherapy research (Leong et al., 2007; Zane et al., 2004). Significant differences in treatment outcome could inform researchers and clinicians about which Asian American subgroups warrant more consideration when delivering mental health care to this ethnic minority group. Unfortunately, the number of studies that have examined Asian American ethnic differences in treatment outcome is limited, with even fewer studies on Asian American ethnic differences at ethnic-specific mental health programs. As a result, definitive answers regarding treatment outcome for the various Asian American ethnic groups cannot be determined at this time without further investigation.

Socioeconomic Status (SES)

The socioeconomic status (SES) of Asian Americans is often a difficult variable to measure due to a broad spectrum of cultural, immigration, and geographical factors that can significantly influence this variable. For the most part, East Asian Americans (e.g., Chinese, Japanese, and Koreans) and Filipino Americans have reported with some of the highest annual incomes and rates of high school completion in the U.S. (S. Sue et al., 1995; U.S. DHHS, 2001). In contrast, Southeast Asian Americans (e.g., Cambodians, Hmong, Iu Mien, Laotians, and Vietnamese) were found to have the highest rates of poverty, and lowest levels of academic achievement in the U.S. (S. Sue et al., 1995, U.S. DHHS, 2001).

Past research on general populations suggest clients from lower levels of SES report with higher rates of premature termination and worse treatment outcomes (Garfield, 1994). Individuals with lower SES also report less clinical experience and exposure to psychotherapy (Jacobs, Charles, Jacobs, Weinstein, & Mann 1972; Strupp & Bloxom, 1973). Since low SES is often correlated with lower education status, these individuals may be more negatively affected by the stigma that society has placed on having a mental illness (Baretto & Segal, 2005; Fox, Blank, Rovnyak, & Barnett, 1999). This is a particularly conspicuous issue for Asian Americans as the stigma of mental illness and a mistrust in Western-based mental health care can act as significant barriers to accessing mental health services (Leong & Lau, 2001). The lack of financial resources (e.g., health or medical insurance) to pay for mental health care can also explain why low SES people, in general, may not seek clinical services and/or prematurely terminate at higher rates (Fox et al., 2001). In fact when surveyed, Asian Americans reported the high costs of mental health care often played an instrumental role in their decision to not seek care or to discontinue treatment (Leong & Lau, 2001; Wong et al., 2006).

Studies examining SES in Asian Americans in California have often used Medi-Cal eligibility as a proxy for low SES. In California, Medi-Cal is the state's version of Medicaid, which provides primary, acute, and long-term insurance benefits with no to little premiums/co-payments for low-income families and their children, people with disabilities, or senior citizens over the age of 65 years (California Healthcare Foundation, 2007). Past research has found that Medi-cal eligibility is associated with higher rates of premature termination, shorter treatment lengths, and poorer treatment outcomes in Asian American clients at ethnic-specific mental health services (S. Sue et al., 1991; Ying &

Hu, 1994). In another study which used employment status as a measure of SES, unemployment was significantly related to higher premature termination for Asian Americans at ethnic-specific mental health services (Zane et al., 1994).

Immigration/Refugee Status

As reported, nearly 40% of the Asian Americans in the U.S. are comprised of immigrants and refugees from other countries (U.S. Census Bureau, 2004). Given their significant presence, the evaluation of how immigration and refugee status impacts mental health service utilization and treatment outcome for Asian Americans is of great importance (U.S. DHHS, 2001). According to the *accumulative stress theory*, many immigrants face multiple stressors including linguistic difficulties, transitioning and adapting to a new environment, racism and discrimination, lack of financial resources, and separation from family (Berry & Sam, 1997; Hwang, Chun, Takeuchi, Myers, & Siddarth, 2005). Refugees face the added stress of escaping from the traumatic experiences of war and genocide, which compounds their difficulty in trying to adapt to the societal demands of a new country (Gong-Guy, Cravens, & Patterson, 1991). Not only do these stressors place immigrants and refugees at a greater risk for developing mental illness (Oh, Koeske, & Sales, 2002; Organista, Organista, & Kurasaki, 2002), but these same factors may contribute to service underutilization and poorer treatment outcome for Asian Americans (Leong & Lau, 2001).

Immigrants and refugees may also have different views about the etiology of mental illness (e.g., organic/biological causes) and overly present their mental health conditions in somatic terms (Akutsu, 1997; Westermeyer, Bouafuely, Neider, & Callies, 1989). These cultural beliefs, in turn, can reduce the likelihood of seeking out the help of

a mental health professional (Flaskerud & Soldevilla, 1986; Uba, 1994). In addition, a lack of knowledge and exposure to Western models of mental health care may reduce their confidence and increase mistrust in a mental health system that seems strange and foreign to them (Akutsu, 1997; Leong & Lau, 2001; Tseng et al., 2001; Uba, 1994). Studies also suggest that Asian immigrants and refugees may be more sensitive to the stigma and shame associated with having a mental illness (Ho, 1976). Finally, many Asian immigrants and refugees must overcome other structural barriers such as finding much-needed financial resources to pay for the exorbitant costs of mental health care or finding a mental health provider who can speak their native language (Kung, 2004; D. W. Sue & Sue, 1999; Wong et al., 2006).

In contrast, the *acculturation hypothesis* suggests that Asian immigrants and refugees will become more integrated and adapt better to a new environment with time and experience (Chun, Organista, & Marin, 2002). As such, individuals will overcome certain difficulties related to initial immigration as they become more confident and effective in using the social and community resources in their new environment. This theory further suggests that the longer an individual lives in the U.S., the more acculturated s/he becomes to the U.S. lifestyle and culture, which could help to reduce the stigma and shame related to having a mental illness and improve the seeking of assistance from a mental health professional, and possibly increase the chances for a better treatment outcome.

Contemporary studies on the epidemiological data of Asian Americans have introduced a new line of research that have examined the age at which a person immigrates to the U.S., and the likelihood of developing a psychological disorder

(Takeuchi, Hong, Gile, & Algeria, 2007). Some studies found that U.S.-born Asian Americans and Asian Americans who immigrated to the U.S. at an earlier age (usually before the age of 18 years) are more at risk for developing a mental disorder (Breslau & Chang, 2006; Hwang et al., 2005; Takeuchi et al., 2007). The cause of this phenomenon has been linked to U.S.-born Asian Americans and immigrants/refugees adopting the unhealthy habits and lifestyles of their environment, and as a function of a regression to the normative prevalence rates, may experience mental illness on the same level as the "native" population (Berry, 1998; Hwang, Myers, Abe-Kim, & Ting, 2007). Other researchers have found that late life immigrants experience higher emotional distress than U.S.-born individuals (Angel, Buckley, & Sakamoto, 2001). Late life immigrants find it more difficult to become proficient in English, and lack the necessary tools (e.g., a Western education) that would allow them access to the resources enjoyed by their U.S.-born counterparts (Zeng & Zie, 2004). These findings suggest that the relationship between immigration and refugee status and the risk for developing a mental disorder may be more complicated than originally thought.

Surprisingly very little has been published on the effects of immigration and refugee status, years spent in the United States, or age at the time of immigration on mental health service utilization and treatment outcome for Asian Americans. In a large-scale analysis of the National Latino and Asian American Study (NLAAS), U.S.-born Asian Americans were more likely to utilize mental health specialty services than foreign-born Asian Americans (Abe-Kim et al., 2007). In the one study that reported the effects of immigration on treatment outcome, foreign-born clients had significantly shorter treatment lengths at ethnic-specific services than U.S.-born clients (Zane et al.,

1994). Both findings support the literature on the *accumulative stress theory* and *acculturation hypothesis*, suggesting that immigration and refugee status may have a significant impact on mental health treatment outcome. Unfortunately, there are too few studies to draw any definitive conclusions at this time (U.S. DHHS, 2001).

Marital Status

In the psychology literature, marital status is usually operationally defined as whether an individual is currently married or not married (Burman & Margolin, 1992). In studies on Asian Americans utilizing mental health services, marital status has often been included as a control variable. For the most part, many of the published studies suggest that marital status has no significant impact on treatment outcomes for Asian Americans (Flaskerud & Liu, 1991; S. Sue et al., 1991; Zane et al., 1994). The one exception to this finding was a study in Los Angeles County that found that unmarried Southeast Asian Americans had significantly poorer rates of service outcome than married and unmarried Chinese, Filipino, Japanese, and Korean Americans (Ying & Hu, 1994). Given the limited amount of studies that have been conducted on Asian Americans, any conclusions regarding the relationship of marital status to treatment outcome would be premature.

Studies on general populations provide stronger evidence for marital status where clients who are married report with more positive prognoses and treatment outcomes (Burman & Margolin, 1992). For instance, large-scale epidemiological studies have shown that non-married persons are at higher risk for mortality (Berkman & Syme, 1979; House, Robbins, & Metzner, 1982). Furthermore, non-married people usually present with more emotional distress when seeking out mental health care and are less likely of a

positive recovery (Gove, 1972). In contrast, married individuals have a greater likelihood of receiving an early diagnosis for health problems and aggressively seeking out treatment (Goodwin, Hunt, Key, & Samet, 1987). When using mental health services, married persons are less inclined to prematurely terminate from treatment, have higher rates of treatment completion, and indicate more robust improvements in psychological functioning (Cronkite & Moos, 1984; Smead, Smithy-Willis, & Smead, 1982). No determination has been made whether these results also occur in the evaluation of Asian Americans at mental health services.

Psychiatric Variables (Diagnosis, Severity, Functioning, and Previous Treatment)

Research on how psychiatric diagnosis and related variables may impact treatment outcome for Asian Americans is yet another understudied area. Part of this problem stems from the difficulty in trying to extrapolate the prevalence rates of mental illness in a heterogeneous ethnic population that is comprised of more than 28 different ethnic groups (e.g., each with their own culture and language) (S. Sue, 1999). Epidemiological studies (e.g., Epidemiological Catchment Area study and the National Comorbidity Study) have also compounded this problem by collapsing Asian Americans into a single homogeneous category and failing to examine possible Asian American subgroup differences on rates of psychopathology (Yang & WonPat-Borja, 2008). Furthermore, a study that evaluated the rate of mental health problem reporting by 7 Asian American subgroups (e.g., Chinese, Cambodian, Filipino, Iu Mien, Japanese, Korean, and Vietnamese Americans) found that no two ethnic groups presented with the same percentages or clinical profiles for mental illnesses (Akutsu & Chu, 2006). This

provided more evidence to support the idea that culturally related differences may exist in the presentation of psychopathology in Asian American ethnic groups.

For the most part, mood disorders are the most commonly diagnosed forms of mental illness in Asian Americans, with reported rates that often exceed those of European Americans (Kuo, 1984; Lin, 1998; Okazaki, 1997; Yang & WonPat-Borja, 2008). Among Asian Americans, Chinese, Korean, and Southeast Asian Americans often report with more clinical diagnoses and severe symptoms of mood disorders than Japanese and Filipino Americans (Gong-Guy, 1987; Kuo, 1984; Kuo & Tsai, 1986; Oh, Koeske, & Sale, 2002; Ying, 1998). Southeast Asians, in general, present with more anxiety disorders, specifically Post-traumatic Stress Disorder (PTSD) (Flaskerud, 1988; Gong-Guy, 1987; Nguyen, 1982; Westermeyer, Vang, & Neider, 1983; Zane et al., 1994). The higher prevalence rates of PTSD in Southeast Asian Americans are often attributed to their refugee status, pre-migration experiences with war-related trauma, and post-migration difficulties in the U.S. In general, epidemiological studies suggest that Asian Americans report with similar prevalence rates of European Americans for the schizophrenia spectrum and psychotic disorders (Zhang & Snowden, 1999). Of course this finding must be interpreted with caution since the different Asian ethnic groups were again collapsed into a single Asian American ethnic category. Other studies suggest that the more acculturated East Asian Americans (i.e., the first Asian ethnic groups to immigrate to the U.S.) report with higher prevalence rates for schizophrenia spectrum and psychotic disorders than other Asian American groups (Flaskerud, 1986; Zane et al., 1994).

Studies analyzing the effects of a particular psychiatric diagnosis on treatment outcome for Asian Americans have exhibited mixed results. Severe mental illnesses like the schizophrenia spectrum and psychotic disorders were found to be associated with lower rates of premature termination and longer treatment lengths, but less psychological improvement in GAS scores (S. Sue et al., 1991; Zane et al., 1994). Other studies reported that less severe diagnoses (such as adjustment disorders) generally predicted shorter treatment lengths for Asian Americans. Finally, a study that focused on mood disorders found no significant relationships between this clinical diagnosis and treatment outcome (Lau & Zane, 2000). It is important to note that due to the limitations of the data sets being analyzed, very few studies have evaluated the impact of more than one psychiatric diagnosis at a time.

Another under-studied area concerning treatment outcome with Asian American clients is the level of severity of psychological functioning when first seeking services. In the general psychotherapy literature, symptom severity and functional impairment has often been associated with poorer treatment response and outcome (Beutler & Hamblin, 1986; Garfield, 1994; Lambert & Anderson, 1996). In the Asian American treatment outcome literature, entry or admission GAS scores have been the most frequently utilized proxy for symptom severity and functional impairment. For the most part, higher entry GAS scores have been significantly related to lower premature termination, greater treatment length, and better treatment outcome for Asian Americans (as measured by entry GAS and termination GAS differences), with even better outcomes for Asian Americans at ethnic-specific than mainstream services (Takeuchi et al., 1995; S. Sue et

al., 1991; Ying & Hu, 1994; Zane et al., 1994). Only one study failed to find a significant positive relationship between entry GAS and treatment outcome (Flaskerud & Liu, 1991).

Another variable of interest that may be related to treatment outcome is whether a client has had any previous psychiatric history before their current request for a mental health service. Research in the general psychotherapy literature suggests that individuals who have utilized services in the past may be more apt to seek professional services for clinical problems in the future (Bailey, Warshaw, & Eichler, 1959; Sorenson, Gorsuch, & Mintz, 1985). Intuitively, knowledge about the psychotherapy process and previous positive experiences in psychotherapy treatment may decrease the likelihood for poor treatment outcome. In one of the few studies that included previous treatment history in the evaluation of pre-intake attrition for Asian Americans, no significant relationship was found between this variable and failure to attend the first appointment (Akutsu et al., 2004). Given the lack of research on this variable, future studies are needed to determine if there is a relationship between previous psychiatric treatment history and treatment outcome for Asian Americans.

Psychiatric Medication Evaluation/Consultation Service Use

Evaluating whether a client is in need of more urgent psychiatric medication evaluation/consultation is important for two reasons. First, the need to schedule a client for urgent psychiatric medication evaluation could serve as a proxy for symptom severity and may support the need for pharmacotherapy. Second, concomitant psychiatric medication care has been found to be highly effective in reducing problematic symptoms for more severe forms of psychopathology (e.g., schizophrenia spectrum, bipolar mood disorders, and obsessive-compulsive disorders) (Klerman et al., 1994; Rounsaville,

Klerman, & Weissman, 1981). This, in turn, hastens the recovery process, allowing the client to better utilize psychotherapeutic treatments and experience a greater likelihood of positive treatment outcome.

To date, little has been published on the effect of psychiatric medication services for Asian Americans suffering from mental illnesses. The few studies available primarily focus on evaluating ethnic differences in physiological reactions to medication dosages between Asian Americans and European Americans (K. M. Lin & Cheung, 1999; Smith & Lin, 1996). However, one study found that concomitant medication use was the most significant predictor of increased treatment length, and positive change in pre- and post-treatment GAF scores for low-income Asian Americans with major depression (Flaskerud & Hu, 1994). Given the strong relationship between severe forms of psychopathology, and the likelihood of receiving psychiatric medication care, evaluating the impact of psychiatric service use on psychotherapy treatment outcome is essential.

Service Provider Variables (Client-Therapist Matching)

The pinnacle feature of ethnic-specific service programs is the ability to match clients ethnically, linguistically, or gender-wise with mental health professionals. These features at ethnic-specific programs can reduce barriers to accessing services and improve treatment outcome for Asian Americans (Zane et al., 2004). Since the clinical decision to provide therapist-client matching is usually done before treatment begins, an important feature of therapist-client matching is the possible control that is given to the service provider in influencing treatment outcome during the earlier stages of psychotherapy. The impact on treatment outcome for Asian Americans at ethnic-specific services has generally been positive.

For the most part, therapist-client ethnic match and therapist-client language match have been significantly associated with lower rates of premature termination and longer treatment lengths for Asian Americans (Flaskerud & Liu, 1991; S. Sue et al., 1991; Takeuchi et al., 1995; Zane et al., 1994). These effects seem stronger for Asian Americans who are matched with a therapist using a non-English primary language or an Asian language or dialect. Asian Americans at ethnic-specific programs who reported with therapist-client ethnic match were nearly 9 times less likely to prematurely terminate from treatment than Asian Americans at mainstream programs (Takeuchi et al., 1995). In contrast to these results, one study found that therapist-client ethnic match, in general, predicted increased treatment length for Chinese, Filipino, Japanese, and Korean Americans, but not for Southeast Asian Americans (Ying & Hu, 1994)

The impact that therapist-client ethnic and language match has on distal direct measures of treatment outcome have not been as promising. Lau and Zane's (2000) analysis of ethnic-specific service providers suggested clients in these programs reported better treatment outcome (as measured by discharge GAS only) than mainstream service providers. It is important to note that high rates of therapist-client ethnic and language match were assumed to take place at these ethnic-specific programs, but these two variables were not actually examined in the analysis. Ying and Hu (1994) also found that therapist-client ethnic match was a good predictor of treatment outcome for only Chinese Americans (as measured by the difference in pre-treatment and post-treatment GAS). Other studies have found no significant relationships between the variables of client-therapist matching and treatment outcome (Flaskerud & Liu, 1991; S. Sue et al., 1991; Takeuchi et al., 1995; Zane et al., 1994).

Another service provider related area of interest has been therapist-client gender match in Asian Americans. In general, the findings regarding the impact of therapist-client gender match have been mixed. An analysis of community mental health service providers in California found that gender match was significantly associated with a lower likelihood of prematurely terminating from treatment (S. Sue et al., 1991). Other studies have reported no significant relationship between gender match and measures of treatment outcome (Flaskerud & Liu, 1991; Ying & Hu, 1994).

Finally, another service provider variable of interest that has shown some promise is continuity of care. In a study assessing the rates of pre-intake attrition for Asian Americans seeking mental health services, continuity of care (defined as the individual who conducted the pre-screening interview being assigned to conduct the intake appointment (first session)) was found to be a significant predictor of intake attendance (Akutsu et al., 2004). Unfortunately, it is not clear if continuity of care (defined as the intake therapist being assigned as the primary therapist) would persist as a significant predictor of treatment outcome after a client has begun treatment. Nevertheless, continuity of care is of critical importance to studying treatment outcome because it is one of the few pre-treatment variables that may be decided by the service provider. To date, no other studies have evaluated the effectiveness of some form of continuity of care to improving treatment outcome for Asian Americans seeking mental health services.

In summary, ethnic, gender, and language match between the therapist and client has generally been related to positive treatment outcome. One could conclude from these findings that ethnic-specific programs can improve treatment outcome for Asian Americans because of the individual or combined impact of client-therapist matching.

However, it is possible that other programmatic variables can be contributing to this positive treatment outcome and again the lack of research in this area makes it difficult to make any definitive statements about the effectiveness of such program-related features at ethnic-specific providers.

SUMMARY

The review of the literature on Asian American mental health service utilization suggests several conclusions:

1. Asian Americans are among the fastest growing ethnic minority groups in the U.S. As such, clinicians must become more familiar with the mental health issues of this burgeoning population to better serve this ethnic group. Regrettably, Asian Americans remain one of the most understudied ethnic groups in terms of their mental health needs and service requirements. What is currently known is that disparities exist in the accessibility and quality of the mental health services being delivered to this population.
2. In an effort to reduce these disparities, mental health providers have introduced ethnic-specific programs to ethnic minority communities. Ethnic-specific programs were designed to provide clients with services that accommodated the individual's cultural background through features like client-therapist ethnic and language matching. Preliminary studies have highlighted the significant relationship between client-therapist matching and clinical improvement on various measures of treatment outcome for Asian Americans. However, it is difficult to draw more definite conclusions regarding which factors of ethnic-

specific programs contribute to improved treatment outcome from these findings due to inconsistencies in the current body of literature.

3. Researchers have argued these inconsistencies in the treatment outcome research on Asian Americans utilizing ethnic-specific programs may be due to the manner in which treatment outcome has been investigated in the past. The most significant of these problems include inconsistencies in the operational definitions of the measures used to evaluate treatment outcome (premature termination, treatment length, clinical measures such as the pre- versus post-treatment GAS/GAF scores), and a lack of comprehensive studies that have controlled other factors (e.g., pre-treatment severity of psychopathology or level of functioning) that may influence treatment outcome. Also, little of this research has examined possible Asian American subgroup differences on treatment outcome, which could be very important to the development of culturally responsive services to different Asian American groups.
4. Researchers have proposed that future studies evaluating the effectiveness of ethnic-specific providers should investigate treatment outcome among the various Asian American subgroups. These studies should also be "fine grained" in their approach, building upon the past literature to identify the components of ethnic-specific services that are related to positive therapeutic outcome. Without further studies of this nature, it is predicted that providers will be hard pressed in trying to find effective ways to treat this ethnic population.

THE PRESENT DISSERTATION STUDY AND HYPOTHESIS

The present doctoral dissertation examined three different measures of treatment outcome for clients seeking services at an Asian-oriented ethnic specific program in Northern California. Three separate analyses were conducted comparing client demographic (e.g., age, gender, SES variables, marital status, immigration variables, and Asian American ethnicity), clinical (e.g., previous psychiatric history, diagnosis, level of psychological functioning, psychiatric medication consultation/use, treatment duration, and session frequency), and service provider variables (e.g., therapist-client ethnic, language, and gender matching, and continuity of care), to two indirect measures of treatment outcome (e.g., premature termination and treatment length), and one direct measure of treatment outcome (e.g., difference in pre- and post-treatment GAF scores). For the latter analysis on pre-post GAF scores, treatment length was included as an independent variable to control for its individual contribution to this direct measure of treatment outcome. A previous study conducted at this provider site found that specific program components and clinical decisions made during the early treatment process significantly predicted attendance of first sessions for Asian Americans seeking mental health services (Akutsu et al., 2004). This dissertation was viewed as a "next step" to that study, and investigated the post-intake process for Cambodian, Chinese, Iu Mien, Korean, and Vietnamese American clients.

While previous studies have studied treatment outcomes with general Asian American populations, the current data set allowed for specific ethnic comparisons across a number of Asian American subgroups while controlling for key factors that have been known to affect utilization and treatment outcome (e.g., immigration status). As a result,

within-group differences regarding premature termination, treatment length, improvement in pre-post GAS scores could be clearly examined and identified among multiple Asian American ethnicities.

The following hypotheses were tested in my doctoral dissertation:

Analysis 1: Indirect Measure of Treatment Outcome: Premature Termination

Hypothesis 1a: The impact of client demographic variables on premature termination

Based on previous findings, clients who are non-married, male, report lower SES (i.e., Medi-Cal eligibility, lower education), identify as Southeast Asian American (e.g., Cambodian, Iu Mien, and Vietnamese), or are foreign-born (regardless of years lived in the U.S.) will have higher rates of premature termination.

Hypothesis 1b: The impact of clinical variables on premature termination

Clients with no previous psychiatric history, who receive a diagnosis of an adjustment disorder, present with lower psychological functioning as measured by pre-treatment GAF score, or do not require a psychiatric medication evaluation within one week after the client's first appointment, will have higher rates of premature termination.

Hypothesis 1c: The impact of program variables to premature termination

Clients who were not ethnic-, gender-, or Asian language matched with their primary therapist or were not assigned their intake therapist as their primary therapist (continuity of care), will have higher rates of premature termination.

Hypothesis 1d: The impact of client demographic, clinical, and program variables on premature termination

When controlling for all demographic, clinical, and service provider variables, service provider variables (i.e., ethnic-, gender-, Asian language match and continuity of care)

will be the strongest and most significant predictors of lower rates of premature termination.

Analysis 2: Indirect Measure of Treatment Outcome: Treatment Length

Hypothesis 2a: The impact of client demographic variables on treatment length

Based on previous findings, clients who are married, female, report higher SES (i.e., not eligible for Medi-Cal, higher education), identify as East Asian American (e.g., Chinese or Korean), or who were born in the U.S. will have longer treatment lengths.

Hypothesis 2b: The impact of clinical variables on treatment length

Clients with previous psychiatric history, who receive a diagnosis of a schizophrenia or psychotic disorder, present with higher psychological functioning as measured by pre-treatment GAF score, have more frequency of visits per week, were appropriately referred out of treatment, or received more concomitant psychiatric medication consultations appointments, will have longer treatment lengths.

Hypothesis 2c: The impact of program variables on treatment length

Clients who were ethnic-, gender-, or Asian language matched with their primary therapist will have longer treatment lengths.

Hypothesis 2d: The impact of client demographic, clinical, and program variables on treatment length

When controlling for all demographic, clinical, and service provider variables, service provider variables (i.e., ethnic-, gender-, Asian language match) will be the strongest and most significant predictors of longer treatment lengths.

Analysis 3: Direct Measure of Treatment Outcome: Change in Pre- versus Post-Treatment GAF Scores.

Hypothesis 3a: The impact of client demographic variables on change in pre- versus post-treatment GAF scores

Based on previous findings, clients who are married, female, report higher SES (i.e., not eligible for Medi-Cal, higher education), identify as East Asian American (e.g., Chinese or Korean), or who were born in the U.S. will report more change in pre- versus post-treatment GAF scores.

Hypothesis 3b: The impact of clinical variables on change in pre- versus post-treatment GAF scores

Clients who report with previous psychiatric history, receive a diagnosis of an anxiety or mood disorder, have a greater frequency of visits per week, were appropriately referred out of treatment, or who received more concomitant psychiatric medication consultation appointments, will report more change in pre- versus post-treatment GAF scores.

Hypothesis 3c: The impact of service provider variables on change in pre- versus post-treatment GAF scores

Clients who were ethnic-, gender-, or Asian language matched with their primary therapist will report more change in pre- versus post-treatment GAF scores.

Hypothesis 3d: The impact of client demographic, clinical, and program variables on change in pre- versus post-treatment GAF scores

When controlling for all demographic, clinical, and service provider variables, the service provider variables (i.e., ethnic-, gender-, Asian language match) will be the strongest and most significant predictors of change in pre- versus post-treatment GAF scores.

CHAPTER II

METHOD

The participants in this study were 1,030 Asian American adult clients (193 Cambodian, 349 Chinese, 113 Korean, 134 Iu Mien, and 241 Vietnamese Americans) who requested clinical services from an Asian-oriented ethnic-specific mental health program in Northern California from January 1, 1988 to June 30, 2004. The current sample used in this dissertation study exceeded the number of participants required for a medium effect size, with an alpha set at .05, and power at .80 in detecting statistically significant results (Cohen 1988; Green, 1991). Although a larger number of clients contacted this mental health program over this 16-year period, many of these clients were excluded from this study for the following reasons. First, only clients who self-identified themselves from one Asian ethnic group category were included to allow for a client-therapist ethnic match to be determined by the primary investigator. Second, only the first episodes of clients who reported with multiple episodes at this ethnic-specific program were selected and examined for the final sample to control for the confounding effects of previous positive treatment at the same clinic. Third, only clients who sought individual psychotherapy services were included in the final sample to allow for a more consistent sample for the analysis. Clients who only required psychiatric medications without any psychotherapy or primarily used non-individual psychotherapy services (e.g., group psychotherapy, day treatment) were excluded from the final sample. Fourth, only

clients who were determined to be suitable for outpatient community mental health services (e.g., non-crisis clients, substance abuse clients, etc.) and who had completed the first intake appointment or session were included in the final sample. These conditions were necessary to create a continuity of care variable to determine if the intake therapist who continued as the primary therapist in the beginning of treatment providing the majority of psychotherapy session to a particular client in the given episode of treatment. Finally, clients were only included in the final sample if they provided valid information on all the variables of interest in this dissertation study.

Table 1 provides a summary of the sample characteristics for all the Asian Americans clients included in this dissertation study. The average client was a 41-year old female with a high school level education who met the criteria for Medi-Cal eligibility. Having resided in the U.S. for about 11 years, the typical client immigrated to the country after her 21st birthday, and spoke an Asian dialect as her primary language of choice. The majority of the clients had no previous experience with psychiatric treatment, and was most commonly diagnosed with a mood disorder.

Data for this study was provided by the management information system of an Asian-oriented ethnic-specific community mental health provider in Northern California. This community mental health provider staffs a multi-disciplinary, multi-lingual team of mental health professionals who are not only knowledgeable about the wide and varied mental health needs of Asian Americans, but also reflect the population that they serve in terms of their demographic and cultural status. All the clinicians at this provider completed at least a master's degree in a mental health profession and provided

comprehensive care through psychological testing, group and individual psychotherapy, crisis intervention, family counseling, and medication management.

MEASURES

Independent Variables

Client Demographic Variables:

Gender

The client's gender was coded as Male = 0 versus Female = 1.

Age

The age of the client was assessed at the first intake appointment and defined as total number of years.

Marital Status

The client's marital status was coded as currently Non-married = 0 versus Married = 1.

Asian American Ethnicity

Five different Asian American ethnic categories were created and dummy coded as No = 0 versus Yes = 1. The Asian American ethnic groups that were included in this analysis were: Cambodian, Chinese, Iu Mien, Korean, and Vietnamese American.

Socioeconomic Status Variables (SES):

Medi-Cal Eligibility

If a client was determined to be Medi-Cal eligible, the client was coded as Medi-Cal = 1 and other clients were coded as 0. The State of California provides a clear definition of Medi-Cal eligibility and clients must report with adjusted household incomes that are below the federal standard for poverty status to receive Medi-Cal

Eligibility status. Given this definition, clients who are Medi-Cal eligible would be defined as coming from a lower socioeconomic status bracket.

Education

Education was broken down into 4 categories which were dummy coded as either No = 0 versus Yes = 1. The categories were: No Formal Education, Completed Primary School Education, Completed High School or Secondary Education, and Completed Some College Education.

Immigration Variables:

Years in the U.S.

This variable represents the total number of years that a client lived in the U.S. by the time of his/her first appointment. If the client was born in the U.S., his/her age at the time of first appointment was used for "Years in the U.S."

Place of Birth and Age at Immigration

This variable consisted of three different categories that were dummy coded as either No = 0 versus Yes = 1. The categories were: Born in the U.S., Immigrated to the U.S. before the Age of 21, and Immigrated to the U.S. at Age of 21 or later.

English as Primary Language

A variable was created which assessed if the client reported English as his/her primary language which was coded as 0 = No versus 1 = Yes.

Clinical Variables:

Previous Psychiatric History

Client's were asked if they had any psychiatric treatment in the past which was coded as No = 0 versus Yes = 1.

Psychiatric Diagnosis

Five different broad categories were created from clinical data about the client's primary DSM-IV (APA, 1994) diagnosis and dummy coded as No = 0 versus Yes = 1. The categories included: Adjustment Disorders, Anxiety Disorders, Mood Disorders, Schizophrenia/Psychotic Disorders, and Other Psychiatric Diagnosis (e.g., Substance Abuse Disorder, etc.).

Entry GAF

The therapist-rated Global Assessment of Functioning (APA, 1994) score (ranging from 1-100) assessed the therapist rating of the client's level of functioning after the first session. This variable was included in various analyses to control for the level of severity of the client's psychopathology at onset/admission as well as to determine his/her level of functioning prior to treatment.

Psychiatric Medication Consultation Appointment

A variable was created that assessed if the intake therapist scheduled a medication evaluation appointment for the client within the first week after the intake appointment was completed. It was assumed that such a recommendation would suggest a more severe presentation of psychopathology. This variable was coded as No = 0 versus Yes = 1.

Number of Psychiatric Medication Consultation Appointments

In order to control for the impact of concomitant psychiatric care, the total number of medication consultation appointments completed by the client during treatment was included as a variable in the analysis of treatment length and pre- versus post-treatment GAF scores as a proxy for a client's use of psychiatric medication.

Appropriate Referral Out of Treatment

In this dissertation study, clients were considered to be appropriately referred out of treatment if they were deemed to have completed treatment by their primary therapist, or if they were referred out to another treatment facility (e.g., inpatient ward in a hospital, or private practitioner). Clients who unilaterally terminated from treatment, or who were treatment resistant were not considered to be appropriately referred out of treatment from this provider. This variable was included in the analysis of treatment length and pre- versus post-treatment GAF scores. The variable was coded as No = 0 versus Yes = 1.

Session Frequency

A variable was created by dividing the total number of completed individual psychotherapy sessions by the treatment duration (in weeks) to represent the frequency of sessions per week for each client.

Service Provider Variables:

Therapist-Client Ethnic Match

A variable was created by matching the therapist's reported ethnicity with the client's reported ethnicity. For the premature termination analysis, the therapist that was matched to the client was the therapist that completed the first 10 (or majority of sessions if less than 10) individual psychotherapy sessions with the client. For the treatment length and treatment outcome (as measured by difference in pre- and post-treatment GAF scores) analyses, the therapist that was matched with the client was the therapist who had seen the client for the majority of their individual psychotherapy sessions during the entire episode of treatment. The variable was coded as No = 0 and Yes = 1.

Therapist-Client Gender Match

A variable was created by matching the therapist's reported gender with the client's reported gender. For the premature termination analysis, the therapist that was matched to the client was the therapist that conducted the first 10 (or less depending on how many sessions the client completed) individual psychotherapy sessions with the client. For the treatment length and pre- and post-treatment GAF scores analyses, the therapist who was matched with the client was the therapist who saw the client for the majority of their individual psychotherapy sessions. The variable was coded as No = 0 and Yes = 1.

Therapist-Client Asian Language Match

A variable was created by matching the therapist's reported language ability with the client's primary or preferred language. For the premature termination analysis, the therapist that was matched to the client was the therapist that conducted the first 10 (or less depending on how many sessions the client completed) individual psychotherapy sessions with the client. For the treatment length and pre- and post-treatment GAF scores analyses, the therapist that was matched with the client was the therapist who saw the client for the majority of their individual psychotherapy sessions. The variable was coded as No = 0 or Yes = 1.

Continuity of Care

For the premature termination analysis, a variable was created that assessed whether the intake therapist was assigned as the primary therapist for individual psychotherapy with the client. Since the match between the intake therapist and the primary therapist was only verified for the first 10 individual therapy sessions, the

continuity of care variable was not available to be included in the analysis for treatment length and pre- and post-treatment GAF scores. Clients that were in treatment for a longer period of time may have been seen by a single or multiple therapists during the course of their treatment, depending on time and therapist factors (e.g., a therapist who left the agency, but the client continuing to require treatment). The variable was coded as No = 0 versus Yes = 1.

Dependent Variables

Premature Termination

In this study, premature termination was defined as: 1) A client failing to stay for five or more individual psychotherapy sessions (the intake session and 4 follow-up individual therapy sessions), and 2) the therapist providing verification that the client discontinued treatment unilaterally or failed to contact the therapist for a follow-up appointment before the fifth session. Clients who were referred for inpatient or outside services to other clinical programs or who were deemed by their therapist to no longer require clinical treatment before the fifth session were not considered premature terminators in this analysis.

The decision for selecting the fifth session as a cut-off point to define whether a client prematurely terminated was based on previous mental health literature which showed premature termination from treatment are more likely taking place between the 3rd to the 5th session of psychotherapy (Horvath & Luborsky, 1993; Saltzman, Luetgert, Roth, Creaser, & Howard, 1976). This approximation is based on the notion that a few sessions are necessary for a therapeutic alliance (i.e., level of interpersonal synergy) to be established between the client and the therapist and a failure to establish this alliance is

deleterious to a client for treatment (Bordin, 1976; Kokotovic & Tracey, 1990; Strupp, 1974). Studies that have examined therapeutic alliances have found that this relationship is important to treatment outcome (as measured by clinical assessments like the Symptom Distress Checklist-90 (SLC-90) (Derogatis, Rickels, & Rock, 1976)) across multiple psychotherapeutic paradigms (Horvath & Luborsky, 1993).

Treatment Length

Treatment length is defined as the total number of completed individual psychotherapy sessions in the first episode of treatment. As reported earlier, treatment length has been positively associated with better treatment outcome (Howard et al., 1986; Kopta, 1983; Smith, Glass, Miller, 1980). Specifically, the number of completed sessions has been positively related to an increase in the likelihood of successful treatment. Given the wide range in number of the completed individual psychotherapy sessions (anywhere from 1 to over 100) at this ethnic-specific program, log transformations were performed on the total number of completed sessions to prevent the effects of positively skewed distributions for this dependent variable. In addition, since treatment length is related to treatment outcome, treatment length will be included as an independent variable in the analysis using pre-therapy and post-therapy GAF scores as the dependent variable. This procedure would allow for controlling the possible contribution of treatment length on treatment outcome.

Change in Pre- versus Post-Treatment GAF Scores

A direct distal measurement of treatment outcome will be evaluated by using the difference score between therapist-rated pre- and post-treatment GAF scores. The reliability of the GAF has been found to be high, showing very good inter-rater reliability

(Hilsenroth et al., 2000; Startup, Jackson, & Bendix, 2002). Some have questioned the validity of the GAF (Goldman, Skodol, & Lave, 1992), while others have found it to possess good concurrent and predictive validity (Sohlberg, 1989; Startup, Jackson, & Bendix, 2002). In a review of the literature, one of the biggest concerns over the use of the GAF was the finding that clinicians needed to be thoroughly trained in its use before reaching a level of reliability and validity for use in clinical practice (Goldman et al., 1992). Since this review, other researchers have found the GAF scores by clinicians with no to very little training showed good reliability and concurrent validity (Hilsenroth et al., 2000; Jones, Thornicroft, Coffey, & Dunn, 1995; Startup, Jackson, & Bendix, 2002).

PROCEDURES

This study will complete a series of secondary data analyses on client, staff, and program information from the management information system at this ethnic-specific program. Prospective clients who initiated contact with this service agency were required to complete a brief prescreening interview with a clinical staff member in their language of choice. Once a prospective client contacted this clinic, the support staff that spoke multiple Asian languages/dialects would first determine the client's language of choice and then s/he would contact a clinical staff member to conduct the prescreening interview in the client's preferred language. Each staff member at this clinic was trained to complete the prescreening interview with a prospective client using a standardized form and standard protocol of questions. While the majority of these prescreening interviews were completed over the telephone, a small percentage of these prescreening interviews (estimated to be about 5%-10% by the support staff) were completed face-to-face with a staff member at the clinic. Procedures for collecting data in the face-to-face condition

did not deviate from the standardized procedures outlined above from completing the prescreening interviews over the phone. Based on the data collected from this prescreening interview, an intake worker was assigned to the client and this staff member was responsible for contacting the client to schedule the intake appointment. All relevant demographic and clinical information were recorded into the information management system after the client's intake appointment. Clients who continued on to individual psychotherapy treatment were either their intake therapist as their primary therapist or were assigned to another therapist within the provider network.

During the course of treatment, more information was collected on each client for the purpose of record keeping, billing, and case management. This recorded information was used in this study to assess the amount of completed individual psychotherapy services, matching with the primary therapist who provided such services, etc.

CHAPTER III

ANALYSIS AND RESULTS

Descriptive Analyses for Premature Termination Study

Table 1 provides a summary of the demographic, clinical, and service provider variables for Asian American clients who had and had not prematurely terminated from individual psychotherapy within the first month of treatment. The overall rate of premature termination for this sample was 9% of the clients. The results of the analyses suggested that clients who prematurely terminated were more likely to be married, χ^2 (1, N = 1,030) = 4.86, $p < .05$; diagnosed with an adjustment disorder, χ^2 (1, N = 1,030) = 11.42, $p < .001$; and gendered matched with their therapist, χ^2 (1, N = 1,030) = 4.29, $p < .05$. In contrast, clients who did not prematurely terminate were more likely to be diagnosed with a schizophrenia spectrum or psychotic disorder, χ^2 (1, N = 1,030) = 4.69, $p < .05$. A significant difference between premature terminators and non-premature terminators was found in the years of residency in the U.S., t (1,028) = 2.62, $p < .05$. Specifically, Asian American clients who prematurely terminated lived a shorter amount of time in the U.S.

Table 2 provides a summary of the rate of premature termination from individual psychotherapy in the first month of treatment for the five Asian American ethnic groups in this dissertation study. An overall chi-square analysis suggested a significant difference in the rate of premature termination across the five Asian American ethnic

groups, χ^2 (1, N = 1,030) = 26.99, p < .001. To identify which Asian American ethnic groups significantly differed on premature termination, a series of pairwise comparisons were performed using chi-square analyses. To reduce the probability of making a Type I error given the 10 pairwise comparisons in the chi-square analyses, a Bonferroni correction method was employed (i.e., p < .05/10 comparisons) and a more restrictive cutoff point, p < .005, was established to identify significant differences between two Asian American ethnic groups. These pairwise comparisons showed that Korean Americans reported a higher rate of premature termination than Chinese Americans, χ^2 (1, N = 462) = 9.42, p < .005, Iu Mien Americans, χ^2 (1, N = 247) = 12.00, p < .001, and Cambodians Americans, χ^2 (1, N = 306) = 22.95, p < .001. Specifically, 20% of the Korean American clients prematurely terminated in the first month of treatment, a rate that was 10%-16% higher than Chinese, Iu Mien, and Cambodian American clients. Furthermore, Vietnamese Americans reported significantly higher rates of premature termination than the Cambodian Americans, χ^2 (1, N = 434) = 9.99, p < .005, with 8% more of the Vietnamese American clients prematurely terminated from treatment.

Hypothesis 1a: The impact of client demographic variables on premature termination:

Based on previous findings, it was hypothesized that clients who were not married, male, reported with a lower SES (i.e., Medi-Cal eligible, lower education), self-identified as Southeast Asian American (e.g., Cambodian, Iu Mien, or Vietnamese), or reported being foreign-born (regardless of years lived in the U.S.) would report higher rates of premature termination. A series of logistic regression analyses were performed to identify which demographic variables were significant predictors of premature termination in the first month of treatment. For the variables that had multiple categories,

dummy coding was required (i.e., education, age at immigration, and Asian American ethnicity) and group comparisons were performed by listing one categorical group as the "comparison" group and substituting this group until all the categories for this variable could be tested for comparisons. For example, Korean Americans served as the baseline comparison group to the other Asian American ethnic groups in the first logistic regression analysis, and then the Vietnamese Americans served as the baseline comparison group and so forth. For the logistic regression analyses, tests for multicollinearity of the independent variables were performed and the results of the condition index and eigen value scores suggested the variables were sufficiently independent.

Table 3 provides a summary of the results from the logistic regression analyses predicting premature termination in the first month of treatment. The overall logistic regression model was found to be significant, χ^2 (1, N = 1,030) = 52.65, $p < .001$, and reported a correct classification of 91% in predicting premature termination. Only partial support for the hypothesis on education was found with clients who had no formal education reporting a 69% greater likelihood to prematurely terminate than clients with some college or a college degree (OR = .31, 95% CI = .12, .81, $p < .05$). In contrast to the proposed hypothesis, married clients were 1.83 times more likely to prematurely terminate than non-married clients (OR = 1.83, 95% CI = 1.11, 3.01, $p < .05$).

The strongest demographic predictor of premature termination was Asian American ethnicity. The results showed that Korean Americans were 62% more likely than Vietnamese Americans (OR = .38, 95% CI = .19, .78, $p < .01$), 65% more likely than the Chinese Americans (OR = .35, 95% CI = .19, .67, $p < .001$), and 93% more likely

than both the Iu Mien (OR = .07, 95% CI = .02, .22, $p < .001$) and Cambodian Americans (OR = .07, 95% CI = .02, .20, $p < .001$) to prematurely terminate from treatment. Furthermore, Vietnamese Americans were 82% more likely than Iu Mien (OR = .18, 95% CI = .06, .53, $p < .01$) and Cambodian Americans (OR = .18, 95% CI = .07, .48, $p < .001$) to prematurely terminate from treatment. Finally, Chinese Americans were approximately 80% more likely than both the Iu Mien (OR = .20, 95% CI = .07, .56, $p < .01$) and Cambodian Americans (OR = .19, 95% CI = .07, .51, $p =<.001$) to prematurely terminate from treatment.

Hypothesis 1b: The impact of clinical variables on premature termination:

Based on previous literature, it was hypothesized that clients who had no prior psychiatric history, received a diagnosis of an adjustment disorder, presented with lower psychological functioning (as measured by lower pre-treatment GAF scores) and did not receive a psychiatric medication evaluation within one week after the first intake appointment would report higher rates of premature termination. A series of logistic regression analyses were performed to identify which of the clinical variable were significant predictors of premature termination. The five clinical diagnosis categories were dummy coded, and comparisons between each category were completed by rotating one category of diagnosis as the "baseline comparison group", and then replacing the category with another clinical diagnosis until a full rotation of all the diagnostic categories were completed. For example, the schizophrenia spectrum and psychotic disorder category served as the "baseline comparison group" in the first logistic regression analysis, then the mood disorder category was substituted to serve as the "baseline comparison group", and so forth. Tests for multicollinearity were performed on

the independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent of each other in this analysis.

Table 4 provides a summary of the results from the logistic regression analyses predicting premature termination. The overall logistic regression model was found to be significant, χ^2 (1, N = 1,030) = 14.34, $p < .05$, and indicated a correct classification of 91% in predicting premature termination. Partial support for the proposed hypothesis was found for clinical diagnosis. Specifically, clients diagnosed with an adjustment disorder were 4 times more likely than clients with a schizophrenia spectrum or psychotic disorder (OR= 4.04, 95% CI = 1.62, 10.12, $p < .01$), and approximately 2.5 times more likely than a client with a mood disorder (OR = 2.55, 95% CI = 1.29, 5.06, $p < .01$) or anxiety disorder (OR = 2.82, 95% CI = 1.20, 6.64, $p < .05$) to prematurely terminate within the first month of treatment.

Hypothesis 1c: The impact of service provider variables on premature termination:

In consideration of previous research, it was hypothesized that clients who were ethnically-, gender-, or Asian language-mismatched with their primary therapist, or who were not assigned their intake therapist as their primary therapist (continuity of care), would report higher rates of premature termination. A logistic regression analysis was performed to identify which of the service provider variables were significant predictors of premature termination. Tests for multicollinerity were performed on these independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent of each other in this analysis.

Table 5 provides a summary of the results from the logistic regression analysis. The overall logistic regression model for this analysis was not significant, χ^2 (1, N =

1,030) = 6.87, p = .14, indicating that this model did not significantly predict premature termination. As a result, the proposed hypotheses for service provider variables were not confirmed.

Hypothesis 1d: The impact of client demographic, clinical, and service provider variables on premature termination:

When including all demographic, clinical, and service provider variables into a single logistic regression model, it was predicted the service provider variables (i.e., gender-, ethnic-, Asian language match and continuity of care) would be the most significant predictors of lower rates of premature termination. To test this hypothesis, a series of logistic regression analyses were performed to determine which variables would remain significant predictors of premature termination after controlling for the contribution of the different demographic, clinical, and service provider variables. As with the previous logistic regression models, dummy coded variables were created for multiple category variables (i.e., education, age at immigration, Asian American ethnicity, and psychiatric diagnosis) and rotation of the baseline comparison group for each of these dummy coded variables was completed. Tests for multicollinearity were performed on the independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent of each other in this analysis.

Table 6 provides a summary of the results from these logistic regression analyses predicting premature termination. The overall logistic regression was found to be significant, χ^2 (1, N = 1,030) = 84.77, p < .001, and indicated a correct classification of 90.9% in predicting premature termination. Contrary to the proposed hypothesis, the service provider variables were not the strongest or most significant predictors of lower

rates of premature termination. It is important to note that some support for the hypothesis was found in the service provider variables, with Asian language match between the client and the therapist reducing the likelihood of premature termination from treatment by 71% (OR = .29, 95% CI = .14, .61, $p < .001$). Furthermore, continuity of care between the intake therapist and primary therapist reduced the chances of a client prematurely terminating from treatment by 44% (OR= .56, 95% CI = .30, 1.02, $p < .05$). Regarding the demographic variables, younger clients reported a slight (2%) increase in the likelihood of premature termination over older clients (OR = .98, 95% CI = .96, 1.00, $p = .05$). Additionally, being married increased the chances of premature termination by 1.7 times (OR = 1.70, 95% CI = 1.02, 2.82, $p < .05$). In contrast, English as a client's primary language reduced the likelihood of premature termination by 78% (OR = .22, 95% CI = .06, .86, $p < .05$). Concerning education, clients with no formal education were 37% more likely than clients who had completed some or all their secondary school education (e.g., high school) (OR = 0.43, 95% CI = .19, .98, $p < .05$) and 76% more likely than clients that had some college or a college degree (OR = .24, 95% CI = .08, .66, $p < .01$) to prematurely terminate from treatment. Finally, it was found that clients who completed some or all of their primary school education were 60% more likely to prematurely terminate from treatment in comparison to clients who completed some or all of their college education (OR = .40, 95% CI = .17, .94, $p < .05$).

When controlling for other demographic, clinical, and service provider variables in the regression model, the strongest predictors of premature termination were Asian American ethnicity and clinical diagnosis. Specifically, Korean Americans were again 73% more likely than the Vietnamese Americans (OR = .27, 95% CI = .12, .57, $p < .001$),

76% more likely than Chinese Americans (OR = .24, 95% CI = .12, .49, $p < .001$), and 97% more likely than both the Iu Mien (OR = .03, 95% CI = .01, .10, $p < .001$) and Cambodian Americans (OR = .03, 95% CI = .01, .11 $p < .001$) to prematurely terminate in the first month of treatment. Furthermore, Chinese Americans were 88% more likely than Iu Mien Americans (OR = .12, 95% CI = .04, .37, $p < .001$) and 86% more likely than Cambodian Americans (OR = .14, 95% CI = .05, .40, $p < .001$) to prematurely terminate from treatment. With regard to clinical diagnosis, clients with an adjustment disorders continued to be 3.86 times more likely than clients with schizophrenia spectrum or psychotic disorders (OR = 3.86, 95% CI = 1.45, 10.27, $p < .01$), 2.64 times more likely than clients with mood disorders (OR = 2.64, 95% CI = 1.22, 5.70, $p < .05$), and 2.68 times more likely than clients with anxiety disorders (OR = 2.68, 95% CI = 1.04, 6.88, $p < .05$) to prematurely terminate from treatment.

Descriptive Analyses for Treatment Length and Change in Pre- versus Post-treatment GAF scores:

To determine which demographic, clinical, and service provider variables were significantly related to treatment length and pre/post-treatment GAF scores, only clients who had continued on after the first month of treatment were selected for this sample. In applying this procedure, the overall sample for these two dependent variables decreased to 937 Asian American clients. A series of descriptive analyses were conducted on the demographic, clinical, and service provider variables to identify significant ethnic differences across the 5 Asian American groups.

Table 7 provides a summary of the descriptive analyses for demographic, clinical, and service provider variables for the 5 Asian American ethnic groups for this reduced sample. For continuous variables (e.g., age, years residing in the U.S., etc.), one-way

analysis of variances (ANOVAS) with Tukey's Honestly Significant Difference (HSD) tests was completed. Significant ethnic differences were reported for years of residence in the U.S., F (4, 932) = 30.59, $p < .001$, entry GAF scores, F (4, 932) = 10.03, $p < .001$, number of psychiatric/medication consultation appointments, F (4, 932) = 8.16, $p < .001$, and session frequency (i.e., average number of visits per week), F (4, 932) = 4.92, $p = .001$. First, East Asian Americans (i.e., Chinese and Koreans) reported 5 years longer residence in the U.S. than South East Asian Americans (i.e., Cambodians, Iu Mien, and Vietnamese). Second, Chinese, Korean, Iu Mien, and Vietnamese Americans reported with higher entry GAF scores than Cambodian Americans. Third, South East Asian groups averaged at least 10 more medication consultation appointments than Korean Americans. Fourth, Chinese Americans averaged more individual therapy sessions per week than the Vietnamese and Iu Mien Americans. Furthermore, Korean Americans averaged more individual therapy session per week than the Iu Mien Americans.

For dichotomous variables (e.g., gender), a series of chi-square analyses were performed to identify which Asian American ethnic groups significantly differed on the variables. To reduce the probability of making a Type I error given the 10 pairwise comparisons that would be performed in the chi-square analyses for each dichotomous variable, a Bonferroni correction method was employed (i.e. $p < .05/10$ comparisons) and a more restrictive cutoff point, $p < .005$, was established to identify significant differences between two Asian American ethnic groups. Significant ethnic differences were found for gender, χ^2 (4, N = 937) = 27.18, $p < .001$, marital status, χ^2 (4, N = 937) = 89.74, $p < .001$, Medi-Cal eligibility, χ^2 (4, N = 937) = 148.73, $p < .001$, no formal education, χ^2 (4, N = 937) = 416.12, $p < .001$, completion of some or all of primary

school, χ^2 (4, N = 937) = 58.89, p < .001, completion of some or all of secondary school, χ^2 (4, N = 937) = 99.69, p < .001, completion of some or all of their college education χ^2 (4, N = 937) = 110.39, p < .001, being born in the U.S., χ^2 (4, N = 937) = 40.61, p < .001, immigration to the U.S. after 21 years of age, χ^2 (4, N = 937) = 23.29, p < .001, and English as primary language of choice, χ^2 (4, N = 937) = 44.00, p < .001.

Specific inter-group differences across the 5 ethnic groups were identified by follow-up pairwise comparisons using chi-square analyses. First, Vietnamese Americans reported a lower percentage of female clients than the Cambodian, χ^2 (1, N = 401) = 19.13, p < .001, Chinese, χ^2 (1, N = 532) = 17.71, p < .001, and Iu Mien Americans, χ^2 (1, N = 341) = 12.24, p < .001. Second, Iu Mien Americans reported a higher percentage of married clients than the Cambodian, χ^2 (1, N = 314) = 50.31, p < .001, Chinese, χ^2 (1, N = 445) = 79.63, p < .001, Korean, χ^2 (1, N = 218) = 55.28, p < .001, and Vietnamese Americans, χ^2 (1, N = 341) = 56.99, p < .001. Third, Cambodian, Iu Mien, and Vietnamese Americans, in general, reported a higher percentage of Medi-Cal eligible clients than Chinese and Korean Americans. Specifically, the Iu Mien and Cambodian Americans reported a higher percentage of Medi-Cal eligible clients than Vietnamese, χ^2 (1, N = 341) = 13.16, p < .001 and χ^2 (1, N = 434) = 8.64, p < .005, respectively, Chinese, χ^2 (1, N = 445) = 49.93, p < .001 and χ^2 (1, N = 505) = 53.51, p < .001, respectively, and Korean Americans, χ^2 (1, N = 218) = 80.06, p < .001 and χ^2 (1, N = 278) = 86.21, p < .001, respectively. Vietnamese Americans also reported a higher percentage of Medi-Cal eligible clients than Chinese, χ^2 (1, N = 532) = 24.33, p < .001, and Korean Americans, χ^2 (1, N = 305) = 51.48, p < .001. Finally, Chinese Americans reported a higher percentage of Medi-Cal eligible clients than Korean Americans, χ^2 (1, N = 409) = 12.99, p < .001.

Fourth, significant ethnic differences in level of education were reported with the Iu Mien Americans reporting the highest percentage of clients with no formal education and the Korean Americans reporting the highest percentage of college-educated clients. Specifically, the Iu Mien Americans reported a higher percentage of clients with no formal education than the Cambodian Americans, χ^2 (1, N = 314) = 82.64, p < .001. The Iu Mien and Cambodian Americans also reported a higher percentage of clients with no formal education than the Chinese, χ^2 (1, N = 445) = 246.43, p < .001 and χ^2 (1, N = 434) = 59.89, p < .001, respectively, Korean, χ^2 (1, N = 218) = 156.34, p < .001 and χ^2 (1, N = 278) = 36.84, p < .001, respectively, and Vietnamese Americans, χ^2 (1, N = 341) = 245.62, p < .005 and χ^2 (1, N = 401) =67.07, p < .001, respectively. With respect to primary school education, Cambodian and Vietnamese Americans reported a higher percentage of clients who completed some or all of their primary school education than Chinese, χ^2 (1, N = 505) = 21.91, p < .001 and χ^2 (1, N = 434) = 11.06, p < .001, respectively, Iu Mien, χ^2 (1, N = 314) = 37.61, p < .001 and χ^2 (1, N = 341) = 27.01, p < .001, respectively, and Korean Americans, χ^2 (1, N = 278) = 20.63, p < .001 and χ^2 (1, N = 305) = 13.39, p < .001, respectively. Additionally, Chinese Americans reported a higher percentage of clients who completed some or all of their primary school education than the Iu Mien Americans, χ^2 (1, N = 445) = 9.28, p < .005. The Iu Mien Americans reported a lower percentage of clients who completed some or all of their secondary school education than Cambodian Americans, χ^2 (1, N = 314) = 15.83, p < .001. Furthermore, the Iu Mien and Cambodian Americans also reported a lower percentage of clients who completed some or all of their secondary school education than Chinese, χ^2 (1, N = 445) = 58.97, p < .001 and χ^2 (1, N = 505) = 27.14, p < .001, respectively,

Korean, χ^2 (1, N = 218) = 53.88, p < .001 and χ^2 (1, N = 278) = 20.80, p < .001, respectively, and Vietnamese American clients, χ^2 (1, N = 341) = 69.86, p < .001 and χ^2 (1, N = 401) = 36.89, p < .001, respectively. In this sample, none of the Iu Mien American clients reported with any college education. The Korean Americans and Chinese Americans reported a higher percentage of clients with some college or a college degree than Vietnamese, χ^2 (1, N = 305) = 21.61, p < .001 and χ^2 (1, N = 532) = 14.38, p < .001, respectively, and Cambodian Americans, χ^2 (1, N = 278) = 54.26, p < .001, and χ^2 (1, N = 505) = 44.88, p < .001, respectively. Furthermore, Vietnamese Americans reported a higher percentage of clients who had some college or a college degree than Cambodian Americans, χ^2 (1, N = 401) = 11.54, p < .001. Fifth, the Chinese Americans were 9 times more likely to be U.S.-born clients than Cambodian, χ^2 (1, N = 505) = 15.53, p < .001, or Vietnamese Americans, χ^2 (1, N = 532) = 15.62, p < .001. None of the Iu Mien American clients reported being born in the U.S. Furthermore, Cambodian and Iu Mien Americans reported a higher percentage of clients who had immigrated to the U.S. after the age of 21 than Chinese Americans, χ^2 (1, N = 505) = 9.89, p < .005 and χ^2 (1, N = 445) = 17.43, p < .001, respectively. Finally, a higher percentage of Chinese Americans, χ^2 (1, N = 505) = 21.33, p < .001, Korean Americans, χ^2 (1, N = 278) = 17.35, p < .001, and Vietnamese Americans, χ^2 (1, N = 401) = 9.24, p < .005, reported English as their primary language of choice than Cambodian Americans. None of the Iu Mien American clients reported English as their primary language of choice.

For the categorical clinical independent variables in this study, overall Asian ethnic group differences were found in previous psychiatric history, χ^2 (4, N = 937) = 87.87, p < .001), and appropriate referral out of treatment, χ^2 (4, N = 937) = 13.55, p <

.01. Specific to clinical diagnosis, overall Asian ethnic group differences were found in schizophrenia spectrum and psychotic disorders, χ^2 (4, N = 937) = 107.89, p < .001, mood disorders, χ^2 (4, N = 937) = 80.67, p < .001, anxiety disorders, χ^2 (4, N = 937) = 35.83, p < .001, and other psychiatric disorder diagnoses (i.e., diagnoses other than the four clinical diagnoses mentioned previously), χ^2 (4, N = 937) = 12.58, p < .05. Specific inter-group differences were identified by follow-up pairwise comparisons. The Chinese Americans reported the largest proportion of clients to have previous experience with psychiatric services than the Vietnamese, χ^2 (1, N = 532) = 9.78, p < .005, Korean, χ^2 (1, N = 409) = 10.42, p < .001, Cambodian, χ^2 (1, N = 505) = 52.36, p < .001, and Iu Mien American clients, χ^2(1, N = 445) = 54.82, p < .001. The Vietnamese Americans followed with more clients reporting to have previous psychiatric experience than the Cambodian, χ^2 (1, N = 401) = 17.51, p < .001, and Iu Mien American clients, χ^2(1, N = 341) = 23.85, p < .001. Additionally, the Korean Americans had more clients reporting previous experience with psychiatric services than the Iu Mien American clients, χ^2 (1, N = 218) = 12.07, p < .001. Specific to appropriate referral out of treatment, more Chinese American clients were appropriately referred out of treatment in comparison to Iu Mien American clients, χ^2 (1, N = 445) = 12.32, p < .001. In regards to clinical diagnosis, Iu Mien Americans were more often diagnosed with mood disorders than the Cambodian, χ^2 (1, N = 314) = 22.35, p < .001, Chinese, χ^2 (1, N = 445) = 75.39, p < .001, Korean, χ^2 (1, N = 218) = 17.15, p < .001, and Vietnamese American clients, χ^2 (1, N = 341) = 40.96, p < .001. Both the Cambodian and Korean American clients were more often diagnosed with a mood disorder than the Chinese American clients, χ^2 (1, N = 505) = 19.28, p < .001, χ^2 (1, N = 409) = 11.69, p < .001, respectively. In this sample, more Chinese American

clients were diagnosed with schizophrenia spectrum and psychotic disorders than the Korean, χ^2 (1, N = 409) = 9.01, p < .005, Vietnamese, χ^2 (1, N = 532) = 22.67, p < .001, Cambodian, χ^2 (1, N = 505) = 58.03, p < .001, and Iu Mien American clients, χ^2 (1, N = 445) = 62.72, p < .001. Furthermore, more Korean and Vietnamese American clients were diagnosed with schizophrenia spectrum or psychotic disorders than the Cambodian, χ^2 (1, N = 278) = 11.19, p < .001, χ^2 (1, N = 401) = 11.30, p < .001, respectively, and Iu Mien American clients, χ^2 (1, N = 218) = 23.22, p < .001, χ^2 (1, N = 341) = 22.21, p < .001, respectively. Cambodian Americans had the highest rate of anxiety disorder diagnoses than the Vietnamese, χ^2 (1, N = 401) = 10.03, p < .005, Chinese, χ^2 (1, N = 505) = 21.01, p < .001, Korean, χ^2 (1, N = 278) = 10.93, p < .001, and Iu Mien American clients, χ^2 (1, N = 314) = 21.80, p < .001. Finally, more Vietnamese Americans were diagnosed with a psychiatric disorder other than the four clinical diagnoses previously listed than the Cambodian Americans, χ^2 (1, N = 401) = 10.05, p < .005.

For the categorical service provider independent variables in this study, overall Asian ethnic group differences were found in client-therapist gender, χ^2 (4, N = 937) = 27.55, p < .001, and Asian language match χ^2 (4, N = 937) = 48.62, p < .001. Specific inter-group differences were identified by follow-up pairwise comparisons. In general, Chinese and Iu Mien Americans were more often gender matched with their therapist than the Vietnamese, χ^2 (1, N = 532) = 9.77, p < .005 and χ^2 (1, N = 341) = 12.92, p < .001, respectively, and Cambodian American clients, χ^2 (1, N = 505) = 14.54, p < .001 and χ^2 (1, N = 314) = 17.14, p < .001, respectively. Finally, the South East Asian American clients (i.e., Cambodian, χ^2 (1, N = 505) = 28.77, p < .001, Iu Mien, χ^2 (1, N = 445) = 15.46, p < .001, and Vietnamese Americans, χ^2 (1, N = 532) = 23.54, p < .001)

were more likely to be Asian language matched with their therapist than the Chinese American clients.

Overall ethnic group differences were found for the dependent variables treatment length, F (4, 932) = 15.43, $p < .001$), and pre- and post-treatment GAF score differences, F (4, 932) = 3.51, $p < .01$). Follow-up pairwise comparison revealed that in comparison to the other Asian ethnic groups, Cambodian Americans had completed an average of 9 more sessions than Iu Mien Americans, an average of approximately 16 more sessions than the Chinese and Vietnamese Americans, and three times more sessions than the Korean Americans. In addition to this, it was found that Chinese and Iu Mien American clients experienced significantly greater differences in pre- and post-treatment GAF scores than Korean and Cambodian American clients.

Hypothesis 2a: The impact of client demographic variables on treatment length:

Based on previous research, it was hypothesized that clients who are married, female, reported with a higher SES (i.e., not eligible for Medi-Cal, higher education), self-identified as East Asian American (e.g., Chinese or Korean), or who were born in the U.S. will have longer treatment lengths. In order to test this hypothesis, a series of multiple regression analyses were performed to identify which demographic variables were significant predictors of treatment length. Dummy coded variables were again created for multiple category variables (i.e., education, age at immigration, and Asian American ethnicity) and the "baseline comparison group" was substituted for a different category in each variable until all pairwise comparisons were completed. For example, Cambodian Americans were removed from the first linear regression analysis to serve as a baseline comparison group to all the other Asian American ethnic groups, replaced, and

then the Iu Mien Americans were removed to serve as a baseline comparison group and so forth. Tests for multicollinearity were performed on the independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent.

Table 8 provides a summary of the results from these multiple regression analyses predicting treatment length. The overall regression model was found to be significant, F (15, 921) = 30.59, $p < .001$, and accounted for 12% of the variance in treatment length, R^2 = .12. In partial support of the hypothesis, clients who were born in the U.S. completed more therapy sessions than clients who immigrated to the U.S. before the age of 21 years, β = -.25, t (921) = 2.97, $p < .01$. Contrary to the hypothesis, Medi-Cal eligible clients completed more therapy sessions than non-Medi-Cal eligible clients, β = .15, t (921) = 4.15, $p < .001$. Furthermore, the East Asian American clients did not present with the longest treatment lengths. More specifically, the Cambodian Americans completed more therapy sessions than Vietnamese Americans, β = -.18, t (921) = 4.13, $p < .001$, Chinese Americans, β = -.24, t (921) = 5.08, $p < .001$, and Korean Americans, β = -.17, t (921) = 4.18, $p < .001$. Finally, the Iu Mien Americans completed more therapy sessions than Chinese Americans, β = -.16, t (921) = 2.45, $p < .05$, and Korean Americans, β = -.12, t (921) = 2.39, $p < .05$.

Hypothesis 2b: The impact of clinical variables on treatment length:

Based on previous findings, it was hypothesized that clients who had prior experience with psychiatric services, who received a diagnosis of a schizophrenia spectrum or psychotic disorder, presented with higher pre-treatment psychological functioning (as measured by higher pre-treatment GAF scores), had a greater frequency

of visits per week, received an appropriate referral out of treatment, or who completed a greater number of concomitant psychiatric medication appointments would be significantly associated with longer treatment lengths. In order to test this hypothesis, a series of multiple regression analyses were performed to identify which of the clinical variables were significant predictors of treatment length. The five clinical diagnosis categories were dummy coded, and comparisons between categories were carried out by rotating individual categories as a "baseline comparison group" through a series of analyses. Tests for multicollinearity were performed on the independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent of each other in this analysis.

Table 9 provides a summary of the results from the multiple regression analyses predicting treatment length. The overall multiple regression model was found to be significant, F (9, 927) = 114.58, $p < .001$, accounting for 53% of the variance in predicting treatment length, $R^2 = .53$. Partial support for the proposed hypotheses were reported with longer treatment lengths being positively associated with a higher number of completed concomitant psychiatric medication consultation appointments, $\beta = .71$, t (927) = 29.11, $p < .001$, and a greater frequency of average visits per week, $\beta = .24$, t (927) = 10.20, $p < .001$. Contrary to proposed hypotheses, previous experience with psychiatric services, $\beta = -.06$, t (927) = 2.19, $p < .05$, and appropriate referrals out of treatment, $\beta = -.14$, t (927) = 6.25, $p < .001$, were found to predict shorter treatment lengths. The most significant clinical predictor of treatment length was clinical diagnosis. No support was found for the hypothesis that a schizophrenia spectrum or psychotic disorder diagnosis would predict longer treatment lengths. In fact, the analysis

suggested that clients diagnosed with mood disorders reported completing more therapy sessions than clients with schizophrenia spectrum and psychotic disorders, $\beta = -.16$, t (927) = 6.22, $p < .001$, anxiety disorders, $\beta = -.05$, t (927) = 2.08, $p < .05$, and adjustment disorders, $\beta = -.13$, t (927) = 5.58, $p < .001$. Furthermore, clients diagnosed with anxiety disorders had significantly longer treatment lengths than clients diagnosed with schizophrenia spectrum and psychotic disorders, $\beta = .09$, t (927) = 3.05, $p < .01$, and adjustment disorders, $\beta = -.10$, t (927) = 3.77, $p < .001$. Finally, clients diagnosed with a psychiatric disorder other than anxiety disorders, mood disorders, and schizophrenia spectrum and psychotic disorders, completed more sessions than those diagnosed with an adjustment disorder, $\beta = -.09$, t (927) = 2.91, $p < .01$.

Hypothesis 2c: The impact of service provider variables on treatment length:

Based on previous findings, it was hypothesized that clients who were ethnically-, gender-, or Asian language matched with their primary therapist would report with longer treatment lengths. In order to test this hypothesis, a multiple regression analysis was performed to identify which of the service provider variables were significantly associated with longer treatment lengths. Tests for multicollinerity were performed on the independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent of each other in this analysis.

Table 10 provides a summary of the results from the multiple regression analyses predicting treatment length. The multiple regression model was found to be significant, F (3, 933) = 5.67, $p < .01$, but a very poor fit, accounting for less than 1% of the variance in treatment length, $R^2 = .009$. Partial support for the hypothesis was found with Asian

language matching between the client and therapist predicting longer treatment lengths, β = .12, t (933) = 2.83, $p < .01$.

Hypothesis 2d: The impact of client demographic, clinical, and program variables on treatment length:

When including all demographic, clinical, and service provider variables into a single multiple regression model, it was predicted that service provider variables (i.e., gender-, ethnic-, and Asian language-match and continuity of care) would be the most significant predictors of longer treatment lengths. In order to test this hypothesis, a series of multiple regression analyses were performed to determine which variables would remain significant predictors of treatment length after controlling for the individual contribution of the different demographic, clinical, and service provider variables in the previous three multiple regression models. As with the previous multiple regression models, group comparison between variables that were dummy coded (e.g., Asian American ethnicity, psychiatric diagnosis, etc.) were conducted by rotating the categories as a "baseline comparison group" through a series of analyses. Tests for multicollinearity were performed on the independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent of each other in this analysis.

Table 11 provides a summary of the results from these multiple regression analyses predicting treatment length. The overall multiple regression model was found to be significant, F (27, 909) = 42.22, p = .001, accounting for 56% of the variance in treatment length, R^2 = .56. Unfortunately, none of the service provider variables were found to significantly predict treatment length. Concerning the demographic variables, female clients completed more therapy sessions than male clients, β = .06, t (909) = 2.08,

$p < .05$. Furthermore, clients who completed some or all of secondary school (e.g., high school) reported more therapy sessions than clients who reported with no formal education, $\beta = .08$, $t\ (909) = 2.12$, $p < .05$. Regarding clinical variables, clients who reported a higher number of completed therapy sessions also reported a higher number of concomitant psychiatric medication consultation appointments, $\beta = .69$, $t\ (909) = 27.66$, $p < .001$, and a greater frequency of average visits per week, $\beta = .26$, $t\ (909) = 10.61$, $p < .001$. Additionally, clients who received appropriate referrals out of treatment also completed fewer therapy sessions, $\beta = -.14$, $t\ (909) = 5.98$, $p < .001$.

When controlling for demographic, clinical, and programmatic factors, the most significant predictors of treatment length continued to be Asian American ethnicity and clinical diagnosis. Specific to Asian American ethnicity, Cambodian and Iu Mien Americans completed more therapy sessions than Vietnamese, $\beta = -.13$, $t\ (909) = 3.94$, $p < .001$ and $\beta = -.15$, $t\ (909) = 3.38$, $p < .001$, respectively, Chinese, $\beta = -.15$, $t\ (909) = 4.13$, $p < .001$ and $\beta = -.17$, $t\ (909) = 3.51$, $p < .001$ respectively, and Koreans Americans, $\beta = -.10$, $t\ (909) = 3.45$, $p < .001$ and $\beta = -.12$, $t\ (909) = 3.19$, $p < .001$, respectively. Specific to clinical diagnosis, clients with mood disorders completed more therapy sessions than clients with schizophrenia spectrum or psychotic disorders, $\beta = -.12$, $t\ (909) = 4.21$, $p < .001$, or adjustment disorders, $\beta = -.13$, $t\ (909) = 5.11$, $p < .001$. Furthermore, clients with schizophrenia spectrum or psychotic disorders completed more therapy sessions than clients with adjustment disorders, $\beta = -.06$, $t\ (909) = 2.17$, $p < .05$, but reported fewer therapy sessions than clients with anxiety disorders, $\beta = .06$, $t\ (909) = 2.07$, $p < .05$. Additionally, clients with anxiety disorders had longer treatment lengths than clients with adjustment disorders, $\beta = -.10$, $t\ (909) = 3.69$, $p < .001$. Finally, clients

with adjustment disorders reported fewer therapy sessions than clients with psychiatric disorders that were not anxiety disorders, mood disorders, or schizophrenia spectrum and psychotic disorders, $\beta = -.09$, $t\ (909) = 3.00$, $p < .01$.

Hypothesis 3a: The impact of client demographic variables on change in pre- versus post-treatment GAF scores:

Based on previous findings, it was hypothesized that clients who are married, female, reported with a higher SES (i.e., not eligible for Medi-Cal, lower education), self-identified as East Asian American (e.g., Chinese or Korean), or reported being U.S. born would be significantly associated with more change between their pre- versus post-treatment GAF scores. In order to test this hypothesis, a series of multiple regression analyses were performed to identify which demographic variables were significant predictors of change in pre- versus post-treatment GAF scores. To control for the confounding effects of the clients' differential levels in pre-treatment functioning on pre- versus post-treatment GAF score differences, entry GAF scores were included in these analyses. As with the other analyses, categorical variables were dummy coded (i.e., education, age at immigration, and Asian American ethnicity), and group comparisons were determined by rotating each category as a "baseline comparison group" through a series of analyses. Tests for multicollinearity were performed on the independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent.

Table 12 provides a summary of the results from these multiple regression analyses predicting change between pre- versus post-treatment GAF scores. The regression model was found to be significant, $F\ (16, 920) = 22.74$, $p < .001$, accounting for 28% of the explained variance in pre- versus post-treatment GAF score differences,

$R^2 = .28$. As expected, lower psychological functioning (as measured by entry GAF scores) predicted more change between GAF scores, $\beta = -.51$, $t\ (920) = 17.67$, $p < .001$. This suggests that clients with a higher level of pre-treatment functioning have a lower ceiling for marked improvement in treatment. Contrary to the hypothesis, clients with no education showed a greater difference in pre- versus post-treatment GAF scores than clients who completed some or all of their primary school education, $\beta = -.09$, $t\ (920) = 2.36$, $p < .05$. In partial support of the hypothesis, clients who completed some or all of their secondary school, $\beta = .15$, $t\ (920) = 4.02$, $p < .001$, or college education, $\beta = .13$, $t\ (920) = 3.31$, $p < .001$, demonstrated more change in pre- versus post-treatment GAF scores than clients who completed some or all of their primary school education.

Ethnic differences showed that in comparison to Chinese Americans, Cambodian, $\beta = -.10$, $t\ (920) = 2.77$, $p < .01$, and Korean Americans, $\beta = -.09$, $t\ (920) = 2.86$, $p < .01$, experienced less of a difference in their pre- versus post-treatment GAF scores. Furthermore, in comparison to Iu Mien and Vietnamese Americans, Cambodian, $\beta = -.13$, $t\ (920) = 2.91$, $p < .01$ and $\beta = -.12$, $t\ (920) = 3.05$, $p < .01$, respectively, and Korean Americans, $\beta = -.11$, $t\ (920) = 2.45$, $p < .05$ and $\beta = -.09$, $t\ (920) = 2.93$, $p < .01$, respectively, experienced less of a difference in their pre- versus post-treatment GAF scores.

Hypothesis 3b: The impact of clinical variables on change in pre- and post-treatment GAF scores:

Based on previous findings, it was hypothesized that clients with prior psychiatric service experience, who were diagnosed with an anxiety or mood disorder, had longer treatment lengths, were appropriately referred out of treatment, had a greater frequency of visits per week, or who completed more concomitant medication consultation

appointments would report more change between pre- versus post-treatment GAF scores. In order to test this hypothesis, a series of multiple regression analyses were performed to identify which of the clinical variables would significantly predict change in pre- versus post-treatment GAF scores. The five clinical diagnosis categories were dummy coded, and comparisons between each category were completed by rotating each category as a "baseline comparison group" through a series of analyses. Tests for multicollinearity were performed on the independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent of each other in this analysis.

Table 13 provides a summary of the results from the multiple regression analyses predicting change in pre- versus post-treatment GAF scores. The overall multiple regression model was significant, F (10, 926) = 43.97, $p < .001$, accounting for 32% of the variance in pre- versus post-treatment GAF score differences, $R^2 = .32$. As with the previous analyses, lower psychological functioning (as measured by entry GAF scores) predicted a larger difference between GAF scores, $\beta = -.47$, t (926) = 16.21, $p < .001$. Partial support for the hypothesis was found with the completion of more concomitant psychiatric consultation appointments, $\beta = .09$, t (926) = 2.17, $p < .05$, and longer treatment lengths (as measured by number of completed sessions), $\beta = .17$, t (926) = 4.43, $p < .001$, being significant predictors of more change in pre- versus post-treatment GAF scores.

Specific to psychiatric diagnosis, partial support for the hypothesis was found as clients with anxiety or mood disorders experienced a greater GAF score difference than clients diagnosed with schizophrenia spectrum or psychotic disorders, $\beta = -.12$, t (926) =

3.67, $p < .001$, $\beta = -.13$, $t\ (926) = 3.13$, $p < .01$, respectively. Interestingly, clients diagnosed with an adjustment disorder experienced greater change in their pre- versus post-treatment GAF scores than clients diagnosed with mood, $\beta = -.21$, $t\ (926) = 3.33$, $p < .001$, anxiety, $\beta = -.14$, $t\ (926) = 2.83$, $p < .01$, schizophrenia spectrum or psychotic, $\beta = -.29$, $t\ (926) = 5.08$, $p < .001$, or other psychiatric disorders (not covered by the previously mentioned clinical diagnoses), $\beta = -.12$, $t\ (926) = 3.15$, $p < .01$.

Hypothesis 3c: The impact of service provider variables on change in pre- and post-treatment GAF scores:

Based on previous findings, it was hypothesized that clients who were ethnically-, gender-, or Asian language matched with their primary therapist would report with more change between pre- versus post-treatment GAF scores. In order to test this hypothesis, a multiple regression analysis was performed to identify which of the service provider variables were significantly associated with pre- versus post-treatment GAF score changes. To control for the confounding effects of the clients' differential levels in pre-treatment functioning on pre- versus post-treatment GAF score change, entry GAF scores were included in these analyses. Tests for multicollinerity were performed on the independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent of each other in this analysis.

Table 14 provides a summary of the results from the multiple regression analyses predicting change in pre- versus post-treatment GAF scores. The overall multiple regression model to test the impact of service provider variables on the difference between pre- versus post-treatment GAF scores was significant, $F\ (4, 932) = 75.89$, $p < 001$, accounting for 25% of the variance in pre- versus post-treatment GAF score differences, $R^2 = .25$. Again, lower psychological functioning (as measured by entry

GAF scores) predicted a greater difference in pre-treatment versus post-treatment GAF scores, $\beta = -.49$, $t\,(932) = 17.24$, $p < .001$. Unfortunately, no support for the hypothesis was found, as none of the service provider variables were significant predictors of change in pre- versus post-treatment GAF scores.

Hypothesis 3d: The impact of client demographic, clinical, and program variables on change in pre- and post-treatment GAF scores:

When including all demographic, clinical, and service provider variables into a single multiple regression model, it was predicted that the service provider variables (i.e., gender-, ethnic-, language match and continuity of care) would be the most significant predictors of more change between pre- versus post-treatment GAF scores. In order to test this hypothesis, a series of multiple regression analyses were performed to determine which variables would remain significant predictors of a change between pre- versus post-treatment GAF scores after controlling for the individual contribution of the different demographic, clinical, and service provider variables in the previous three multiple regression models. To control for the confounding effects of the clients' differential levels in pre-treatment functioning on pre- and post-treatment GAF score change, entry GAF scores were included in this analysis. As with the previous multiple regression models, group comparison between variables that were dummy coded were determined by rotating each category as a "baseline comparison group" through a series of analyses. Tests for multicollinearity were performed on the independent variables, and the results of the condition index and eigen value scores suggested that the variables were sufficiently independent of each other in this analysis.

Table 15 provides a summary of the results from these multiple regression analyses predicting change in pre- versus post-treatment GAF scores. The overall

regression model was significant, F (28, 908) = 20.43, $p < .001$, accounting for 39% of the variance in change between pre- versus post-treatment GAF scores ($R^2 = .39$). As expected, lower psychological functioning (as measured by pre-treatment GAF scores) continued to predict a greater difference in pre- versus post-treatment GAF scores, β = -.52, t (908) = 17.99, $p < .001$. Unfortunately, no support for the hypothesis was found, as none of the provider variables were significant predictors of more change between pre- versus post-treatment GAF scores. Significant predictors of greater pre- versus post-treatment GAF score change included completion of more concomitant medication consultation appointments, β = .08, t (908) = 2.09, $p < .05$, longer treatment lengths (as measured by total number of completed sessions), β = .21, t (908) = 5.40, $p < .001$, and an appropriate referral out of treatment, β = .11, t (908) = 4.09, $p < .001$. In contrast, a greater average number of visits per week, β = -.07, t (908) = 2.26, $p < .05$, were predictive of less change in pre- versus post-treatment GAF scores. Specific to education, in comparison to clients who completed some or all of their primary school education, clients who completed some or all of their secondary school education were more likely to experience a greater difference in their pre- versus post-treatment GAF scores, β = .13, t (908) = 3.67, $p < .001$.

The most significant predictors of more change in pre- versus post-treatment GAF scores were in Asian ethnicity and clinical diagnosis. Specific to ethnic differences, Cambodian American clients showed less of a change in pre- versus post-treatment GAF scores than Chinese, β = -.21, t (908) = 5.68, $p < .001$, Iu Mien, β = -.17, t (908) = 3.89, $p < .001$, and Vietnamese American clients, β = -.18, t (908) = 4.83, $p < .001$. Additionally, Korean American clients showed less of a change in pre- versus post-

treatment GAF scores than Chinese, β = -.09, t (908) = 2.94, $p < .01$, and Vietnamese American clients, β = -.06, t (908) = 1.99, $p < .05$. Specific to clinical diagnosis, in comparison to clients diagnosed with adjustment disorders, clients diagnosed with mood, β = -.18, t (908) = 2.90, $p < .01$, anxiety, β = -.09, t (908) = 2.02, $p < .05$, schizophrenia spectrum and psychotic, β = -.30, t (908) = 5.30, $p < .001$, and other clinical diagnoses (not covered by the previously mentioned clinical diagnoses), β = -.11, t (908) = 2.96, $p < .01$ showed less of a change in pre- versus post-treatment GAF scores. Finally, clients diagnosed with an anxiety or mood disorder experienced more of a change in their GAF scores than clients diagnosed with schizophrenia spectrum or psychotic disorder, β = -.19, t (908) = 4.45, $p < .001$and β = -.15, t (908) = 4.49, $p < .001$, respectively.

CHAPTER IV

DISCUSSION

The present dissertation study examined important demographic, clinical, and service provider variables and their relationship to three measures of treatment outcome (i.e., premature termination in the first month of treatment, treatment length (as measured by number of completed sessions), and change in pre- and post-treatment GAF scores) among five Asian American ethnic groups seeking individual psychotherapy from an ethnic-specific mental health service provider.

Summary of Findings: Premature Termination

In this clinical sample, 9% of clients prematurely terminated from treatment in the first month. Although somewhat lower than findings in previous research, this rate of premature termination is consistent with other studies on Asian American mental health service utilization that reported a range of 2% to 10.7% for premature termination (O'Sullivan et al., 1989; S. Sue et al., 1991; Takeuchi et al., 1995). In contrast to the operational definition of premature termination as the failure to return after the first session in these previous studies, it is important to note this dissertation study employed both a higher cut-off number of therapy sessions (i.e., termination before the fifth session) and the therapist's judgment to verifying the status of premature termination.

Impact of Client Demographic Variables on Rates of Premature Termination

Partial support was found for the hypotheses regarding the impact of client demographic variables on rates of premature termination. As expected, clients who reported no formal education were more likely to prematurely terminate from treatment than those with a college education. Interestingly, when including the client demographic, clinical, and service provider variables into a combined analysis, the power of the education variables as predictors of premature termination increased. Specifically, the combined analysis yielded additional information suggesting that clients with no formal education were more likely to prematurely terminate from treatment than clients with secondary schooling (e.g., high school), and that clients with primary schooling (e.g., elementary school) were more likely to prematurely terminate than clients with a college education. Post-hoc analyses revealed that the inclusion of the client clinical variables may have accounted for this increase, as an uneven distribution was identified between level of education and clinical diagnosis (e.g., a large portion of the clients with a college education were diagnosed with an adjustment disorder). Although there were no specific reasons that could explain this phenomenon, the inclusion of the clinical diagnosis variables into the same analysis may have controlled for these uneven distributions, making the education variables more robust predictors of premature termination. The present findings support past research that suggest clients with limited formal education may be more susceptible to the stigma and shame associated with seeking mental health care therefore increasing the likelihood that they would prematurely terminate from treatment (Baretto & Segal, 2005; Clarkin & Levy, 2004;

Fox et al., 1999). The fact that education remained significant even when controlling for various client demographic, clinical, and service provider variables highlights its relative importance as a predictor of premature termination with this Asian American clinical population. This finding warrants more consideration on how to improve mental health service delivery to less educated clients who may present with a higher likelihood for prematurely terminating from treatment.

Contrary to expectations, clients who were married were more likely to prematurely terminate from treatment. There are several possible reasons for this negative finding associated with marital status. First, it is possible that a spouse may use negative coercion to pressure a client to seek out mental health services, and this could decrease a client's level of commitment to staying in treatment. Second, a spouse may provide certain positive benefits of informal help and support that may lead to a client leaving treatment early or prematurely and forego more formal or professional help. Unfortunately, the current data set did not contain information on such variables and no further tests could be conducted to examine these possibilities to explain this negative finding associated with marital status. Furthermore, this finding became non-significant when the client clinical and service provider variables were included into a combined analysis, suggesting that other variables were stronger predictors of premature termination.

The most significant demographic predictor of premature termination was Asian American ethnicity. Contrary to the hypothesis, Cambodian and Iu Mien Americans (members of the South East Asian group) were the least likely, while Korean Americans (member of the East Asian group) were the most likely of the Asian American ethnic

groups to prematurely terminate from treatment in the first month. Asian American ethnicity continued to remain a strong predictor of premature termination even when entering the client clinical and service provider variables into a combined analysis, suggesting that ethnic differences in premature termination were the result of factors other than pre-treatment psychological functioning and clinical diagnoses. Interestingly, the combined analysis also showed that clients who reported English as their primary language (a language associated measure of acculturation) predicted a reduced likelihood of premature termination. While this finding supports past research that higher *acculturated* Asian Americans may be more cognitively hardier and resistant to the negative effects of the stigma regarding mental health treatment (Chun et al., 2002; Leong & Lau, 2002), it fails to explain why Cambodian and Iu Mien American reported with low rates of premature termination and Korean Americans reported with high rates of premature termination. This is an interesting point given that Cambodian and Iu Mien Americans had the lowest percentage of clients who spoke English as a primary language, while Korean Americans reported the highest proportion of English speakers. What can be further gleaned from the combined analysis is that factors beyond the scope of the measures of acculturation included in this study may have been driving the significance of the Asian American ethnic variables as predictors of premature termination.

There are several explanations that could shed some light onto these contrary findings. First, the literature suggests that a significant number of Cambodian and Iu Mien Americans were forced to relocate to the U.S. because of war and civil unrest (Gong-Guy, 1987; Gong-Guy et al., 1991; Nguyen, 1982; Westermeyer et al., 1983). As

refugees to the U.S. with little to no resources and limited ability to speak English, this diminished capacity may have facilitated a greater appreciation of receiving help from Cambodian and Iu Mien staff at an ethnic-specific service program. It is very likely that Southeast Asian Americans in need of assistance would make a strong commitment to a therapist who shared their same ethnicity and spoke their native language and this could significantly reduce the likelihood for premature termination. A recent study on Cambodian Americans lends support to this theory, as it was found that structural barriers (e.g., high cost of treatment and lack of bilingual staff) were the most significant obstacles to mental health service utilization for this population (Wong et al., 2006). Second, among the Asian American ethnic groups included in this study, the Cambodian and Iu Mien Americans were the most recent to have immigrated to the U.S. (Niedzwiecki & Duong, 2004). The literature suggests that recent immigrants are more likely to maintain traditional Asian cultural values such as "saving face" and conformity to group expectations (Ho, 1987; B.S.K. Kim, Atkinson, & Umemoto, 2001; B.S.K. Kim, Atkinson, & Yang, 1999; Leong, Wagner, & Tata, 1995; Ying & Akutsu, 1997). This may have translated into Cambodian and Iu Mien American clients adhering to treatment more to avoid upsetting an "authority figure" in the form of their primary therapist. It is possible these culturally-related factors could reduce the likelihood of premature termination for Cambodian and Iu Mien Americans.

The higher rate of premature termination in Korean Americans may be explained by the influence of Eastern philosophy, and the acceptance of suffering as a way of life that has shaped this ethnic group's behaviors and social values (Pang, 1998). Korean American culture places a high value on being able to endure hardships, while

maintaining a sense of calm, making the ability to control one's emotions an esteemed attribute (Park & Bernstein, 2008; Yamashiro & Matsuoka, 1997). These values make Korean Americans especially susceptible to the stigma of mental illness, as Korean Americans consider suffering from a mental illness not only a sign of individual weakness, but also something that brings great shame and dishonor to the family (S.C. Kim, 1997; Park & Bernstein, 2008).

It is also possible that Korean Americans in this sample may be benefiting from an affiliation with organized religion. In the U.S., Korean Americans have had a long history of strong social networks associated with Korean Christian churches (Park & Bernstein, 2008). These Korean Christian churches not only offer spiritual support, but also help with employment searches, offer informal counseling, host cultural activities, and provide a myriad of other social services that make converting to Christianity extremely appealing to recent Korean immigrants (Hurh, 1998). Additionally, these religious organizations provide socially acceptable forms of support and comfort to individuals suffering from mental illnesses (Park & Bernstein, 2008). As a result, help from the religious community could circumvent the need for Korean Americans to seek out or remain in the less socially acceptable formal (or professional) forms of treatment. Unfortunately, the current data set did not contain information that would help to examine these possibilities and further explain the ethnic differences in rates of premature termination.

Impact of Clinical Variables on Rates of Premature Termination

In partial support of the second set of hypotheses on clinical variables, clients with adjustment disorders were more likely to prematurely terminate than clients with

schizophrenia and psychotic disorders, mood disorders, and anxiety disorders. In the combined regression model with client demographic, clinical, and service provider variables, clinical diagnosis remained a significant, albeit slightly weaker predictor of premature termination. Post-hoc investigations revealed that certain Asian American ethnic groups were more likely to be diagnosed with a particular clinical disorder, and that these trends may have reduced the significance of the clinical diagnosis variables in the combined analysis. For example, Chinese Americans were more likely to be diagnosed with a schizophrenia spectrum or psychotic disorder than the other Asian American groups. This finding was not surprising as more acculturated Asian American ethnic groups like the Chinese Americans oftentimes report with higher rates of schizophrenia spectrum and psychotic disorders (Flaskerud, 1986; Uehara, Takeuchi, & Smukler, 1994). Post-hoc analyses also revealed that Cambodian Americans received more diagnoses of anxiety disorders than the other Asian American groups. Again, this finding was not surprising as higher rates of anxiety disorders, especially PTSD, with Cambodian Americans was often associated with pre-migration exposure to war-related trauma (Kinzie, Tran, Breckenridge, & Bloom, 1980; Nguyen, 1982). Given these ethnic differences in clinical diagnosis, Asian American ethnicity (the strongest demographic predictor of premature termination) probably accounted for some of the significance attributed to clinical diagnosis in predicting premature termination. What can be further extrapolated from the combined regression analysis is that certain clinical diagnoses (e.g., adjustment disorder) were significant predictors of higher premature termination even when controlling for pre-treatment psychological functioning (GAF) or Asian American ethnicity.

In terms of clinical diagnosis, adjustment disorders are classified as subthreshold disorders that do not meet the criteria of more severe major diagnoses like anxiety or mood disorders (Strain et al., 1998). As such, clients with adjustment disorders have reported with a better prognosis for recovery in a shorter time frame when compared to debilitating psychiatric disorders like schizophrenia (APA, 2004). Given this understanding, clients with adjustment disorders in this study may have reported with lower levels of psychopathology and this finding in conjunction with the knowledge that Asian Americans are extremely reluctant to seeking and remaining in mental health treatment could have facilitated greater premature termination (Akutsu, 1997; Matsuoka, Breaux, & Ryujin, 1997; Uba, 1994). Unfortunately, this is mere speculation, as the current data set does not contain the necessary information to explore this finding and future research should examine the significant importance of clinical diagnosis to premature termination.

Impact of Service Provider Variables on Rates of Premature Termination

Unfortunately, there were no significant findings to support the hypotheses that service provider variables were strong predictors of premature termination. Contrary to expectation and past studies (Flaskerud & Hu, 1991; Fujino et al., 1994), gender-matching between the therapist and client was found to increase the likelihood of premature termination in the first month of treatment. Post-hoc analyses on separate male and female client samples failed to replicate the negative finding of gender-matching on premature termination, suggesting the overall significant finding was not due to biases attributed to male or female samples alone. Interestingly, the current findings corroborate a previous finding that gender-matching between a client and

prescreening interviewer reduced the likelihood of intake attendance (Akutsu et al., 2004). As suggested in this previous study, it is possible that differences in role expectations regarding mental health services (e.g., male clients expecting or preferring female therapists because of cultural expectations that they are warm and caring, and female clients expecting or preferring the male "authority figure") may have contributed to a greater likelihood of a client prematurely terminating from treatment.

The inclusion of the client demographic and clinical variables with the service provider variables into a combined logistic regression analysis generated several interesting findings. First, gender-match between the client and therapist became non-significant, suggesting client demographic and/or clinical variables may be stronger predictors of premature termination. Second, while client-therapist gender-match became non-significant, continuity of care increased in its significance as a predictor of premature termination. Third, the most surprising finding was that Asian language-matching between the client and therapist became a very significant predictor of a reduced likelihood for premature termination. While these findings provided some support to the fourth set of hypotheses, further clarification was necessary. This was especially true for Asian language-matching which jumped from being a non-significant predictor in the service provider analysis (OR = .60, 95% CI = .32, 1.12, $p = .11$) to a highly significant predictor in the combined analysis (OR = .29, 95% CI = .14, .61, $p < .001$).

Post-hoc analyses revealed that the presence of Asian American ethnicity was contributing to the significance of the service provider variables in the combined analysis. Unfortunately, it is unclear as to how Asian American ethnicity helped to facilitate this improvement in the significance of continuity of care and client-therapist

Asian language match as predictors for reduced premature termination. It is possible that there is an interaction effect between these sets of variables, but the current data set did not contain enough information to conduct further tests to examine these possibilities.

Concluding Remarks: Analysis on Premature Termination

In summary, there are two important conclusions that can be drawn from the current data analyses. First, although the general rate of premature termination at this ethnic-specific provider was relatively low, there were significant Asian American group differences in their rate of premature termination. This finding warrants more careful consideration into how ethnic-specific services are being delivered to Asian Americans, and underscores the importance of moving away from examining Asian Americans as a homogeneous racial group, to evaluating the treatment needs of the individual Asian American ethnic groups. Second, the results suggest that certain programmatic features (i.e., Asian language match, continuity of care) at ethnic-specific services are helpful in reducing premature termination in the first month of treatment for Asian American clients. It is important to note these two programmatic features were significant predictors even when controlling for multiple client demographic and clinical variables. Since these are clinical decisions at the onset of treatment, the current findings suggest that ethnic-specific providers have a certain level of control over influencing treatment outcome during the earlier stages of the treatment process.

Summary of Findings: Treatment Length

In general, clients in this clinical sample completed an average of 23 sessions in a given episode of treatment. On face value, this reported number of completed sessions is comparable to the average treatment length found at ethnic-specific service providers and

significantly higher than treatment lengths at mainstream providers for Asian Americans reported in previous studies (Flaskerud & Hu, 1994; S. Sue et al., 1991; Takeuchi et al., 1995). Unfortunately, accurate comparisons with past studies about treatment length are somewhat difficult due to different methods used for analyzing the mean of completed sessions (e.g., geometric mean or log transformations), and the temporal constraints (e.g., analyzing one versus two years of clinical data) that each individual study employed. Nevertheless, the current mean reported for treatment length lends some support to the effectiveness of the treatments at this Asian-focused ethnic-specific service provider. However, like the premature termination analysis, significant differences between the impact of demographic, clinical, and service provider predictors on treatment length suggested differential rates in the amount of sessions completed by clients in this sample. The results of the four analyses regarding the predictors of treatment length will be discussed in the following section.

Impact of Client Demographic Variables on Treatment Length

In partial support of the first set of hypotheses regarding the impact of demographic variables on treatment length, U.S.-born Asian Americans completed more individual therapy sessions than foreign-born Asian Americans who had immigrated to the U.S. before 21 years of age. This finding persisted even when controlling for the impact of years of U.S. residence and whether a client spoke English as their primary language (a measure often associated with acculturation). Past research suggests that U.S.-born Asian Americans are often more acculturated than their foreign-born counterparts (Chun et al., 2002) and higher levels of acculturation are linked to more positive help-seeking attitudes and behaviors in Asian Americans (Atkinson & Gim,

1989; Gim, Atkinson, & Whiteley, 1990; B. S. K. Kim & Omizo, 2003). As a result, higher levels of acculturation in the U.S.-born clients may insulate them against the Asian American stigma and shame regarding mental illness, and promote greater acceptance of mental health services as a viable treatment option. This is turn may have contributed to their longer stays in treatment. Unfortunately, it remains unclear as to why U.S.-born status for Asian Americans did not predict significantly longer treatment lengths than foreign-born status for Asian Americans who immigrated to the U.S. after 21 years of age. It is possible that while longer treatment lengths may have been the product of acculturation and acceptance of mental illness and mental health treatments in U.S.-born Asian Americans, Asian Americans who immigrated to the U.S. after 21 years of age may have been motivated to stay in treatment because of a greater appreciation of the help they were receiving by a service provider familiar with their culture and language. More specifically, the literature suggests that Asian Americans who immigrate to the U.S. after 21 years of age are often more disenfranchised than their U.S.-born counterparts (Rumbaut, 2004; Zeng & Zie, 2004). Having immigrated to the U.S. during their adulthood, these individuals often struggle with learning and speaking English, and may have missed the benefits and opportunities that an education in the U.S. could have provided compared to younger immigrant counterparts. This ethnic-specific service program may have been the only place where they could receive treatments from a provider who not only was familiar with their culture, but who could also speak their native language. This in turn may have translated into the non-significant differences in lengths of treatment between U.S.-born Asian Americans, and Asian Americans who immigrated to the U.S. after 21 years of age.

In contrast to the hypothesis and previous research on Asian American mental health service utilization (S. Sue, 1991; Ying & Hu, 1994), clients who were Medi-Cal eligible predicted longer treatment lengths. It is important to note that the current study's sample was derived from a community mental health provider. In the State of California, individuals who are at or below the poverty level are eligible for government assisted medical and mental health care (California Healthcare Foundation, 2007). In light of this information, it was not so surprising to see that individuals who qualified for government assisted healthcare tended to utilize more services from a provider that was implemented to serve the economically underprivileged Asian American community.

When the client clinical and service provider variables were added into a combined logistic regression analysis, age at immigration and Medi-Cal eligibility became non-significant predictors of treatment length. This loss in significance seems to suggest that clinical variables were stronger predictors of treatment length and may have had some overlap in prediction with these other variables. Comparable to research findings on gender, education and mental health service use, the combined regression analysis showed that female clients completed more individual psychotherapy sessions than male clients and clients with some high school education or a high school degree completed more therapy sessions than clients without any formal education. Although both the gender and education variables predicted treatment length even when controlling for the client clinical and service provider variables, the low degree of significance made the predictive values of these variables somewhat questionable.

As with the analyses on premature termination, Asian American ethnicity was the strongest predictor of treatment length. Contrary to the proposed hypothesis, the

Cambodian and Iu Mien Americans (members of the Southeast Asian American ethnic group), in general, reported the highest number of completed individual psychotherapy sessions. Post-hoc investigations revealed that a significant relationship between Asian American ethnicity and clinical diagnosis might have contributed to the change. For example, Cambodian American clients were more likely to be diagnosed with an anxiety disorder and Iu Mien American clients were more likely to be diagnosed with a mood disorder. When clinical diagnosis variables were included into the combined regression analysis with demographic and service provider variables, this inclusion was associated with a stronger report of significance for different Asian American ethnicities in predicting treatment length among the Asian American ethnic groups.

The current results show that Cambodian and Iu Mien Americans report with the lowest rates of premature termination and highest number of completed sessions in the current sample. It is speculated that such findings may be related to higher levels of treatment compliance and loyalty to mental health staff and treatment once an agreement is made for service delivery. As mentioned previously, the Cambodian and Iu Mien Americans are the most recent to have immigrated to the U.S. among various Asian American groups (Niedzwicki & Duong; 2004). As a result, they lack the financial and social resources of the more established Asian American ethnic group communities (Leong et al., 2007; Moore & Boehnlein, 1991; Wong et al., 2006). This ethnic-specific provider may be the only place where these populations could turn to receive treatment from therapists who are familiar with their culture and speak their native language. It is also important to note that the Cambodian Americans and Iu Mien Americans who come from tribal communities often turn to their extended family networks for assistance and

support (Chung & Bemak, 2006; Chung & Lin, 1994; Hsu, Davies, & Hansen, 2004; Moore & Boehnlein, 1991; Ying, 2001). It is likely that they may have viewed their Cambodian or Iu Mien American therapist as part of their community, which could explain their increased service utilization. Unfortunately, the current data set did not contain enough information about these ethnic groups to be able to conduct further tests to examine these possibilities.

Impact of Client Clinical Variables on Treatment Length

Before discussing the findings of the analyses, it is important to note that the clinical variables accounted for half of the variance in predicting treatment length (R^2 = .53). This was a mere 3% less than the variance accounted for by all the variables in the combined analysis (R^2 = .56), suggesting clinical variables are the most significant predictors of treatment length. As expected, a higher frequency of sessions per week predicted longer treatment lengths. The significance of this finding was consistent in both the individual analysis with only the client clinical variables, and the combined analysis. Session frequency was included in the analyses to prevent the researcher from making any false assumptions about treatment length that could arise from different schedule formats. That is, the treatment needs and experiences of a client seen once a month for six months may be entirely different from a client being seen once a week for six weeks. The present findings suggests that there may be a significant relationship between the clinic's decision to schedule more individual sessions per week and the number of completed individual sessions in a given episode of treatment. The frequency of visits per week in general was rather low, suggesting that most clients were seen about

once every three weeks to a month. Unfortunately, the data set did not contain enough information to further investigate which factors were contributing to this finding.

Clients who were receiving concurrent medication treatment (as reported by a higher number of psychiatric consultation appointments) were more likely to have completed a higher number of individual therapy sessions. The usual course of treatment concerning medication interventions requires that clients commit to a period of time of taking the medications and working closely with the psychiatrists to identify side effects and reduction in symptoms, maintenance of clinically relevant serum levels, and other procedures related to medical treatment. In this clinical sample, it is plausible to suggest that these requirements could lead to a greater commitment to mental health treatment at least in the beginning stages of such clinical treatment. When interpreting this result, it is important to note that an additional commitment to treatment on the part of the client could allow the individual psychotherapy provider more time to work through difficult therapist-client dyadic issues in the early stages of treatment and reduce the likelihood for earlier termination and increasing treatment length.

In partial support of the hypotheses regarding the impact of client clinical variables on treatment length, clients diagnosed with an adjustment disorder had significantly shorter treatment lengths than other clinical diagnoses. This finding remained significant even when including the client demographic and service provider variables into a combined analysis. Again, this result could be the reflection of adjustment disorders being the least severe forms of psychopathology (with little impact to cognitive and interpersonal functioning) (APA, 2004; Strain et al., 1998) and such issues could be resolved appropriately during a shorter period in clinical treatment as

supported in this dissertation study. Additional findings in the analysis that contained only client clinical variables suggested that clients diagnosed with mood disorders predicted significantly longer treatment lengths than clients diagnosed with anxiety and schizophrenia spectrum and psychotic disorders. Furthermore, clients diagnosed with anxiety disorders predicted longer treatment lengths than clients diagnosed with schizophrenia spectrum and psychotic disorders. When the client demographic and service provider variables were entered into a combined analysis, the difference in treatment lengths between clients diagnosed with mood and anxiety disorders became non-significant. The change in the results concerning clinical diagnosis may have been due to Asian American ethnicity. As previously reported, the Cambodian and Iu Mien Americans presented with the longest treatment lengths. Cambodian Americans were also more likely to be diagnosed with anxiety disorders, and Iu Mien Americans were more likely to be diagnosed with mood disorders. The results of the combined analysis suggest that the introduction of Asian American ethnicity may have mediated the relationship between the clinical diagnosis variables and treatment length.

It was not surprising to see that clients diagnosed with mood and anxiety disorders predicted longer treatment lengths than clients diagnosed with schizophrenia spectrum and psychotic disorders. Research has shown that most forms of mood and anxiety disorders are treatable through individual psychotherapy interventions (Barlow, 1988; Emmelkamp, 2004; Hollon, Shelton, & Davis, 1993; Robinson, Berman, & Neimeyer, 1993; Weissman & Markowitz, 1994). In contrast, the etiology of schizophrenia spectrum and psychotic disorders are more based in biological psychiatry, and an individual's physiological predisposition for developing these disorders (APA,

2004; Emmelkamp, 2004; Zubin & Spring, 1977). The main course of treatment for schizophrenia spectrum and psychotic disorders usually involves a standard regimen of psychotropic medications and very few, if any, recommendation for individual psychotherapy sessions. Psychotherapeutic interventions are often offered in the form of social skills training (often in group therapy sessions) and behavior family training to help the family cope with caring for individuals suffering from these serious forms of mental illness (Dixon, Adams, & Luckstead, 2000; Emmelkamp, 2004). As a result, individuals suffering from schizophrenia spectrum and psychotic disorders would have been seen less frequently in individual psychotherapy, and more frequently in group therapy, psychiatric consultation, or liaison therapy with their family, which were not a specific focus of the research questions in this dissertation study nor included in the current analyses.

In contrast to the hypothesis, individuals who had previous experience with psychiatric treatment predicted shorter treatment lengths. It is possible that the more experienced clients were able to make better use of their sessions, which prompted a reduction in the number of completed sessions. When the client demographic and service provider variables were entered into a combined analysis, this finding became non-significant, suggesting that other variables better predicted treatment length. Finally, clients who were appropriately referred out of treatment predicted shorter treatment lengths. It is important to note that this variable was included in the analysis to control for the therapist's judgment about the completion of treatment and how this would impact the number of completed sessions. Furthermore, the appropriate referral out of treatment variable included all clients who the therapist marked down as not unilaterally

terminating from treatment. Given the present findings, it may be possible that a relationship existed between appropriate referral out of treatment and clinical diagnosis. For example, post-hoc investigations revealed that there was a high likelihood of a client diagnosed with schizophrenia spectrum and psychotic disorders to be appropriately referred out of treatment to another agency or service provider. What may have occurred is that individuals diagnosed with severe forms of psychopathology may have had symptoms that warranted a referral to more specialty clinical settings (e.g., inpatient psychiatric units) earlier on in their treatments, and this was reflected in the current findings. This finding was consistently significant in both the analysis with only the client clinical variables model, as well as the combined model with the client demographic and service provider variables model.

Impact of Service Provider Variables on Treatment Length

Partial support for the hypothesis regarding the impact of service provider variables was found with Asian language matching between the client and therapist being significantly related to longer treatment lengths. However, it is important to note that the overall model statistics in this analysis were extremely low, with the service provider variables explaining less than 1% of the variance in predicting treatment length (R^2 = .009). Given the results of the individual model, it was not surprising to find no support for the fourth set of hypotheses, as none of the service provider variables significantly predicted longer treatment lengths in the combined analysis with the client demographic and service provider variables.

Concluding Remarks: Analysis on Treatment Length

In summary, the client clinical variables were the most significant predictors of treatment length. The most striking findings were in clinical diagnosis, where it was found that clients with adjustment disorders reported the smallest number of completed individual psychotherapy sessions compared to other disorders. Even though the analyses suggested that the client clinical variables accounted for most of the variance in predicting treatment length, significant ethnic differences were found among the Asian American groups. Specifically, the Cambodian and Iu Mien Americans reported the most individual psychotherapy sessions at this ethnic-specific service provider. The present findings continue to support the notion that these Southeast Asian American ethnic groups have a greater need for treatment. Interestingly, while not a significant predictor, descriptive analyses revealed that on average, Korean Americans exhibited the shortest treatment lengths of the groups. The results continue to support the need for providers to evaluate the treatment needs of the individual Asian American ethnic groups.

Unfortunately, the service provider variables were not significant predictors of treatment length in this dissertation study. However, it is possible that service provider variables such as client-therapist matching and continuity of care may have the greatest relevance and influence in the beginning stages of therapy (Flaskerud & Hu, 1994) and its possible impact on treatment length diminishes as a client stays in treatment longer. Based on the findings of premature termination in this study, it is possible that having an intake therapist continue on to treat you, and being able to converse in your native language may have a more positive impact during the first month of treatment. After

which, other factors (such as therapeutic alliance) may play a more important role in mitigating mental health service utilization behaviors.

Summary of Findings: Change in Pre- versus Post-Treatment GAF Scores

On average, clients in this clinical sample received a 6.57-point increase between their pre- and post-treatment GAF scores. While this average score seems modest, it suggests that most clients experienced an overall improvement in their psychological functioning after treatment. In order to control for the confounding effects of the clients' differential levels in pre-treatment functioning on change in pre- versus post-treatment GAF scores, entry GAF scores were entered into each of the four analyses (client demographic, clinical, service provider variables, and a combined analysis with all three sets of variables). As anticipated, lower entry GAF scores were significant predictors of a greater change between pre- versus post-treatment GAF scores in all analyses, justifying the need to include this variable as a control in these analyses. These findings suggest that clients with a higher level of pre-treatment functioning had a lower ceiling for marked improvement for treatment even when controlling for the various variables in this dissertation study. As with the analyses on premature termination and treatment length, there were significant differences between client demographic and clinical variables that indicated that not all clients experienced the benefits of treatment in the same way. The results of the four analyses on pre- versus post-treatment GAF scores will be discussed in the following section.

Impact of Client Demographic Variables on Pre- versus Post-Treatment GAF Scores

Contrary to expectations, clients who had a primary school education (e.g., elementary school) predicted less of a difference in pre- versus post-treatment GAF

scores than clients who reported with no formal education. This was a puzzling finding because it contradicted previously reported results that found higher levels of education significantly predicted a reduced likelihood for premature termination, and the completion of more individual psychotherapy sessions by these Asian American clients. It is likely that this finding was the result of some relationship between clients reporting no education and another variable in the analysis. Unfortunately, no specific answer could be found to explain this contrary finding using post-hoc analyses. In partial support of the hypothesis regarding the impact of the client demographic variables on pre- versus post-treatment GAF scores, individuals who had secondary schooling (e.g., high school) or a college education showed more change between their pre- versus post-treatment GAF scores than individuals with primary schooling. When the client clinical and service provider variables were added into a combined analysis, most of these findings in education became non-significant, suggesting that other variables were better predictors of change between pre- versus post-treatment GAF scores. Interestingly, the combined analysis yielded an increase in significance for the finding that clients with secondary schooling showed a greater difference in their pre- versus post-treatment GAF scores over clients with primary schooling. In general, the current results lend some support to the literature which suggests that clients with less education are often more negatively affected by the stigma that society has place on mental illness, which in turn may prevent them from fully experiencing the beneficial effects of mental health treatment (Baretto & Segal, 2005; Fox et al., 1999).

In partial support of the hypothesis, Asian American men showed a significantly smaller difference between their pre- versus post-treatment GAF scores in comparison to

Asian American women. This result supports the research that Asian American men may be more affected by the stigma associated with mental illness (e.g., mental illness is a sign of weakness), which in turn may be contributing to their smaller GAF score differences (Tata & Leong, 1994). When the client clinical and service provider variables were added to the combined analysis, this finding became non-significant. This may have been the result of other clinical variables proving to be better predictors of change in pre- versus post-treatment GAF scores.

Surprisingly, the analysis that included only client demographic variables showed that Cambodian and Korean Americans reported with less change in pre- versus post-treatment GAF scores than Chinese Americans. When the client clinical and service provider variables were included in the combined regression analysis, the ethnic differences between these Asian American groups increased (probably as a result of including the client clinical variables). Specifically, the combined analysis yielded results which suggested that the Cambodian and Korean Americans had generally showed the least change in pre- versus post-treatment GAF scores among the Asian American ethnic groups included in this study (with the exception of a non-significant difference between the Iu Mien and Korean Americans).

There is sufficient evidence in the study to suggest that Korean Americans pose the highest risk for premature termination and shorter treatment length and this may be related to greater ambivalence or reluctance about mental health treatment. For example, a previous study at the same mental health provider found that Korean Americans reported the highest rates of failure to attend their first intake appointment compared to other Asian American groups (Akutsu et al., 2004). Given that Koreans Americans were

the most likely to prematurely terminate and complete the fewest number of therapy sessions, it is not surprising that they would also report with the smallest changes between pre- versus post-treatment GAF scores.

In contrast, the Cambodian Americans present with a different mental health service utilization profile representing a need for ethnic-specific services and treatment compliance. That is, this ethnic-specific provider may have been the only place where the Cambodian Americans could turn to for low-cost treatments from therapists who were familiar with their culture, and spoke their native language. In the same study noted earlier, Akutsu et al. (2004) found that Cambodian Americans were the most likely of the Asian American groups to attend their intake appointments. Furthermore, results from previous analyses in this dissertation study suggest that the Cambodian Americans (and the Iu Mien Americans) were the least likely to prematurely terminate from the first month of treatment, and completed the most individual psychotherapy sessions of the Asian American ethnic groups. In contrast to the Iu Mien Americans, the Cambodian Americans most likely suffered from the most pre-migration exposure to trauma. During the Pol Pot Regime in the 1970's, nearly a third of the Cambodian population were killed as a result of forced labor, torture, famine, and murder as governmental leaders tried to enforce a totalitarian society upon the country by demolishing any Western influence (Abueg & Chun, 1996). Many Cambodians developed severe forms of posttraumatic stress disorder as they not only witnessed the massacre of family members and other great atrocities, but were also victims of severe violence themselves (Boehnlein & Kinzie, 1997; Ebihara, 1985; Kinzie, 1989; Kinzie, Fredrickson, Ben, Fleck, & Karls, 1984). Their problems were only compounded when the Vietnamese invaded Cambodia,

forcing many Cambodians to relocate to the U.S. as refugees with little to no resources at all (Kinzie, Boehnlein, & Sack, 1998). Unfortunately, it is likely that this pre-migration exposure to trauma may have contributed to the small change between the Cambodian Americans pre- versus post-treatment GAF scores.

Impact of Client Clinical Variables on Pre- versus Post-Treatment GAF Scores

In partial support of the hypothesis regarding the impact of clinical variables on pre- versus post-treatment GAF scores, clients who completed more psychiatric medication consultation appointments reported greater change in GAF scores. The significance of this finding remained relatively unchanged even when adding the client demographic and service provider variables into a combined analysis. The current finding supports previous studies which found that the concomitant use of psychiatric medication with psychotherapy often leads to better treatment outcomes than psychotherapy or medication use alone (Klerman et al., 1994; Rounsaville et al., 1981; Thase & Jindal, 2004). It is also important to note that there is a body of literature which suggests that Asian Americans often express the symptoms of their psychological problems somatically (Uba, 1994; U.S. DHHS, 2001; Zane et al., 2004). Experts have clarified that it is not a lack of awareness of their emotional problems, but a tendency for Asian Americans to focus more on their physical discomfort (Lin & Cheung, 1999). As a result, the current findings could be further explained by the effectiveness of psychiatric medications in reducing the physical symptoms of psychological disorders (Thase & Jindal, 2004) in this Asian American clinical population.

As expected, clients who were appropriately referred out of treatment showed significantly greater increases in their pre- versus post-treatment GAF scores in both the

individual (i.e., clinical service provider variables only) and combined analyses. It is important to reiterate that both the client's pre- and post-treatment GAF scores, and whether a client had been appropriately referred out of treatment were all determined by the client's primary therapist. As a result, it is plausible to suggest that clients who were deemed as not having unilaterally terminated from treatment would be marked down as experiencing some benefits from contact with this ethnic-specific service provider by their primary therapist. Unfortunately, since all components of this part of the analysis was determined by one person, the results should be interpreted with caution, as it is vulnerable to biases on the part of the primary therapist.

In partial support of the hypotheses, the completion of more individual psychotherapy sessions predicted greater positive change in pre- versus post-treatment GAF scores. As with the other clinical predictors, the significance of this finding was consistent in both the individual and combined analyses. On face value, the present findings lend credence to the theory of the dose-effect relationship which states that clients will experience more positive benefits if they complete more treatment (Anderson & Lambert, 2001; Archer et al., 2000; Eaton et al., 1993; Howard et al., 1986; Kopta, 1983; Smith et al., 1980). Unfortunately, the results of the rest of this dissertation study suggested that it would be premature to draw any conclusions based on this theory alone. Interestingly, clients diagnosed with adjustment disorders reported the greatest change in their GAF scores in both the individual and combined analyses. While this finding was not surprising given the literature which suggests that adjustment disorders have the best prognoses of the psychiatric disorders (APA, 2004; Strain et al., 1998), it created some doubt about the utility of treatment length as a measure of treatment outcome. Previous

analyses in this dissertation study showed that clients with adjustment disorders also report with the shortest treatment lengths. What these findings suggest is that multiple factors (such as the client's diagnosis) contribute to treatment outcome, and imply that the relationship between treatment length and treatment outcome is more complex and not as linear as the relationship proposed by the dose-effect theory.

With regard to other clinical diagnoses, clients with mood and anxiety disorders experienced greater change between their pre- versus post-treatment GAF scores than clients with schizophrenia spectrum and psychotic disorders in both the individual and combined analysis. Treatment outcome studies have found that psychotherapy is often very helpful in reducing negative symptomatology, decreasing likelihood for relapse, and improving the quality of life for clients suffering from mood and anxiety disorders (Barlow, 1988; Chambless & Gillis, 1993; Gould, Otto, Pollack, & Yap, 1997; Lambert, Hatch, Kingston, & Edwards, 1986; Lambert & Ogles, 2004). In contrast, the debilitating symptoms of schizophrenia spectrum and psychotic disorders can often only be treated through psychiatric medications (Emmelkamp, 2004). The current findings seem to reflect the treatment outcome research, and how responsive a clinical disorder is to psychotherapy.

Finally, contrary to the hypothesis, clients who reported a higher frequency of sessions per week predicted less of a change in their pre- versus post-treatment GAF scores in both the individual and combined analyses. Post hoc analyses identified a relationship between pre-treatment GAF scores and frequency of sessions per week. Given these findings, it is possible that clients who reported a higher frequency of sessions per week had completed their treatments more quickly, and experienced less of a

GAF score change because they presented with higher levels of pretreatment psychological functioning. As previously reported, it is also possible that clients who reported with relatively high pre-treatment GAF scores may be faced with a "ceiling" effect" as there is less possibility for improved post-treatment GAF scores due to elevated GAF scores at clinical admissions.

Impact of Service Provider Variables on Pre- versus Post-Treatment GAF Scores

Unfortunately, no support was found for the third set of hypotheses regarding the impact of the service provider variables on change in pre- versus post-treatment GAF scores, as none of the service provider variables yielded significant findings. Furthermore, no support was found for the fourth set of hypotheses, as again none of the service provider variables were significant predictors of greater GAF score change in the combined analysis.

Concluding Remarks: Analysis on Pre- versus Post-Treatment GAF Scores

In summary, as with the previous two sets of analyses, Asian American ethnicity was one of the most significant predictors of change in pre- and post-treatment GAF scores. Several interesting developments are worth mentioning with regard to Asian American ethnicity and pre- and post-GAF scores. What was somewhat troubling was the reported pattern showed for Korean Americans in this study who had the highest rates of premature termination, the shortest treatment lengths, and the least reported change between pre- and post-treatment GAF scores. It is possible that there are certain factors that are unique to this particular ethnic-specific service provider or the Korean American clients in this study that may be leading to these poor treatment outcomes. Nevertheless the findings warrant an investigation as to how treatment is being delivered to the Korean

American clients at this provider. In addition, the findings for Cambodian Americans in this study stood out because of certain circumstances. While Cambodian Americans reported with the lowest rates of premature termination and the longest treatment lengths, these positive trends in treatment were not reflected in significant improvement between pre- and post-treatment GAF scores. Further analyses are warranted with Cambodian American client samples to determine if mental health services that are offered to this ethnic group are proving to be culturally effective in reducing the symptoms of their psychopathology.

Methodological Considerations

The findings of this dissertation study suggest there are important client demographic, clinical, and service provider variables that are significantly related to treatment outcome for Asian Americans. It is important to note that when interpreting the present findings, one should consider several methodological issues. First, this dissertation study was based on secondary data analysis on data collected by the information management system at a clinic for primarily clinical record keeping and billing purposes. Unfortunately, this precluded the inclusion of information that may have helped to better explain some of the significant findings and differential treatment outcome trends. For example, the effects of cultural barriers, such as a client's attitude regarding psychotherapy and information regarding their help-seeking practices, could not be assessed. Studies have shown that cultural differences in help-seeking practice and attitudes regarding the effectiveness of mental health services can influence mental health service utilization by directing Asian American clients to utilize more informal forms of help (e.g., family and friends) (Leong & Lau, 2001; Nguyen & Anderson, 2005;

Spencer & Chen, 2004). This in turn may have a significant impact on treatment outcome for those Asian Americans who seek out formal forms of help (e.g., community based mental health clinics). Another limitation related to the constraints of secondary data analyses arise from a lack of appropriate measures of social economic status (SES) and acculturation. Although previous studies have used variables such as English as the client's primary language of choice as a proxy for acculturation and Medi-Cal eligibility as a proxy for SES (Gamst et al., 2001, S. Sue et al., 1991; Takeuchi et al., 1995; Ying & Hu, 1994), these variables do not completely reflect the complexities underlying these constructs. For instance, assessing one's preference to speak English does not capture the experience of trying to adapt to one's environment for the first time. In a similar vein, assessing if one is eligible for government-assisted living does not capture the multiple levels an individual can hold within the social economic status construct and the life experiences that each level brings (e.g., the unemployed college graduate requiring government assistance to live). Furthermore, the reasons why clients immigrated to the U.S. could not be assessed. It is important to note that the clinical profile and needs of clients who voluntarily immigrated to the U.S. may be entirely different from those who were forced out of their country as refugees. In this sample, many of the clients from Southeast Asian groups (i.e., Vietnamese, Cambodians, and Iu Mien) may have been refugees who fled to the U.S. due to the Vietnam War. However, there was no specific variable to verify this status and we could only assume this was a possible condition of their immigration. Finally, the results of this dissertation study are also limited by the use of indirect measures of treatment outcome. What these variables fail to capture are the client's opinions about the treatment. In addition, two of these outcome measurements

(e.g., premature termination and pre- and post-treatment GAF scores) rely on therapist judgment and therefore are vulnerable to the biases of individual therapists.

The second limitation of this dissertation study is the age and length of time captured by the data set. In total, the data covers clients that sought treatment as early as 1988, to clients who sought treatment as recently as 2004. Past mental health treatment outcome studies with Asian Americans often limit the scope of their data to several months or years (Lau & Zane, 2000; S. Sue et al., 1991; Takeuchi et al., 1991; Zane et al., 1994; Ying & Hu, 1994). This dissertation study was not restricted to such time-limits, and this longer period of analysis may have decreased the likelihood of replicating the same findings of previous studies. Another consideration is that changes have taken place in the mental health system over 15 years and clients in the earlier segments of the data set may not reflect the same clinical experiences of contemporary clients. Finally, the 15 years of service provisioning covered in the data set makes it difficult to control for all of the contingencies in this study. One of the most significant of these contingencies is the change in therapist staff (i.e., therapists who had retired or who had found other employment) that may occur for clients with especially long treatment histories at this clinic. It is important to note that in the past, researchers (e.g., Leong, 1994) have successfully taken large chronological chunks of clinical data to produce meaningful studies on the delivery of mental health services to Asian Americans.

The third limitation of this dissertation study is that it is restricted in its generalizability. As previously noted, the Asian American racial category is made up of over 28 distinct Asian American ethnic groups (S. Sue, 1999). Unfortunately, due to restraints imposed by the data analysis, only the five largest Asian American ethnic

groups utilizing services at this provider were included. In addition to this, the data was collected from a single ethnic-specific mental health service provider in Northern California. As a result, this study may not be applicable to Asian Americans residing in other regions of the U.S. Furthermore, without a mainstream service provider comparison group, the significance of the relationships between the independent variables and treatment outcome measures are limited. Despite the outlined limitations, many of the logistic and linear regression analyses were found to be significant, with robust findings for demographic, clinical, and service provider variable predictors and treatment outcome.

Dissertation Study Implications

Client Considerations

When evaluated collectively, the findings of this dissertation study provide significant implications for the delivery of mental health services to Asian Americans. At the most fundamental level, the rates of premature termination, treatment lengths, and pre- and post-treatment GAF score differences of the Asian American clients at this ethnic-specific service provider are comparable to the rates cited in studies of treatment outcome at other ethnic-specific providers (Flaskerud & Hu, 1994; Lau & Zane, 2000; Takeuchi et al., 1995). These findings are reassuring, in that they suggest that the effectiveness of the treatments at this clinical site is commensurate with similar ethnic-specific mental health services.

This dissertation study builds upon the existing literature by identifying Asian American ethnic group differences that may be critically important in the development of more effective forms of treatment for Asian American clients in two ways. First, the

results suggest that the Asian American ethnic groups may experience mental health treatment differently and these group differences may be the outcome of cultural-specific factors. The most striking differences were associated with the clinical experiences of Korean American clients. Even when controlling for demographic, clinical, and service provider predictors, Korean Americans reported with higher rates of premature termination, smaller differences in their pre- versus post-treatment GAF scores, and somewhat shorter treatment lengths than the other Asian American ethnic groups. These findings tend to support previous literature which found that premature terminators do not stay in treatment long enough to experience any therapeutic benefits (Archer et al., 2000; Ogrodniczuk et al., 2005; Mueller & Pekarik, 2000; Pekarik, 1983). This finding is also troubling because Korean American clients reported with a higher likelihood of failing to attend their intake appointments (after contacting this clinic), and were less likely to be identified as needing urgent care by intake staff at this same ethnic-specific clinic (Akutsu et al., 2004; Akutsu, Tsuru, & Chu, 2006). Taken together, these findings suggest that Korean Americans may be unique in their issues for treatment. There is some evidence to suggest that Korean Americans have a particularly strong reluctance in accepting their psychological problems as a mental disorder, and are more susceptible to the stigmatization regarding the mentally ill and the use of mental health services (S.C. Kim, 1997; Park & Bernstein, 2008; Shin, 2002). It is possible that this cultural difference in conceptualizing mental disorders and mental health treatment may be influencing the mental health service utilization behaviors of this population. Given this information, mental health providers may need to place more efforts in providing initial

education and outreach programs to Korean American communities and later developing specific retention programs once these clients are in clinical treatment.

In contrast to the Korean Americans, the Cambodian Americans presented with an entirely different clinical profile, exhibiting the lowest rates of premature termination and the longest treatment lengths. Even with such promising findings, the Cambodian Americans also presented with the poorest pre- versus post-treatment GAF score change. Coupled with the lowest pre-treatment psychological functioning (as measured by intake GAF score) among the Asian ethnic groups in this study, the results suggest that Cambodian Americans may have a greater need for mental health treatment, but at the same time are experiencing the least improvement from services as measured by GAF score differences. Rather than focusing on increased outreach programs, the current results warrant a more careful investigation into the types of treatments that are being offered to Cambodian Americans. Future studies should focus on the treatment outcome of Cambodian Americans in order to evaluate if the current mental health delivery system is meeting their needs, and providing culturally appropriate forms of treatment to this ethnic group.

Second, the diagnostic information obtained from this dissertation study suggests that the treatment needs of the various Asian American ethnic groups may be different. The importance of this finding is compounded by results that have identified significant relationships between psychiatric diagnosis and differential treatment outcome (as measured by rates of premature termination, treatment length, and pre- versus post-treatment GAF score differences). Clinicians could use this information to plan treatments in various ways. For example, a large proportion of Iu Mien clients were

diagnosed with mood disorders. As such, clinicians may expect to employ more interventions aimed to reduce depressive symptoms when working with this population. Clinicians working with Chinese Americans may need to be prepared to provide more time-intensive and comprehensive treatments (such as the use of community services) to these clients, as a large percentage were diagnosed with schizophrenia spectrum and psychotic disorders. Finally, given the large number of clients diagnosed with anxiety disorders, clinician should be attentive to signs of stress when working with Cambodian Americans.

Service Provider Considerations

One of the capstone features of ethnic-specific programs is the ability to provide client-therapist matching by not only gender, but also ethnicity and the client's Asian language of choice. Past studies have found that client-therapist gender, ethnic and Asian language-matching significantly predicted reduced rates of premature termination, longer treatment lengths, and positive differences between pre- versus post-treatment GAF scores (Chen et al., 2003; Lau & Zane, 2000; O'Sullivan et al., 1989; S. Sue et al., 1991; Zane et al., 1994). These favorable findings have prompted researchers to laud these features (or service provider variables) as being the catalyst to better treatment outcome for ethnic minority populations (Sue et al., 1991; O'Sullivan et al., 1989; Zane et al., 2004). When controlling for key demographic and clinical variables, significant relationships were identified between certain features of ethnic-specific programs such as client-therapist Asian language match, as well as continuity of care between the intake therapist and primary therapist (or the therapist who ultimately oversees the client's treatment) and reduced rates of premature termination in this dissertation study. These

findings have significant implications for improving the delivery of mental health services to Asian Americans in two ways.

First, the findings suggest that ethnic-specific service providers have some control over clinic procedures which may help to reduce premature termination in Asian American client populations. Specifically, the dissertation analysis has shown that providing the client with treatment in their Asian language of choice and permitting the intake therapist to continue with the client as his/her primary therapist can reduce rates of premature termination above and beyond the contribution of client demographic (e.g., ethnicity) and clinical variables (e.g., psychiatric diagnosis) in the first month of treatment. Second, a reduction in the rates of premature termination is critical in not only providing efficient, but also effective services to Asian American clients. Research on general client populations found that clients who do not prematurely terminate will often go on to complete treatment, thereby reaping the maximum therapeutic benefits from treatment (Archer et al., 2000; Pekarik, 1983)

A previous study at this ethnic-specific provider found similar results that suggested that Asian language-match between the client and therapist and continuity of care helped to reduce the likelihood of the client not attending his/her intake appointment (Akutsu et al., 2004). The results of this dissertation study provide further evidence and support of these promising findings that certain decisions and resources offered by service providers can reduce premature termination in the first month of treatment. When evaluated together, the results of these two studies suggest that services providers may need to reconsider current clinical procedures and policies as these decisions in the beginning stages of treatment can help to reduce negative mental health service

utilization behaviors like pre-intake attrition and premature termination in the first month among Asian American clients.

The results of the dissertation study also suggest that concomitant psychiatric services may play a critical role in improving treatment outcome for Asian Americans. Research has shown that Asian Americans may conceptualize their psychological problems as originating from organic causes and express their symptoms somatically (S. Sue & Morishima, 1982; Uba, 1994). Given this perspective, it is possible that Asian Americans may have a greater affinity for medication use and interventions, which are strongly rooted in the field of medicine and psychiatry. Asian Americans may also be more amenable to seeking a medical professional for psychological problems because this decision could help to buffer the stigma and shame of admitting to a mental health problem or characterological flaw (Lin & Cheung, 1999; Uba, 1994). The present findings suggest that ethnic-specific service providers should consider the use of psychiatric care, where appropriate, as a means to supplement and increase the effectiveness of individual psychotherapy, and to provide more culturally responsive services to Asian Americans. This may be especially important to clients with severe psychopathology, clients who are reluctant to treatment, or clients with a cultural tendency to view their mental disorders as originating from organic causes.

Future Directions

The findings and limitations in previous sections suggest that there are a number of possible future directions for research on the effectiveness of mental health services for Asian American populations. First, in order to get a more accurate measure of treatment outcome, future studies on Asian American clinical populations should

consider if it is appropriate to use treatment length and pre- versus post-treatment GAF scores as measures of treatment outcome. More specifically, the findings of this dissertation study suggest that treatment length and GAF score change are affected by multiple factors such as pre-treatment psychological functioning, clinical diagnosis, and Asian American ethnicity, and may not be the most accurate measures of treatment outcome. In the past, many studies have used treatment length as a measure of treatment outcome based on the dose-effect relationship in psychotherapy theory (Anderson & Lambert, 2001; Archer et al., 2000; Eaton et al., 1993; Howard et al., 1986; Kopta, 1983; Smith et al., 1980). The results of this dissertation study suggest this relationship is more complex and not as linear as has been once proposed. For example, Asian American clients diagnosed with adjustment disorders reported the shortest treatment lengths (an indication of poor treatment outcome), yet also reported with the greatest change in their pre- versus post-treatment GAF scores. Additionally, the results suggest that change in GAF scores were affected by clinical diagnosis (i.e., clients with schizophrenia spectrum or psychotic disorders reported the lowest increases in GAF score change) and Asian American ethnicity. As a result, future studies on treatment outcome with Asian Americans should include more variables that tap into the client's attitudes and opinions about the treatment they receive. It may also be helpful if more proximal and direct measurements are used to evaluate treatment outcome (such as a session-by-session questionnaire).

Second, very interesting ethnic differences in treatment outcome were identified for Cambodian and Korean American clients. Specifically, Korean Americans had shown the worse treatment outcome with the highest rates of premature termination,

shortest treatment lengths, and least improvement in their pre- versus post-treatment GAF scores. Furthermore, although Cambodian Americans were the least likely to prematurely terminate and had the longest treatment lengths, they experienced very little change in their pre- versus post-treatment GAF scores (second to the Korean Americans). Unfortunately, the limitations imposed by secondary data analysis precluded further exploration of the data to illuminate the possible causes to these phenomena. Thus future studies should include qualitative data to support quantitative analyses. One way to gain more information about clients would be to access their case notes. Unfortunately, laws regarding confidentiality may make this difficult. Alternative methods such as client interviews or focus groups aimed at collecting more clinical information could add to a better understanding of how culture impacts mental health service use and treatment outcome, and help to explain some of the differential findings in treatment outcome between Asian American ethnic groups.

Finally, concomitant psychiatric consultation was found to be a significant predictor of longer treatment lengths and greater changes in pre- versus post-treatment GAF scores. Unfortunately, in this data analysis, the number of completed psychiatric consultation appointments served as a proxy for concurrent medication use by the client. Future studies should use a more direct means to evaluate the types of medications an Asian American client may be using during her/his psychotherapy treatment in order to isolate the effects psychiatric medication may have on treatment outcome. By doing this, researchers can say with greater certainty that the treatment outcome results were above and beyond the contribution of psychiatric medication use. This is very important as it

justifies the importance of psychotherapy in the treatment of psychiatric disorders for Asian Americans.

CONCLUSION

In conclusion, this dissertation study attempted to comprehensively examine the effectiveness of ethnic-specific services using three measures of treatment outcome (rates of premature termination, treatment length, and pre- versus post-treatment GAF score differences). The results suggest that treatment outcome studies should focus more on Asian American ethnic group differences and move away from previous attempts to define Asian Americans as a single homogeneous group. The current study also suggests the utility of these features may occur more within the initial stages of treatment and less so in the latter parts of treatment when other elements of the therapeutic process may be more prominent. The findings of this dissertation study underscores the importance of testing these hypotheses further to identify when cultural-responsive features can have the greatest impact on service delivery to Asian American populations and how quality of care of service delivery can remain consistent throughout the course of treatment for Asian Americans.

In an era where managed care has increasingly reduced funding for mental health care, service providers can ill afford to not maximize the effectiveness of the treatments they are providing to ethnic minority populations such as Asian Americans. This issue is particularly important to Asian Americans, whose burgeoning population will experience an increase in mental health treatment needs, and inevitably begin to tax the resources of the current mental health delivery system. Recent changes in legislation including the

Mental Health Parity Act should require new and innovative forms of treatment for all mental health clients and this new direction in service delivery should include greater research to study the effectiveness of general and culture-specific interventions for future client populations.

Table 1
Sample Characteristics of Asian American Clients Seeking Ethnic-Specific Mental Health Services (N = 1,030)

Variables	Overall Characteristic (N = 1,030)	Asian American Ethnicity				
		Cambodians (n = 193)	Chinese (n = 349)	Iu Mien (n = 134)	Koreans (n = 113)	Vietnamese (n = 241)
Gender (Female)	63.70%	70.50%	67.30%	67.90%	63.70%	50.60%
Age (In Years)	41.21 (13.73)	40.07 (11.40)	41.85 (15.99)	41.17 (12.31)	41.91 (13.63)	40.88 (12.68)
Married	47.20%	45.10%	39.00%	84.30%	38.90%	44.00%
Medi-Cal Eligible	75.20%	92.70%	62.20%	96.30%	43.40%	83.40%
Education						
No Education	23.70%	37.80%	9.50%	89.60%	6.20%	4.60%
Primary School Education	25.40%	39.90%	20.60%	8.20%	13.30%	36.10%
Secondary School Education	31.60%	16.60%	39.00%	2.20%	42.50%	44.00%
College Education	19.30%	5.70%	30.90%	0%	38.10%	15.40%
Years Lived in U.S.	10.84 (8.45)	9.85 (5.18)	14.13 (10.42)	7.61 (4.90)	12.68 (8.51)	7.78 (6.85)
Age at Immigration						
Born in U.S.	3.70%	0.50%	9.20%	0%	2.70%	0.80%
Immigrated < 21 Years Old	22.60%	22.30%	25.80%	14.90%	19.50%	24.10%
Immigrated $\geq$ 21 Years Old	73.70%	77.20%	65.00%	85.10%	77.80%	75.10%
English as Primary Language	10.20%	3.60%	16.30%	0%	14.20%	10.40%
Previous Psychiatric History	31.50%	16.60%	47.30%	10.40%	30.10%	32.80%[b]
Medication Consultation < 1 Week of Intake	12.90%	7.80%	21.20%	1.50%	3.50%	15.80%
Total Number of Medication Consultation Appointments	14.40 (21.51)	20.26 (23.31)	11.82 (22.38)	15.93 (16.28)	5.48 (11.88)	15.65 (23.07)
Entry GAF[a] Score	47.50 (11.20)	43.52 (11.05)	47.04 (11.65)	48.99 (9.56)	50.04 (7.50)	49.46 (12.07)
Appropriate Referral Out of Treatment	78.40%	85.00%	81.40%	72.40%	68.10%	77.20%
Average Number of Sessions Per Week	0.31 (0.32)	0.29 (0.21)	0.35 (0.44)	0.25 (0.17)	0.36 (0.29)	0.27 (0.23)
Psychiatric Diagnosis						
Mood Disorder	51.60%	57.50%	37.20%	82.80%	56.60%	47.70%
Schizophrenia Spectrum and Psychotic Disorder	21.70%	8.30%	37.80%	2.20%	21.20%	20.30%

Anxiety Disorder	14.30%	26.90%	11.50%	6.70%	8.80%	14.90%
Adjustment Disorder	6.70%	5.20%	8.00%	3.00%	7.10%	7.90%
Other Psychiatric Disorder	5.70%	2.10%	5.40%	5.20%	6.20%	9.10%
Matching with Primary Therapist						
Gender Matched	60.10%	47.70%	65.90%	70.90%$_a$	65.50%	53.10%
Ethnic Matched	85.20%	87.00%	82.80%	84.30%	88.50%	86.30%
Asian Language Matched	81.50%	90.20%	68.80%	86.60%	86.70%	87.60%
Prematurely Terminated from Treatment	9.00%	3.10%	8.90%	5.20%	19.50%	11.20%
Treatment Length[b]	21.56 (28.44)	35.46 (37.59)	18.01 (29.07)	25.85 (21.81)	11.72 (15.59)	17.82 (22.16)
Pre- versus Post-Treatment GAF[a] Score Differences	6.56 (11.81)	6.16 (11.26)	7.71 (11.73)	7.85 (12.17)	2.59 (7.90)	7.85 (12.17)

Note. Categorical variables are listed in percentages, while continuous variables are listed as means with standard deviations in parentheses.
[a] GAF = Global Assessment of Functioning. [b] Total number of completed individual psychotherapy sessions.

Table 2
Demographic, Clinical, and Service Provider Characteristics Between Clients Who Did and Did Not Prematurely Terminate from Individual Psychotherapy

Variables	Overall Characteristics (N = 1,030)	Premature Termination: Premature Terminators (n = 93)	Premature Termination: Non-Premature Terminators (n = 937)
Gender (Female)	63.70%	68.80%	63.20%
Age (In Years)	41.21 (12.73)	41.13 (14.65)	41.22 (13.65)
Married	47.20%	58.10%	46.10%*
Medi-Cal Eligible	75.20%	69.90%	75.80%
Education			
No Education	23.70%	20.40%	24.00%
Primary School Education	25.40%	28.00%	25.20%
Secondary School Education	31.60%	36.60%	31.10%
College Education	19.30%	15.10%	19.70%
Years Lived in U.S.	10.83 (8.45)	9.04 (6.76)	11.01 (8.59)*
Age at Immigration			
Born in U.S.	3.70%	3.30%	3.70%
Immigrated < 21 Years Old	22.60%	16.10%	23.30%
Immigrated ≥ 21 Years Old	73.70%	80.60%	73.00%
English as Primary Language	10.20%	5.40%	10.70%
Previous Psychiatric History	31.50%	23.70%	32.20%
Medication Consultation < 1 Week of Intake	12.90%	10.80%	13.10%
Entry GAF[a] Score	47.53 (11.20)	48.92 (11.85)	47.39 (11.13)
Psychiatric Diagnosis			
Schizophrenia Spectrum and Psychotic Disorder	21.70%	12.90%	22.60%*
Mood Disorder	51.60%	50.50%	51.70%
Anxiety Disorder	14.30%	12.90%	14.40%
Adjustment Disorder	6.70%	15.10%	5.90%**
Other Psychiatric Disorder	5.70%	8.60%	5.40%
Matching with Primary Therapist			
Gender Matched	58.70%	68.80%	57.70%*
Asian Language Matched	77.10%	72.00%	77.60%
Ethnic Matched	81.80%	81.70%	81.90%
Intake Therapist Assigned as Primary Therapist	74.20%	76.30%	74.00%

Note: Asterisks denote a significant difference between clients who did and did not prematurely terminate from treatment for each specific variable. For continuous variables, t-tests were performed. For categorical variables, chi-square tests for pair-wise comparisons were performed. Standard deviations for continuous variables are presented within the parentheses in the table.
[a] GAF = Global Assessment of Functioning.
*p < .05. **p < .01.

Table 3
Percentages of Premature Terminators and Non-Premature Terminators by Asian American Group

	Premature Terminators (n = 93)		Non-Premature Terminators (n = 937)	
Ethnicity	*n*	%	*n*	%
Korean	22	19.50	91	80.50_{a}
Vietnamese	27	11.20	214	$88.80_{a,b}$
Chinese	31	8.90	318	$91.10_{b,c}$
Iu Mien	7	5.20	127	$94.80_{b,c}$
Cambodian	6	3.10	187	96.90_{c}

Note. Overall chi-square analyses indicated an overall significant difference of premature termination across the five Asian American groups, χ^2 (1, N = 1,030) = 26.99, p < .001. The percentages with different subscripts indicate a significant difference between two Asian American groups with regard to premature termination. Adjustments were made to the level of significance to account for multiple pairwise comparisons in the analysis (Bonferroni: p < .005).

Table 4
Logistic Regression Analyses for Demographic Predictors of Premature Termination from Individual Psychotherapy (N = 1,030)

Variable	Odds Ratio	95% CI	Wald F
Gender[a]	1.26	0.78 – 2.05	0.89
Age	0.98	0.96 – 1.00	2.59
Married[b]	1.83	1.11 – 3.01	5.56*
Medi-Cal Eligible[b]	0.99	0.57 – 1.74	0.001
Education			
No Education as the baseline comparison group			
Primary School Education	1.31	0.29 – 1.38	1.31
Secondary School Education	0.51	0.23 – 1.12	2.81
College Education	0.31	0.12 – 0.81	5.66*
Primary School Education as the baseline comparison group			
Secondary School Education	0.79	0.44 – 1.43	0.59
College Education	0.48	0.22 – 1.07	3.19
Secondary School Education as the baseline comparison group			
College Education	0.61	0.29 – 1.24	1.89
Years Lived in U.S.	0.97	0.93 – 1.01	2.75
English as Primary Language[b]	0.58	0.17 – 2.01	0.75
Age at Immigration			
Born in the U.S. as the baseline comparison group			
Immigrated < 21 Years Old	0.29	0.06 – 1.46	2.22
Immigrated ≥ 21 Years Old	0.34	0.06 – 1.93	1.49
Immigrated < 21 Years Old as the baseline comparison group			
Immigrated ≥ 21 Years Old	1.13	0.52 – 2.45	0.09
Ethnicity			
Koreans as the baseline comparison group			
Vietnamese	0.38	0.19 – 0.78	7.06**
Chinese	0.35	0.19 – 0.67	10.40***
Iu Mien	0.07	0.02 – 0.22	20.67***
Cambodians	0.07	0.02 – 0.19	24.68***
Vietnamese as the baseline comparison group			
Chinese	0.93	0.51 – 1.71	0.05
Iu Mien	0.18	0.06 – 0.53	9.60**
Cambodians	0.18	0.07 – 0.48	11.82***
Chinese as the baseline comparison group			
Iu Mien	0.19	0.07 – 0.56	9.19**
Cambodians	0.19	0.07 – 0.51	11.10***
Iu Mien as the baseline comparison group			
Cambodians	0.98	0.31 – 3.18	0.00

Note. The overall logistic regression model was significant, χ^2 (1, N = 1,030) = 52.65, p < .001, and reported a correct classification of 91% in predicting premature termination.
[a] 0 = Men, 1 = Women. [b] 0 = No, 1 = Yes.
* p < .05. ** p < .01. *** p < .001.

Table 5
Logistic Regression Analyses for Clinical Predictors of Premature Termination from Individual Psychotherapy (N = 1,030)

Variable	Odds Ratio	95% CI	Wald F
Previous Psychiatric History[a]	0.82	0.47 – 1.44	0.47
Medication Consultation < 1 Week of Intake[a]	0.03	0.52 – 2.19	0.32
Entry GAF[b] Score	1.00	0.98 – 1.02	0.01
Psychiatric Diagnosis			
Schizophrenia Spectrum and Psychotic Disorders as the baseline comparison group			
Mood Disorders	1.58	0.78 – 3.22	1.62
Anxiety Disorders	1.43	0.59 – 3.45	0.64
Adjustment Disorders	4.04	1.62 – 10.12	8.91**
Other Psychiatric Diagnoses	2.57	0.95 – 6.93	3.46
Mood Disorders as the baseline comparison group			
Anxiety Disorders	0.90	0.47 – 1.75	0.09
Adjustment Disorders	2.55	1.29 – 5.06	7.21**
Other Psychiatric Diagnoses	1.62	0.72 – 3.63	1.37
Anxiety Disorders as the baseline comparison group			
Adjustment Disorders	2.82	1.20 – 6.64	5.66*
Other Psychiatric Diagnoses	1.79	0.69 – 4.67	1.43
Adjustment Disorders as the baseline comparison group			
Other Psychiatric Diagnoses	0.64	0.24 – 1.65	0.87

Note. The overall logistic regression model was significant, χ^2 (1, N = 1,030) = 14.34, $p < .05$, and reported a correct classification of 91% in predicting premature termination.
[a] 0 = No, 1 = Yes. [b] GAF = Global Assessment of Functioning.
* $p < .05$. ** $p < .01$.

Table 6
Logistic Regression Analyses for Service Provider Predictors of Premature Termination from Individual Psychotherapy (N = 1,030)

Variable	Odds Ratio	95% CI	Wald F
Matching with Primary Therapist			
Gender Matched[a]	1.63	1.03 – 2.59	4.28
Ethnic Matched[a]	1.41	0.69 – 2.16	2.86
Asian Language Matched[a]	0.60	0.32 – 1.12	2.55
Intake Therapist Assigned as Primary Therapist[a]	0.96	0.57 – 1.62	0.02

Note. The overall logistic regression model was not significant, χ^2 (1, N = 1,030) = 6.87, p = .14.
[a] 0 = No, 1 = Yes.

Table 7
Logistic Regression Analyses for Demographic, Clinical, and Service Provider Predictors of Premature Termination (N = 1,030)

Variable	Odds Ratio	95% CI	Wald F
Gender[a]	1.09	0.58 – 1.00	2.06
Age	0.98	0.96 – 1.00	3.72
Married[b]	1.65	0.99 – 2.76	3.69
Medi-Cal Eligible[b]	1.16	0.65 – 2.09	0.26
Education			
No Education as the baseline comparison group			
Primary School Education	0.58	0.26 – 1.29	1.76
Secondary School Education	0.43	0.19 – 0.98	3.99*
College Education	0.24	0.08 – 0.66	7.64**
Primary School Education as the baseline comparison group			
Secondary School Education	0.74	0.40 – 1.35	0.97
College Education	0.40	0.17 – 0.94	4.39*
Secondary School Education as the baseline comparison group			
College Education	0.55	0.26 – 1.16	2.48
Years Lived in U.S.	0.97	0.94 – 1.01	1.90
English as Primary Language[b]	0.22	0.06 – 0.86	4.74*
Age at Immigration			
Born in the U.S. as the baseline comparison group			
Immigrated < 21 Years Old	0.23	0.04 – 1.21	3.01
Immigrated ≥ 21 Years Old	0.31	0.05 – 1.90	1.59
Immigrated < 21 Years Old as the baseline comparison group			
Immigrated ≥ 21 Years Old	1.35	0.59 – 3.09	0.48
Ethnicity			
Koreans as the baseline comparison group			
Vietnamese	0.27	0.12 – 0.57	11.60***
Chinese	0.24	0.12 – 0.49	15.37***
Iu Mien	0.03	0.01 – 0.09	30.97***
Cambodians	0.03	0.01 – 0.11	32.21***
Vietnamese as the baseline comparison group			
Chinese	0.89	0.46 – 1.74	0.11
Iu Mien	0.10	0.03 – 0.33	14.90***
Cambodians	0.12	0.04 – 0.35	15.27***
Chinese as the baseline comparison group			
Iu Mien	0.12	0.04 – 0.37	13.43***
Cambodians	0.14	0.05 – 0.40	13.24***
Iu Mien as the baseline comparison group			
Cambodians	1.20	0.36 – 4.03	0.09
Previous Psychiatric History[b]	0.65	0.36 – 1.17	2.11
Medication Consultation < 1 Week of Intake[b]	1.46	0.67 – 3.18	0.92
Entry GAF[c] Score	1.00	0.98 – 1.03	0.05
Psychiatric Diagnosis			
Schizophrenia Spectrum and Psychotic Disorders as the baseline comparison group			
Mood Disorders	1.46	0.69 – 3.11	0.98
Anxiety Disorders	1.44	0.57 – 3.66	0.59
Adjustment Disorders	3.86	1.45 – 10.27	7.34**

Other Psychiatric Diagnoses	1.99	0.69 – 5.69	1.64
Mood Disorders as the baseline comparison group			
Anxiety Disorders	0.99	0.48 – 2.01	0.001
Adjustment Disorders	2.64	1.22 – 5.70	6.13*
Other Psychiatric Diagnoses	1.36	0.57 – 3.27	0.47
Anxiety Disorders as the baseline comparison group			
Adjustment Disorders	2.68	1.04 – 6.88	4.19*
Other Psychiatric Diagnoses	1.38	0.49 – 3.83	0.38
Adjustment Disorders as the baseline comparison group			
Other Psychiatric Diagnoses	0.52	0.18 – 1.46	1.56
Matching with Primary Therapist			
Gender Matched[b]	1.41	0.76 – 2.60	1.19
Ethnic Matched[b]	0.98	0.45 – 2.16	0.002
Asian Language Matched[b]	0.29	0.14 – 0.61	10.72***
Intake Therapist Assigned as Primary Therapist[b]	0.56	0.30 – 1.02	4.31*

Note. The overall logistic regression model was significant, χ^2 (1, N = 1,030) = 84.77, p < .001, and reported a correct classification of 90.9% in predicting premature termination.
[a] 0 = Men, 1 = Women. [b] 0 = No, 1 = Yes. [c] GAF = Global Assessment of Functioning.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 8

Sample Characteristics of Asian American Clients Seeking Ethnic-Specific Mental Health Services for the Treatment Length and Change in Pre- Versus Post-Treatment GAF Score Analyses (N = 937)

Variables	Overall Characteristic (N = 937)	Asian American Ethnicity				
		Cambodians (n = 187)	Chinese (n = 318)	Iu Mien (n = 127)	Koreans (n = 91)	Vietnamese (n = 214)
Gender (Female)	63.20%***	70.60%$_{a}$	67.30%$_{a}$	68.50%$_{a}$	59.30%$_{a,b}$	49.10%$_{b}$
Age (In Years)	41.22 (13.65)	40.36 (11.39)	41.95 (15.89)	40.80 (13.65)	41.92 (13.43)	40.83 (12.71)
Married	46.10%***	44.40%$_{b}$	37.40%$_{b}$	84.30%$_{a}$	35.20%$_{b}$	42.50%$_{b}$
Medi-Cal Eligible	75.80%***	92.50%$_{a}$	62.90%$_{b}$	96.10%$_{a}$	41.80%$_{c}$	82.70%$_{d}$
Education						
No Education	24.00%***	37.40%$_{b}$	9.10%$_{c}$	89.00%$_{a}$	3.30%$_{c}$	4.70%$_{c}$
Primary School Education	25.20%***	40.10%$_{a}$	20.80%$_{b}$	8.70%$_{c}$	13.20%$_{b,c}$	33.60%$_{a}$
Secondary School Education	31.10%***	16.60%$_{b}$	38.70%$_{a}$	2.30%$_{c}$	41.80%$_{a}$	44.90%$_{a}$
College Education	19.70%***	5.90%$_{c}$	31.40%$_{a}$	0%$_{d}$	41.80%$_{a}$	16.80%$_{b}$
Years Lived in U.S.	11.02 (8.59)***	9.89 (5.24)$_{b}$	14.45 (10.56)$_{a}$	7.69 (4.94)$_{b}$	13.36 (8.83)$_{a}$	7.87 (4.94)$_{b}$
Age at Immigration						
Born in U.S.	3.70%***	0.50%$_{b}$	9.10%$_{a}$	0%$_{b}$	3.30%$_{a,b}$	0.90%$_{b}$
Immigrated < 21 Years Old	23.30%	21.90%	26.70%	15.70%	20.90%	24.80%
Immigrated ≥ 21 Years Old	73.00%***	77.50%$_{a}$	64.20%$_{b}$	84.30%$_{a}$	75.80%$_{a,b}$	74.30%$_{a,b}$
English as Primary Language	10.7%***	3.20%$_{b}$	17.00%$_{a}$	0%$_{b}$	17.60%$_{a}$	11.20%$_{a}$
Previous Psychiatric History	32.20%***	16.60%$_{d,c}$	48.70%$_{a}$	11.00%$_{d}$	29.70%$_{b,c}$	35.00%$_{b}$
Total Number of Medication Consultation Appointments	15.40 (22.14)***	20.88 (23.43)$_{a}$	12.83 (23.19)$_{b,c}$	16.73 (16.34)$_{a,c}$	6.76 (12.93)$_{b}$	17.31 (23.94)$_{a,c}$
Entry GAF[a] Score	47.39 (11.13)***	43.55 (11.14)$_{c}$	46.84 (11.65)$_{a}$	48.98 (9.71)$_{a,b}$	50.09 (7.72)$_{a,b}$	49.49 (11.45)$_{b}$
Appropriate Referral Out of Treatment	86.20%**	87.70%$_{a,b}$	89.30%$_{a}$	76.40%$_{b}$	84.60%$_{a,b}$	86.90%$_{a,b}$
Average Number of Sessions Per Week	0.29 (0.23)***	0.29 (0.22)$_{a,b,c}$	0.33 (0.25)$_{a}$	0.24 (0.17)$_{b}$	0.35 (0.28)$_{a,c}$	0.27 (0.23)$_{b,c}$
Psychiatric Diagnosis						
Mood Disorder	51.70%***	57.20%$_{b}$	37.10%$_{c}$	82.70%$_{a}$	57.10%$_{b}$	47.70%$_{b,c}$
Schizophrenia Spectrum and Psychotic Disorder	22.60%***	8.60%$_{c}$	40.30%$_{a}$	2.40%$_{c}$	23.10%$_{b}$	20.60%$_{b}$
Anxiety Disorder	14.40%***	27.30%$_{a}$	11.30%$_{b}$	6.30%$_{b}$	9.90%$_{b}$	14.50%$_{b}$

Adjustment Disorder	5.90%	4.80%	6.90%	3.10%	4.40%	7.50%
Other Psychiatric Disorder	5.40%*	2.10%$_{b}$	4.40%$_{a,b}$	5.50%$_{a,b}$	5.50%$_{a,b}$	9.80%$_{a}$
Matching with Primary Therapist						
Gender Matched	59.20%***	48.10%$_{b}$	65.40%$_{a}$	71.70%$_{a}$	60.40%$_{a,b}$	51.90%$_{b}$
Ethnic Matched	85.50%	87.70%	83.00%	85.80%	85.70%	86.90%
Asian Language Matched	82.30%***	90.90%$_{a}$	70.40%$_{b}$	88.20%$_{a}$	83.50%$_{a, b}$	88.30%$_{a}$
Treatment Length[b]	23.44 (29.15)***	36.47 (37.76)$_{a}$	19.54 (30.01)$_{b,c}$	27.09 (21.73)$_{b}$	13.97 (16.61)$_{c}$	19.71 (22.82)$_{b,c}$
Pre- versus Post-Treatment GAF[a] Score Differences	7.05 (11.96)**	6.20 (11.08)$_{a,b}$	8.27 (11.94)$_{a}$	8.20 (12.04)$_{a,b}$	3.42 (8.44)$_{b}$	6.86 (13.57)$_{a}$

Note. Asterisks denote overall significant differences for each variable. Subscripts refer to significant differences between ethnic groups. Same letters indicate non-significant differences, different letters indicate significant differences. For continuous variables, Tukey HSD procedure for pairwise comparison was used to reduce the possibility of making Type I errors. For categorical variables, chi-square tests for pair-wise comparisons were performed. Adjustments were made to the level of significance to account for multiple categorical variable pairwise comparisons in the analysis (Bonferroni: $p < .005$).

[a] GAF = Global Assessment of Functioning. [b] Total number of completed individual psychotherapy sessions.

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

Table 9
Multiple Regression Analyses for Demographic Predictors of Treatment Length (N = 937)

Variable	*B*	*SE B*	β
Gender[a]	0.13	0.08	0.05
Age	-0.01	0.004	-0.07
Married[b]	0.05	0.09	0.02
Medi-Cal Eligible[b]	0.42	0.10	0.15***
Education			
No Education as the baseline comparison group			
Primary School Education	-0.24	0.13	-0.08
Secondary School Education	-0.03	0.14	-0.01
College Education	-0.05	0.17	-0.02
Primary School Education as the baseline comparison group			
Secondary School Education	0.21	0.11	0.08
College Education	0.19	0.14	0.06
Secondary School Education as the baseline comparison group			
College Education	-0.02	0.12	-0.01
Years Lived in U.S.	-0.01	0.01	-0.08
English as Primary Language[b]	-0.01	0.16	-0.001
Age at Immigration			
Born in the U.S. as the baseline comparison group			
Immigrated < 21 Years Old	-0.72	0.24	-0.25**
Immigrated ≥ 21 Years Old	-0.51	0.28	-0.18
Immigrated < 21 Years Old as the baseline comparison group			
Immigrated ≥ 21 Years Old	0.21	0.13	0.08
Ethnicity			
Cambodians as the baseline comparison group			
Iu Mien	-0.22	0.15	-0.06
Vietnamese	-0.52	0.13	-0.18***
Chinese	-0.63	0.12	-0.24***
Koreans	-0.71	0.17	-0.17***
Iu Mien as the baseline comparison group			
Vietnamese	-0.31	0.17	-0.11
Chinese	-0.41	0.17	-0.16*
Koreans	-0.49	0.21	-0.12*
Vietnamese as the baseline comparison group			
Chinese	-0.09	0.11	-0.04
Koreans	-0.18	0.16	-0.04
Chinese as the baseline comparison group			
Koreans	-0.08	0.14	-0.02

Note. The overall model was significant, F (15, 921) = 30.59, $p < .001$, $R^2 = 0.12$. Dependent Variable Treatment Length was log transformed.
[a] 0 = Men, 1 = Women. [b] 0 = No, 1 = Yes.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 10
Multiple Regression Analyses for Clinical Predictors of Treatment Length (N = 937)

Variable	*B*	*SE B*	β
Previous Psychiatric History[a]	-0.15	0.07	-0.06*
Total Number of Medication Consultation Appointments	0.04	0.001	0.71***
Entry GAF[b] Score	-0.002	0.003	-0.02
Appropriate Referral Out of Treatment[a]	-0.51	0.08	-0.14***
Average Number of Sessions Per Week	1.26	0.12	0.24***
Psychiatric Diagnosis			
Mood Disorders as the baseline comparison group			
Anxiety Disorders	-0.17	0.08	-0.05*
Schizophrenia Spectrum and Psychotic Disorders	-0.48	0.08	-0.16***
Other Psychiatric Diagnoses	-0.21	0.13	-0.04
Adjustment Disorders	-0.69	0.13	-0.13***
Anxiety Disorders as the baseline comparison group			
Schizophrenia Spectrum and Psychotic Disorders	-0.31	0.10	-0.10**
Other Psychiatric Diagnoses	-0.04	0.14	-0.01
Adjustment Disorders	-0.53	0.14	-0.10***
Schizophrenia Spectrum and Psychotic Disorders as the baseline comparison group			
Other Psychiatric Diagnoses	0.26	0.14	0.05
Adjustment Disorders	-0.22	0.14	-0.04
Other Psychiatric Diagnoses as the baseline comparison group			
Adjustment Disorders	-0.49	0.17	-0.09**

Note. The overall model was significant, F (9, 927) = 114.58, $p < .001$, $R^2 = 0.53$. Dependent Variable Treatment Length was log transformed.
[a] 0 = No, 1 = Yes. [b] GAF = Global Assessment of Functioning.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 11
Multiple Regression Analysis for Service Provider Predictors of Treatment Length (N = 937)

Variable	*B*	*SE B*	β
Matching with Primary Therapist			
Gender Matched[a]	0.07	0.08	0.03
Ethnic Matched[a]	-0.07	0.14	-0.02
Asian Language Matched[a]	0.37	0.13	0.12**

Note. The overall model was significant, F (3, 933) = 5.67, $p < .01$, $R^2 = 0.009$. Dependent Variable Treatment Length was log transformed.
[a] 0 = No, 1 = Yes.
** $p < .01$.

Table 12
Multiple Regression Analyses for Demographic, Clinical and Service Provider Predictors of Treatment Length (N = 937)

Variable	*B*	*SE B*	β
Gender[a]	0.15	0.07	0.06*
Age	-0.01	.003	-0.05
Married[b]	0.10	0.06	0.04
Medi-Cal Eligible[b]	0.12	0.08	0.04
Education			
No Education as the baseline comparison group			
Primary School Education	0.07	0.09	0.03
Secondary School Education	0.22	0.10	0.08*
College Education	0.09	0.12	0.03
Primary School Education as the baseline comparison group			
Secondary School Education	0.15	0.08	0.06
College Education	0.02	0.09	0.01
Secondary School Education as the baseline comparison group			
College Education			
Years Lived in U.S.	0.001	0.004	0.01
English as Primary Language[b]	-0.01	0.13	-0.003
Age at Immigration			
Born in the U.S. as the baseline comparison group			
Immigrated < 21 Years Old	-0.33	0.18	-0.11
Immigrated ≥ 21 Years Old	-0.27	0.20	-0.09
Immigrated < 21 Years Old as the baseline comparison group			
Immigrated ≥ 21 Years Old	0.06	0.09	0.02
Ethnicity			
Cambodians as the baseline comparison group			
Iu Mien	0.05	0.11	0.01
Vietnamese	-0.38	0.09	-0.13***
Chinese	-0.39	0.09	-0.15***
Koreans	-0.43	0.12	-0.10***
Iu Mien as the baseline comparison group			
Vietnamese	-0.42	0.13	-0.15***
Chinese	-0.44	0.13	-0.17***
Koreans	-0.48	0.15	-0.12***
Vietnamese as the baseline comparison group			
Chinese	-0.02	0.08	-0.01
Koreans	-0.05	0.11	-0.01
Chinese as the baseline comparison group			
Koreans	-0.04	0.10	-0.01
Previous Psychiatric History[b]	-0.06	0.07	-0.02
Total Number of Medication Appointments	0.04	0.001	0.69***
Entry GAF[c] Score	0.001	0.003	0.01
Appropriate Referral Out of Treatment[b]	-0.48	0.08	-0.14***
Average Number of Sessions Per Week	1.34	0.13	0.26***
Psychiatric Diagnosis			
Mood Disorders as the baseline comparison group			
Anxiety Disorders	-0.13	0.08	-0.04
Schizophrenia Spectrum and			

Psychotic Disorders	-0.35	0.08	-0.12***
Other Psychiatric Diagnoses	-0.15	0.13	-0.03
Adjustment Disorders	-0.65	0.13	-0.13***
Anxiety Disorders as the baseline comparison group			
Schizophrenia Spectrum and Psychotic Disorders	-0.22	0.10	-0.07*
Other Psychiatric Diagnoses	-0.02	0.14	-0.004
Adjustment Disorders	-0.52	0.14	-0.10***
Schizophrenia Spectrum and Psychotic Disorders as the baseline comparison group			
Other Psychiatric Diagnoses	0.19	0.14	0.04
Adjustment Disorders	-0.31	0.14	-0.06*
Other Psychiatric Diagnoses as the baseline comparison group			
Adjustment Disorders	-0.50	0.17	-0.09**
Matching with Primary Therapist			
Gender Matched[b]	-0.02	0.07	-0.01
Ethnic Matched[b]	-0.07	0.10	-0.02
Asian Language Matched[b]	0.06	0.11	0.02

Note. The overall model was significant, F (27, 909) = 42.22, p = .001, R^2 = 0.56. Dependent Variable Treatment Length was log transformed.
[a] 0 = Men, 1 = Women. [b] 0 = No, 1 = Yes. [c] GAF = Global Assessment of Functioning.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 13
Multiple Regression Analyses for Demographic Predictors of Change in Pre- versus Post-Treatment Global Assessment of Functioning Scores (N = 937)

Variable	*B*	*SE B*	β
Gender[a]	2.23	0.73	0.09**
Age	0.03	0.04	0.04
Married[b]	0.79	0.76	0.03
Medi-Cal Eligible[b]	-0.63	0.89	-0.02
Education			
No Education as the baseline comparison group			
Primary School Education	-2.69	1.14	-0.09*
Secondary School Education	1.21	1.26	0.05
College Education	1.31	1.46	0.04
Primary School Education as the baseline comparison group			
Secondary School Education	3.90	0.97	0.15***
College Education	4.01	1.21	0.13***
Secondary School Education as the baseline comparison group			
College Education	0.11	1.04	0.004
Years Lived in U.S.	-0.09	0.05	-0.06
English as Primary Language[b]	0.94	1.44	0.02
Age at Immigration			
Born in the U.S. as the baseline comparison group			
Immigrated < 21 Years Old	-0.27	2.12	-0.01
Immigrated ≥ 21 Years Old	0.57	2.44	0.02
Immigrated < 21 Years Old as the baseline comparison group			
Immigrated ≥ 21 Years Old	0.84	1.16	0.03
Ethnicity			
Chinese as the baseline comparison group			
Iu Mien	0.91	1.48	0.03
Vietnamese	0.46	0.99	0.02
Cambodians	-3.01	1.09	-0.10**
Koreans	-3.55	1.25	-0.09**
Iu Mien as the baseline comparison group			
Vietnamese	-0.45	1.50	-0.02
Cambodians	-3.92	1.35	-0.13**
Koreans	-4.47	1.81	-0.11*
Vietnamese as the baseline comparison group			
Cambodians	-3.47	1.14	-0.12*
Koreans	-4.02	1.37	-0.09*
Cambodians as the baseline comparison group			
Koreans	-0.55	1.49	-0.01
Entry GAF[c] Score	-0.55	0.03	-0.51***

Note. The overall model was significant, F (16, 920) = 22.74, $p < .001$, $R^2 = 0.28$.
[a] 0 = Men, 1 = Women. [b] 0 = No, 1 = Yes. [c] GAF = Global Assessment of Functioning.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 14
Multiple Regression Analyses for Clinical Predictors of Change in Pre- and Post-Treatment Global Assessment of Functioning Scores (N = 937)

Variable	*B*	*SE B*	β
Previous Psychiatric History[a]	0.36	0.79	0.01
Total Number of Medication Appointments	0.05	0.02	0.09*
Entry GAF[b] Score	-0.51	0.03	-0.47***
Appropriate Referral Out of Treatment[a]	3.83	0.98	0.11***
Average Number of Sessions Per Week	-1.82	1.52	-0.04
Treatment Length[c]	1.69	0.38	0.17***
Psychiatric Diagnosis			
Adjustment Disorders as the baseline comparison group			
Mood Disorders	-4.95	1.49	-0.21***
Anxiety Disorder	-4.64	1.64	-0.14**
Schizophrenia Spectrum and Psychotic Disorders	-8.31	1.64	-0.29***
Other Psychiatric Diagnoses	-6.14	1.95	-0.12**
Mood Disorders as the baseline comparison group			
Anxiety Disorders	0.31	0.98	0.01
Schizophrenia Spectrum and Psychotic Disorders	-3.36	0.92	-0.12***
Other Clinical Diagnoses	-1.19	1.47	-0.02
Anxiety Disorders as the baseline comparison group			
Schizophrenia Spectrum and Psychotic Disorders Diagnoses	-3.67	1.18	-0.13**
Other Psychiatric Diagnoses	-1.49	1.64	-0.03
Schizophrenia Spectrum and Psychotic Disorders as the baseline comparison group			
Other Psychiatric Diagnoses	2.18	1.61	0.04

Note. The overall model was significant, F (10, 926) = 43.97, $p < .001$, $R^2 = 0.32$.
[a] 0 = No, 1 = Yes. [b] GAF = Global Assessment of Functioning.
[c] Log transformation of a client's total amount of completed individual therapy sessions.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 15
Multiple Regression Analysis for Service Provider Predictors of Change in Pre- versus Post-Treatment Global Assessment of Functioning Scores (N = 937)

Variable	*B*	*SE B*	β
Matching with Primary Therapist			
Gender Matched[a]	1.52	0.79	0.06
Ethnic Matched[a]	-1.44	1.22	-0.04
Asian Language Matched[a]	0.005	1.12	0.00
Entry GAF Score	-0.53	0.03	-0.49***

Note. The overall model was significant, F (4, 932) = 75.89, $p < .001$, $R^2 = 0.25$.
[a] 0 = No, 1 = Yes. [b] GAF = Global Assessment of Functioning.
*** $p < .001$.

Table 16
Multiple Regression Analysis for Demographic, Clinical and Service Provider Predictors of Change in Pre- versus Post-Treatment Global Assessment of Functioning Scores (N = 937)

Variable	*B*	*SE B*	β
Gender[a]	1.21	0.81	0.05
Age	0.04	0.03	0.04
Married[b]	0.02	0.72	0.001
Medi-Cal Eligible[b]	-1.48	0.86	-0.05
Education			
No Education as the baseline comparison group			
Primary School Education	-1.93	1.08	-0.07
Secondary School Education	1.42	1.19	0.06
College Education	1.38	1.37	0.05
Primary School Education as the baseline comparison group			
Secondary School Education	3.35	0.92	0.13***
College Education	3.31	1.14	0.11
Secondary School Education as the baseline comparison group			
College Education	-0.05	0.98	-0.001
Years Lived in U.S.	-0.05	0.05	-0.04
English as Primary Language[b]	-0.11	1.53	-0.003
Age at Immigration			
Born in the U.S. as the baseline comparison group			
Immigrated < 21 Years Old	1.64	2.01	0.06
Immigrated ≥ 21 Years Old	1.62	2.29	0.06
Immigrated < 21 Years Old as the baseline comparison group			
Immigrated ≥ 21 Years Old	-0.02	1.09	.00
Ethnicity			
Chinese as the baseline comparison group			
Iu Mien	-1.16	1.45	-0.03
Vietnamese	-0.92	0.95	-0.03
Cambodians	-6.24	1.09	-0.21***
Koreans	-3.49	1.19	-0.09**
Iu Mien as the baseline comparison group			
Vietnamese	0.24	1.45	0.01
Cambodians	-5.08	1.30	-0.17***
Koreans	-2.34	1.72	-0.06
Vietnamese as the baseline comparison group			
Cambodians	-5.32	1.10	-0.18***
Koreans	-2.57	1.29	-0.06*
Cambodians as the baseline comparison group			
Koreans	2.74	1.44	0.07
Previous Psychiatric History[b]	-0.64	0.79	-0.03
Total Number of Medication Appointments	0.05	0.02	0.08*
Entry GAF[c] Score	-0.56	0.03	-0.52***
Appropriate Referral Out of Treatment[b]	3.86	0.94	0.11***
Average Number of Sessions Per Week	-3.48	1.54	-0.07*
Treatment Length[d]	2.05	0.38	0.21***
Psychiatric Diagnosis			
Adjustment Disorders as the baseline comparison group			
Mood Disorders	-4.31	1.49	-0.18**

Anxiety Disorders	-3.29	1.63	-0.09*
Schizophrenia Spectrum and Psychotic Disorders	-8.59	1.62	-0.30***
Other Clinical Diagnoses	-5.69	1.92	-0.11**
Mood Disorders as the baseline comparison group			
Anxiety Disorders	1.02	0.96	0.03
Schizophrenia Spectrum and Psychotic Disorders	-4.28	0.95	-0.15***
Other Clinical Diagnoses	-1.37	1.45	-0.03
Anxiety Disorders as the baseline comparison group			
Schizophrenia Spectrum and Psychotic Disorders	-5.29	1.19	-0.19***
Other Clinical Diagnoses	-2.39	1.61	-0.05
Schizophrenia Spectrum and Psychotic Disorders as the baseline comparison group			
Other Clinical Diagnoses	2.91	1.59	0.06
Matching with Primary Therapist			
Gender Matched[b]	0.72	0.76	0.03
Ethnic Matched[b]	-2.04	1.14	-0.06
Asian Language Matched[b]	-0.13	1.21	-0.004

Note. The overall model was significant, F (28, 908) = 20.43, $p < .001$, $R^2 = 0.39$.
[a] 0 = Men, 1 = Women. [b] 0 = No, 1 = Yes. [c] GAF = Global Assessment of Functioning.
[d] Log transformation of a client's total amount of completed individual therapy sessions.
* $p < .05$. ** $p < .01$. *** $p < .001$.

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