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THE RELATIONSHIP BETWEEN HEALTH ADHERENCE BEHAVIORS,

LEVEL OF ACCULTURATION, FREQUENCY OF COGNITIVE DISTORTIONS,

AND PSYCHOLOGICAL DISTRESS IN FILIPINO AMERICANS

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DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by Marisa R. Nuñez on the 8th day of May, 2019, in partial fulfillment of the requirements for the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and literary quality.

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Abstract

Nonadherence to medical recommendations is a prevalent concern within the U.S health care system, including among many ethnic minority groups, such as Filipino Americans. The purpose of this study was to investigate the relationship between health adherence behaviors, acculturation level, frequency of cognitive distortions, and psychological distress in Filipino Americans. Filipino American participants (N = 121) completed the following measures: the Health Adherence Behavior Inventory, A Short Acculturation Scale for Filipino Americans, the Patient Health Questionnaire-9th edition, the Generalized Anxiety Disorder 7-item scale, and the Inventory of Cognitive Distortions. Results indicated a significant negative relationship between anxiety symptoms and health adherence behaviors and a significant negative relationship between depression symptoms and health adherence behaviors. Further, psychological distress was found to significantly predict health adherence behaviors, with depression making a significant contribution. There was also a significant positive relationship between acculturation and anxiety, and a significant positive relationship between acculturation and frequency of cognitive distortions. Clinical implications for this population include that the more acculturated a Filipino American is to the host culture, the higher frequency of cognitive distortions. This suggests that acculturation is an important factor to consider within health care as it relates to cognitive distortions. Future recommendations would be to consider the concept of colonial mentality, protective factors, and the development of more acculturation assessment tools for Filipino Americans.

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Chapter 1: Introduction

Statement of the Problem

With a population of approximately 3.4 million, Filipino Americans make up the second largest group of Asian immigrants in the U.S. (second only to Chinese Americans), and their numbers continue to grow (Nadal, 2011; U.S. Census Bureau, 2012). Despite their large numbers, Filipino Americans remain an underserved and under-researched population regarding health care (Kuroki, 2014; Tuason, Ancheta, & Battie, 2014).

Research has shown that nonadherence to medical recommendations is a significant problem, both in the general population and among various ethnic minority groups (DiTomasso, Golden, & Morris, 2010). For the purpose of this study, nonadherence was operationalized as failure to complete recommended or commonly accepted health behaviors. Health beliefs, a general understanding of medical knowledge, and more global cognitions contribute to an individual's ability to follow through with medical recommendations (M. Cohen, Arad, Lorber, & Pollack, 2007). Asian Americans tend to have distinct health-related beliefs that may interfere with treatment adherence. Research on such adherence in this and many other populations emphasizes the importance of comfort, trust, and overall quality of the patient-professional relationship (Lim, Baik, & Ashing-Giwa, 2012). Specific barriers, such as education level, English proficiency, and perceived social norms, can also impact health adherence behaviors (Ma et al., 2013).

Huang, Calzada, Cheng, and Brotman (2012) determined that children of foreign-born Asians were more prone to poor health as compared to Caucasian children and

children of Asians born in the U.S. Baker (2011) contributed to this knowledge, stating

that cancer is the leading cause of death for Asian and Pacific Islander Americans, as

opposed to the general population, who are more likely to die from heart disease. Of

course, health-related behaviors are influenced by culture and level of acculturation.

Acculturation may be described as a dual process psychological phenomenon of

changes within an individual related to cultural patterns, such as habits, attitudes, and

values, which occur when multiple cultural groups make contact. The process is dual in

nature as the changes can occur bidirectionally; that is, identification with both the host

and heritage cultures. This typically applies to immigrants and those who experience

geographical relocation (Berry, 2005; D. Kim, B. R. Sarason, & I. G. Sarason, 2006;

Torres, Driscoll, & Voell, 2012). Past research has shown a relationship between

psychological stress and acculturation (D. Kim et al., 2006; G. Kim et al., 2011;

Kirmayer et al., 2011). For instance, Shim and Schwartz (2008) examined Korean

American immigrants and found that less acculturation was related to increased

psychological distress. This was further supported by Choi, Tan, Yasui, and Hahm

(2016), who examined different strategies for acculturation and how each affected

anxiety or depression levels. Choi and colleagues found that an integration approach,

which is when people maintain their heritage culture while participating in the host

culture, correlated with better physical and psychological outcomes for participants. The

article highlighted the acculturation process as one of the major challenges for Asian

Americans.

Thorpe and colleagues (2006) supported the findings of a relationship between

psychological distress and health adherence, indicating that higher psychological distress

was related to decreased adherence rates. For the purpose of this study, psychological

distress was defined generally to include symptoms of depression and anxiety. Kagee,

Steel, and Bronwyne (2014) examined the relationship between adherence, psychological

distress, and health-related quality of life. The researchers found that increased barriers

to compliance with health care recommendations were positively and significantly

correlated to psychological distress. Similarly, Rosenfield (2004) and Yurica (2002)

found that cognitive distortions contribute to levels of psychological distress, including

depression, anxiety, personality disorders, and a host of other psychological and

behavioral health conditions. Research has shown that cognitive distortions, or errors in

thinking, are related to negative automatic thoughts as well as maladaptive schemas and

can lead to dysphoria and maladaptive behavior (D. A. Clark & A. T. Beck, 2010).

Additionally, such faulty thought processing impacts health beliefs, which play a role in

medical decisions and can impact health adherence behaviors (Burns, 1990; Christensen,

Moran, & Wiebe, 1999).

Purpose of the Study

        An extensive review of current literature suggests that the level of acculturation

and psychological distress influence adherence to health recommendations. Although the

existing research contributes to the expanse of knowledge regarding acculturation,

psychological distress, and health adherence behaviors, there remains a wide gap in the

research. Additional research and analyses can be conducted among all three constructs

and the hypothesized role of cognitive distortions for these important biopsychosocial

phenomena. Even less is known about these issues in the Filipino American community.

The purpose of this study was to examine the relationship between health adherence

behaviors, level of acculturation, frequency of cognitive distortions, and psychological distress in Filipino Americans. Consequently, the present research will illuminate knowledge that will benefit this rapidly growing community, as well as the broader health care population, by understanding the variables that affect health care behaviors.

The purpose of this study was to determine whether a relationship exists among health adherence behaviors, acculturation, psychological distress, and cognitive distortions in Filipino Americans. The hope was that this study would help to identify potential factors that may facilitate salubrious health-related behaviors for this rapidly growing ethnic minority group. Additionally, a better understanding of these constructs could help professionals serve the Filipino American community and also improve the population's well-being through better assessment, treatment planning, psychoeducation, and treatment implementation.

Chapter 2: Literature Review

Health Belief Model

Rosenstock's (1990) description of the health belief model (HBM) suggests that people make health-related decisions based on their perceptions of the possibility of illness and their expectations of treatment efficacy. This includes people's perceptions of and attitudes toward help-seeking behaviors. The HBM has served as a useful tool to help examine the factors that contribute to health adherence behaviors (J. E. Kim & Zane, 2016). Ma and colleagues (2013) identified these contributing factors, which include perceived vulnerability or threat of the health condition, perceived severity of the issue(s), perceived obstacles to following through on the health adherence behaviors, and perceived benefits of performing the behavior.

Henshaw and Freedman-Doan (2009) studied the HBM as it applied to mental health. They described the HBM as a socio-cognitive approach such that people consider how medical conditions could impact day to day living. Additionally, treatment is examined with a cost-benefit analysis perspective regarding whether health adherence behaviors are worth following through. The simplicity of this model provides a parsimonious framework to examine attitudes and thoughts about health. Further, the socio-cognitive theory facilitates a pragmatic focus for research since it can be translated into actionable steps toward improving health care (Henshaw & Freedman-Doan, 2009). The HBM was used as the theoretical framework for the current study.

Nonadherence

Adherence to health care recommendations is a crucial aspect of health care beliefs and practices. Health adherence behaviors can be described as the extent to which

a person executes beneficial lifestyle changes, follows through on recommendations from

a health care provider, and takes medications as prescribed. The model posits that

professionals' health care suggestions respect the autonomy of patients and view medical

and behavioral recommendations as an agreement between patient and clinician, rather

than a demand (Mukhtar, Weinman, & Jackson, 2014).

Conversely, nonadherence to health care recommendations is equally important to

health. Moore (2010) examined nonadherence of oral medication for breast cancer

patients. There were several factors that impacted patients' adherence to their treatment,

including dosing and administration requirements, memory loss within older individuals,

lower education levels, adverse medication effects, cost of medication, and physical

limitations. Kagee, Steel, and Bronwyne (2014) examined structural barriers that may

prevent patients with HIV from following through with antiretroviral therapy. The

researchers found that barriers of transportation, food insecurity, mental health treatment

programs, low socioeconomic status, and low health-related knowledge influenced

adherence. Moreover, these structural barriers directly impacted emotional, physical, and

cognitive well-being, or psychological distress (Kagee, Steel, & Bronwyne, 2014).

In addition to the aforementioned factors, G. Kim and colleagues (2011)

examined other possible barriers to adherence. The researchers studied adult Latino and

Asian immigrants with psychiatric disorders and their use of mental health services, and

found that language barriers could play a significant role in adherence. Particularly for

the Latino population, limited English proficiency decreased the odds of mental health

care utilization. The researchers did not find a significant link to English proficiency for

the Asian immigrant groups, but found that Asians were least likely to use services as

compared to the general population (G. Kim et al., 2011). Further, Sun, Hoyt, Brockberg, Lam, and Tiwari (2016) conducted a meta-analysis examining predictors of psychological help-seeking attitudes for racial and ethnic minorities. These researchers found that racial minorities underutilize treatment services despite having severe psychological distress. They also posited that acculturation and enculturation, which they defined as the process in which individuals of a minority group are socialized to their cultural heritage, were predictors of help-seeking attitudes (HSAs). HSAs can be either positive or negative, and they refer to the attitudes toward seeking help for psychological problems, such as being involved with psychotherapy or counseling. For Asian Americans, negative HSAs were linked to the stigma and discomfort with self-disclosure (Sun, Hoyt, Brockberg, Lam, & Tiwari, 2016). As the previous studies have illuminated, health beliefs and attitudes are partially shaped by culture.

Asian Americans

Culture plays a crucial part of how an individual's beliefs and behaviors are shaped. Culture can impact religious views, diet, language preference, social interactions, access to health care, and health-related beliefs. According to the United States Office of Management and Budget, for the purpose of the 2010 Census, the definition of "Asian" included people with origins in the Far East, Southeast Asia, or the Indian subcontinent. This encompasses Thailand, Vietnam, the Philippines, China, Japan, Korea, Pakistan, India, Malaysia, and Cambodia. Specifically, the 2010 Census presented the race of "Asian," but also recognized reported responses of Chinese, Korean, Japanese, Vietnamese, Filipino, Asian Indian, or any other detailed entries (U.S. Census Bureau, 2010).

Asian American health beliefs. Lim, Baik, and Ashing-Giwa (2012) explored the relationship between cultural health beliefs, acculturation, and the doctor-patient relationship in Asian American breast cancer survivors. They also examined treatment-related decisions and health behaviors. The researchers found that the intra-interpersonal health beliefs, the doctor-patient relationship, and collaborative decision-making were positively associated with healthy lifestyle practices. It was also determined that Asian Americans have distinct health beliefs and behaviors, which vary with type of illness, specific Asian subgroups, and years in the United States (Lim et al., 2012). Asian Indians and Pakistanis in the U.S. often experience issues with disclosure of cancer due to stigma, but place importance on knowledge of information for future generations, demonstrating a collectivistic mentality (Leader, Monhanty, Selvan, Lum, & Giri, 2018). Similarly, S. B. Kim (2017) highlighted that Asian American individuals have the lowest rates of cancer screening as compared to other racial or ethnic groups.

Asian American populations tend to stigmatize certain health behaviors, such as using mental health services. J. E. Kim and Zane (2016) examined Asian American health beliefs regarding this topic. The researchers used a cross-sectional questionnaire among 395 Asian American and 261 White American college students to study how various factors could impact help-seeking behaviors. The HBM served as the framework to understand perceived severity of illness, susceptibility, benefits, and barriers. Despite having higher reported rates of psychological distress, Asian American participants were less likely to engage in help-seeking behaviors. The researchers determined that there were more perceived barriers for Asian Americans compared to White Americans, such

as stigma, with Asians being more likely to seek help for academic issues rather than emotional or interpersonal problems versus their White counterparts.

The HBM also explains how views of Asian Americans relate to barriers in health adherence. Ma and colleagues (Ma et al., 2013) studied the HBM in Vietnamese Americans as related to cervical cancer screening behaviors. The researchers highlighted specific barriers that impact women in this population, such as being younger, unmarried, living in the United States for less than 15 years, having limited English proficiency, lacking insurance, and having a female physician. Additionally, lower education level and limited knowledge of the usefulness of cervical screenings inhibited seeking this type of service. This lack of information contributed to their existing health beliefs in that they perceived lower benefits of this type of health behavior, which is a common issue for Asian Americans.

Common health problems for Asian Americans. Although there is much diversity between and within the Asian population, there are common health issues that this group faces. H. C. Yoo, Gee, and Takeuchi (2009) discussed some of the common health problems that Asian Americans commonly face, examining whether or not perceived discrimination was associated to the chronic health conditions typically shared by that particular subgroup. Although, common health problems of Asian Americans can include: HIV/AIDS; hepatitis B; tuberculosis; breast, lung, liver, and cervical cancer; type two diabetes; and suicide (Lim et al., 2012; H. C. Yoo, Gee, & Takeauchi, 2009). The 717 participants identified as Chinese, Vietnamese, and Korean. The researchers found that Asian Americans' perceptions of both racial and language discrimination had a

positive correlation with chronic health conditions (H. C. Yoo et al., 2009). Therefore, it is possible that shared experiences relate to common illnesses within this population.

 Filipino Americans

According to the Census Bureau (2010), the Asian population increased at a rate that was four times faster than the total population in the United States, with Chinese being the largest specific ethnicity, followed by Filipino and Asian Indian as the second and third largest, respectively. Just as the Asian culture as a whole is immensely heterogeneous, the Philippines itself is a country that is rich in diverse culture. This archipelago has over 7,000 identifiable islands, eight ethnic groups, over 70 languages/dialects, and five religions (U.S. Census Bureau, 2010). The Philippines consists of 80 provinces, all of which follow a presidential republic form of government. A review of Filipino history reveals that the country was colonized by Spain in the sixteenth century, and then later by the United States in 1898. In 1942 during World War II, Japan invaded and occupied the country until 1945, at which time the Americans returned. Shortly thereafter, in 1946, the Philippines gained their independence. The different ruling countries and cultures strongly influenced the diversity of Filipino cuisine, clothing, traditions, and art. The geography, consisting of thousands of remote islands, explains the vast cultural differences between the various regions (Nadal, 2011).

Diaspora. The diaspora refers to the movement of people from one nation to another (Beller, 2008). One main contributor to the diaspora in Filipino culture is the idea of overseas Filipino workers (OFWs). An OFW is an individual who leaves his or her native country to work in another in order to send money back to his or her family. Beller (2008) discussed the concept of people who take on this position, some of the

struggles that they face, and the social cost of remittances gained. Beller noted that the

impoverished economic status of the Philippines was a main impetus for people to travel

overseas for work despite the possibility of facing oppressive, exploitative, and outright

dangerous conditions. Beller considered the challenges between balancing personal goals

of success and individual interests with the objective conditions of leaving one's country

in order to support a family.

Becoming an OFW to earn an income is a significant factor that led to Filipino

immigration. The Rockefeller Foundation-Aspen Institute Diaspora Program (RAD;

2014) reported that the Philippines is the third highest country that receives remittances

from the U.S. RAD discussed the history of the Filipino diaspora to the U.S. The

literature highlighted information such as main reasons for migration, geographic areas of

relocation, and other important statistics. Filipino immigrants started moving to the U.S.

in the 1900s, as influenced and made easier by colonization, since they were already

considered nationals. Individuals fell under three main positions: workers, students, and

military service members for the U.S.

RAD (2014) reported on the more recent trends of Filipino immigrants between

the years of 2002 to 2012. They stated that the largest proportion (52%) of Filipinos

were granted lawful permanent resident status as immediate relatives of citizens who

already live in the U.S. The trend of worker and student positions has continued into

recent immigration. Filipinos reportedly came to the U.S. 97,000 times as temporary

workers and 50,000 times with student visas. Regarding relocation areas, most Filipino

Americans reportedly live on the west coast of the United States (U.S. Census Bureau,

2010). California and Hawaii are the most common states for Filipino immigrants to

reside. Other than the cities of Los Angeles, San Francisco, and Honolulu, New York is another metropolitan area that Filipino Americans commonly populate.

There are high proportions of the Filipino diaspora that have earned college degrees, with 43% of those 25 years and older having at least a bachelor's degree (RAD, 2014). Regarding employment, RAD also reported that Filipino immigrants have a slightly higher possibility of working in the labor force, especially since Filipina women are also more likely to hold occupations. In relation, these immigrants are generally economically successful in the U.S. As previously mentioned, Filipino Americans have a high rate of remittance inflows that are sent to the Philippines, which has increased exponentially over the past several years.

Colonial mentality. In order to better understand the dynamics of the Filipino culture, it is important to consider all of the influences that have affected the development of Filipino history. Spain and U.S. colonization of the Philippines greatly influenced its culture and Filipinos' perceptions of themselves (Felipe, 2016; Nadal, 2009). Some scholars hold different opinions about what the traditional Filipino society was like prior to colonization (Agoncillo, 2007; Pido, 1986). There is the possibility that it was an egalitarian or even a matriarchal structure. With the invasions of Spain and the U.S., it is hypothesized that the societal view shifted to a patriarchy. In addition to the change in gender status importance in the Philippines, a hierarchy of skin color placed privilege and power with the elite, White man.

Felipe (2016) described the concept of colonial mentality (CM) as a result of the reign of the U.S., describing it as a form of internalized oppression in which a Filipino person automatically prefers and identifies more with the American colonizer, thus

rejecting anything Filipino-related. In turn, CM has been shown to be positively

correlated with depressive symptoms (David, 2008; David & Nadal, 2013). Further,

presence of CM is typically related to having poorer collective self-esteem as the

imposed concepts of sexism and racism are internalized (David, Sharma, & Petalio,

2017).

David (2010) studied how CM is a significant factor for the mental health

outcomes of Filipino Americans. CM can be examined on a covert and overt basis. The

covert level deals with internal shame and feelings of embarrassment or inferiority,

whereas the overt level is composed of discriminating against less Americanized

Filipinos or other observable behaviors that demonstrate the desire to be seen as more

American, such as having interest in the NBA, hip hop culture, and speaking English

more proficiently (Agoncillo, 2007). David (2010) implemented various scales, such as

the Colonial Mentality Implicit Attitude Test, to examine the relationship between CM

and mental health outcomes. It was found that covert CM was predictive of depression

symptoms. Additional research found that CM had a positive correlation with

psychological distress, specifically depression (David, 2008; David & Nadal, 2013).

These psychological factors are important considerations for Filipino American

immigrants since mental health affects health adherence behaviors, which was examined

in the current study.

Filipino American health beliefs. According to McBride (2002), there are

several indigenous health beliefs to consider for this particular population. The concept

of *timbang* emphasizes the significance of keeping balance within the body, such as being

in a warm (as opposed to a hot or cold) environment to maintain ideal health. This idea

further supports having a layer of fat on one's body in order to maintain the warmth

necessary for health. Health promotion beliefs are typically geared to protection of the

body, including flushing toxins and impurities such as by vomiting or sweating, using a

gatekeeping system to guard and distance the body from harm, and heating related to

maintaining optimal warmth levels. Three models help to explain these concepts. One

model is naturalistic and ranges in source from excessive stress and inappropriate food to

events in nature, such as thunderstorms. The personality model attributes causes of

illness to social punishment from witches, sorcerers, or evil spirits. Lastly, the mystical

model ties illness to retribution from ancestors due to unfulfilled obligations.

As a response to illness, Filipino Americans traditionally cope in a variety of

ways. It is historically common to seek indigenous resources within the community, as

seen through use of cultural healers who offer herbs, prayers and rituals, and massage

(McBride, 2002). Rather than seeking professional help, the older Filipino generation

may prefer to use traditional home remedies or consult with families, friends, or spiritual

counselors. Particularly with mental illness, there tends to be a significant amount of

stigma and shame, which may lead to avoidance behaviors. Similarly, lack of awareness

of services lends to poor health outcomes. Often with both physical and mental ailments,

tiyaga, which means patience and endurance, may motivate people to tolerate their

symptoms as much as possible. Another form of coping is to have fatalistic resignation,

or *bahala na*. This is to view the sickness and suffering as the will of God and, therefore,

unavoidable. (Lagman, G. J. Yoo, Levine, Donnell, & Lim, 2014; McBride, 2002).

These beliefs contribute to health behaviors and outcomes.

Religion plays a significant role within the Filipino culture and dictates much of the traditions, values, and beliefs. Lagman et al. (2014) reported that Roman Catholicism is the leading religion practiced in the Philippines, followed by 85% of the population. This was influenced by the colonialism of Spanish rule and also contributed to the culture's ideals of family and community. Most Filipinos who emigrate to the U.S. maintain their religious practice, and this has become an adaptive coping tool to manage daily hardships and major life events. Lagman and colleagues examined religion as it related to Filipino patients being treated for breast cancer. Through qualitative interviewing of 10 Filipina Americans, they found that prayer was a source of comfort and healing for most, promoting the idea of "leaving it to God." Although this may sometimes be seen as an adaptive way to cope with a difficult diagnosis, the researchers noted that it may also impact the way in which people address their medical issues. For example, many Filipino Americans may engage in traditional health practices, such as using faith healers. Additionally, religiosity helped participants feel more connected to their communities as sources of support. Due to a sense of familiarity, Filipino Americans reported more comfort reaching out to religious leaders as opposed to mental health professionals for personal issues (Lagman et al., 2014).

Common health problems for Filipino Americans. According to Nadal (2011), there are several highly prevalent health issues among Filipino Americans, and this subgroup tends to have higher prevalence rates of obesity, diabetes, cardiovascular disease, substance abuse, depression, and suicide as compared to the general population. Other issues include breast cancer, emphysema, and dietary issues, such as high fat,

cholesterol, and sodium levels. Similarly, hypertension is another typical health issue

that is likely related to diet intake (Nadal, 2000; Tuason et al., 2014).

Tuason, Ancheta, and Battie (2014) further examined psychological health,

specifically among 377 Filipino American women between the ages of 40 and 46. The

researchers gathered information about participants' levels of depression, anxiety,

discrimination, optimism of future outcomes, and degree of perceived control. They

found that Filipina Americans had higher prevalence of hypertension compared to

women from other Asian subgroups and African American women, and that Filipina

Americans underutilized counseling services despite higher rates of diagnoses. They

concluded that there is an interconnection between demographic, psychological, and

biological variables in this population, specifically demonstrating a negative relationship

such that lower income predicted higher depression and anxiety (Tuason et al., 2014).

Gee, Delva, and Takeuchi (2007) conducted a study to examine substance use

among Filipino Americans. Researchers sampled 18-year-old participants in San

Francisco and Honolulu. The researchers found that unfair treatment, such as

discrimination and racism from Caucasian individuals, contributed to increased substance

use. Another study about cyberbullying reported that Filipino and Samoan Americans

were more likely than Caucasian Americans to feel poorly about themselves, which

positively and significantly correlated to both substance use and suicide attempts

(Goebert, Else, Matsu, Chung-Do, & Chang, 2011). Other studies suggested that

Filipinos born in the U.S. were more likely than their Philippine-native counterparts to

engage in heavy drinking, possibly due to higher perceived discrimination (I. Kim &

Spencer, 2011; W. Kim, I. Kim, & Nochajski, 2010).

Laus (2012) further delved into the topic of substance use for Filipino Americans as it related to culture. The researcher discussed the idea of *pakikisama,* which is defined as a desire for social acceptance and approval, as it is a significant factor to identity. *Pakikisama* was considered a contributing factor to drug using behaviors as a way for people to feel connected. Nadal (2000) reported on the concept of *kapwa* or unity with a fellow being. This emphasizes the importance of connectedness for Filipino Americans to one another and to a greater society, which may explain the inclination toward popular, but maladaptive, behaviors. Both Laus and Nadal separately determined that once drug use becomes more problematic, Filipino Americans have *hiya*, or shame, which results in being secretive as opposed to seeking help in order to protect their personal and familial pride (Laus, 2012; Nadal, 2000). Laus reported that drug use was also a way for individuals to cope with financial and lifestyle stresses—using drugs to deal with issues in the home.

Acculturation

Acculturation occurs when multiple cultural groups make contact, which may occur during geographical relocation (D. Kim et al., 2006; Torres et al., 2012). Acculturation is an important consideration when examining immigrant populations, as it is a common and major experience. The original concept of acculturation was presented by Gordon in 1964, as a unidimensional model that was conceived as a linear progression from one set of cultural norms to another (as cited in Baker, 2011). Gordon's unidimensional model viewed acculturation as an outcome of choices, with the host and heritage cultures being on opposing ends of a continuum such that only one identification is possible (Schwartz, Unger, Zamboanga, & Szapocznik, 2010).

Following Gordon's model, in 1993, LaFramboise and colleagues proposed the

framework of bicultural competence, which moved away from the idea of a singular

identity and instead posited that people could identify with more than one identity (as

cited in Schwartz et al. , 2010). In 1997, Berry proposed the acculturative strategies

framework (as cited in Kuo, 2014). Using the theory of coping with stress, Berry

postulated that the quality of acculturation was contingent upon the ability to cope with

the differences presented by a host culture. The model suggested that an individual's

strategy to acculturate was moderated by variables, such as gender, age, language use,

and personal characteristics such as perceived locus of control. The different strategies

include assimilation (in which an individual adopts the host culture and discards his or

her heritage culture), separation (in which an individual rejects the host culture and

retains his or her heritage culture), integration (in which an individual adopts the host

culture and retains his or her heritage culture), and marginalization (in which an

individual rejects the host culture and discards his or her heritage culture); each stage

focuses on the two dimensions of host and heritage culture (Schwartz et al., 2010).

Other acculturation models have since been created. In 2010, Castro and Murray

developed the resilience-based stress-appraisal-coping model, which highlighted the

importance of resilience and positive outcomes of cross-cultural adaptation (as cited in

Kuo, 2014). This model is also based on longitudinal consideration of one's ability to

continue coping with the changes of context (as cited in Kuo, 2014). That same year,

Yakushko examined the experiences of recent immigrants through qualitative studies and

generated the stress and coping grounded theory. Within the theory, there are five

domains: (a) causal conditions for migration, (b) the central phenomenon related to the

sources and types of stress, (c) coping patterns, (d) context of individual, family, and community, and © intervening conditions, such as the access to resources. Yakushko's theory emphasized the complexity as seen in the breadth and depth of the factors involved in the acculturation process (as cited in Kuo, 2014).

Numerous studies have demonstrated wide variance in the acculturation experience. Sun, Hoyt, Brockberg, Lam, and Tiwari (2016) investigated some of the differences among racial and ethnic minorities through meta-analysis. First, the researchers operationalized their understanding of two different terms that are often incorrectly used interchangeably: acculturation and enculturation. According to their definition, acculturation is the process of psychological changes brought on by the interaction of two or more cultures. Some of these changes include attitudes toward oneself, others, and the future; beliefs about health, locus of control, and justice; and preferences for language, cuisine, and social groups.

In contrast, Sun and colleagues (2016) described enculturation as the process of socialization into a cultural heritage, learning about the norms and characteristics of the culture through participation and observation. These researchers found between group differences, with benefits of better psychological treatment and help-seeking attitudes for Asian Americans who were acculturated, benefits for African Americans who were enculturated, and poorer outcomes for Mexican Americans who were more acculturated (Sun et al., 2016). These findings are important to the present study because they emphasized how level of acculturation can affect the health behaviors for different minority groups. Choi et al. (2016) studied 291 Korean American families in the Midwest in order to scrutinize the acculturation process. The researchers found that there

were three separate acculturation strategies utilized, including separation (no adaptation of host environment), integrated bicultural acculturation (multiple cultures were compatible), and modest bicultural acculturation (underdeveloped integrated approach). Integrated bicultural acculturation was related to the most desirable outcomes of overall well-being for Korean Americans. They reported that acculturation was a major issue that Asian Americans encounter, regardless of generational status (Choi, Tan, Yasui, & Hahm, 2016)

According to Berry (2005), acculturation is the dual process psychological phenomenon that describes the changes within an individual related to cultural patterns when exposed to other cultures. This can include changes in attitudes, values, and traditions. Berry's bidimensional model has shown to be applicable to modern experiences of immigration since it considers the range of immigrant experiences as reflected in the different acculturation strategies. Additionally, it has been a theoretical framework for scales that measure acculturation (Baker, 2011). Although there are numerous models for acculturation, there have also been several criticisms of the existing frameworks—particularly Berry's, as it is commonly used.

Criticisms of Berry's acculturative strategies framework. Rudmin (2006) touched upon the drawbacks of acculturation models. Specifically, Rudmin critiqued Berry's psychometrics, noting that research has shown people identifying with more than one strategy despite the model suggesting people identify with only one. Additionally, Rudmin highlighted the poor quality supervision that resulted in an unnoticed correlation between differing constructs, divergent validity. Rudmin also pointed out doubts regarding the marginalization construct since the strategy was equivocally related to poor

outcomes. Another criticism of current acculturation frameworks was, as Rudmin

contended, that they focused on what he proposed were more superficial constructs, such

as music and cuisine preference, instead of investigating more complex concepts, such as

religion, child-rearing practices, and sexual norms (Rudmin, 2006). Berry and colleagues

(2008) later responded to the criticism by indicating the presence of external and internal

validity for the scales that were used to measure acculturative attitudes of integration.

Similarly, he stated that the multiple measurement approach allowed a more

comprehensive understanding of acculturation. Berry also emphasized the complexity of

the acculturation process, as it can be confusing, ambiguous, and conflicting, which

reflects the possible identification with more than one strategy (Berry, Phinney, Sam, &

Vedder, 2008).

Despite these concerns, Berry's acculturative strategies framework has provided a

strong theoretical foundation for numerous studies regarding ethnic minority well-being

and health outcomes (Baello & Mori, 2007; Berry & Hou, 2016; Ea, Griffin,

L'Eplattenier, & Fitzpatrick, 2008; Fox, Merz, Solorzano, & Roesch, 2013; Schwartz et

al., 2010). Therefore, Berry's model was used as the theoretical foundation for the

current study because it has addressed the complexities of the acculturation process, has

been previously applied to a variety of cultural groups, and is commonly accepted among

scholars.

D. Kim, B. R. Sarason, and I. G. Sarason (2006) posited that cultural confusion

may commonly develop as the result of simultaneous exposure to numerous cultures. D.

Kim and colleagues investigated the influence of parental cultural values as they pass

down from one generation to the next. The researchers found that Asian Americans

experienced more complex development of their identities and attitudes compared to their European American counterparts. For example, Asian Americans experienced more cognitive dissonance regarding their heritage and host cultures. This suggested that this complexity was, in part, due to their experiences of and need to resolve prejudice and discrimination. D. Kim, B. R. Sarason, and I. G. Sarason also found that children of parents with high acculturation levels experienced less psychological distress and better adjustment.

Acculturation and health. There are several factors that tie acculturation to health outcomes. In addition to negative physical symptoms that cultural health beliefs may impact (as previously stated), mental health should also be considered. Yoon et al. (2012) conducted a meta-analysis to examine acculturation, enculturation, acculturation strategies, positive mental health outcomes (such as self-esteem and positive affect), and negative mental health outcomes (such as depression and anxiety). Yoon and colleagues used Berry's theory to develop the framework of the meta-analysis. Findings showed that acculturation was favorable over enculturation for the survival of Asian American groups as compared to African American groups. Potential reasons for this conclusion were the relatively new status of having more Asians in the United States as compared to previously, their wide range of dispersion among social classes, and the diversity between Asian subgroup cultures. Another finding was that adhering to the integrative acculturation strategy positively correlated to improved mental health compared to following other acculturation strategies.

Language use is an aspect of acculturation that relates to health outcomes. G. Kim and colleagues (2011) studied language barriers to receiving mental health. They

examined Latino and Asian immigrant adults ages 18 to 68 who were diagnosed with

psychiatric disorders and found that limited English proficiency significantly diminished

the likelihood that both Latino and Asian immigrants would utilize mental health care

services. Overall, Asian immigrants were least likely to use the services, though

additional factors may have contributed, such as mental health stigma and limited access

to resources. Also, Kuroki (2014) found that Filipino Americans' better language

proficiency in the United States was associated with higher probability of suicide attempt

as compared to Filipinos who were less proficient in English. Additionally, Kuroki found

that having a relative within a 90-minute drive was a protective factor. It is possible that

this correlation was due to experiencing more perceived social support, which is an

important facet of Filipino culture.

Hall and Yee (2012) addressed the neglect of research and mental health

treatment for Asian Americans, despite the high need for it. The authors posited that

there are several myths—such as Asian Americans being a small and successful group

that does not experience problems generally or behaviorally—that perpetuate these help-

seeking behaviors. In addition to these myths, Asian Americans actually experience a

significant amount of acculturative stress and discrimination that contribute to

psychological distress. Hall and Yee contended that federal mental health policies

neglect this population, as they are a group that tends to fall low in importance to policy

makers and researchers due to their underrepresentation in government. Additionally, the

aforementioned myths perpetuate the neglect of Asian Americans. Hall and Yee

emphasized the importance of continued research and development to garner more

awareness and attention for this underserved group. Further, H. C. Yoo, Gee, and

Takeuchi (2009) noted that there is much heterogeneity within Asian Americans regarding language, history, and traditions, thus highlighting the need to study various subgroups.

Another important consideration is the relationship between acculturation and substance use. Toleran et al. (2012) examined substance use among Chinese, Filipino, and Vietnamese adult men in California. They found that Filipino Americans had higher rates of alcohol, cigarette, marijuana, and cocaine use compared to the other Asian subgroups. Sociodemographic factors were likely contributors to drug risk, including immigrant status, social isolation, education level, and poverty. According to another study on drug usage, Filipino Americans had a strong desire to fit in and belong, which may lead to peer pressure and acceptance-seeking through using different substances (Laus, 2012). Shih and colleagues (2015) reported that substance use is also a growing issue for adolescents, with Filipino Americans having the highest initiation behavior rates in comparison to other Asian subgroups. Further, Park, Anastas, Shibusawa, and D. Nguyen (2014) studied the relationship between acculturation and stress for the Asian American population. They examined Chinese, Vietnamese, and Filipino Americans who were born outside of the U.S. and determined that Filipino Americans drank more than Chinese and Vietnamese Americans, and Asian Americans drank more than the general population; however, the overall importance of the study was to highlight the possible relationship between acculturative stress and alcohol use for these subgroups, such that those who were more acculturated tended to drink alcohol more (Park, Anastas, Shibusawa, & D. Nguyen, 2014).

Different levels of acculturation may also tie to the accessibility and use of health care resources. Mena, Padilla, and Maldonado (1987) studied college students who immigrated to the United States from the Philippines, and found that higher levels of acculturation indicated higher use of resources for coping, such as psychotherapy, psychoeducation, and pharmacology. Additionally, Filipino Americans who were more acculturated than not were more likely to accept cognitive restructuring, which demonstrated an openness to mental health techniques. Similarly, Chataway and Berry (1989) found that lower levels of acculturation correlated to higher amounts of stress within the same population. In 2005, H. C. Yoo and Lee also studied Asian American college students and their experiences with racial discrimination. The researchers determined that a stronger, more secure sense of ethnic identity related to less perceived discrimination.

Racial identity has been studied as it relates acculturation and mental health issues; however, there are discrepancies in findings among different ethnic and racial groups. For example, Settles et al. (2010) conducted a study of racial identity among 379 African American women. Racial identity was examined through level of racial centrality (the degree to which race defines a person's self-concept), private regard (personal judgment of race), and public regard (perception of others' judgment of one's race). The researchers found that there was a positive correlation between all aspects of racial identity and depression. Research has shown that coping is associated directly with acculturation and various mental health outcomes, as seen in the aforementioned studies as well as meta-analyses of the topic (Yoon et al., 2012).

The acculturation process is something that can contribute to the physical and mental health of immigrants, as well as their children. Huang, Calzada, Cheng, and Brotman (2012) compared children of foreign-born Asians and U.S.-born Caucasians. They found that there was little support for the myth of Asians being the "model minority," as they experienced greater risk for poor social relationships, internalizing problems, and poorer physical health. Ruzek, D. Q. Nguyen, and Herzog (2011) examined Asian American college students' acculturation and psychological distress. A regression analysis found that the more acculturated participants were to European values, the less likely they were to experience psychological distress.

As the research indicates, acculturation may correlate with both positive and negative health-related outcomes. Dela Cruz, Padilla, and Agustin (2000) reported that some Latinas who are more acculturated are more likely to smoke cigarettes. Conversely, this same population may also have more accurate knowledge of sexual education related to condom use and lower likelihood of obesity, with higher levels of acculturation. Dela Cruz, Padilla, and Agustin reported that Latino and Hispanic Americans had more personalized measurements at the time, which helped to explain the differences in acculturation outcomes. Despite the growing number of Filipino Americans, the researchers stated that there was a lack of acculturation scales specific to this group. Dela Cruz and colleagues emphasized the importance of individual scales respective to specific cultural groups, which led to their development of A Short Acculturation Scale for Filipino Americans (ASASFA; dela Cruz, Padilla, & Agustin, 2000).

Acculturation measures. There are numerous scales that aim to measure acculturation. Some scales, such as Ward and Kennedy's (1994) Acculturation Index, Stephenson's (2000) Stephenson Multigroup Acculturation Scale, and Zea and colleagues' (2003) Abbreviated Multidimensional Acculturation Scale, were developed to examine multiple groups for acculturation. Other scales were created that narrow the focus to Asian Americans, such as Kim, Atkinson, and Yang's (1999) Asian Value Scale; Flannery and colleagues' (2001) Asian American Acculturation Inventory for Asian Americans; Rudmin, Ahmadzadeh Wolfe, and colleagues' (2001) European American Value Scale for Asian Americans; Chung, Kim, and Abreu's (2004) Asian American Multidimensional Acculturation Scale; Ryder and colleagues' (2000) Vancouver Index of Acculturation; Suinn, Ahuna, and Khoo's (1992) Suinn-Lew Asian Self-Identity Acculturation Scale; and the ASASFA (dela Cruz et al., 2000).

Although all of the aforementioned scales would adequately measure acculturation, dela Cruz, Padilla, and Agustin's (2000) ASASFA is the only valid assessment that specifically targets Filipino Americans and, as such, was used for the current study. Additionally, its brevity of 12 items lends to easier participant use. The ASASFA is based on A Short Acculturation Scale for Hispanic Americans (ASASH), which is psychometrically sound and has been supported in numerous validation studies (as cited in Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987). Further, the ASASFA is offered in both English and Tagalog, the official national language of the Philippines. In order to accurately convert the scale to Tagalog, the researchers used multiple translators, back translators, experts, and tests to review the translation throughout various steps of the process.

The ASASFA targets Filipino Americans within three dimensions of acculturation: (a) language use and preference at home, work, and socially; (b) language use and preference in media; and (c) preferred ethnicity of individuals within interpersonal relationships. The specificity of the scale lends to a more accurate approach in examining Filipino Americans than acculturation scales that measure all Asian groups.

Psychological Distress

Psychological distress can be described as general conditions of anxiety and depressive symptoms that negatively affect well-being (Kessler et al., 2003). For the purpose of this study, psychological distress was defined generally to include symptoms of depression and anxiety. Specifically, it was operationally defined as scores of 10 or higher on the Generalized Anxiety Disorder 7-Item Scale (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006), which measures anxiety, and Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001), which measures depression.

Psychological distress and health. Several researchers have examined the relation of psychological distress to health issues. Huang et al. (2012) examined physical and mental health in children of Asian immigrants and found that children of Asian parents, relative to White children, experienced poorer physical health, less interpersonal skills, and more internalizing problems, such as anxiety and depression. Kagee, Steel, and Bronwyne (2014) examined structural barriers to health adherence behaviors. They defined structural barriers as broad forms of social construction that may prevent the activities in which people typically engage. These barriers can include institution-related, environmental, poverty-related, legal, cultural, and political factors. The researchers studied 291 HIV-positive participants in South Africa to examine the relationship

between antiretroviral therapy adherence, psychological distress, and health-related quality of life. They found that psychological distress mediated the relationship between structural barriers to pill taking and physical well-being. Merz, Malcarne, Roesch, Riley, and Sadler (2011) found that depression was a great cause of illness, disability, and death among English- and Spanish-speaking Latinas. Consequently, they recommended screening for depression to reduce the impact of depression on public health on a global scale.

Regarding anxiety, Sun et al. (2016) conducted a meta-analysis on racial minorities, treatment-seeking, and psychological distress. They determined that this particular population suffered from more severe psychological distress compared to the majority population. Additionally, individuals who had stronger racial and gender identities were likely to experience more stigma as compared to those who had less developed identities. This stigma was related to having higher levels of anxiety as well.

Social support can help to mitigate psychological distress related to life stressors. M. Cohen, Arad, Lorber, and Pollack (2007) examined psychological distress, life stressors, and social support among 56 HIV-positive Jewish immigrants from Ethiopia to northern Israel. The researchers found that acculturation influenced the expression of psychological distress, which related to life stressors and less perceived social support. It was also noted that personal beliefs about their health influenced their decisions about their medical approaches to wellness.

Psychological distress measures. There are numerous scales that aim to measure psychological distress, or different aspects of it. For example, the Kessler Psychological Distress Scale (K10; Kessler & Mroczek, 1994), Hospital Anxiety and Depression Scale

(HADS; Snaith, 2003), Beck Anxiety Inventory (BAI; A. T. Beck & Steer, 1993), Beck

Depression Inventory-Second Edition (BDI-II; A. T. Beck, Steer, & Brown, 1996),

Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995), Penn State

Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990), Hamilton

Anxiety Rating Scale (HARS; Hamilton, 1959), Clinically Useful Depression Outcome

Scales (CUDOS; Zimmerman, Chelminski, McGlinchey, & Posternak, 2008), and the

Quick Inventory of Depressive Symptomatology (QIDS; Rush et al., 2003) are all scales

that measure various facets of psychological distress. For the purpose of this study, the

GAD-7 (Spitzer et al., 2006) and PHQ-9 (Kroenke et al., 2001) were used due to their

brevity, validity, reliability, cross-cultural application, and preference within medical

settings.

Cognitive Distortions

Cognitive distortions can also impact medical decisions, as they have been

described as inaccurate ways of thinking. The term cognitive distortion was first

introduced by A. T. Beck (1967) as a predictable manner of processing information that

can lead to identifiable errors in thinking. He originally developed six distortions: (a)

absolutist/dichotomous thinking, (b) arbitrary inference, (c) minimization and

magnification, (d) overgeneralization, (e) personalization, and (f) selective abstraction.

Burns (1999) later added more cognitive distortions to his checklist of cognitive

distortions: (a) overgeneralization, (b) mental filter, (c) jumping to conclusions, (d) all-or-

nothing thinking, (e) magnification or minimization, (f) labeling, (g) emotional reasoning,

(h) should statements, (i) personalization and blame, and (j) discounting the positives.

Three more major distortions were also presented: (a) perfectionism, (b) comparison, and

(c) externalization of self-worth (Freeman & DeWolf, 1992; Freeman & Oster, 1999).

Although these are commonly accepted, this is not a comprehensive list, as there have

been additional distortions identified and proposed over time. For instance, Knouse and

Mitchell (2015) added to the list of cognitive distortions while examining the comorbidity

of attention-deficit/hyperactivity disorder (ADHD) with depression and anxiety. One

example is positively-valenced cognitive avoidance, which describes an overly optimistic

automatic thought that decreases an individual's likelihood of using coping skills.

     T. Beck (1976) applied the concept of cognitive distortions to the cognitive triad

and illustrated how faulty thinking could influence a negative view of the self, the world

or other people, and the future. This sort of faulty information processing reinforces

negative automatic thoughts, perceptions, and interpretations of events that contribute to

the development of a maladaptive schema and resultant distress and impairment (A. T.

Beck, Freeman, Davis, & Associates, 2006; D. A. Clark & A. T. Beck, 2010). J. Beck

(2011) further studied the impact of cognitive distortions on psychological well-being.

She found that there was a strong connection between the presence of distortions to

higher levels of depressive symptoms. This supported A. T. Beck's earlier work with the

cognitive model of depression, which reported the crucial role of distortions in the

development and maintenance of depression. Similarly, research has shown that

cognitive distortions implicated the presence of other forms of psychological issues,

including anxiety (D. A. Clark & A. T. Beck, 2010; Rosenfield, 2004). The etiology and

maintenance of anxiety symptoms, as related to distortions, may stem from the

misperception of threat to the self, world, or future (A. T. Beck, 1976).

Cognitive distortions and health. Cognitive distortions can impact emotion and behavior. Burns (1980) reported that cognitive distortions directly affect every aspect of the cognitive model, as the world and events may be perceived as neutral, positive, or negative events based on their influence on automatic thoughts, which impact mood and behavior. Burns further proposed that specific cognitive distortions, such as minimization, could impact health-related behaviors (Burns, 1990). For example, minimization of a health problem may decrease the perceived importance of seeking a medical screening.

Christensen, Moran, and Weibe (1999) further supported this idea when they found that cognitive distortions could lead to misperceptions of significant health behaviors and predict maladaptive of decisions and behaviors. For example, an individual who has symptoms of colorectal cancer may minimize the frequency and severity of the signs, which may inhibit the action of obtaining a screening. Uhl (2007) supported this finding with research that concluded that increased frequency of cognitive distortions was tied to negative behavioral and psychological risk factors as defined by the Millon Behavioral Medicine Diagnostic. Specifically, Uhl found that those with higher occurrence of cognitive distortions were less satisfied with themselves and their life situations. Similarly, Stankiewicz (2008) reported that there was a significant positive correlation between scores on the Inventory of Cognitive Distortions (ICD; Yurica & DiTomasso, 2002) and Health Adherence Behavior Inventory (HABIT; DiTomasso, 1997). The conclusions from Stankiewicz's findings also implicated that cognitive factors may be related to race and diversity, as the sample population was primarily African American (Stankiewicz, 2008).

Cognitive distortion measures. There are several scales that can be used to measure general cognitive distortions, as opposed to distortions that correspond to specific diagnoses, including the Automatic Thoughts Questionnaire (ATQ; Hollon & Kendall, 1980), Cognitive Errors Questionnaire (CEQ; Lefebvre, 1981), Cognitive Distortions Scale (CDS; Briere, 2000), Dysfunctional Attitude Scale (DAS; Weissman & A. T. Beck, 1978), and the ICD (Yurica, 2002; DiTomasso & Yurica, 2011). Although all of the aforementioned scales are psychometrically sound tools, the ICD has been validated with both depressed and anxious populations, and has been used to measure health adherence behaviors (Rosenfield, 2004; Stankiewicz, 2008; Uhl, 2007). As such, the 11 factor analyzed cognitive distortions measured by the ICD and defined by Yurica (2002) were utilized for the purposes of this study: (a) externalization of self-worth, (b) fortune-telling, (c) magnification, (d) labeling, I perfectionism, (f) comparison to others, (g) emotional reasoning, (h) arbitrary inference/jumping to conclusions, (i) minimization, (j) mind-reading, and (k) emotional reasoning and decision-making.

Research Question

An answer to the following question was sought through the current study: Are health adherence behaviors related to level of acculturation, psychological distress, and frequency of cognitive distortions in Filipino Americans?

Chapter 3: Hypotheses

Four hypotheses were developed after reviewing the literature.

Hypothesis I

It was hypothesized that a number of variables would correlate significantly with the

health adherence behaviors (as measured by the HABIT). More specifically,

acculturation (as measured by the ASASFA) was hypothesized to relate positively to

health adherence behaviors, and anxiety symptoms (as measured by the GAD-7)

depression symptoms (as measured by the PHQ-9), and cognitive distortions (as

measured by the ICD) were hypothesized to relate negatively to health adherence

behaviors.

Hypothesis II

It was hypothesized that level of psychological distress (as measured by the GAD-

7 and PHQ-9) would predict health adherence behaviors in a significant and negative

direction, such that those who endorse higher levels of psychological distress would be

less likely to exhibit health adherence behaviors.

Hypothesis III

It was hypothesized that acculturation would significantly and negatively

correlate with anxiety symptoms.

Hypothesis IV

It was hypothesized that acculturation would significantly and negatively

correlate with the frequency of cognitive distortions.

Chapter 4: Method

Participants

Data were collected from 121 adult participants of an online survey. Completed data were included if the participant was between 18 and 85 years of age and identified as Filipino in ethnicity, such that at least one biological parent also identified with that ethnicity. Additionally, participants had to be residents of the United States and able to read English at an eighth-grade reading level. Further demographic questions were included to assess for gender, geographical location, immigrant generation, education level, the presence of a religious/spiritual identity, and involvement with any type of Filipino American group or community.

Participants were excluded from the study if they were outside of the age criterion, did not have parents who identify as being Filipino/a, Pilipino/a, Pinoy, or Pinay, were not residents of the United States, and were unable to read English at an eighth grade reading level.

Procedure

Data were collected through the internet to obtain a sufficiently large sample of Filipino Americans. Participants were recruited via social media and e-mail. The demographic questionnaire and self-report measures were collected online through SurveyMonkey. The first step was to determine the copyrights of the measures and the ability to transfer them onto the SurveryMonkey platform. Then, the final link for the study was advertised on social media through the researcher's personal account and collegiate-level and community-level Filipino organization pages (such as the Filipino Intercollegiate Dialogue Network and Fil-Am of Centre County Group), as well as sent

through various academic and professional listservs (such as the Penn State Filipino

Association and Asian American Psychological Association). A snowball sampling

strategy in which eligible persons recruit other persons for participation was utilized.

Interested persons were screened via SurveyMonkey for the above criteria.

Qualified persons who met inclusion criteria were invited to complete the questionnaires.

Those who did not meet inclusion criteria were brought to the final page, which thanked

them for their time. Participants were not compensated for their participation.

Measures

Socio-demographic questionnaire. A socio-demographic questionnaire assessed

age, gender, marital status, geographic location, immigrant generation, highest level of

education, ability to read in English, status as a United States resident and years in the

country, involvement with any type of Filipino American group or community, and

religious identification.

Health adherence behaviors. Each participant's level of health adherence was

assessed with the HABIT, which consists of 50 dichotomous items (True = 1, False = 0)

that describe health-related behaviors, typically found in primary care settings

(DiTomasso, 1997). For example, "I try to sleep 8 hours each night (True or False)."

The sum score is calculated among 47 items, with 3 items requiring reverse scoring. A

higher score indicates that individuals endorsed more health-related behaviors and less

overall health risks, since a high score predicts adherence to physician recommended

behaviors (DiTomasso, 1997). The HABIT has been tested in comparison to other

reliable measures, such as the Health Risk Assessment, and was found to be reliable (α =

.71; Parke, 2004). Additionally, the HABIT has construct validity in determining poor

health outcomes as a result of nonadherence and other problematic behaviors ($p = .01$;

Parke, 2004).

Acculturation. In order to assess for level of acculturation, ASASFA was used.

The scale was initially validated itself with 165 first-generation Filipino Americans and

originally based on another accepted and psychometrically sound measure, the ASASH

(Marin et al., 1987). The ASASFA development followed the guidelines of

recommended procedure for cross-cultural research. The ASASFA consists of 12 items

measured on a 5-point Likert-scale, offered in both the English and Tagalog languages

(dela Cruz, Padilla, & Butts, 1998). For example, "In what language(s) are the TV

programs you usually watch? (1) Only Philippine language(s), (2) More Philippine

language(s) than English, (3) Both equally, (4) More English than Philippine language(s),

(5) Only English." To ensure the validity of the translation into Tagalog, experts tested

both forward and backward translation between the two languages, which also addressed

adaptability of cultural differences through conceptual, semantic, experiential, content,

and technical equivalence (dela Cruz et al., 1998).

The 5-point Likert-scale responses for each item correspond to a value. For

example, "(5) Only English" equals a value of 5 for that item. The sum value is totaled,

with a possible range of scores from 12 to 60. The mean score is calculated, which

ranged from 1 to 5. A lower mean score indicates a lower level of acculturation, whereas

a higher score indicates a higher level of acculturation. This also allows individuals to

identify as bicultural, such that they have preferences for both Filipino and American

cultures. The tool measures three factors regarding language use, media language

preference, and ethnic social relations. The ASASFA has demonstrated internal

consistency (α = .85; dela Cruz et al., 1998).

Psychological distress. To assess for psychological distress, two measures were

distributed. The first measure, the PHQ-9 is a 9-item scale that is used to assess

depression over the last two weeks (Kroenke et al., 2001). Each item is scored from 0

(not at all) to 3 (nearly every day) and added together, which provides a severity score

ranging from 0 to 27. For example, "Over the past 2 weeks, how often have you been

bothered by poor appetite or overeating? (0) Not at all, (1) Several days, (2) More than

half the days, (3) Nearly every day." Cutoff scores of 5, 10, 15, and 20 represent mild,

moderate, moderately severe, and severe depression, respectively. The scale was

originally tested with 6,000 clinic patients, which showed good internal consistency (α =

.83) and test-retest reliability (Spitzer, Williams, Kroenke, Hornyak, & McMurray,

2000). The validity was established within eight primary care and seven obstetrical

clinics and showed that scores greater than or equal to 10 had a sensitivity and specificity

of 88% major depression. Scores on the PHQ-9 have been shown to correlate positively

and significantly with scores on the BDI-II (Spitzer et al., 2000). The PHQ-9 also has

been widely used for cross-cultural purposes (de Lima Osorio, Mendes, Alexandre

Crippa, & Loureiro, 2009; Kohrt, Luitel, Acharya, & Jordans, 2016; Lotrakul, Sumrithe,

& Saipanish, 2008; Zhong, Gelaye, Fann, Sanchez, & Williams, 2014). To take extra

precaution for the item regarding suicidal ideation (i.e., thoughts that the respondent

would be "better off dead" or of thoughts of hurting himself or herself in some way), a

page was included that provided support resources (e.g., National Suicide Prevention

Lifeline [1-800-273-8255] and Crisis Hotline [775-784-8090]) to participants who

endorsed the item.

The second measure of psychological distress, the GAD-7 was included to assess

for anxiety levels over the last two weeks (Spitzer et al., 2006). Each item is scored from

0 (not at all) to 3 (nearly every day) and added together, which provides a severity score

of 0 to 21. For example, "Over the last 2 weeks, how often have you been bothered by

trouble sleeping? (0) Not at all, (1) Several days, (2) More than half the days, (3) Nearly

every day." Cutoff scores of 5, 10, and 15 represent mild, moderate, and severe anxiety,

respectively. The scale was validated with primary care patients and has been validated

across multiple cultures (Garcia-Campayo et al., 2010; Spitzer et al., 2006). The

psychometrics of the GAD-7 demonstrate good internal consistency reliability ($\alpha = .93$).

The measure has convergent, construct, criterion, factorial, and procedural validity (Lowe

et al., 2008; Mills et al., 2014; Stewart, Hays, & Ware, 1988).

Cognitive distortions. The ICD consists of 69 statements that represent how

people feel/think about certain things (Yurica & DiTomasso, 2002). Each item is rated

through a Likert scale in terms of frequency. For example, "I tend to discount the good

things about me. N = never, R = rarely, S = sometimes, O = often, and A = always," with

each item being scored from 1 (never) to 5 (always). Cognitive distortions included in

the ICD are based on a factor analysis, which determined 10 identified factors:

externalization of self-worth, magnification, comparison to others, emotional reasoning,

mind-reading, minimization, jumping to conclusions, fortune-telling, labeling,

perfectionism, and decision-making (Yurica & DiTomasso, 2002).

The scale has been validated with nonclinical samples as well as clinical samples within psychiatric and medical settings (S. Cohen, Kamarack, & Mermelstein, 1983; Weissman, & A. T. Beck, 1978; Uhl, 2007). Correlating the ICD with the disorders assessed on the Millon Clinical Multiaxial Inven^{to}ry, 3rd edition (MCMI-III; T. Millon, Davis, & C. Millon, 1997), Rosenfield (2004) determined that the frequency of cognitive distortions, as measured by the ICD, accounted for half of the variance in both the number and severity of most clinical syndromes and personality disorders. Additional research has shown that frequency of cognitive distortions, as measured by the ICD, correlate with behavioral and psychological risk factors (Uhl, 2007). This suggests that those who experienced more cognitive distortions were also more likely to engage in risky behaviors, as well as be more prone to having mental health challenges. Uhl (2007) determined that those with higher occurrence of cognitive distortions were less satisfied with themselves and their life situations. The criterion and content validity of the ICD has been tested and considered valid with a high test-retest reliability (Roberts, 2015) and with very high internal consistency ($\alpha = .99$; Yurica & DiTomasso, 2002).

Chapter 5: Results

Statistical Analyses

This section presents demographic data and statistical analyses. Pearson correlation analyses and a multiple linear regression analysis were performed to determine the relationships between health adherence behaviors, acculturation, psychological distress, and cognitive distortions.

The variables of interest were examined through SPSS 24.0. The first power analysis was conducted for Pearson correlation analysis at 80% power at the .05 level of significance for a medium effect size, yielding a need for 107 participants. The analysis included a medium effect size of 0.30, which is a conventional standard (Cohen, 1992).

Demographic Information

A total of 183 individuals completed the screening questions in the survey. Of the 183 people, 121 participants met the inclusion criteria and completed every item in the questionnaires. These 121 participants all identified as Filipino American, reported that they were within the age range of 18 to 85 (with the mean age of 29 and standard deviation of 9.4), could read English, and were current residents of the United States. As such, their data met inclusion criteria and were included in the data analysis (N = 121).

Participants identified as 61.9% (n = 75) female, 36.4% (n = 44) as male, and 1.7% (n = 2) as other. Further, 49.6% (n = 60) of the participants identified as being single, 41.3% (n = 50) as married, and 9.1% (n = 1) as cohabiting with their partners. As seen in Table 1, 47.1% (n = 57) of the participants in the sample reported having completed a college education.

Table 1

Education Demographic Variables

Education Level	Frequency	Percent
High School	3	2.5
Some College	12	9.9
College	57	47.1
Master's Level	24	19.8
Doctoral Level	25	20.7
Total	121	100.0

Table 2 indicates that 100% of the participants indicated Filipino ancestry, with the majority, 86.8% (n = 105), of the participants reporting two biological parents who identify as Filipino Americans and the remaining 13.2% (n = 16) reporting one parent who identifies as Filipino American.

Table 2

Biological Parental Ethnic-Identity Demographic Variables

Parent(s)	Frequency	Percent
Both	105	86.8
Mother	12	9.9
Father	3	2.5
One Parent (not identified)	1	0.8
Total	121	100.0

The average years spent living in the United States was reported as 29.31, ranging from a minimum of 3 to a maximum of 55 years. As shown in Table 3, the majority of the participants, over 60% (n = 73), identified as being second-generation immigrants.

Table 3

Immigrant Generation Demographic Variables

Generation	Frequency	Percent
First	41	33.9
Second	73	60.4
Third	6	4.9
Unknown	1	0.8
Total	121	100.0

Of the 121 participants, the majority, 59.5% (n = 72) reported that they were not involved in any type of Filipino American group activities, in contrast to 40.5% (n = 49) reported such involvement. A majority, 73.6% (n = 89), of the participants reported having some form of religious identity. Among those with religious identity, approximately 56.2% (n = 68) of the participants identified as being Roman Catholic and 17.6% (n = 12) of that Roman Catholic group reported being involved with religious communities. Some of the religious communities in which participants reported being involved were Roman Catholic (81.0%), Christian (12.7%), Episcopalian (1.3%), Methodist (2.5%), and Pentecostal (2.5%).

Hypothesis I

To examine whether health adherence behaviors (as measured by the HABIT) were significantly positively correlated with acculturation (as measured by the

ASASFA), and significantly negatively correlated with anxiety symptoms (as measured

by the GAD-7), depression symptoms (as measured by the PHQ-9), and frequency of

cognitive distortions (as measured by the ICD), six Pearson product-moment correlations

were conducted. Upon review, the assumptions of the Pearson product-moment

correlations were met. A histogram indicated a normal distribution without any

significant outliers, and a visual inspection of a normal probability plot indicated a lack

of significant multicollinearity or homoscedasticity.

Results also indicated that there was no significant linear relationship between

acculturation and health adherence behaviors (r(121) = -.043, p = .321). Further results

showed that there was a significant negative linear relationship between anxiety

symptoms and health adherence behaviors (r(121) = -.*192*, r^2 = .0368, p = .*018*) and a

significant negative relationship between depression symptoms and health adherence

behaviors (r(121) = -.375, r^2 = .1406, p = .000). This indicated that 3.68% of the

variance in health adherence behaviors can be explained by anxiety, and 14.06% of the

variance in health adherence behaviors can be explained by depression. Additionally,

there was no significant relationship between frequency of cognitive distortions and

health adherence behaviors (r(121) = -.148, p = .052). Correlation coefficients are

displayed in Table 4.

Table 4

Correlations for Health Behaviors, Acculturation, Anxiety, Depression, and Cognitive Distortions

	Health Behaviors	Acculturation	Anxiety	Depression	Cognitive Distortions
Health Behaviors	-----	-.043	-.192*	-.375**	-.148
Acculturation	-.043	-----	.175*	.094	.251**
Anxiety	-.192*	.175*	-----	.760**	.564**
Depression	-.375**	.094	.760**	-----	.584**
Cognitive Distortions	-.148	.251**	.564**	.584**	-----

*$p < .05$; **$p < .01$

Hypothesis II

To identify whether the severity of psychological distress (as measured by the GAD-7 and the PHQ-9) predicted health adherence behaviors in a significant and negative direction, a multiple linear regression was conducted using anxiety symptoms (as measured by the GAD-7) and depression symptoms (as measured by the PHQ-9) as the predictor variables, and health adherence behaviors (as measured by the HABIT) as the criterion variable. Tests of assumptions and multiple linear regressions were met. The Durbin-Watson statistic was equal to 1.557, indicating acceptable levels of autocorrelation.

The collinearity diagnostics demonstrated that for psychological distress, the predictor variables of anxiety and depression, there was no evidence of multicollinearity. The tolerance statistics were equal to .422. As such, multicollinearity was not a problem for these variables. Field (2009) posits that tolerance statistics with values below 0.2

suggest concern and values below 0.1 suggest serious concern. Further, the variance

inflation factor was equal to 2.370. According to Field, values of 10 suggest problems

with multicollinearity. As such, there was further evidence that this assumption was met.

The results of the multiple linear regression analysis revealed a multiple

correlation of $R = .402$ with a coefficient of determination of .162 ($R^2 = .162$). This

indicated that 16.2% of the variance observed could be attributed to psychological

distress (depression and anxiety). Table 5 presents the results of the multiple linear

regression analysis. Table 6 presents the overall regression analysis. This revealed a

significant regression ($F(2,120) = 11.377$, $p = .000$). This suggests that the combination

of the anxiety and depression (predictor variables) made a significant contribution to the

prediction of health adherence behaviors; however, as shown in Table 7, further analysis

through an independent examination of each predictor variable revealed that only one

predictor, depression (as measured by the PHQ-9), made a significant contribution to the

prediction of health adherence behaviors and in a negative direction.

Table 5

Model 1 Summary of the Predictor Variables (Anxiety and Depression) to the Criterion Variable (Health Adherence Behaviors)

Model	R	R^2	Adjusted R^2	Std. Error of Est.	R^2 Change	F Change	df1	df2	Sig. F Change
1	.402	.162	.147	6.166	.162	11.377	2	118	.000*

*Denotes significance

Table 6

Overall Regression Analysis with Predictor Variables (Anxiety and Depression) to the Criterion Variable (Health Adherence Behaviors)

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	865.069	2	432.535	11.377	.000*
Residual	4486.220	118	38.019		
Total	5351.289	120			

*Denotes significance

Table 7

Coefficients of Predictor Variables (Anxiety and Depression) to the Criterion Variable (Health Adherence Behaviors)

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	.
Model	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (constant)	35.121	.857		41.002	.000*		
Anxiety	.310	.181	.222	1.712	.090	.422	2.370
Depression	-.764	.182	-.544	-4.194	.000*	.422	2.370

*Denotes significance

Hypothesis III

A Pearson correlation was conducted to determine whether there was a significant relationship between acculturation and anxiety symptoms. Upon review, the assumptions of the Pearson product-moment correlation were met. A visual inspection of the histogram indicated a normal distribution without any significant outliers, and assumptions for linearity and homoscedasticity were demonstrated by a normal

probability plot. Results indicated that acculturation positively and significantly correlated with anxiety symptoms ($r(121) = .175$, $r^2 = .0306$, $p = .028$), indicating approximately 3.06% of the variance in anxiety can be explained by acculturation. As such, contra to the original hypothesis, the results found a significant, positive relationship between acculturation and anxiety symptoms.

Hypothesis IV

A Pearson correlation was conducted to determine whether there was a significant relationship between acculturation and frequency of cognitive distortions. In reviewing the data, the assumptions of the Pearson product-moment correlation were met. A visual inspection of the histogram indicated a normal distribution without any significant outliers, and acceptable levels of linearity and homoscedasticity were demonstrated by a normal probability plot. Results indicated that acculturation positively and significantly correlated with frequency of cognitive distortions ($r = .251$, $r^2 = .063$, $p = .003$), indicating approximately 6.30% of the variance in frequency of cognitive distortions can be explained by acculturation. As such, the hypothesis of a negative relationship was not supported, but the results found that a positive relationship was significant.

Chapter 6: Discussion

This study examined the relationship between health adherence behaviors of Filipino Americans and acculturation, frequency of cognitive distortions, and psychological distress. Previous research found significant relationships between health behaviors and these various factors in the general population (Huang, Calzada, Cheng, & Brotman, 2012; Lagman et al., 2014; Lim et al., 2012; Yoon et al., 2012). The findings from this study provided more information and support existing research regarding this particular under-researched population. Additionally, it raised further questions that future researchers may be able to examine.

Significant Findings and Clinical Implications

Results of the current study found several significant findings. There was a significant negative relationship between psychological distress and health adherence behaviors such that psychological distress could predict lower levels of adherence to medical recommendations. This supports previous findings, which would suggest that the presence of anxiety and depression symptoms impede health-related behavior because they decrease the likelihood of following through on medical recommendations (Kagee et al., 2014; Merz, Malcarne, Roesch, Riley, & Sadler 2011). This connection was important, as ethnic minority populations tend to experience heightened levels of anxiety and depression symptoms in comparison to their Caucasian counterparts, and these results indicate that these symptoms can directly affect health adherence behaviors in Filipino Americans (Settles, Navarette, Pagano, Abdou, & Sidanius, 2010; Sun et al., 2016).

The current study also examined the relationship between acculturation and anxiety. A significant positive relationship was found between anxiety and acculturation. This suggests that the more acculturated Filipino American participants were to American culture, the more likely they were to experience higher levels of anxiety symptoms. These results were surprising and did not support the hypothesis, which posited that individuals who were more acculturated to American culture would likely experience lower levels of anxiety.

It is possible that this finding is related to the theory of attachment anxiety. Brennan, C. L. Clark, and Shaver (1998) described the concept of attachment anxiety as fear of abandonment and the desire for obtaining reassurance from others. When discussing the societal views of Americans and Filipinos, the former Western culture tends to be more individualistic as compared to the latter collectivistic Eastern culture. It is possible that the collectivistic view that a more Filipino-culture oriented individual has serves as a protective factor in terms of having better perceived social support (W. Kim et al., 2010). It may be that a relative lack of perceived social support, less common to the Filipino culture in contrast to American culture, may be more salient for immigrants and first-generation Americans and may, thus, may be more profound. In other words, attachment anxiety in conjunction with an individualistic culture lends a potential explanation of the current study's findings: the more Americanized Filipino Americans are, the more anxious they may feel due to a perceived lack of social support. Interestingly, there is a gap in the research about this relationship, especially as it pertains to the Filipino American population.

Other possible explanations involve recognizing the discrepancies that may coincide with the sample population. Both the PHQ-9 and the GAD-7 are self-report measures that were norm-referenced to a sample primarily comprised of Caucasians (Kroenke et al., 2001; Spitzer et al., 2006). As such, they might not be as valid and reliable as assessment tools for anxiety and depression in Filipino Americans. Additionally, Filipino Americans specifically, and Asian Americans generally, are more likely to discuss their mental health symptoms in more physical terms (J. E. Kim & Zane, 2016). Due to the stigma of mental health concerns, these groups tend to have their symptoms manifest in more somatic ways (Sun et al., 2016).

Additionally, although the findings did not support the hypothesis of a negative relationship between level of acculturation and frequency of cognitive distortions, a significant positive relationship was determined. This indicated that participants who identified more with American culture experienced errors in thinking more often than those who identified as more Filipino, which was not hypothesized. A study regarding people with multicultural backgrounds found the experience of balancing more than one cultural context is related to increased stress levels and disruption of cognitive processes (D. Kim et al., 2006). It is possible that this multicultural experience, alone, is related to increased frequency of cognitive distortions.

Other studies have examined the concept of positive cognitive distortions, which can be defined as thinking errors that serve as coping mechanisms for individuals until they are capable of dealing with actual threats. They found that these types of cognitive distortions can be functional in regard to serving as a protective factor for people (Kendall, 1992; Kuroki, 2014; Taylor & Brown, 1988). An example of this is when a

parent receive news that his or her child has been in an accident at school, so he or she uses minimizing of the negative situation in order to arrive at the school and take appropriate action for his or her child's well-being. The cognitive distortion of minimizing in this particular situation might have been protective in the sense that the parent was able to safely and calmly do what was necessary to take care of his or her child. Another example is when a student occasionally uses a mental filter regarding grades for the purpose of striving for higher scores in order to be successful in being valedictorian. It may be that the ICD inadvertently measured these distortions as well. Although these studies demonstrated possible explanations of the current findings, there is a notable gap in the literature regarding Filipino Americans and how their cultural experiences may contribute to their frequency of cognitive distortions.

Another possible explanation for the positive relationship between acculturation and frequency of cognitive distortions could stem from the idea of *bahala na*. This is the concept that addresses the Filipino attitude of leaving everything according to God's plan (McBride, 2002). As such, Filipino individuals may experience fewer distortions or thought disruptions if they are able to apply an external locus of control to whatever situations they may find themselves in.

The current study strengthened the existing research linking psychological distress to both health adherence behaviors and cognitive distortions. Previous research examined the relationship between the ability to follow through with medical recommendations and levels of anxiety and depression, and found that health adherence behaviors were significantly decreased when psychological distress levels were heightened, as occurs with anxiety and depression (Kagee et al., 2014; Thorpe et al.,

2006). Similarly, previous researchers found that the frequency of cognitive distortions was directly related to the increased presence of anxiety, depression, and even personality disorder symptoms (D. A. Clark & A. T. Beck, 2010; Rosenfield, 2004; Yurica, 2002). Therefore, the current findings corroborated the results of previous studies, demonstrating the central role of cognition in psychological well-being. This study helped to better define the relationship between health-related behaviors, cognitive distortions, psychological distress and culture in Filipino Americans. When applying the HBM to this particular participant demographic, findings from the current study contribute to the notion that psychological distress factors, such as anxiety and depression, are strongly tied to behavioral outcomes in Filipino Americans.

Limitations

It is important to note various limitations of the current study. First, participants were gathered primarily online through convenience sampling, which narrowed the participant pool to those who had access to internet and were capable of using it. Similarly, the majority of the participants in the sample reported having completed a college education, which may limit the generalizability to the Filipino American community overall. Additionally, geographic location was primarily constrained to the Northeastern U.S. This may have impacted participants' responses to certain questions regarding acculturation and psychological distress because certain areas have larger Filipino American communities, which may model the acculturation process or provide less acculturated avenues of support. For example of the latter, there is higher residency of Filipino Americans in particular cities, such as San Francisco, California and Jersey City, New Jersey as compared to Jackson, Mississippi (RAD, 2014). Having

membership or availability to join a local ethnic community may offer protection factors to distress, such as support, acceptance, and unity, thereby influencing acculturation (I. Kim & Spencer, 2011; W. Kim et al., 2010; Kirmayer, et al., 2011).

A second identified limitation was the lack of options for a psychometrically validated acculturation scale specifically for Filipino Americans. The ASASFA is the only assessment tool of its kind in the literature that examines acculturation for Filipino Americans. Although its specificity of addressing this particular Asian subgroup benefitted the current study, the ASASFA only examined language use and preference at home, work, socially, and in media, and the preferred nationality of individuals within interpersonal relationships. It does not include ethnicity of individuals; rather, it only addresses nationality. Further, the measure does not examine specific values, beliefs, or traditions. Additionally, the tools within the study were self-report measures, which may have lent to the potential of subjective bias.

Although this variable was not assessed, a final potential limitation of this study was the awareness of the possible influence of colonial mentality (CM). Because the existing literature supports the relationship between CM and depression symptoms (David, 2008; David & Nadal, 2013; David et al., 2017), actual utilization of a CM measure would have contributed to a better understanding of how CM manifests in Filipino Americans and influences the variables under study. In this way, CM might be a mediating factor for health beliefs and adherence to health behaviors and may have explained the unexpected finding regarding depression. Similarly, the current study did not examine more traditional alternative health beliefs of Filipino Americans, which could have lent to a better understanding of the participants in the study and how that

may relate to health adherence behaviors for those in the U.S. Although these limitations were present, the current study offered insight that is relevant to acculturation, psychological distress, frequency of cognitive distortions, and health adherence behaviors in Filipino Americans.

Future Directions

As integrated health care continues to become more popular, increasing knowledge of behavioral health and information linking mental and physical health will allow clinicians to better serve their patients. Additionally, it is important to continue expanding the knowledge regarding growing ethnic minority populations, such as Filipino Americans. In moving forward, there are several ideas that can be examined. Researchers may consider taking a more in-depth look at the health status related to heterogeneity within Filipino Americans, including traditional, alternative health beliefs that they may hold. With the Philippines' vast diversity of ethnicity, religion, language, traditions, and cuisine—as influenced by the varying geography of the 7,000 islands— there is likely notable diversity linked to health behaviors and outcomes in its immigrants (Nadal, 2011; U.S. Census Bureau, 2010).

Also, future studies may examine CM as it relates to health behaviors. Similarly, it might be beneficial to examine CM, well-being, and help-seeking behaviors for Filipino Americans as previous research has suggested the possible link between well-being, perceived access to health care, and likelihood of seeking mental health treatment (David & Nadal, 2013; Fung & Wong, 2007).

Conclusion

The current study found that Filipino Americans who identified as more acculturated to American culture also had a higher frequency of cognitive distortions and experienced higher levels of anxiety. Additionally, this study supported existing research indicating that higher levels of anxiety and depression predict lower adherence to health recommendation behaviors in the vibrant and burgeoning Filipino American community.

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