PREDICTORS OF EARLY TERMINATION FROM MENTAL HEALTH TREATMENT BY VIETNAMESE CLIENTS AT AN ETHNIC-SPECIFIC CLINIC

A Thesis Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
of the Requirements for the Degree

Master of Education

by

Kyle Philip Warmack

May 2012

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Abstract

Vietnamese Americans have had a very short history in the United States. Most came as refugees from a war-torn Vietnam and encountered traumatic experiences that resulted in mental health problems. However, research has indicated that Asian Americans are underrepresented in mental health treatment. To understand this, researchers have identified numerous predictors that are associated with termination across ethnic groups. Yet, little research has focused on the association between specific Asian ethnic groups and early termination. The current study investigated the contributions of predictor variables on treatment outcome by Vietnamese clients. The participant sample included 122 Vietnamese clients who sought counseling from 2004 to 2011 at an ethnic-specific clinic. A logistic regression analysis was used to examine the association between treatment outcome (complete vs. incomplete) and independent predictor variables. Results indicated that yearly household income (OR: 1.693) was a significant predictor of treatment completion. Implications of the study were also discussed.

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Chapter I

Review of Related Literature

The United States is known as a "melting pot" created from various nationalities and cultures from the entire world. According to the 2010 census, the ethnic groups making up the U.S. population included White (72%, 223,553,265), Black (13%, 38,929,319), Asian (5%, 14,674,252), American Indian and Alaska Native (0.9%, 2,932,248), Native Hawaiian and other Pacific Islander (0.2%, 540,013). Six percent (19,107,368) of the population identified as "other" and 3% (9,009,073) identified as two or more races, including Hispanic individuals who also identify as one of the aforementioned categories (U.S. Census Bureau, 2010).

The Asian American population grew little until the late 1900s. Between 2000 and 2010 the Asian population increased by 43.3% (4,431,254), and of that increase, the Vietnamese population grew 37.9% from 1,222,528 to 1,548,449 (U.S. Census Bureau, 2010). Currently there are approximately 1.5 million Vietnamese living in the United States and more than half are concentrated in California (581,946), Texas (210,913), and Washington (66,575). Vietnamese Americans make up the 5th largest Asian American ethnic group (Chuong & Minh, 2003; U.S. Census Bureau, 2010; U.S. Department of Health & Human Services-Office of Minority Health, 2008).

In comparison to other major Asian ethnic groups such as Chinese or Japanese, the Vietnamese have had a relatively short history in the United States. Vietnamese and other Southeast Asian groups (i.e., Cambodians, Hmong, and Laotians) initially resettled in the United States not for economic or professional reasons but as the result of war. Waves of migration began toward the end of the Vietnam War and the fall of Saigon in

1975. The first wave comprised of Vietnamese refugees who were well educated and wealthy (Constitutional Rights Foundation, 2012). This wave also included people with close ties to the government and skilled professionals (The Advocates for Human Rights, 2011). The first wave marked the beginning of a vast migration from communist-controlled Vietnam.

Over 400,000 Vietnamese fled as refugees during the second wave of migration that occurred after the outbreak of the Vietnam-China conflict in 1978 (Caplan, Choy & Whitmore, 1992). Their exodus involved clandestine escapes on overcrowded boats and exposure to trauma over four distinct stages: premigration, migration, encampment, and postmigration (Abueg & Chun, 1996). Consequences of political turbulence prior to migration reported by Vietnamese refugees included changing their residence due to proximity to battle areas, loss of personal property, loss of family members and friends, and feeling that their lives were in danger (Matkin, Nickles, Demos, & Demos, 1996). Migration trauma specific to Vietnamese refugees consisted of attacks by Thai pirates on "boat people" leaving Vietnam from the late 1970s through the 1980s. Throughout this time period, the majority of boats leaving Vietnam (75%) were attacked and most boats that were struck once were targeted on multiple occasions (Cohen & Hemphill, 1991). During these attacks, the Thai pirates raped, beat, shot, and drowned Vietnamese refugees while stealing their last remaining possessions (Cohen & Hemphill, 1991; Kleinman, 1990; Lee & Lu, 1989). An estimated 200,000 refugee deaths resulted from these attacks (Mollica, 1994).

Vietnamese exposure to trauma continued in foreign countries during their time spent in refugee camps. While residing these camps, refugees experienced beatings,

destruction of living spaces, and abrupt transference to other camps at the hands of border guards in attempts to break their will and coerce repatriation (Boehnlein & Kinzie, 1997; Freeman & Huu, 2003). Refugees were also subjected to overcrowding, starvation or poor nutrition, unsanitary conditions, and personal danger (Abueg & Chun, 1996). As a result of poor conditions, Vietnamese refugees were exposed to additional trauma such as tuberculosis and other infections (Sutter & Haefliger, 1990), witnessing or participating in violent riots (Basler, 1992), and fleeing upon the threat of being forced to return to Vietnam (Gargan, 1996). Refugees who survived migration and encampment may continue to experience unique traumas post migration when confronted with new barriers such as language, cultural values and worldviews, foods, traditions, currency, and systems of business as they acclimate to life in the United States (Abueg & Chun, 1996; Davidson, Murray, & Schweitzer, 2008).

Today however, the Vietnamese population is also comprised of immigrants and natural born citizens. It is important to note the differences between refugees and other groups of immigrants within the Vietnamese population because their experiences may differ. Examples of immigrant difficulties include isolation, high poverty rates, persistent crime (especially among low-income youth), and English proficiency (Texeira, 2005). Although different in severity from events that were typically experiences by refugees, these barriers may still affect the well-being of Vietnamese in the United States. Thus, it is important that clinicians and treatment centers become aware of the differences between refugee and non-refugee groups when treating presenting mental health concerns.

Vietnamese and Mental Health

Vietnamese refugees and immigrants have experienced various degrees of trauma as a result of migration and acculturation. As a result of reoccurring exposure to trauma, many Vietnamese have experienced mental health problems. Patient mental health complaints include anxiety disorders (59%) (Wagner, Manicavasagar, Silove, Marnane, & Tran, 2006), depression (57%) (Kinzie & Manson, 1983), and somatization and physical disorders (39%) (Lin, Carter & Kleinman, 1985) among other less frequent diagnoses.

Anxiety disorders have been well documented for Vietnamese living in the United States, and research has focused more specifically on posttraumatic stress disorder (PTSD). PTSD is defined as the direct or indirect exposure to a traumatic event resulting in the re-experiencing of the original trauma(s), avoidance of stimuli that is associated with the trauma(s), and increased arousal symptoms (American Psychiatric Association, 2000). As a result of repeated exposure to trauma during premigration, migration, encampment, and acculturation, Vietnamese refugees and immigrants have a high lifetime prevalence of PTSD (14%) (Nicholson, 1997) in comparison to the host population in the United States (6.8%) (Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005). Researchers have asserted that PTSD has been diagnosed in up to 50% of Vietnamese patients with any mental disorder, and that the risk of any mental illness, particularly PTSD, increases with age (Silove, Steel, Bauman, Chey, & McFarlane, 2007). Severity and type of trauma has also been correlated with presentation of PTSD in the Vietnamese population. In a specific refugee sample from the Vietnamese Civic Association in Boston, Massachusetts, Mollica et al. (1998) indicated that individuals

exposed to torture during encampment had an estimated PTSD prevalence of 90%, compared to 79% of those who were not exposed to torture. Other anxiety disorders such as agoraphobia (17%), generalized anxiety disorder (7%) and social phobia (17%) have been reported less frequently (Wagner et al., 2006).

Because trauma has been linked to symptoms of depression, researchers have examined how Vietnamese present with depression. Studies indicate that the prevalence of depression ranges from 30% (Leung, Cheung, & Cheung, 2010) to 57% (Kinzie & Manson, 1983) in Vietnamese subjects. Symptoms associated with depression that were reported by patients include difficulty concentrating (63%), sadness (61%), fatigue (33%) and hopelessness (19%), with cultural-specific symptoms consisting of 30% of all reported problems (Buchwald, Manson, Dinges, Keane, & Kinzie, 1993). In order to better understand how the Vietnamese make sense of depression, Fancher, Ton, Meyer, Ho, & Paterniti (2010) organized in-depth interviews with Vietnamese community members in California. Respondents described depression under four consistent themes: stigma and face, social functioning and the role of family, traditional healing and beliefs about medication, and language and culture. These themes indicate that other variables should be considered when assessing for depression-like symptomatology in Vietnamese patients. Other variables that have been related to the presentation of depression in Vietnamese patients include gender (women more than men), trauma exposure during premigration, lack of education, lower income, and non-married status (Ngo, Tran, Gibbons, & Oliver, 2001; Tran, Ngo, & Conway, 2003)

Despite the documented mental health concerns in the Vietnamese population, practitioners have indicated that Vietnamese patients are more likely to report physical

symptoms than mental ones. Reported complaints in both men and women include sleep disturbances (92-94%), headaches (84-93%), memory impairment (83-89%), dizziness (73-80%), nightmares (83-88%), and lower back pain (65-74%) (Matkin et al., 1996). The presentation of similar physical symptoms has been diagnosed by physicians as somatization, or physical disability without the presence of organic etiology. Similarly, Lin, Carter and Kleinman (1985) used a sample population from a community clinic in Seattle, Washington and observed that approximately 39% of Vietnamese patients were likely to be diagnosed with somatization. The presentation of physical symptoms in place of mental distress may be related to Vietnamese culture and as a result can alter help-seeking patterns.

Vietnamese Culture and Help-Seeking

Although research has demonstrated the prevalence of mental illness in the Vietnamese population, research has also asserted that Vietnamese underutilize mental health services. In their study, Kirmayer et al. (2007) indicated that individuals with a Vietnamese background were one-third less likely to utilize mental health services than the other ethno-cultural groups. Additional studies have also correlated culture, as well as spiritual beliefs, age (by generation), length of residence, and occupation with Asian Americans' negative attitudes toward mental health care utilization (Abe-Kim et al., 2007; Kim & Ornizo, 2003; Luu, Leung, & Nash, 2009; Nguyen & Anderson, 2005; Uba, 1991).

One reason research has indicated that the lower utilization of mental health services by the Vietnamese population in the United States is the stigma associated with mental health in Vietnamese culture. Vietnamese culture is influenced by traditional

Chinese culture and Confucianism (Liang, 2004). Confucianism is an ethical belief system and its core values stress harmony, respect, benevolence, fidelity, family allegiance, stoicism and shame (often referring to as "saving face"), in addition to focus on self-development (Kramer, Kwong, Lee, & Chung, 2002; Liang, 2004). Vietnamese believe that mental illness is reflective of weakness and interferes with self-control (Liang, 2004; Nguyen, 1985). This ethical belief system focuses more on the individual by maintaining proper dignity in all situations, avoiding shame, and practicing self-government. Mental illness has also been attributed to an imbalance or excess in life energies, punishment for past or present transgressions, and possession by evil spirits (Kramer et al., 2002; Lee, 2002).

Cultural beliefs have been shown to affect the amount and type of help seeking behaviors Vietnamese display. Vietnamese seeking mental health assistance are more likely to initially seek help from a member of their own community, especially religious leaders, in response to difficulty with acculturation and exposure to Western practices (Kirmayer et al., 2007; Luu, Leung, & Nash, 2009). Utilizing traditional practice helps conceal the problem from family and community members**.** Typically, after exhausting other options, Vietnamese patients may seek help from Western mental health professionals. However, only a minority of patients utilize Western services. Through interviews in a highly diverse, multiethnic neighborhood, Kirmayer et al. (2007) observed that approximately 6.8% of the Vietnamese population utilized Western mental health practices in comparison to 16.4% in the host population of Quebec. Additional research indicated that despite favorable attitudes towards seeking mental health service, 97.3% of Vietnamese respondents reported no visits to psychologists within the past 3 years and

100% reported no visits to psychiatrists in the past 3 years. (Nguyen & Anderson, 2005). Another clinical study by Wagner et al. (2006) reported that 30% of Vietnamese patients attended less than five sessions of mental health service. To date, however, research is limited when investigating the contributions of specific factors on early termination of Vietnamese patients from mental health services.

Predictors of Early Termination

Research has examined treatment termination in the general population and results have shown that many clients terminate therapy prematurely. For example, Berghofer, Schmidl, Rudas, Steiner, & Schmitz (2002) found that 69% of subjects in a community sample terminated mental health treatment early. Furthermore, researchers have asserted that there may be certain predictors that correlate with early termination in numerous populations.

Sociodemographic factors have been related to early termination rates of mental health treatment. Factors (also referred to as barriers) such as occupational status (54% unemployed), low-income range (Olfson et al., 2009), limited access to insurance (Edlund et al., 2002), and low level of education (Wierzbicki & Pekarik, 1993) have been associated with early termination of mental health treatment. Additionally, researchers have identified marital status as a predictor. Single and widowed individuals can comprise up to 70% of patients who terminate early in a given sample (Berghofer et al., 2002; Olfson et al., 2009; Wierzbicki & Pekarik, 1993).

An additional subset of factors including age (younger more than older), ethnic and language match, difficulty with transportation to the treatment center(s), and previous psychiatric experience or diagnoses (e.g., psychosis, anxiety, mood and personality

disorders) have also been associated with early termination of mental health treatment (Bados, Balaguer, & Saldaña, 2007; Beckham, 1992; Berghofer et al., 2002; Edlund et al., 2002; Flaskerud, 1986; Flaskerud & Liu, 1991; Hoffman, 1985; Olfson et al., 2009; Van Minnen, Arntz, & Keijsers, 2002; Wierzbicki & Pekarik, 1993). Research has obtained mixed results in regard to gender differences among clients who terminate early. Previous research identifies males as more likely to prematurely terminate (Van Minnen, Arntz, & Keijsers, 2002), which is not consistent with additional study that indicates females as more likely to leave treatment from human services (Olfson et al., 2009). More research is needed to investigate gender differences in premature treatment termination.

Multiple studies have indicated strong associations between ethnicity and early termination. Among other variables, Wierzbicki & Pekarik (1993) found that African-American and other minority groups were at a greater risk for dropping out of therapy. This is consistent with a study by Olfson et al. (2009) which indicated that cultural associations may affect early treatment termination, especially those patients who made a minimum of 3 visits. To better understand these associations, Sirey et al (2001) examined perceived cultural stigma and found that older patients with a perceived stigma score 3 points above the mean score on the Stigma Coping Scale were associated with a greater likelihood of treatment discontinuation. The resulting data suggests that culture and stigma between groups may be associated with premature termination of mental health treatment.

Researchers have found more specific ethnic group differences between Asian Americans and populations from other cultures. Sue and McKinney (1975) found that in

comparison to White patients, more Asian American patients prematurely terminated mental health treatment. The results indicated a dropout rate of 52% after one session by Asian American patients whereas roughly 30% of White patients terminated early. A more recent study yielded data that indicated approximately 37% of Asian Americans terminate early after the 4th admission to mental health service, in comparison to 34% of White and 31% of Latino populations (Chen, Sullivan, Lu, & Shibusawa, 2003).

Despite the contributions from previous research on premature mental health termination, previous studies have categorized Asian Americans as one large, cohesive population consisting of numerous Asian subgroups. This is problematic because Asian Americans are vastly heterogeneous. Chu & Sue (2011) assert that Asian American diversity extends across more than 50 distinct ethnic groups that speak over 30 different languages. This is also supported by Uehara, Takeuchi, & Smukler (1994) who caution against combining all Asian ethnic groups into one category because this can lead erroneous conclusions. Such conclusions can mislead clinicians to incorporate ineffective treatment interventions. Because some of the Asian ethnic subgroups have history with seriously mental illness, such as the Vietnamese, ineffective treatment may lead to early termination. Thus, additional research is needed to examine specific differences among the Vietnamese population in order to identify predictors that could aid in their treatment. The focus of the current study is to investigate whether certain predictors contribute to the completion of mental health treatment by Vietnamese clients at an ethnic-specific community clinic.

Chapter II

Methods

Data

Participant data were drawn from a de-identified database provided by Asian American Family Services (AAFS) that contained demographic and treatment information. AAFS is a community based, non-profit organization located in Houston, Texas, that specializes in the mental health and social service needs of various ethnic groups, but primarily Asian Americans. In service since 1994, AAFS is the largest clinic of its kind in the southern United States.

Participants

The database included 388 clients who received counseling and other mental health services at AAFS between 2004 and 2011. Two hundred thirty-eight were excluded because they were not of Vietnamese ethnicity. Twenty-eight were excluded because they were below 18 years of age. The resulting sample consisted of 122 Vietnamese clients of whom were mostly female (n=94). Clients who completed treatment ranged from ages 24 to 72 (mean = 42.88), with household incomes ranging from $11,928 to $85,706 per year (mean = $50,737.88) including disability, unemployment, and social security. Clients who did not complete treatment ranged from ages 18 to 78 (mean = 40.33), with household incomes ranging from $10,427 to $82,952 (mean = $33,670.76) including disability, unemployment, and social security. Education levels for both groups varied from elementary school to graduate school and presenting problems included: academic, ethnic, familial, financial, immigration, marital, and social difficulties.

Procedure

Database information was collected at AAFS from patients seeking counseling. Upon first introduction to the clinic, participants responded to an initial screening questionnaire to obtain basic information (i.e., demographic, presenting problem). From the screening, clients were assigned to an intake session with a clinician. Clinicians' level of training was varied, including: physicians, psychologists, licensed professional counselors, licensed social workers, licensed marriage and family therapists, licensed professional counselor-interns, and students in training. Clinicians were selected based on projected compatibility with each client (i.e., ethnic, language, and gender match) for more effective treatment intervention. During the intake session, clinicians recommended treatment if it was determined that it would be beneficial to the client. At the end of the first session, clinicians and clients outlined treatment goals in which both parties agreed upon.

Variables

This study investigated the contributions of predictor variables on the outcome of treatment. The dependent variable was treatment outcome and the independent variables were associated predictors. Treatment outcome is a dichotomous variable, defined by completion (i.e., "complete" or "incomplete") of the predetermined treatment goals as dictated by the clinician and client. Dropout was then identified as incompletion of treatment goals. Associated predictors were defined as demographic (i.e., age, education level, gender, socioeconomic status, driving distance, years residing in the United States) and psychiatric (i.e., comorbidity of psychiatric diagnoses) information. Other predictors

that were identified include number of household members, clinician ethnic match, and primary language.

Data Analysis

Statistical analysis was used in two sequential steps. In the first step, comparative descriptive analysis was used to compare demographic information between clients who completed treatment and clients who did not complete treatment. Analyses included a Chi-square and One-way ANOVA. In the second step, logistic regression was used to examine the independent contributions of the predictor variables on the binary dependent variable (completion of treatment).

Chapter III

Results

Table 1 provides comparative descriptive statistics for the participant sample. The sample consisted of 122 Vietnamese clients divided by completion (n = 24) or incompletion (n = 98) of treatment goals. The two groups differ significantly on gender $\chi 2$ (2, n = 122) = 16.914, $p < .001$, level of education $\chi 2$ (1, 122) = 7.382, $p < .05$, yearly household income F (1, 120) = 17.639, $p < .001$, distance from AAFS (miles) F (1, 115) = 9.053, $p < .05$, and years residing in the United States F (1, 101) = 9.904, $p < .05$. In general, clients who completed treatment were older, had higher annual household income, more likely to utilize Vietnamese as a primary language, less likely to have comorbid psychiatric diagnoses, and were more frequently matched with a clinician of the same ethnicity. Clients who did not complete treatment had lower levels of education, lived further from the treatment center, had more individuals living in the household and were more likely to be diagnosed with Mood and Psychotic disorders.

Table 2 contains the results of a logistic regression analysis with treatment completion as the outcome variable. A constant-only model test compared to the full model test of predictors was statistically significant, $\chi 2$ (10, n = 122) = 34.783, p < .001, indicating that the predictors reliably differentiate between completion and incompletion of treatment. The Nagelkerke R2, a statistic comparable to the R2 in a linear regression, was .450. Goodness of fit, shown by the Hosmer-Lemeshow test, was $\chi 2$ (8, n = 122) = 7.560, p = .478, a result that indicated the logistic model chosen for the study was correct. Analysis indicated that yearly household income (OR: 1.693) was an independent

predictor of treatment completion. Other independent variables were not statistically significant in predicting treatment completion.

Chapter IV

Discussion

The results of the current study support findings from previous research that identify various predictors of early termination of mental health treatment. The analysis of several factors on treatment completion yielded one predictor of significant value. Yearly household income (OR: 1.693) significantly predicted treatment completion, whereas other factors controlled for were shown to not be significant in predicting the dependent variable.

The significant results are consistent with observations made by previous research study that yearly household income predicts early termination of mental health treatment (Beckham, 1992; Olfson et al., 2009; Wierzbicki & Pekarik, 1993). Yearly household income is a large component of socioeconomic status, which is an important factor on utilizing mental health service. Individuals who struggle financially would have a more difficult time paying for treatment and as a result, would terminate early. This is supported by the results of the current study that indicates for every $10,000 increase in yearly income, an individual is 1.693 times more likely to complete treatment. In addition, descriptive statistics comparing those who completed treatment and those who did not complete found a difference, on average, of $17,000 between the annual household incomes of the groups.

Conclusions based on these findings should be made cautiously. Although significance was found on one predictor, results from previous literature that found other variables to be significant predictors were not replicated. This may be explained by the limited access to demographic variables. For example, Edlund et al. (2002) implicated

limited access to insurance as a predictor of early termination. Information in the database used for the current study did not list insurance data. Similarly, marital status as a predictor variable (Berghofer et al., 2002; Olfson et al., 2009; Wierzbicki & Pekarik, 1993) was not identified in the database. Without access to multiple variables, results become more differentiated from previous research.

Another explanation for non-significant predictors may be sample size. The participant sample used in the current study contained 122 Vietnamese clients, with only 24 accounting for clients who completed treatment. Given the sample size is relatively small in regard to treatment completion, there may have been little variance on certain factors. That is, clients' age, gender, education level, years residing in the United States, comorbidity of psychiatric diagnoses and distance from treatment center may be very similar. Also, considering the sample was used from data collected an ethnic-specific community clinic, variance on primary language and clinician ethnic match could have been very small. However, this does suggest that other variables may not be related to early termination. For example, Sue & Zane (2009) discuss the concept of "giving". In their paper, the authors describe how clients may hold an expectation to immediately gain a benefit from mental health treatment. If a clinician does not address the immediacy expectations, then clients may terminate early. In any event, additional research should be conducted to examine other variables on larger participant samples.

There are multiple limitations for the present study. First, amount of original case files is unknown from when the database was created. Ideally, all client files would be included in the database. Second, generalizability to the greater Vietnamese population will be difficult. The participant sample was isolated using convenience sampling and

client information was extracted from files at an ethnic-specific community clinic, which not all Vietnamese clients may have access to. Third, predictor variables within the database were limited. Although a good number were used in the study, more variables were not included that may confound the study. Ideally, one would control for all variables related to early termination found in the previous literature. Fourth, clients in the database were not distinguished between refugees and immigrants. This is an important difference because refugee exposure to traumatic experiences may result in more severe psychiatric problems that might not be presented in a non-refugee population. Further, later generations (including natural born citizens of the U.S.) of Vietnamese clients may present with more social problems as opposed to psychiatric disturbances due to the lack of exposure to trauma and increased familiarity with the western culture.

The results of the study also have clinical implications. The current study isolated Vietnamese clients apart from the general Asian American population. Previous research has focused on Asian Americans as a single population, but using this grouping could lead to utilizing ineffective treatment plans. By focusing solely on the Vietnamese population, the present study was able to identify a predictor of treatment completion by Vietnamese clients and as a result, can create more interventions for this population. Also, identifying significant predictors on treatment completion could allow treatment centers and clinicians to provide buffers to early termination. For example, the community clinic used in this study (AAFS) could educate their clinicians on the significance of income on mental health treatment completion. With this knowledge, treatment centers could be more flexible financially to increase the services provided to

Vietnamese clients seeking treatment. Furthermore, treatment centers could utilize other treatment interventions apart from therapy. Interventions such as biofeedback may provide more practical means for treatment that Vietnamese clients can understand. These alternative interventions may help mental health clinicians reduce the amount of early terminators in the Vietnamese population. Despite the current results yielding one significant factor, the reported odds-ratio for the non-significant variables provide information for more examination. Future research could investigate similar variables further with larger participant groups to better understand the contributions of predictor variables on treatment completion.

As noted in the introduction, the causes for early termination of mental health treatment between all cultures can be many. Specifically, little is known about Vietnamese clients and early termination. Future research could focus on Vietnamese clients at clinics that are not ethnic-specific to gain a better understanding of various factors that predict early termination from mental health treatment. Larger participant samples at these clinics would afford a higher probability that clients vary on many factors. Additionally, more research could expand on variables that have not yet been analyzed as predictors (i.e., "giving", clinician intervention competence). The total amount of predictor variables is unknown and can be infinite, but more prudent study could enhance the knowledge of cultural effectiveness of treatment intervention. With the growing numbers of Vietnamese residing in the United States, it is important that additional research be conducted in order to establish more effective treatment interventions for specific populations. By recognizing and implementing more

interventions with specific populations, clinicians could make a meaningful contribution to the successful mental health treatment of Vietnamese clients.

Table 1. *Comparative Descriptive Statistics of Vietnamese Clients*

Variable	Total (n = 122)	Incomplete (*n* = 98)	Complete (*n* = 24)	P Value
Age (Years)	40.83 (SD=13.542)	40.33 (SD=14.148)	42.88 (SD=10.764)	.412[b]
Gender				<.001[a]
Male	22.1% (27)	21.6% (21)	25% (6)	
Female	77.0% (94)	78.4% (76)	75% (18)	
Years residing in the U.S.	16.21 (SD=10.311)	17.90 (SD=10.207)	10.65 (SD=8.721)	.002[b]
Primary language				.083[a]
Vietnamese	78.7% (96)	75.5% (74)	91.7% (22)	
English	21.3% (26)	24.5% (24)	8.3% (2)	
Household income per year	$37,028.22 (SD=19.030.25)	$33,670.76 (SD=17,106.97)	$50,737.88 (SD=20,660.49)	<.001[b]
Level of education				.007[a]
Less than high school	78.7% (96)	83.7% (82)	58.3% (14)	
High school or above	21.3% (26)	16.3% (16)	41.7% (10)	
Initial diagnosis				
Comorbid diagnoses	13.1% (16)	15.3% (15)	4.2% (1)	.147[a]
Anxiety disorder	18.9% (23)	17.3% (17)	25% (6)	.390[a]
Mood disorder	34.4% (42)	36.7% (36)	25% (6)	.278[a]
Adjustment disorder	27.9% (34)	26.5% (26)	33.3% (8)	.505[a]
Psychotic disorder	4.9% (6)	6.1% (6)	0% (-)	.214[a]
Distance from AAFS (miles)	13.274 (SD=8.370)	14.417 (SD=8.477)	8.842 (SD=6.334)	.003[b]
Ethnic Match				.139[a]
Match	66.4% (81)	63.3% (62)	79.2% (19)	
No match	33.6% (41)	36.7% (36)	20.8% (5)	
Members in household	3.27 (SD=1.538)	3.36 (SD=1.582)	2.92 (SD=1.316)	.207[b]

Note: a = Chi-square analysis, b = One-way ANOVA analysis

Table 2. *Logistic Regression Analysis Predicting Treatment Outcome* (n=122)

Variable	*B*	SE *B*	Wald's Statistic	Odds Ratio (95% CI)
Constant	-.776	1.696	.210	.460 (-)
Age (years)	.008	.028	.076	1.008 (.954-1.064)
Gender (0=Male, 1=Female)	-.697	.534	1.702	.498 (.175-1.419)
Years residing in U.S.	-.058	.036	2.513	.944 (.879-1.014)
Primary Language (0=Vietnamese, 1=English)	.196	1.090	.032	1.216 (.144-10.307)
[a]Household income per year	.526*	.182	8.321	1.693 (1.184-2.420)
Level of Education (0=LHS, 1=HS+)	1.062	.708	.133	2.893 (.723-11.584)
Comorbidity of psychiatric diagnoses (0=Not comorbid, 1=Comorbid)	-1.918	1.448	1.755	.147 (.009-2.509)
Distance from AAFS (miles)	-.091	.050	3.332	.913 (.827-1.007)
Ethnic match (0=No match, 1 = Match)	.554	.746	.552	1.741 (.403-7.517)
Members in household	-.260	.217	1.441	.771 (.504-1.179)

Note: *$p < .05$, a = income/10000

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