Socioecological model of mental health resource utilization in Asian American adolescents with anxiety
SOCIOECOLOGICAL MODEL OF MENTAL HEALTH RESOURCE
UTILIZATION IN ASIAN AMERICAN ADOLESCENTS WITH ANXIETY

by

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ABSTRACT

Nearly 46 million Americans meet the criteria for a mental disorder. Anxiety impacts
30% of these individuals in the United States. A mounting focus on mental health has
prompted a growing response in both research and clinical contexts. Despite this
increased attention, Asian Americans still face significant mental health disparities.
Furthermore, the broad use of the term Asian Americans makes it difficult for researchers
and clinicians to encapsulate the needs in this diverse group.

Asian American adolescents are an at risk population due to the significant
developmental and cultural stressors they face. Consequently, knowledge pertaining to
this population’s mental health resource utilization becomes an important tool in
providing care. A socioecological approach was used to investigate determinants relevant
to anxiety and mental health resource utilization in Asian American adolescents. Current
public health models do not adequately represent the interactions between the analyzed
determinants. As such, a socioecological model was proposed which depicts the dynamic
relationships surrounding Asian American adolescent mental health resource utilization.
A dearth in current research makes it difficult to generalize this model for the whole
population. Nevertheless, this model provides an important first step to understanding the unique situation that Asian American adolescents face.
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LIST OF ABBREVIATIONS

CAT……………………………………………………….Culturally Adapted Therapy
CBT………………………………………………………Cognitive Behavioral Therapy
DSM-V………………………………………………………..The Diagnostics and Statistical Manual of Mental Disorders
FBO………………………………………………………..Faith Based Organizations
GAD……………………………………………………….Generalized Anxiety Disorder
HBM……………………………………………………….Health Belief Model
LEP……………………………………………………….Limited English Proficiency
MHL……………………………………………………….Mental Health Literacy
MHRU…………………………………………………….Mental Health Resource Utilization
NEM……………………………………………………….Network Episode Model
SASS……………………………………………………….Skills for Academic and Social Success
SAD……………………………………………………….Social Anxiety Disorder
SEM……………………………………………………….Social Ecological Model
SBO……………………………………………………….School Based Organization
STR……………………………………………………….Student Teacher Relationship
INTRODUCTION

Awareness surrounding mental health has recently skyrocketed in today’s society due to recent public policy changes, such as the Affordable Care Act. This policy requires many American insurance plans to cover preventative mental health care services, such as behavioral screenings, effectively mainstreaming mental health care (Huang et al., 2016). The National Survey on Drug Use and Health reported that 45.9 million Americans met specific criteria for mental disorders (SAMHSA, 2012). According to The Diagnostics and Statistical Manual of Mental Disorders (DSM-V), these mental disorders have been defined as a “behavioral or psychological syndrome or pattern that occurs in individuals reflecting an underlying psychobiological dysfunction” (American Psychiatric Association, 2013).

For example, anxiety is one of the most prevalent psychiatric illnesses in the United States, where the combined anxiety subtypes account for 30% of the general population (Kessler et al., 2005). Among the subtypes that comprise anxiety disorders, specific phobias account for a large proportion (Kessler et al., 2005). These specific phobia disorders occur when individuals have significant or persistent fear responses to certain objects or situations (American Psychiatric Association, 2013).

Analogous to specific phobia, both Generalized Anxiety Disorder (GAD) and Social Anxiety Disorder (SAD) are characterized by heightened fear responses to a trigger. Individuals with SAD have abnormally adverse reactions to social situations while those with GAD suffer from extreme worry on a daily basis (American Psychiatric Association, 2013). Anxiety disorders as a whole have detrimental effects in the
individual’s day-to-day life, but most effects are relatively minor. Despite anxiety’s different etiologies, most cases are characterized by a disproportionately high level of fear in response to an event (American Psychiatric Association, 2013). This paper recognizes the presence of phobias and their weight on the prevalence of anxiety disorders in the US. However, this paper will use anxiety to describe more serious disorders in the category such as generalized anxiety and social anxiety.

**Asian Americans and Anxiety**

The current population of Asian Americans is approximately 15.7 million, representing 5% of the total United States population (United States Census, 2014). The population is expected to increase by 213% by 2025 making them one of the fastest growing ethnic groups in the country (United States Census, 2014). Recently, Asian Americans have surpassed Hispanics as the largest new immigrant group in the United States (Brown, 2014). Reviewing data from the National Latino and Asian American Study (NLAAS) it was found that the lifetime prevalence rate of mental disorders in Asian Americans was 17.3% (Takeuchi et al., 2007a) while the prevalence of anxiety was found to be 5.8% (Takeuchi et al., 2007b).

A large proportion of research on Asian American mental health disparities use mental health resource utilization (MHRU) as a measurable outcome (Takeuchi et al., 2007b; Abe-Kim et al., 2007; Spencer et al., 2010). The literature suggests that Asian Americans are the least likely to seek out and utilize mental health resources when compared to other minority groups and Whites (U.S. Department of Health and Human
Additionally, the NLAAS provided data to show that only 8.5% of Asian Americans sought out any form of mental health services, and only 4.3% used a professional mental health services (Abe-Kim et al. 2007). The low service utilization rate is maintained across variables such as age and geographic location (U.S. Department of Health and Human Services, 2001a).

MHRU in the context of this paper will be broadly defined as help seeking behavior or visitation to formal or informal mental health resources. As a whole, mental health resources will be defined as a group of professional or lay organizations operating in order to prevent or treat mental health disorders. For the purpose of this paper, “formal mental health services” include those taking place at a hospital or community health center with a licensed professional practitioner or specialist. Meanwhile, “informal mental health services” include those taking place in other public places, such as churches, school, or home, without a professional (ie. faith healers, shamans). These resources can differ depending on cultural contexts, where certain groups such as Asian Americans opt to use faith healers, shamans, or other non-Western medical practitioners (Kim & Kendall, 2015).

The preponderance of research studies pertaining to anxiety has been conducted with Western populations in mind. As a result, the challenge for researchers has been to reduce the health disparities in these minority populations. The concepts of mental health and anxiety were developed from a Western, Educated, Industrial, Rich, and Democratic (WEIRD) perspective (Henrich et al., 2010). Application of such ideology in ethnic populations, such as Asian Americans, may lead to implicit biases or faulty cross-cultural
understanding (Barrett, 2006). Researchers proposed that symptoms, therapies, and criterion for diagnoses may not adequately describe anxiety and mental health illnesses in this population (Chung, 2002).

One problem in measuring mental health disorders, including anxiety, in the Asian American population is the heterogeneity present. At least 43 ethnic groups that speak over 100 different languages make up the combined Asian American population (Kramer et al. 2002). The majority of studies use Asian American as an umbrella term when recruiting participants. Neglecting to differentiate between sub-groups fails to recognize the nuanced effect that anxiety has for each ethnicity. For example, East Asian youth (Chinese, Japanese) have lower levels of anxiety when compared to Southeast Asian youth (Filipino) (Austin & Chorpita 2004). The Latino and African American populations are well studied in comparison to the Asian American population (Huang et al. 2005, Brotman 2011). Over the last decade research has focused on adapting past findings and exploring new strategies to fill the current gaps in knowledge.

**Mental health in Asian American adolescents**

Adolescence is a crucial transitional period between childhood and adulthood, where values and beliefs are built and can persist for the rest of life. Adolescents may navigate many difficult situations that could compound stress lending itself to the development of anxiety. In fact, epidemiological studies estimate that nearly a third of adolescents meet the criteria for anxiety disorders (Merikangas et al., 2010). Presence of anxiety symptoms during adolescence is a strong predictor of recurring diagnoses later in
life (Ferdinand et al., 2007). In spite of this, estimates suggest that only 25% of 
adolescents with social anxiety find their way into some form of treatment (Essau et al., 
1999).

The presence of anxiety in the general population of adolescents reveals the 
necessity to study anxiety in Asian American adolescents. Asian American adolescents 
face excess stress from acculturation and discrimination; as a result, they are at risk for 
anxiety (Huang et al. 2012). They face a unique set of situations that can be exacerbated 
by concepts of race, ethnicity, conflicting familial values, and assimilation (Omizo & 
Kim, 2010).
PURPOSE

The purpose of this paper is to explore the determinants that comprise the systems interactions influencing the mental health resource utilization of Asian American adolescents with anxiety. In addition, this determinant analysis will be used to construct a model that synthesizes the interactions across socio-ecological levels.

By the end of this paper, I aim to:

1. Utilize current research to explore the determinants pertinent to MHRU among Asian American adolescents
2. Use the determinant analysis to create a socioecological model of MHRU among Asian American adolescents
3. Analyze the final model in comparison with other existing public health models
DETERMINANT ANALYSIS

In order to properly analyze the determinants of mental health resource utilization among Asian American adolescents, the dynamic multi-level interactions must be considered. The state of empirical literature discussing Asian American adolescents is similar to that of the Asian American population as a whole. A dearth of research has made it necessary to extrapolate the conclusions from similar populations.

Figure 1 shows a social-ecological model (SEM) taken from Dahlberg & Krug (2002), which will be used to organize the determinants into the following levels: individual, relationships, and community. The determinants used in this paper were chosen based on the frequency they appeared as important factors for mental health resource utilization in the target population.

Dahlberg & Krug (2002) described the individual level determinants to be characteristics which directly influence behavior. In the context of this paper, the individual level will discuss how MHRU is affected by: gender, acculturation and its proxy’s immigration status and language proficiency, and mental health literacy. Second, relationship level determinants are comprised of the inter-personal relationships between the individual and their inner circle (Dahlberg & Krug, 2002). The following relationships and their influence on MHRU will be discussed: parents, teachers, clergy, and providers. Finally, community level determinants are comprised of larger groups or organizations to which the individual belongs (Dahlberg & Krug 2002). This level of the
determinant analysis consists of: School Based Organizations (SBOs), Faith Based Organizations (FBOs), and Stigma.

![Social ecological model diagram](image)

<table>
<thead>
<tr>
<th>Individual</th>
<th>Individual characteristics that influence behavior, such as biological, knowledge, attitudes, beliefs, and perceptions.</th>
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<tr>
<td>Relationships</td>
<td>Interpersonal interaction and primary groups including family, friends, classmates, co-workers that provide identity, support and role designators.</td>
</tr>
<tr>
<td>Community</td>
<td>Community settings such as health department, media, non-profit organizations. Influence of organization system that include such groups as schools, workplace, etc.</td>
</tr>
<tr>
<td>Society</td>
<td>Social/cultural norms, along with health, economic and educational policies along with local, state, and federal laws.</td>
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**Figure 1. Social ecological model. Adapted from Dahlberg & Krug, 2002.**

**Individual Level**

**Gender and Gender Roles**

Although sex is biologically determined, gender and gender roles are psychosocial constructs acquired by individuals through environmental and social cues that shapes their lived experience of being male or female (Winter, 2015). Through interactions with other social markers like class and race, gender affects one’s mental health in a complex way. As such, it would be important to consider these gender related
disparities in mental health within the context of Asian American adolescents to understand their unique situation.

Gender stereotypes for men and women appear to reinforce social stigma and discourage help-seeking behaviors, thus serving as barriers to accurate treatment of psychological disorders (“Gender and Women’s mental health”, n.d.). Furthermore, certain disorders such as anxiety that presents simultaneously with depression are more prevalent in women than men (Kessler et al., 1994). A study of undergraduate college students found that females reported significantly more mental health systems when compared to male students of a similar age (McIntyre, 2014). Additionally, Cyranowski et al. (2000) posited that the differences in mental illness prevalence between genders could be explained by the social pressures and relationship values distinct in men and women. For example, during adolescence the socialization style females used in their peer groups fostered empathetic, close-knit relationships in contrast to the domineering male socialization style (Cyranowski et al., 2000).

Asian American women, especially those who adhere to traditional family ideology, view serving their husband and raising their children as central roles. (Walton & Takeuchi, 2010). Meanwhile, Asian American men derive their masculinity from separate constructs compared to their white counterparts. White males often view their masculinity as an opposite construct from femininity. On the other hand, Asian American men view their masculinity stemming from their social and personal interactions with others. The perception of Asian American men is that they adhere to traditional gender roles, and are more nurturing, than their white counterparts (Chua & Fujino., 1999).
Additionally, Asian American families, especially those with immigrant parents, are patriarchal in nature (Pyke & Johnson, 2003).

These gender roles among Asian Americans have profound effects on their mental health. Asian American women are more susceptible to social obligations leading to more SAD than Asian American men (Sangalang & Gee., 2012). Similar to other races, such as White and African Americans, Asian American women have higher rates of anxiety (SAD/GAD) than Asian American men (McLean et al., 2011). In addition, they also have higher rates of depression compared to Caucasian men (Young et al., 2010).

Lastly, Asian American men and women have different patterns of MHRU. A study of young adolescents showed that females are more likely to turn to friends while males are more likely to seek out a family member. Furthermore, 30% of the teens reported that they would be unwilling to use a mental health service with a significantly larger proportion of the boys being unwilling (Chandra & Minkovitz, 2006). When looking at both age and gender, older adults were more willing to seek out formal mental health services than younger adults; older females were more willing than their male counterparts. (Leong & Zachar, 2007; Mackenzie et al., 2006). Comparable to White men, traditional gender roles also influence the way Asian American men view help-seeking behaviors. They may view it as a sign of weakness (Chang & Subramaniam, 2008). In contrast, Asian American women are more likely to use specialty mental health services than Asian American men (Ihara et al., 2013). Research showed that adolescents’ MHRU did not differ significantly across gender but adolescent females
were more likely to talk about their social anxiety (Colognori, 2012). However, there were no studies specifically studying the MHRU of Asian American adolescents.

Acculturation

Acculturation is the process of psychological and cultural changes occurring within individuals as a result of contact between multiple cultural groups (Berry, 2005). It has been linked with Asian American mental health attitudes and help seeking behaviors. Even when compared with Latinos, a group with similar cultural constructs, higher levels of acculturative conflict are found in Asian American families (Lee & Liu, 2001). Culture clash between traditional parental values and those of immigrant parents are the root of acculturative conflict, or intergenerational disagreements, and is a common cause of acculturative stress in Asian American adolescents (Juang et al., 2012; Lee et al., 2000). Acculturative stress can be considered as the burden caused by adjustments to a new culture (Berry et. al, 1997). Increased acculturative stress leads to poorer mental health outcomes in Asian Americans (ie. depression and anxiety).

Higher levels of acculturation have been shown to be associated with better mental health in the Asian American population (Miller et al., 2011; Hwang & Ting, 2008). A study of Asian American college students found that high levels of acculturation or assimilation of Western ideals lead to more positive attitudes towards seeking professional mental health services (Yeh et al., 2014). This is congruent with studies of college students showing that adherence to traditional cultural values lead to negative attitudes towards MHRU (Lee et al., 2009). Because acculturation has such a diverse role
in Asian American mental health outcomes it becomes an important factor to consider when exploring MHRU.

The effects of acculturation are difficult to pinpoint and measure, therefore proxy variables are often used. Common measures of acculturation include: English language proficiency and their generational status or time of immigration (Zane & Mak 2003). Consequently, this paper will discuss two specific proxy variables used to measure acculturation and its effect in the Asian American community: “English language proficiency” and “immigration status”.

Language proficiency

Language acts as an important barrier to health care access of any kind. Navigation of the health care system as well as proper communication of medical concerns is more difficult for individuals with limited English proficiency (LEP) (Ponce et al 2006, Flores 2006). Limited English Proficiency (LEP) can be defined as speaking English less than “very well” speaking ability as scored on the U.S. Census Bureau (Kim et al. 2011). Many research studies also have their respondents self-report their language ability, with those reporting “fair/poor” language skill level being marked as LEP (Abe-Kim et al. 2007, Kim et al. 2011). Language proficiency is one of the most robust moderators of health care quality and health care outcomes (Walton et al. 2009). It is especially important for mental health because unlike many physical ailments, which have empirical diagnostic exams, mental health disorders require verbal communication of symptoms.
Language is a significant barrier affecting Asian Americans’ access to mental health care. A study of international graduate students found that limited English proficiency (LEP) was associated with higher acculturative stress and anxiety (Yeh & Inose, 2003). As such, language proficiency is a crucial factor for Asian American adolescents in the determination of anxiety. Meanwhile, Summer et al. (2008) found a smaller increase in stress and anxiety among international high school students, which (Sumer et al., 2008). The difference in age was proposed as the reason for the weakened effect, younger students more readily adapted to new languages and this supported socialization (Sumer et al., 2008).

English proficiency is also an important determinant in the utilization of mental health resources in the Asian American population. English proficient Asian Americans are more likely to utilize mental health resources than LEP individuals (Abe-Kim et al. 2007). Compared to the 56% of Asian American respondents who spoke English, only 11% of Asian Americans with LEP or no English proficiency received necessary specialty mental health services (Sentell, 2007). Individuals with LEP experienced higher levels of discrimination and shied away from specialty mental health services (Spencer et al., 2010). Instead LEP individuals utilized informal mental health services such as friends or relatives in place of formalized care (Spencer & Chen 2004).

Immigration status

In the context of this paper immigration status refers to the age of immigration and also generational standing (e.g. first or second). First generation immigrants are born
outside of the country, while second generation immigrants have at least one first
generation immigrant parent. In addition, “1.5 generation immigrants” refer to those
foreign-born but came to the United States before the age of 16 (Lee et al., 2009). This
distinction is made because these immigrants moved during their formative years—where
acculturating to the new culture is easier relative to immigrating at an older age.
Immigration status plays an important role in acculturation because it dictates social
status and available support systems (Fuligni, 2004). Additionally, immigration status
may be indicative of the developmental context in which individuals will be adapting to
the new host country (Leu et al., 2008).

The effects of immigration status are difficult to isolate. One posited cause for
high levels of anxiety in the adolescent immigrant population is role reversal between
parent and adolescent. Because adolescents more readily navigate the new cultural
landscape they become responsible for portions of their parents’ responsibility (Yeh et
al., 2014). With adolescents no longer adopting the same traditional values as their
parents, acculturative differences occurring as family’s transition towards 2\textsuperscript{nd} and 3\textsuperscript{rd}
generations may also contribute (Takeuchi et al., 2007b).

Inconsistencies in the literature make it difficult to determine the effect of
immigration status on mental health in the Asian American community. For example, it
was suggested that younger Asian American children had easier times learning English
and were able to use school to find appropriate social networks, thereby easing their
transition (Leu et al., 2008). However, other studies have shown younger immigrant
children presenting with higher anxiety (Patterson et al., 2013). Similar variations occur
when looking at Asian American adolescents, a diverse group when generational status is considered. Participants in a study designed to assess the mental health needs in 1.5 and 2\textsuperscript{nd} generation immigrants reported that their immigration status contributed heavily to their levels of anxiety (Lee et al., 2009). This parallels results from Takeuchi et al. (2007b) that 2\textsuperscript{nd} generation immigrants showed higher anxiety. When immigration age is considered Zhang et al. (2013) found that immigrants under the age of 18 were 2.43 times as likely to acquire an anxiety disorder; however, no significant difference was found among this age group in the Takeuchi et al. (2007b) study.

U.S.-born Asian Americans are more likely to use formal mental health resources when compared to their foreign-born counterparts (Le Meyer et al. 2009). First generation immigrants show the lowest level of MHRU. Second generation immigrants show a more interesting pattern of MHRU, which are similar to that of their immigrant parents but not as low. Third generation immigrants show patterns of utilization similar to those of the general U.S. population, where they are three times more likely to utilize mental health resources than their first generation counterparts (Abe-Kim et al. 2007). Immigration to the U.S. at a younger age was correlated with predicted increased MHRU, length of residency was not a significant predictor of MHRU (Lee & Matejkowsi 2014).

While the effect of immigration status on Asian American mental health is variable, the general trend of recent studies show that immigration at a younger age and higher generational status—as in being third generation compared to second generation—are both predictive of increased MHRU (Lee & Matejkowsi 2014; Abe-Kim 2007; Le Meyer et al. 2009).
Mental health literacy

Jorm et al. (1997a) coined the term mental health literacy (MHL) and defined it as, “knowledge and beliefs about mental disorders which aid their recognition, management or prevention.” Facets of MHL include but are not limited to: prevention strategies, recognition of symptoms, treatment strategies or options, and timing of when to seek out professional help (Jorm 2012).

A) Asian American adolescent mental health literacy

Recent research focusing on the effectiveness of adolescent mental health education has been shown to increase help seeking behavior and mental health service utilization. Mental disorders in adolescence are known to persist into later stages in life; therefore, implementation of early intervention and detection strategies is imperative (Beesdo et al., 2009). A study in Canada supplemented a high school curriculum with The Guide—a set of mental health education modules—utilizing pre-existing school-based personnel to yield a significant and sustained change in mental health knowledge and attitude for both teachers and students (Mcluckie et al., 2014). Similarly Hart et al. (2016) evaluated the effectiveness of teen Mental Health First Aid—a program designed to reduce mental health stigma and improve literacy—and found that students reported feeling more confident in providing mental health first aid, an increase in help seeking intentions, and a decrease in stigma (Hart et al., 2016).
Improvement of mental health education among adolescents is an important step in targeting anxiety in the specifically Asian American adolescent population. Mental health stigma that is typical in Asian American families leave adolescents unable to turn to their parents for support. For example, providers report that their Filipino adolescent patients refuse to seek help from their parents fearing their reactions (Javier et al., 2014). Traditional views also prevent Asian American adolescents from speaking with other adults since discussing mental health issues outside the family is taboo (Lee et al., 2009).

The role of peer-peer interactions then becomes increasingly important. Because adolescents are more likely to open up to their peers, thereby forming support groups. These interpersonal connections are protective against stressors, providing a sense of stability (Barber & Schluterman, 2008). Asian American adolescents, especially those who are immigrants, face similar acculturative stressors. The aforementioned studies, which sustainably reduced stigmatization and increased help-seeking behavior, are viable strategies in educating the Asian American adolescent population.

B) Teacher mental health literacy

Integration of mental health education into school curriculum pushes increased responsibility on teachers to play larger roles as informal mental health resources (Atkins et al., 2010). McLuckie et al. (2014) found that supplemental modules for high school teachers proved to be effective in improving their MHL. The benefit of increasing mental
health literacy in teachers is to improve their identification of mental health disorders and to play a larger collaborative role within a school environment.

C) Parents mental health literacy

Because parents are integral figures in their children’s development, their level of MHL is important to consider. Parental mental health literacy is higher for parents who are white, more educated, have older children, or have children that utilized more mental health services (Mendenhall & Fraunholtz, 2015). However, adults show low levels of mental health literacy regarding anxiety disorders (Furnham & Lousley, 2013). Providers often indicated that they perceived parent’s mental health literacy to be low and that parents relied too much on informal sources for information about their child’s mental health (Fraunholtz et al., 2015). As such, improving parental mental health literacy is a viable method for targeting anxiety in adolescents.

D) Clergy mental health literacy

Most studies highlight the low level of mental health literacy found in clergy members. A study of MHL in African American clergy found that church leaders lacked knowledge about anxiety and depression commonly found in their congregations (Stansbury & Schumacher, 2008). Similar findings were found in Korean American clergy, there was a discrepancy in respondent’s ability to identify disorders and their self-reported ability to identify disorders (Jang et al., 2016). In order for clergy to become
effective informal mental health resources for Asian American adolescents, they must first bolster their own MHL.

\textit{E) Provider mental health literacy}

Because general practitioners have difficulty identifying mental illnesses such as anxiety, improving their MHL will allow them to successfully refer them to mental health specialists and even allow them to provide better front-line mental health care. Programs have been put in place which target the development of mental health education general practitioners, where they are taught to better identify symptoms and promote cooperation between more providers of differing experience levels (Walton, 2008). Similarly, continuing medical education was able to improve general practitioners attitudes about mental health (McCall et al., 2004).

\textbf{Relationship Level}

\textbf{Parents}

Evidence indicates that the majority of parents find mental health is important enough to discuss during both acute and routine checkups (Foster et al. 2015). When asked to rank adolescent health topics, mental health topics such as stress and depression ranked in the top five. Foster et al. (2015) found that White parents are more likely to support the discussion of mental health topics compared to ethnic minority parents, such as African Americans. In contrast, it is common for Asian American parents to overlook
and conceal their children’s mental health needs from friends and family in order to avoid embarrassment (Yi & Tidwell, 2005). Extensive cultural beliefs attached to mental illness such as stigma, contamination of one’s family, and etiological interpretations involving supernatural causes or a weakness of an individual’s character perpetuate the negative view on mental health in the Asian American community (Yamawaki, 2015; Tung, 2011; Wynaden, 2005).

Conflict within the family is an important mediator in the prevalence of anxiety symptoms because it provides every day opportunities for youth to encounter stressful situations but also develop strategies for handling and coping with stress (Zeman et al., 2006). However, youth may exhibit increased emotional distress, including more intense and prolonged instances of anger, fear, and sadness in response to family stressors (Koss et al., 2016).

Asian American adolescents have stated that they struggle in communicated with their parents, particularly their fathers; furthermore, they have mentioned having difficulty in discussing problems with their parents (Rhee et al., 2003). This family conflict faced by Asian American adolescents is rooted in the disagreement between mainstream American values and their parents’ traditional views (Lee, Choe, Kim, & Ngo, 2000). According to Masten et al. (2004), these adolescents from high conflict families had difficulties coping with stress during their transition from adolescence into adulthood. Furthermore, Lee, Su, and Yoshida (2005) found an inverse relationship between family conflict and social support. This may explain the increased anxiety found
in adolescents who depend on their parents for social support when compared to more independent students in college (Juang & Cookston, 2012).

Because Asian American parents maintain high levels of mental health stigma; it is possible that they increase anxiety in adolescents by decreasing utilization of resources and perpetuating stigmatizing attitudes. Because adolescents are psychologically dependent on their parents during this critical time in their development, it is reasonable that parental views on mental health stigma influences the formation of the adolescents’ own views on mental health stigma (Moses, 2010). Negative attitudes found in older Asian Americans such as shame and embarrassment may perpetuate stigma in their children (Lin & Cheung, 1999).

Parents are cornerstones in their children’s development comprising a large portion of adolescent support systems. Because physicians continue to struggle in recognizing mental health symptoms in adolescents—particularly GAD and SAD—parents are critical determinants for early detection and care (Olariu et al., 2015; Vermani, 2011). Parents must play an important role in psychotherapeutic treatments as evidenced by the success of parent-based interventions in reducing adolescent anxiety, (Rapee, 2008). However, a study of parental views on adolescent mental health and resources found that parents with high stigma would often conceal their children’s condition and were unsure of how to approach initial counseling session (Coyne et al., 2015). In fact, Asian American parents may deny the existence of their child’s mental illness by rationalizing, “Oh that kid was born bad!” (Flores et al., 2015). In order for
parent-based therapies to be effective, it would be reasonable to believe that parents need to accept the existence of mental illnesses.

Consequently, Asian American parents could take increasingly larger supporting roles in their children’s mental health. Therefore, educating Asian American parents becomes the challenge in reducing Asian American adolescent anxiety. Parents are likely the primary decision makers for their adolescent children when seeking out mental health services. As such, a more positive outlook on mental health would be beneficial to increasing MHRU.

Teachers

Teachers act as important gatekeepers in the detection and referral of anxiety and related disorders in adolescents. The current structure of the school systems places teachers in close proximity with their high school students. Evidence has suggested that youth are more likely to utilize services when school-based personnel become aware of their anxiety (Colognori, 2011). However, this calls into question the ability of teachers to recognize anxiety symptoms in their classrooms. In fact, Soares (2014) found that further education is desired by public school teachers to help them understand the needs of their students. Teachers, along with other school faculty, are present in the high-stress environment that contains the stressors typical in adolescent life.

A teacher’s implicit bias based on racial differences found in classrooms can lead to unequal treatment of students. For example, Pigott & Cowen (2000) found that teacher-perceived appropriateness of a student’s behavior changed depending on the
student’s race. A study conducted by Yiu (2013) measured the perceived student-teacher relationship (STR) against race and found that teachers felt a stronger bond for certain minority groups. Specific beliefs held by the teachers impacted their views on particular minority groups, which explain why teachers contributed the greatest variance in measures of STR (Yiu, 2013). Findings from the previous study also supported previous assertions by Baker, Grant, and Morlock (2008) that STR is predictive of student adaptation in schools. In a longitudinal study of mental health changes in elementary aged children, STR was shown to be predictive of decreases in anxiety (Miller-Lewis, 2012).

Asian American students experience discrimination in a similar fashion to the African American and Latino students, however, they face excess societal pressure due to the model minority myth (Hwang & Goto, 2009; Wing, 2007). The model minority myth contributes to the identification issues. It suggests that higher performance leads to perceptions of no problems. Yiu (2013) found that Asian American students reported feeling the lowest level of STR.

In the case of Asian American adolescent students, this anxiety can be a combination of discretion built from traditional values and the different social roles teachers play in the United States versus other countries (Yeh, 2008). The predictive nature of STR shown in the Miller-Lewis study may not be as strong in an Asian American adolescent population possibly due to structural changes in the education system. For example, elementary classes are usually taught by a single teacher throughout the whole day, which allows more significant bonding to occur. In contrast, high school
classrooms involve the rotation of student groups between subjects. This variance in STR across different faculty may be beneficial in identifying anxiety in students: such as an overlooked student presenting with anxious behavior in one class being recognized by a different teacher in another class. Promoting a state of STR similar to elementary schools, while encouraging the vigilance of multiple teachers in high schools would be ideal in identifying anxiety among adolescent students.

Teachers have stated that they are interested in learning how to meet the needs of their students. Promotion of MHRU in adolescents can take the form of recognition and referral, partnership with school psychologists or counselors, and direct application of therapeutic techniques. Often, teachers collaborate with school based mental health professionals in order to create classroom level interventions or to target individual students. The teachers provide the necessary details, which the mental health specialist does not have access too. Furthermore, collaboration allows teachers to ensure that students are doing their best to adhere to plans set out by mental health specialists (Creed et. al., 2013).

Teachers have the ability to refer their students for further counseling through school-based mental health providers or to outpatient services. However, there are often more referrals with more overt, externalized behavioral symptoms--such as those of attention deficit hyperactivity disorder--rather than those with less overt, internalized symptoms--such as those of anxiety. This supports the idea that training teachers to recognize the nuanced presentations of anxiety symptoms and other disorders in adolescents so they can be appropriately referred (Pearcy, 1993).
Lastly, after being properly trained, teachers can act as resources, themselves, implementing therapeutic strategies under the supervision of a mental health specialist (Easton & Erchul, 2009; Lane et al., 2006). For instance, cognitive behavioral therapy (CBT) has been successfully adapted to treat anxiety in adolescents (Leigh 2016). However, there is no consensus among the literature about the significant effects of teacher-delivered CBT in the reduction in anxiety in adolescents (O’Leary-Barrett et al., 2013). Therefore, further research should be conducted to test the efficacy of teacher-delivered interventions on anxiety reduction.

Clergy

Caring for mental health, especially in the instance of illness, is not a formalized role for clergy (Leavy et al., 2007). Collaboration between clergy and mental health service providers has often been cited as a solution to provider shortage (Blalock & Dew, 2012; Pickard, 2012). However, variations in competencies to recognize mental health symptoms and counsel individuals has often been reported (Bledsoe et al., 2013). Therefore, clergy may be poorly equipped to handle the management of mental health issues. Despite this, clergy and other faith leaders are still influential in how patient congregants conceptualize mental health (Payne, 2009). Often, pastors are the first line responders to mental health crises (Openshaw & Harr, 2009).

Faith leaders are highly regarded authority figures in Asian American culture (Javier et al., 2014). This respect carries over to U.S. born Asian Americans who often turn towards religious advisers when seeking help (Dolly & Williams, 2013). Over 66%
of Asian Americans find religion as an important aspect of their life (Religion Landscape Study, 2014). As a result they are pivotal in the promotion of mental health resource utilization and anxiety detection.

A study conducted among Asian American clergy found that educated faith leaders were more likely to make referrals (Yamada, Lee & Kim, 2012). In addition to increasing the uptake of services, Asian American clergy have been used as educational resources for Asian American parents. An ethnographic study reveals that membership in Christian churches improved communication between Taiwanese American immigrant parents and their children in contrast to having a Confucian “cold” hierarchical style of parenting that is less communicative (Chen, 2006). Due to their role as prominent members of the Asian American community clergy are venues for mental health care in Asian American adolescents.

Clergy can also act as access points to mental health care or as resources themselves. Research has shown that individuals who self-reported as being religious who were subjected to religious therapy, such as reading verses and prayer, for their anxiety was actually effective in reducing their anxiety (Razali et al., 1998). If clergy members can be trained to frame prayer and religious text readings as appropriate psychotherapeutic techniques they may be promising mental health resources for the Asian American population.

Despite their great potential as a mental health resource, multiple surveys have shown that clergy have mixed feelings when asked about referring congregation members to professional services. Clergy have voiced their reservations about sending individuals
to providers, stating that they preferred to counsel members of their faith personally (Blalock & Dew, 2012). However, some clergy from several Christian faiths and Buddhism replied that it was necessary to refer people to mental health professionals when issues became too severe for them to handle (Openshaw & Harr, 2009). This supports the idea that clergy act as gatekeepers into mental health services (Lee et al., 2008).

In order for the clergy to play a more effective role in the promotion of MHRU among the Asian American adolescents the following things must be done. Firstly, they need to be able to identify symptoms but also recognize their limitations as informal mental health practitioners, unlike properly trained professionals such as licensed therapists and physicians. Secondly, they must network with local community health centers and primary care physicians that they can entrust with their congregants. For example clergy members view referral more positively when they are made with programs or providers that understand and respect their cultural and spiritual values (Mattox & Sullivan 2008).

Mental health practitioners

As previously distinguished, mental health practitioners can provide formal or informal mental health services. Those that provide formal mental health services are often licensed professional practitioners or specialists, while those providing informal services are faith healers, religious leaders, or shamans. Despite the pervasive nature of anxiety, physicians continue to struggle with identification and the execution of proper
treatments especially in adolescents (Comino et al., 2001). Studies have proposed reasons for this, such as time constraints and lack of adequate knowledge on the part of general practitioners (Tylee & Walters, 2007). The following section will review and discuss the role of both formal and informal mental health care providers in Asian American adolescent mental health.

*Formal Mental Health Providers*

A) Ethnic matching

According to the ethnic match hypothesis, patients paired with providers of the same ethnicity will develop more robust relationships because of shared ethnic identity, language, and cultural views (Gamst, 2001). Previous personal experience with traditional values enable ethnic minority therapists to sensitively explore concerns raised by their Asian American patients (Yamamoto, 1978). Studies have found that ethnic matching patients with providers increased visitation of mental health centers for Asian American patients (Gamst, 2001) and also decreased anxiety related symptoms (Douglass, 2014). However, a meta-analysis by Cabral & Smith (2011) showed that although Asian Americans perceived their ethnically matched providers positively, there was no significant positive change in mental health outcomes due to similarities in ethnicity. Although the literature shows mixed results for the effects of ethnic matching, it may show promise for Asian American adolescents because they are suggested to experience a decrease in anxiety when interacting with peers of the same ethnicity (Yeh
et al., 2014). It would be reasonable to expect a similar effect when expanded to their providers.

B) Cognitive matching

While ethnic match suffers from the inflexible nature ethnicity and race, cognitive matching with providers is more feasible because it can be learned. A cognitive match occurs when patient and providers share similar attitudes and beliefs (Zane et al., 2005). While ethnic match enhances the possibility of cognitive match, it does not ensure it (Maramba & Hall, 2002). Zane et al. (2005) found that aligning treatment expectations led to patients reporting a greater effect from the counseling sessions. When looking at coping orientation a significant decrease in the dysphoria that patients felt after counseling sessions was present (Zane et al. 2005). A cognitive incongruence between provider and patient impacts the premature termination of treatment in Asian Americans (Berger et al., 2014). Asian Americans with high levels of acculturation show improvement in mental health outcomes when using traditional Western based therapy, which could be attributed to their acceptance of new ideals (Abe-Kim et al., 2007). For less acculturated individuals, providers may be able to alter their treatment expectations in order to align with their patients. The advantage of cognitive match is the separation of similar views and ethnicity. This may be one possible avenue to increase the service utilization caused by shortages of ethnic providers.
C) Cultural competency

Cultural competency is another characteristic of providers, which is described as a set of problem-solving skills and acquired knowledge of an individual’s heritage applied towards effective treatment and diagnoses (Whaley & Arthur, 1996). Evidence suggests that cultural factors greatly impact the efficacy of psychotherapies among Asian Americans (Bhui & Morgan, 2007). Various models of culturally adapted therapy (CAT) outline the necessity to bridge the gap for the Asian Americans with mental health needs (Hwang, 2006; Leong & Lee 2006). Though few empirical studies have been conducted in an Asian Americans, Pan et al. (2011) found that CAT was efficacious in the reduction of catastrophic thinking and general fear—which are common anxiety symptoms—when used among Asian American undergraduate patients. This suggests that it takes a holistic sense of therapeutic techniques and even collaboration between formal and informal mental health resources to provide effective treatment for Asian Americans.

On the provider level, Brach & Fraser’s (2000) model of cultural competency highlights competency training and collaboration between providers, community health workers, and indigenous healers as avenues to reduce Asian American mental health disparities (Figure 2). In fact, programs like the South Cove Bridge Project are designed to train primary care practitioners and nurses in culturally competent practices in community health centers—which are suggested to be primary access points for Asian Americans to receive mental health care (Lin & Shinke, 2007; Yeung et al., 2004).
D) Pediatricians

Pediatricians are physicians that have specialized in the diagnosis and care in the population of children, adolescents and young adults (Committee on Pediatric Workforce, 2015). Although there are child psychiatrists that specialize in pediatric mental health care, there is a disparity between supply and demand. There are millions of adolescents with mental health needs but only 6,300 child psychiatrists in the United States (Kim, 2014). Primary care pediatricians ideally fill this gap because of the amount of time they spend with adolescents and their families (Dempster et al., 2012). As such, the relationship between pediatricians and their adolescent patients is important to consider in the identification and treatment of mental health issues.

Pediatricians along with child and adolescent psychiatrists agree that the responsibility of identification and referral of mental illnesses falls on the primary care pediatricians; however, they may not be best equipped for that role (Heneghan, 2008). In fact, pediatricians have stated that they realize they are a frontline resource but sometimes feel uncomfortable trying to provide mental health care (Pfefferle, 2007). As such, it is important to improve the capacity of pediatricians for treating mental health issues. One way to do this is to implement a preceptorship models where pediatricians consult with a specialist for diagnostic help (Kuehn, 2011). Other methods that have shown success is by using specific tools such as standardized protocols providing questions that pediatricians should ask patients, which have helped increase their identification and referral rate (Marie-Mitchell et al., 2016; Kuehn, 2011). Lastly, it would also
Informal mental health providers

A study by Choi & Kim (2010) found that more than 25% of Asian Americans utilized informal health resources for their mental health needs. In addition, Broad & Allison (2002) found that combinations of indigenous healers and professional care were accepted by native Hawaiians, though patients preferentially chose indigenous healers for chronic illnesses and visited providers for acute services. Due to a belief system which strongly supports the use of community and family as support systems, individuals may choose to seek help from an indigenous healer, thereby delaying professional medical care, which may be detrimental in severe cases of mental illness (Zhang, 1998). In the case of Asian Americans and Mental health, this poses a problem because Asian American adolescents may delay care by seeking out informal services or turning to family until the problem becomes too severe to handle (Garland et al. 2005). This is supported by data from Bhui & Morgan (2007) that Asian American adolescents tended to have more severe symptoms upon arriving to care.
New strategies are being developed that target ethnic minority adolescents. However, these mental health service are rendered useless if the targeted individuals cannot find their way to them (Cauce et al., 2002). Adolescents often spend upwards of eight hours in school making school-based programs integral to the early detection and treatment of mental illnesses in youth (Green, 2013). Existing resources such as guidance counselors and extra-curricular activities act as foundations for future mental health service opportunities (Herzig-Anderson, 2013). Moreover, school-based programs are
highly accessible, the location eliminates the necessity for transportation, and many programs do not depend on mental health specialists (Wu, 1999).

Studies have shown that school-based programs can be used for the delivery of anxiety interventions to ethnic minority adolescents. The Baltimore Child Anxiety Treatment Study in Schools was designed specifically to provide mental health treatment in school environments (Ginsburg, 2002; Ginsburg, 2012). With cognitive restructuring and psychoeducation a significant reduction in self-rated and clinician-rated anxiety was found. A related study Cool Kids implemented similar techniques and noted a decrease in self-reported anxiety and teacher-reported anxiety (Mifsud, 2005).

Skills for Academic and Social Success (SASS) is another program specifically targeting students with social anxiety. Distinct from the previously mentioned studies, SASS included social events and psychoeducational meetings with teachers (Fisher et al., 2004). Promotion of mental health has also been achieved with school-based therapies in the Asian American adolescent population. Chinese high school immigrant students that participated in cultural adjustment courses reported increased social connectedness with peers and teachers (Yeh, 2008). High levels of social connectedness have been linked to lower levels of anxiety (Lee & Robbins, 1998; Malaquias, 2015).

After the implementation of the Affordable Care Act, 5% of Asian American and Pacific Islanders remain under- or uninsured (Kaiser Family Foundation, 2008). In comparison with the Latino and African American population this number is quite low. However, this statistic is not representative of the entire Asian American population. Roughly 20% of Southeast Asian Americans are uninsured (Tran, 2012). School-based
programs can offer relatively inexpensive services to reduce Asian American adolescent anxiety.

For example, clinicians excluded cognitive behavioral therapy, instead implementing art therapy (Ginsburg, 2012). Despite the use of non-specific therapies reduction in adolescent anxiety was maintained. Although The Baltimore Child Anxiety Treatment Study in Schools and Cool Kids utilized professionals to disseminate information it may be possible to train school administration to continue after an adjustment period. This supports the idea that teachers and other school personnel could be trained to apply non-specific interventions in place of expensive mental health specialists (Herzig-Anderson, 2012).

Framing psychotherapy and psychoeducation as crucial for academic achievement may cause Asian American parents to look favorably on these programs (Ihara et al., 2014). Parental mental health stigma makes school-based programs ideal for Asian American adolescents. Programs such as SASS state “Academic Success” which could motivate parents to become involved and educated. It is widely known that newly immigrated students face discrimination. SASS and cultural adjustment programs emphasize the social components in adolescent interactions. Providing socialization training in schools equips Asian American adolescent students with necessary tools for navigating new societal communication

Faith-based organizations
Faith-based organizations (FBOs) are founded on the principles of faith and religion (Ebaugh et al., 2003). They consist of varying agencies such as: Religious congregations, programs sponsored by congregations, and non-profit faith based agencies (Villatoro et al., 2016). Although it is not their primary purpose, FBOs have the capacity to deliver mental health related educational and interventional services.

FBOs have widespread networks that can link with formalized healthcare (Villatoro et al., 2016). In a preliminary study of post-disaster mental health preparedness, FBOs linked with local health departments in order to train civilians to assist with psychological stress (McCabe et al., 2014). Marked improvement after the mental health first aid workshops demonstrate the ability for FBOs to link local health departments with their communities (Mccabe et al., 2014). A study using faith-based education program as an intervention found that it was effective in improving many mental health outcomes, which included anxiety as assessed by a self-report questionnaire (Cronje et al., 2015). Educational programs though FBOs show similar outcomes in the Asian American population. Elderly Chinese Americans congregants regarded professional mental health services in a more positive light after viewing educational programming (Teng & Friedman, 2009).

A comparable if not stronger outcome could be possible in an Asian American adolescent population. Due to acculturation differences, adolescents may be more receptive to the educational programming than their older counterparts. A review of health programs implemented through FBOs was conducted by (Dehaven et al., 2004). While the majority of studies lacked necessary data for definitive conclusions, Dehaven
at al. (2004) found that FBO health programs significantly influenced the knowledge of disease and improved screening behavior. The previous studies are successful proofs of concept for FBOs as possible routes to improve mental health literacy and therefore utilization in Asian American adolescents.

Beyond their educational merits, FBOs show promise in the reduction of anxiety related symptoms. A prayer related intervention, Steps to Freedom, consisted of lengthy counseling sessions with lay clergy (Hurst et al., 2008). Self-reported levels of anxiety and depression were significantly reduced even at the 4 month post-intervention period (Hurst et al., 2008). The use of prayer related interventions have maintained reduced levels of anxiety up to 12 months (Boelens et al., 2012). A pilot study found that a nondenominational spiritual based intervention decreased generalized anxiety and somatization of symptoms (Koszycki et al., 2013). Improvement is seen in the majority of studies; however, they are in the preliminary or pilot stages. Nevertheless, faith based interventions are a valuable asset for treating anxiety.

Very little information is available on the efficacy of faith based interventions in the Asian American adolescent population. But they show potential as possible alternative resources, as more than 25% of Asian Americans reported attending at least one religious service a week (Religion Landscape Study, 2014). Because spiritual based interventions improve both anxiety and symptom somatization the study conducted by Koszyckik et al. (2013) is the most favorable for implementation in Asian Americans who are high risk for both (Huang et al., 2012).
Stigma

Mental health stigma can be defined as the set of negative attitudes towards oneself or others with a psychological disorder (Corrigan, 2004). These attitudes consist of but are not limited to labeling, stereotype endorsement, prejudice, and discrimination that lead to disadvantages for members of the outgroup (Link & Phelan, 2004). The concept of stigma is a broad and heavily researched topic affecting a variety of communities worldwide.

Increased emphasis has been placed on the need to understand the sources and mechanisms surrounding stigma. Despite these efforts, mental health stigma remains one of the most steadfast barriers to utilization of mental health resources and treatment (Conner et al., 2009). As it relates to the mental health services, stigma reduces both utilization and increases rates of premature treatment termination (Corrigan, 2004). Studies of individuals with needs for mental health treatment have found that up to 24% felt afraid of what others would think of them and this was listed as a reason for not seeking care (Kessler et al., 2001).

Perpetrators of stigma can include many of the previously mentioned connections, such as family members, mental health providers, and clergy. Parents play a crucial role in the formation of their children’s attitudes towards mental health. One study conducted by Jorm & Wright (2008) found an association between the parental attitudes towards mental health and their children’s attitude, where it is proposed that negative attitudes are passed along to the child. As integral components of adolescent social support systems, parents are reasonable targets for stigma reduction therapy. A recent study by Stathi,
Tsantila, & Crisp (2012) found reduction in mental health stigma when healthy individuals imagined contact with affected individuals. Imagined scenarios simulating interactions with anxious adolescents may prepare Asian American parents to support their children. Secondly, mental health providers are also capable of perpetrating stigma against their patients (Kennedy et al., 2014). Even mental health specialists are not immune to stigmatization of their mentally ill patients (Lauber et al., 2006). More positive perceptions of mental health care providers can be achieved through improvements in education (Packer et al., 2006).

Lastly, religious figures, such as the clergy, can often play a role in stigmatization of mental health. For example, some leaders of the Pentecostal church viewed mental illness as signs of sinfulness (Kelleher & Leavey, 2004). Meanwhile, when interviewed, some clergy did not make any differentiation between types of mental illnesses, clumping psychotic illnesses in one corner and anxiety and depression in another (Leavey et al., 2007). Clergy can help improve stigmatizing attitudes in their congregations by encouraging and teaching tolerance and support for those with mental illness (Wesselmann & Graziano, 2010).

High levels of stigma are associated with an unwillingness to seek out psychological treatment leading to underutilization of resources (Sirey et al., 2001). Ethnic minorities such as African and Asian minorities are at the highest risk for underutilization of mental health resources (U.S. Department of Health and Human Services, 2001a). As such, stigma is a very important barrier to MHRU among Asian American adolescents.
Table 1. Summary of Socioecological Determinants in MHRU in anxious Asian American Adolescents

<table>
<thead>
<tr>
<th>Socioecological Level</th>
<th>Determinant</th>
<th>Effect on MHRU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Gender and Gender Roles</td>
<td>No specific research in the target population was available. In Asian American adults women had higher MHRU than men.</td>
</tr>
<tr>
<td>Individual</td>
<td>Acculturation</td>
<td>The effects of acculturation have been approximated through the proxy variables of Immigration Status and Language Proficiency.</td>
</tr>
<tr>
<td>Individual</td>
<td>Immigration Status</td>
<td>Higher generational standing was indicative of increased levels of MHRU.</td>
</tr>
<tr>
<td>Individual</td>
<td>Language Proficiency</td>
<td>Limited English Proficiency would decrease MHRU.</td>
</tr>
<tr>
<td>Individual</td>
<td>Mental Health Literacy</td>
<td>Increased MHL at the relationship and individual levels can increase MHRU by Asian American Adolescents.</td>
</tr>
<tr>
<td>Relationship</td>
<td>Parent</td>
<td>Parental mental health attitudes contribute greatly to their children’s attitude. A more positive view of mental health could lead to increased adolescent MHRU.</td>
</tr>
<tr>
<td>Relationship</td>
<td>Teacher</td>
<td>Teachers can increase MHRU through implementation of mental health curriculum in schools, referral of students, or as an informal mental health resource.</td>
</tr>
<tr>
<td>Relationship</td>
<td>Clergy</td>
<td>Perceived as a non-stigmatizing informal mental health resource, clergy can increase MHRU in adolescents through referral or dissemination of mental health education.</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Relationship</td>
<td>Providers</td>
<td>Formal mental health care providers can increase MHRU through the application of culturally adapted techniques and cultural competence. Informal mental health care providers act as non-stigmatizing frontline mental health resources.</td>
</tr>
<tr>
<td>Community</td>
<td>School Based Organizations</td>
<td>SBOs provide a venue for both informal mental health care and education.</td>
</tr>
<tr>
<td>Community</td>
<td>Faith Based Organizations</td>
<td>FBOs provide a venue for both informal mental health care and education.</td>
</tr>
<tr>
<td>Community</td>
<td>Stigma</td>
<td>Increased levels of stigma resulted in decrease MHRU.</td>
</tr>
</tbody>
</table>
THEORETICAL MODELS

A variety of models have been used to describe an individual’s care seeking behavior. In order to propose a separate model, I reviewed two models which have demonstrated success in displaying MHRU in Asian Americans are the Health Belief Model and the Network Episode Model.

Health Belief Model

The Health Belief Model (HBM) postulates that an individual’s health related behaviors are affected by the threat of the illness and their expectations of treatment (Rosenstock, 1966). The tenets of HBM, in Figure 3, are based on the perceived: susceptibility, severity of consequences, benefits of treatment, barriers towards treatment, and general health motivations (Rosenstock, 1988). HBM is widely accepted in its use towards physical illnesses but research has just begun to explore its application towards mental health (Henshaw & Freedman-Dao, 2009). While the HBM has been used to describe resource underutilization in ethnic minority communities very few studies have investigated the relevance of HBM in adolescent mental health (Smith, 2009; O’connor et al., 2014).

Attempts to apply the HBM in the Asian American population have been successful. In a population of Asian American adolescents and young adults increased help seeking intentions were positively associated with high perceived benefit regardless of high perceived barriers (O’connor et al., 2014). This is consisted with the notion that
aligned treatment expectations improved MHR utilization (Zane & Sue, 2009). Additionally, both O’connor et al., (2014) and Kim & Zane (2015) found that higher perceived susceptibility did not lead to increased help seeking intentions. This fits the current understanding of cultural factors influencing MHRU in the Asian American adolescents.

The HBM uses both benefits and barriers which clearly displays the various interactions between determinants (Henshaw & Freedman-Dao, 2009). This allows researchers and clinicians to aim for specific negative attitudes that may deter MHRU (Henshaw & Freedman-Dao, 2009). The HBM also has a number of weaknesses when applied from a mental health perspective. The original model does not consider emotions such as shame or embarrassment as a determinant of health behavior (Smith, 2009). Because shame avoidance and loss of face are traditional Asian American values the original model is insufficient. Further, the model focuses on individual level determinants and disregards the roles of social networks. Because adolescents are heavily shaped by socialization the current HBM must be altered in order to account for these elements (Henshaw & Freedman-Dao, 2009). Finally, more research is necessary to determine the relationship between predicted intention using the HBM and realized action (Kim & Zane, 2015).
Network Episode Model

The Network Episode Model (NEM) views health as a phenomenon given meaning through interactions with members of an individual's social network (Pescosolido, 1992). It was created in response to numerous individual oriented models such as the health belief model (Rosenstock, 1966). In the original NEM, health and illness related behaviors make up an individual's illness career, which is the sequence of events towards the rectification of an illness (Figure 2), in turn this chronologically affected by social processes (Pescosolido, 2011).

Since its conception, the NEM has undergone a series of revisions making it suitable for use in a variety of populations. For example, Costello et al. (1998) modified
the NEM to use in children, the key tenets still revolving around key adults influencing mental health decision making. Additionally, because NEM acknowledges the involvement of other adults such as teachers it can incorporate elements left out by the HBM (Boydell et al., 2013).

A study conducted by Perry & Pescosolido (2013) found that specific portions of the networks could be activated depending on an individual's situational need. Boydell et al. (2013) used a revised NEM in ultra high risk adolescents and found that teachers were often approached by the troubled students. Because adolescents spend a majority of their time in school, teachers become alternative adult support systems reinforcing the notion of selective activation. Additionally, the NEM accounts for both positive and negative consequences of social interactions on an individual's illness career (Perry & Pescosolido, 2013). This corresponds with the relationship between teachers and Asian American students (Yiu, 2013). Ultimately, the NEM corresponds with many of the observations involving Asian American adolescents and their relationship with adults in the community.

However, by focusing on the relationship level interactions which govern mental health making decisions, the active roles adolescents play in their own mental health wellness (e.g. conceptualization and help seeking) are lost (Boydell et al., 2013). In order to capture the independent actions of adolescents the existing NEM needs to be adapted.
The purpose of this paper is to analyze the socioecological determinants pertinent to mental health utilization and anxiety in Asian American adolescents. Additionally, existing public health models and their applicability to the population of interest were evaluated in order to provide contextual evidence showing the need for an improved model. While both the HBM and NEM have productively been applied, they falter due to discrete focus on the individual and relationship levels respectively.

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has a number of weaknesses when applied from a mental health perspective. The original model does not consider emotions such as shame or embarrassment as a determinant of health behavior (Smith, 2009). Because shame avoidance and loss of face are traditional Asian American values the original model is insufficient. Further, the model focuses on individual level determinants and disregards the roles of social networks. Because adolescents are heavily shaped by socialization the current HBM must be altered in order to account for these elements (Henshaw & Freedman-Dao, 2009).

The NEM focuses heavily on the interactions, between individuals and relationship level agents, which govern mental health utilization decisions. However, adolescents are act individuals with the ability to make their own decisions. For example, increased mental health literacy empowers adolescents to advocate the necessity of MHRU with their parents and providers (Hart et al., 2016). Because the active roles adolescents play in their own mental health wellness (e.g. conceptualiztion and help seeking) are lost (Boydell et al., 2013) the NEM is unable to capture the independent adolescent actions.

Similarly to the NEM and HBM the proposed SEM accounts for the consequences of interactions between the individual and relationship levels. It improves upon the HBM by acknowledging the influence of the emotional components of shame and embarrassment. Additionally, unlike the NEM, the proposed SEM recognizes the individual’s actions for their own mental health wellness. Finally, the proposed SEM accounts for community level agents which neither the HBM or NEM were able to do.
Figure 5 displays the proposed socioecological model which incorporates ideas from both models and allows for interactions across multiple levels. Based on the determinant analysis a visual representation conceptualizing the relationship between each of determinants was created.

![Figure 5. Adapted Socioecological model of anxious Asian American adolescent Mental Health Resource Utilization](image)

In addition to the separate effects of each of these socio-ecological levels, they also interact with each other to create nuanced effects on Asian American adolescents’ anxiety. The perceptions of anxiety among these adolescents, as well as their attitudes towards MHPU are influenced by their relationships with influential figures in their lives, such as those described in the relationship level of the model. However, these effects are
mediated by the adolescents’ individual characteristics. For example, parents can pass down their stigmatizing attitudes towards mental health onto their children but this effect is different depending on their immigration status. Likewise, providers’ relationships with the adolescents are affected by their language proficiency because identification of mental illnesses is contingent upon a patient’s ability to communicate their psychological symptoms.

Community level determinants have broad-reaching effects on the downstream determinants in the model. For instance, the environment of school-based organizations and faith-based organizations are important in educating teachers and clergy, respectively, on mental health topics. Additionally, these organizations also affect the individual directly by acting as non-stigmatizing sanctuaries for them to access informal mental health resources.
CONCLUSION

This proposed model conceptualizes the relationships between the individual, network, and community level determinants. The model provides a roadmap which outlines the relationships that guide Asian American adolescent MHRU. For students and new clinicians, this model highlights the importance of continued education in cultural competency. Also, it shows the dire need for improved MHL, even among non-specialist professionals. Existing clinicians can utilize this model as a guide that addresses crucial individual patient characteristics and references important stakeholders who may be integral for a collaborative approach. Similarly, parents can view this model as a guide to the key members involved in their children’s mental health. Additionally, it offers insight into the organizational resources such as SBOs and FBOs which may answer mental health questions.

While the model identifies salient issues within the context of MHRU in Asian American adolescents, it only acts as a starting point. The model alone is insufficient to address the recognized issues and it would benefit from additional relevant research which would allow for greater application to the population of interest. For example, further exploration between components of each level, such as the role clergy take as primary informal providers. For researchers, this model acts as a reference point for new research.

Despite the breadth of data that was available concerning the state of Asian American mental health as a whole, a void is present when examining MHRU in anxious Asian American adolescents. Moreover, similar to other studies of Asian Americans, this
paper recognizes the inherent differences between each ethnicity. While the
aforementioned proposed model is able to frame socioecological interaction influencing
MHRU in Asian American adolescents as a whole, further empirical research specific for
each sub group is required.
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Education

Boston University School of Medicine, Boston September 2014 – 2016 (Anticipated)
Medical Science, M.S.

University of Michigan, Ann Arbor September 2009 – May 2014
Neuroscience, B.S.
Asian Language and Culture, Minor

Research Experience

Dr. William Dauer, University of Michigan, Research Assistant September 2012 – June 2014
• Explore the biochemical and genetic etiology of Dystonia
• Utilize cell culture and mouse models to help clarify disease mechanisms
• Carry out data collection using various neurobiological techniques

Dr. Junro Yamashita, University of Michigan, Research Assistant September 2010 - April 2011
• Designed experiments to elucidate pathways of bone calcium deposition
• Cultured osteoblasts and performed biological assays measuring in vitro calcium levels
• Analyzed data leading to statistical evidence coinciding with current hypothesis

Dr. Kenneth Easton, Orthopedic Associates of Michigan, Research Assistant June 2009 - August 2009
• Evaluated the efficacy of current orthopedic surgical techniques
• Logged and organized datasets for over 100 patients
• Analyzed information yielding evidence for patient recovery time and overall surgical outcome

Publications


Community Service

Massachusetts General Hospital, Emergency Radiology Volunteer October 2015 – July 2016
• Work with volunteer team to escort patients from various emergency department wings to the radiology ward
• Provide patients with water, blankets, and comfort while waiting for exams
BUSM-STEP, Mentoring Curriculum Committee Member September 2015 – May 2016
• Designed workshops to facilitate bonding between medical and graduate student mentors and high school students
• Provided guidance via one-on-one mentorship to help high school students execute their goals
• Planned presentations on life skills topics such as interview skills or goal setting to help prepare high school students for college

Work Experience
Boston University School of Medicine September 2015 – May 2016
• Tutored both first year medical students and graduate students in histology, biochemistry, and physiology

Feather Education September 2015 – August 2016
• Prepared English literature curriculum for English Second Language Chinese high school students to improve public classroom readiness
• Edited essays and provided feedback as SAT preparatory tutor for the new English and Writing portions of the exam

Leadership
Filipino American Student Association University of Michigan September 2010 – May 2014
• Secretary (2010-2011)
• Lead Cultural Committees for Philippine Culture Nights and the 25th Anniversary Banquet
• Choreographed and performed traditional Filipino and modern hip-hop dance

Wolverine Tutors University of Michigan January 2013 – May 2013
• Use technology to reach out to at-risk elementary and high schools
• Work with children nationwide providing educational assistance and mentoring

Awards
• Foreign Language and Area Studies - Fellowship Recipient 2011-2012
• Center for Southeast Asian Studies Undergraduate - Language Excellence Award 2012-2013
• University of Michigan Department of Asian Language and Culture - Outstanding Achievement in Filipino Language 2012-2013