

**Breaking the Silence: Mental Health and Treatment Utilization  
Among Asian Pacific Islander Desi American College and University Students**

by

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## **Dedication**

This dissertation is dedicated to Rachel – the most extraordinary young APIDA I have ever known.

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## **Abstract**

Asian Pacific Islander Desi American (APIDA) students face unique mental health challenges and treatment disparities, with the extant literature demonstrating that APIDA populations have disproportionately high levels of untreated mental health symptoms. There is currently a gap in the literature of studies on APIDA college and university student mental health and help-seeking that use a national sample, investigate APIDA subpopulations, and are methodologically rigorous. There's also very little quantitative research that explicitly applies both individual and structural-level considerations to mental health outcomes and treatment utilization across APIDA populations and limited work that utilizes complementary qualitative inference to interpret quantitative analyses.

In light of this, my dissertation uses mixed methods to understand and assess influences of mental health and characteristics of mental health service use among APIDA college and university students. I will combine a unique set of data sources: (1) three most recent academic years (2017 -2019) of a nationwide annual web-based survey examining mental health and service utilization among undergraduate and graduate students (2) institutional data on APIDA student support systems, mental health resources, counseling centers, and psychoeducational outreach efforts from a diverse set of colleges and universities (3) in-depth focus group discussions with APIDA students.

In Chapter 1, I introduce the APIDA panethnicity and highlight the significance of this body of work in the current landscape of mental health research and practice. In Chapter 2, I examine individual and structural factors that influence the mental health wellbeing of APIDA

undergraduate and graduate students. Through the guidance of the Social-ecological theory and in the context of Intersectionality, I identified significant intragroup variation in both the mental health outcomes and correlates of mental health across APIDA subpopulations. I found that females, non-heterosexuals, non-international students, and non-US born students whom arrived in the US between ages 12-17 reported higher levels of mental health distress. Notably, structural, organizational and interpersonal level factors have the strongest association with any mental health problems among all APIDA students. In Chapter 3, I used the Andersen's Behavioral Model of Health Service Use to inform my multilevel analyses on the association between predisposing, enabling, and need factors on mental health treatment utilization among overall APIDA students and international APIDA students. In general, perceived need, subjective knowledge of campus resources, belief in treatment efficacy and APIDA student website links to mental health resources are associated with highest odds of treatment utilization, while personal stigma and greater than 16 hours spent on schoolwork are associated with particularly low odds of treatment utilization. Chapter 4 describes the design and findings of my focus group discussions, and elucidates the key influences on mental health (sense of belonging, microaggressions, social relationships, campus climate) and the key barriers (knowledge of symptoms and resources, invalidation of mental health problems, faculty/staff as inadequate allies) and facilitators (peer support, therapist cultural congruency) driving treatment use among APIDA students. Chapter 5 then focuses on an integrated discussion and interpretation of the analyses from Chapters 2 through 4, as well as practical implications and future directions in research related to APIDA student mental health and service utilization on college and university campuses.

Taken together, my dissertation will substantially advance our understanding on ways universities can develop more effective and targeted prevention, outreach, and service delivery programs to support often overlooked students struggling with their mental health.

## Chapter 1 Introduction

The improvement of adolescent and young adult mental health is of vital public health importance, as roughly half of all lifetime mental disorders have first onset by mid-adolescence and nearly three-quarters by mid-adulthood (Kessler et al., 2005). In the past decade, mental health symptoms have nearly doubled in college student populations (Duffy, Twenge, & Joiner, 2019; Eisenberg, 2019). Given these trends, college and university campuses provide an ideal setting to identify, prevent, and treat mental illness during an epidemiologically vulnerable and psychosocially significant life period. Campuses also offer an important avenue for reaching young people of color and diverse student populations that face additional mental health challenges and are more likely to have an unmet need for mental health services compared to their White peers (Lipson, Kern, Eisenberg, & Breland-Noble, 2018). In particular, Asian Pacific Islander Desi American (APIDA) students have faced unique mental health and treatment disparities, with previous research demonstrating that APIDA youth report higher levels of suicidal ideation and suicidal attempt, but significantly lower levels in use of mental health help-seeking avenues (Goodwill & Zhou, 2020; Lipson et al., 2018; Liu, Stevens, Wong, Yasui, & Chen, 2019).

### *APIDA Panethnicity*

Throughout this dissertation, I use the umbrella term Asian Pacific Islander Desi American (APIDA), which refers to individuals whose origins are rooted in East, South, and Southeast Asian countries as well as the Pacific Islanders. Other pan-ethnic classifications

include Asian American (AA), Asian American and Pacific Islander (AAPI), Asian American, Native Hawaiian, and Pacific Islander (AANHPI) have all been used in various capacities in scholarship and demarcate distinctive Asian histories (Espiritu, 1992; Srinivasan, O’Fallon, & Dearry, 2003; Wyatt, Ung, Park, Kwon, & Trinh-Shevrin, 2015). I utilize the APIDA grouping, which has become increasingly endorsed in higher education, to intentionally acknowledge Desi students as part of the community (Chan, 2017). Desi is a within-group term often used among South Asians in the United States to refer to populations from the Indian subcontinent, and are frequently included in or associated with the Asian American community in research on college campuses (Chan, 2017; Frey & Roysircar, 2006; Mallapragada, 2014).

The proportion of APIDA students on campuses nationwide is growing steadily and as late as 2014, represented approximately 10% of all college students, with some campuses ranging to over 40% (De Brey et al., 2018). It is important to highlight that experiences within APIDA are distinct despite the interconnectedness of race, history, and culture shared by many identity categories within this group. Over 48 ethnic groups comprise the APIDA population, with diverse migration patterns and settlement experiences that have influenced the large within-group variation in educational achievement and socioeconomic attainment (Chan, 2017; Hoeffel, Rastogi, Kim, & Shahid, 2012; E. Lee, 2015). Colonialism in Native Hawaiian, Pacific Islander, Korean, Indian and Filipinx histories, for example, have often subordinated these groups’ cultural and ethnic identities, a repercussion that many within these communities are still working to dismantle (Buena Vista, Jayakumar, & Misa-Escalante, 2009; Chan, 2017; Dave et al., 2000; Silva, 2004).

In addition to the impact of colonialism, immigration and migration patterns are also central to the APIDA experience. Policies marked by anti-Asian xenophobia, including the

Chinese Exclusion Act and Executive Order 9066 internment of Japanese Americans, as well as immigration quotas, visa preferences, and refugee sponsorships have dictated when, from where, and for what reasons APIDA immigrants could migrate to the United States (Lee, 2015).

Moreover, despite national discourse of the undocumented student experience framed around the Latinx narrative, people from Asian countries actually make up the fastest-growing population of undocumented immigrants in the United States since 2010 (Pew Research Center, 2019). These socio-political dynamics uniquely shaped economic and social forces surrounding many APIDA communities, and consequently exert influence on the understanding of race, class, and belonging among APIDA adolescents and young adults. The campus climate regarding religious inclusion and racial profiling is also of salience for APIDA communities, particularly Desi Asian students. Islamophobic attitudes are now entrenched within the discourse of terrorism and national security. This hostility toward the Muslim population has contributed to the conflation of a Muslim religious identity with a South Asian ethnic identity, with adverse implications on Desi communities' perceptions of safety and overall wellbeing (Chan, 2017; Ghaffar-Kucher, 2012; Iyer, 2015).

While different APIDA communities hold distinct legacies in the United States, similarities in how American society evaluate APIDA ethnic groups with regard to immigration, citizenship, and civil rights have also led to shared experiences in discrimination and oppression. Given these overlapping realities, I discuss APIDA as both a singular racial identity and a collective of diverse ethnic identities, a phenomenon scholars have termed “panethnicity” (Espiritu, 1992). Aggregating this very diverse population into one group, however, can still be problematic in research. This body of work is my first take on looking at various APIDA subpopulations, and the confines of my data did not fully allow me to disaggregate this category



into distinct ethnicities. Given the dearth of literature using national samples of APIDA college and universities students, however, this body of work is still salient in elucidating the unique mental health and help-seeking experiences across this population.

### *Misconceptions of model minority myth*

The model minority myth is relevant to many aspects of the mental health status and care utilization among APIDA. The term was first used to describe APIDA during the civil rights era, in an effort by White academics and policymakers to differentiate APIDA from other ethnic minority groups (Shim, 1998). APIDA were stereotyped as thriving model citizens, and deemed to have overcome racism through Confucian values, work ethic, and centrality of family. This perception, however, conveniently overlooked the 1965 Immigration Act at the time, which selectively recruited and rewarded highly educated APIDA with visas, immigration status, and pathways to citizenship (Park, 2008; Wang, 2008).

The model minority classification is problematic for a number of reasons, with pernicious effects on both APIDA populations and other people of color. From a broader social and political context, it's used historically and presently as a tool designed to erase racism, denounce the existence of white privilege, and protect an institutionalized racial hierarchy. The model minority status is positioned as a critical lever of white supremacy, which draws its power from and validates anti-black dehumanization and oppression (Dennis, 2018; Dixon & Rosenbaum, 2004). This stereotype preserves that meritocracy is rewarded, discounting victims of systemic racism who are blamed for their own life conditions. It is also used as a wedge to divide groups by constructing Black Americans as a “problem minority”, while keeping Whiteness on top (Poon et al., 2016).

While the premise of the model minority myth is based on proximity to whiteness by conforming to Eurocentric notions of success, there is still a gatekeeping of ethnicity which maintains the exclusivity of the White category. Concurrent with the model minority stereotype is the view of APIDA as perpetual foreigners, who are permanent outsiders to the norms of North American culture and the dominant inner circle (Dennis, 2018). The extant literature on microaggressions demonstrate that racism towards APIDA is often fueled by the perpetual foreigner status of APIDA populations which dichotomizes “Asian” and “American” into mutually exclusive categories due to strict boundary policing of white hegemony (Dennis, 2018; Kim & Lee, 2014; Sue, Bucceri, Lin, Nadal, & Torino, 2009).

The model minority stereotype also creates a monolithic narrative that hard work automatically equates to success, negating diasporic experiences, as well as past and present structural barriers that interrupt success for different marginalized groups within APIDA populations (Kawai, 2005). This myth not only maintains White supremacy and the oppression of other people of color, but it also serves to position APIDA as without social and psychological issues, painting a deceptive picture of APIDA mental and physical health. In addition to the stress-producing consequences of minority status, racism, cultural conflicts, immigrant status, and refugee experiences, APIDA students who internalize the model minority stereotype may face additional stressors that lead to unrealistic expectations, as well as pressures to succeed and conform to high educational, occupational, and economic expectations. Attempts or failure to meet these expectations can often lead to feelings of inadequacy and self-doubt, and psychological distress (Lee et al., 2009).

### *Review of literature: Mental Health Status and Mental Health Care Utilization*

Prior research conveys mixed evidence on the prevalence of mental health symptoms among APIDA in comparison to other race and ethnicities. In many studies, the overall prevalence rate of mental illness is lower among APIDA compared to other racial groups across almost all measures. The National Survey for Drug use and Health (2012) found, for example, that APIDA reported a 15.8% lifetime any psychiatric disorder rate compared to 20.6% in non-Hispanic white Americans (Substance Abuse and Mental Health Services Administration, 2012). The National Latino and Asian American Study (NLAAS), however, revealed a lifetime prevalence of 17.3% and 12-month prevalence of 9.19% for any mental (Takeuchi et al., 2007). These rates were higher than White, Black, and Latinx populations in the National Comorbidity Study (Breslau, Kendler, Su, Gaxiola-Aguilar, & Kessler, 2005).

When breaking down the APIDA category by ethnic group, a more complicated picture is revealed. A systematic review of the literature on depression among APIDA found that estimates of depression among Korean and Filipino Americans were similar but were roughly twice as high as Chinese Americans. Cambodian Americans showed the highest prevalence, as over half of the sample reported depressive symptoms (Kim, Park, Storr, Tran, & Juon, 2015). Nativity and gender should also be considered when discussion of the mental health profile of APIDA. For example, on study found that lifetime prevalence of any mood disorder is 13.4% among U.S. born APIDA, compared to 8.3% among immigrants. Gender differences are also present: U.S. born women reported a lifetime prevalence of mood disorders of 17.8%, compared to U.S. born men, at 9% (Hong, Tamaki, Walton, & Sabin, 2014).

The literature conveys that the study of APIDA psychopathology is subject to different results depending on the assessment methodology administered. Consequently, researchers that

study this topic encounter many challenges in ascertaining the true prevalence of mental disorders among APIDA. While this validity issue partially arises from the heterogeneity of APIDA populations, as described previously, it is also likely associated with cultural biases in reporting style and cultural idioms of distress (Chu & Sue, 2011). Some research on cultural variations in response on Likert scales found that APIDA tend to respond with more central tendency bias, with an inclination to choose neutral or moderate, rather than extreme responses options (Chen, Lee, & Stevenson, 1995; Hamamura, Heine, & Paulhus, 2008). Several studies also show that APIDA are more likely to experience mental health symptoms in somatic rather than psychological terms (Leong & Lau, 2001; Mak & Zane, 2004; Ryder et al., 2008; Tseng et al., 1990). Chinese Americans, for example, are more likely to exhibit somatic symptoms of depression and mood disorders compared to White and Black Americans (Chang, 1985; Hsu & Folstein, 1997). Consequently, mental health professionals and measures that rely solely on standard psychiatric diagnoses may not identify somatic expressions of distress.

While some studies have shown the overall population of APIDA has lower rates of mental illness compared to other racial groups across most measures, suicide is an exception, especially among college age students and adolescents. The 2009 Youth Risk Behavior Survey Data revealed that 17.1% of APIDA males and 21.1% of APIDA females in grades 9-12 have seriously considered suicide, which is higher than rate than non-Hispanic whites for both males and females (Stephens et al., 2009). In addition to this, the rate of attempted suicide is estimated to be 50-90% higher than for non-Hispanic White males and females. Even more troubling is that the rate of completed suicides, which has increased by about 96 % from 2000 to 2009, according to a 2012 National Center for Health statistical report (Curtin, Warner, & Hedegaard, 2016). APIDA females have the highest suicide rate among all racial groups, underscored by suicide

being the second leading cause of death for APIDA women ages 15-24 (Hijioka & Wong, 2012). Despite these alarming statistics, there has been a persistent downward trend of mental health care utilization among APIDA youth and adults.

The literature has consistently shown that APIDA are less likely to seek help for mental health problems than other racial demographic groups, even after controlling for prevalence of disorders. This lower use of mental health services applies to APIDA regardless of geographic location, age, gender, education, or APIDA subgroup (Abe-Kim et al., 2007; Department of Health and Human Services, 2001; Kearney, Draper, & Barón, 2005; Matsuoka, Breaux, & Ryujin, 1997; Zhang, Snowden, & Sue, 1998). One 2007 paper using data from the National Latino and Asian American Study revealed that only 8.6% of APIDA compared with 17.9% of the general population sought assistance from a mental health or health care professional (Abe-Kim et al., 2007). Among APIDA with a probable DSM-IV diagnosis, only 28% utilized any mental health services, in contrast to 54% of the general population (Wang et al., 2005). Other studies have suggested that APIDA adults and youth are between two and five times less likely to seek mental health services than compared with their non-Hispanic White counterparts (Eisenberg, Golberstein, & Gollust, 2007; Garland et al., 2005; Masuda, Suzumura, Beauchamp, Howells, & Clay, 2005; Matsuoka et al., 1997). Furthermore, APIDA patients who did enter the mental health care system reported more severe and chronic conditions. Many patients with serious mental health conditions did not reach the service system until very late in the help seeking process. A study on APIDA patients with schizophrenia, found that on average, these patients did not reach the mental health system until three years after initial onset of psychotic symptoms (Lin & Cheung, 1999).

The literature reveals several reasons for low mental health care utilization among APIDA. Stigmatization has played an important role in APIDA's low service use. "Haji" among Japanese, "Hiya" among Filipinos, "Mianzi" among Chinese, and "Chaemyun" among Koreans are all terms that disclose concerns over the process of shame and the loss of face (D. W. Sue & Sue, 1999). Many APIDA tend to avoid mental health agencies, health services, and welfare agencies, because the utilization of services for certain issues is an overt admission of the existence of these problems, and may result in public knowledge of familial troubles (Chu & Sue, 2011). Some studies have also found that greater personal stigma and lower stigma tolerance predicts a lower likelihood to seek help among APIDA students, and that stigma about mental illness is higher among this population (Eisenberg, Downs, Golberstein, & Zivin, 2009; Ting & Hwang, 2009).

Another contributor to mental health care utilization disparities in APIDA are institutional-level factors. Southeast Asian Americans, such as Cambodians, Hmong, or Laotians, often exhibit higher rates of being uninsured or underinsured, which is a significant barrier to access of mental health services (Reeves et al., 2004). The available language and culturally appropriate services for APIDA is also lacking. Nearly half of APIDA experience restricted access to mental health care due to limited English proficiency (Department of Health and Human Services, 2001). There is also a shortage of culturally competent providers who are able to deliver mental health treatments with similar worldviews on problem perception, coping orientation and therapy goals to that of APIDA clients (Gamst et al., 2003; Kang, Tucker, Wippold, Marsiske, & Wegener, 2016; D. W. Sue & Sue, 1999; Zane et al., 2005). In general, the literature shows that mental health help-seeking and service utilization is lower in APIDA than other racial and ethnic groups (Abe-Kim et al., 2007; Lipson et al., 2018; A. Y. Zhang et al.,

1998). This trend is not indicative of lower need, as many studies have shown higher rates of certain mental health issues in APIDA subgroups, such as in women, adolescents and emerging adults, as well as specific ethnicities within the APIDA umbrella (Hong et al., 2014; Kim et al., 2015; Stephens et al., 2009).

### *Dissertation Overview and Significance*

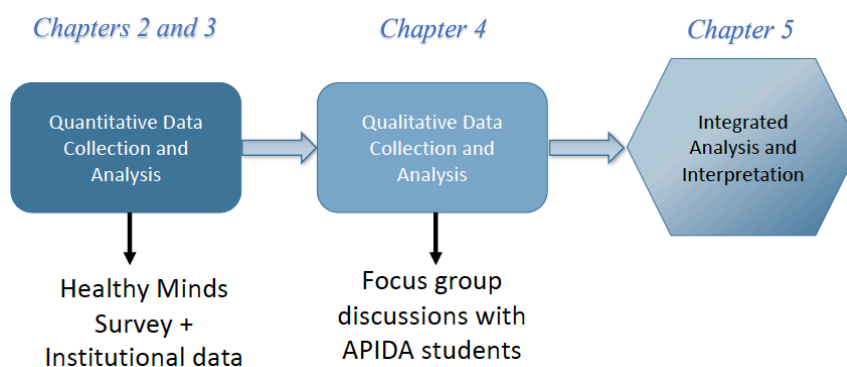
There is currently a gap in the literature of studies on APIDA young adult mental health and help-seeking that are methodologically rigorous with sufficient sample sizes, as the existing research focused on this population are typically confined to one school or institution, in a single geographical region. Even when considering studies focused on the mental health of APIDA populations as a whole, the nationally representative surveys with sufficient sample sizes (National Latino and Asian American Survey and the National Comorbidity survey), are over 15 years old (Cook et al., 2018). To the best of my knowledge, there is currently only one other study that is centered on APIDA undergraduate and graduate students and uses a national sample to examine factors related to mental health and help-seeking. This study examined factors related to suicidality, using a sample of 1377 students across 66 campuses from data collected in 2006 (Wong, Koo, Tran, Chiu, & Mok, 2011) .

There's also an absence of studies that incorporates holistic and contextual considerations of identity in mental health among APIDA populations. Many studies allude to the salience of this, but it's conceptualized from a more theoretical or historical perspective, rather than a rich statistical representation. There's also very little quantitative research that explicitly applies both individual and structural-level considerations to health outcomes, and virtually none to my knowledge that apply it to mental health outcomes in APIDA populations. Finally, there is

limited work on APIDA young and emerging adults that applies complementary qualitative inference to interpret quantitative analyses, which is a loss in terms of depth in understanding the mental health needs of this population, as well as an obstacle for intuiting the most promising avenues that will improve existing disparities in untreated mental health symptoms.

My dissertation uses the Social-Ecological theory, Andersen’s Socio-behavioral theory of healthcare utilization, and mixed methods to understand and assess influences of mental health and characteristics of mental health service use among APIDA college and university students. The dissertation consists of five complimentary chapters; in addition to this introduction as the first chapter, the second and third chapters build towards the fourth, and the fifth chapter is a consolidated conclusion (see Figure 1.1).

Figure 1.1. Dissertation mixed methods approach



Chapters 1 has introduced the population interest and significance of this body of work for mental health research. Chapter 2 utilizes the Social-Ecological theory framework and will elucidate individual and structural factors that influence the mental health wellbeing of APIDA undergraduate and graduate students. This chapter will utilize the three most recent academic years (2017-2019) of a nationwide annual web-based survey examining mental health and service utilization among students enrolled in a diverse set of colleges and universities, in combination with institutional level data on APIDA student support systems, mental health



resources, counseling centers, and psychoeducational outreach efforts. Using this novel dataset, I explored the intragroup variation of mental health outcomes among APIDA subpopulations and assessed the correlates of mental health among APIDA students as a whole, as well as subpopulations that demonstrated significant deviations from overall student mental health patterns.

In Chapter 3, I examine the association between demographic, health attitude, personal and family resources, institutional and community support, and self-evaluated need factors on mental health treatment utilization among overall APIDA students and international APIDA students. I utilize the same dataset from Chapter 2, as well as Andersen's theoretical framework to guide my multilevel analyses. I found significant variations in mental health help-seeking behaviors among overall APIDA and APIDA international students. I also identified barriers to treatment and found differential effects of correlates related to Andersen's predisposing, enabling and need factors on overall APIDA compared to APIDA international students who meet the criteria for any mental health problem.

While the relationships found in Chapters 2 and 3 are strong, it was difficult to determine causality given the limits to my cross-sectional data. My quantitative analyses also probed more questions that I was interested in breaking down, such as what the mechanisms were behind the variation and significance of the coefficients in my models. In response to this, Chapter 4 describes the design and findings of focus groups discussions, with the objective of understanding what are the key influences on mental health and the key barriers and facilitators driving help-seeking behaviors among APIDA college and university students. Chapter 5 then focuses on an integrated discussion and interpretation of the analyses from Chapters 2 through 4,

as well as practical implications and future directions in research related to APIDA student mental health and service utilization on college and university campuses.

This body of work applies robust empirical methods to an understudied yet highly relevant population in college mental health. I will not only generate new knowledge regarding factors associated with the mental health status and low mental health service use among APIDA, but also deconstruct the previously aggregated understanding APIDA students through an intersectionality lens, in effort to capture nuanced interpersonal and contextual experiences of various identities within this diverse group. The comprehensive examination of higher levels along the causal pathway, by targeting structural determinants and organizational as well as community-based protective and risk factors, will address systemic issues that may underlie mental health disparities in APIDA populations. Taken together, the aims of my dissertation will substantially advance our understanding on ways universities can develop more effective and targeted prevention, outreach, and service delivery programs to support often overlooked students struggling with mental health.

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## **Chapter 2 Mental Health Conditions: Variations Across APIDA Subgroups and Major Correlates**

### **Introduction**

While there are several studies that compare the prevalence of mental health issues among Asian Pacific Islander Desi American (APIDA) across other racial identities, the literature that examines intragroup variation in APIDA mental health is limited (Hwang & Goto, 2008; Le Meyer, Zane, Cho, & Takeuchi, 2009; Lipson, Kern, Eisenberg, & Breland-Noble, 2018; Ting & Hwang, 2009; Young, Fang, & Zisook, 2010). In a recent comprehensive review evaluating studies of mental health disparities, one notable finding was the glaring absence of methodologically rigorous studies assessing APIDA populations. The nationally representative surveys that had sufficient APIDA sample sizes (the Collaborative Epidemiological Psychiatric Surveys of the National Survey of American Life, National Latino and Asian American Survey, and National Comorbidity Survey– Replication) are now more than 15 years old (Lê Cook et al., 2019).

Not only do few studies investigate individual level influences on mental health, they also neglect other ecological domains that impact APIDA undergraduate and graduate student mental health. Increased scholarship has illustrated the importance of examining multidimensional aspects of individual psychology and applying multiple contextual factors in understanding mental health status (Banks & Kohn-Wood, 2002; Veenstra, 2011; Viruell-Fuentes, Miranda, & Abdulrahim, 2012). A comprehensive and inclusive approach to studying APIDA mental health must account not only for multiple variables of influence, but also consider how and under what

circumstances these different factors may interact and produce mental health outcomes.

Recognizing the salience of such an approach, this chapter will draw from the framework of the Social-Ecological model, considered in the context of intersectionality, to explore intragroup variation in, and evaluate the effect of individual and contextual factors on, APIDA mental health outcomes (Crenshaw, 1991; Guo, Hopson, & Yang, 2018).

### ***Theoretical framework and hypotheses***

The Social-ecological model is a theoretical model of health promotion that offers a multiple systems perspective, addressing that the complexity of personal wellbeing cannot be understood by single level analysis (Stokols, 1996). This model provides a comprehensive framework that integrates multiple levels of influence on health outcomes and has served as the framework for prior studies on the promotion of well-being and behavioral health in diverse populations (Scrimin, Moscardino, & Natour, 2014; Seng, Lopez, Sperlich, Hamama, & Meldrum, 2012).

A Social-ecological perspective shifts from unidimensional conceptualizations of mental health to incorporate interpersonal, organizational, community and structural dimensions that take into account elements of race, class, gender, and immigrant status, and how these shape disparities (Stokols, 1996; Viruell-Fuentes et al., 2012). This model recognizes that mental health is determined at multiple levels from the intrapersonal to the interpersonal, organizational, community, and societal/policy levels (Seng et al., 2012; Stokols, 1996).

At the individual level, demographic factors such as age, sexual orientation, and gender and the subsequent internalized valence an individual assigns to these identities, including the potential mitigating effects of venerating a particular identity, may influence mental health status (Seng et al., 2012). The intrapersonal experience of acculturation, defined as the process of

acquiring the cultural characteristics of the new country one migrates to, has also been shown in the literature to influence mental health, with potential impact on attitudes, cognitions, relationships, and values (Ting & Hwang, 2009). The direction of this influence, however, is unclear in studies on East Asian and South Asian adolescents and young adults (Miller, Yang, Hui, Choi, & Lim, 2011b; Rahman & Rollock, 2004; Young et al., 2010). For APIDA students not born in the United States, the development context of the immigration experience at different ages of arrival impacts individual progression on the acculturation continuum. The age of immigration may also expose individuals to particular sets of risks if occurrence was during formative periods of life (Leu et al., 2008). Despite the salience of these factors, there are currently no studies to the best of my knowledge focused on APIDA college students, that explore the impact of age of immigration on mental health.

Given previous findings about individual level factors, my first hypothesis is that individual level factors will predict significant variation in mental health across APIDA subpopulations, with female, international, and Sexual and Gender minority (SGM) students experiencing more mental health symptoms compared to male, cisgender, heterosexual, and non-international APIDA students. I also predict that non-US born APIDA who immigrate earlier and those with higher acculturation will report less mental health symptoms.

Interpersonal level factors involve interactions with others in one's social network, such as peers, romantic partners and family members, and the quality of those relationships. The connection between social support and psychological well-being of young people is strongly linked (Boutin-Foster et al., 2013; Smokowski, Evans, Cotter, & Guo, 2014). Given the extant research, my second hypothesis is that among APIDA students, those who are partnered in a relationship, and those who report having supportive social relationships, will experience fewer

mental health symptoms compared to non-partnered students, or those who do not report supportive relationships, respectively.

Organizational level resources for college students involve aspects of campus community including campus climate. One study found evidence that perceptions of inclusive multicultural learning environments promotes positive mental health, while perceptions of exclusionary policies are correlated with psychological distress among APIDA students. This data, however, is over two decades old and relies on individual level self-report on campus climate (Cress & Ikeda, 2003). Based on this previous work, my third hypothesis is that investments in diversity at the campus organizational level is correlated with lower odds of APIDA students experiencing mental health symptoms.

Community level factors may involve living as a member of a racial/ethnic minority with out-group status, that could impinge additional stressors. Out-group status has shown to adversely impact an individual's self-concept, as well as increase risk of identity-based trauma exposures (Meuret et al., 2016). Sense of belonging within a campus community is also related to positive mental health, and has shown to moderate the relationship between mental health and student persistence towards graduation (Stebleton, Soria, & Huesman, 2014). Despite the salience of community level factors, they are not well studied in APIDA populations (Lê Cook et al., 2019). Given studies on other student populations, my fourth hypothesis is that APIDA students who attend institutions housed in communities with higher proportions of APIDA and those with higher perceived sense of belonging will report less mental health problems than those who do not.

At the macro or societal level, structural inequalities in education and income associated with marginalized status has been shown to take a toll on adult populations (Seng et al., 2012).

For college students the evidence shows socioeconomic status is relevant to mental health, particularly the link of stress related to financial strain and adverse mental health (Selenko & Batinic, 2011; Walsemann, Gee, & Gentile, 2015). Discrimination, model minority stereotyping, and microaggressions also impact mental health across ecological levels, though perpetuated and sustained at the societal level (Corrigan, Markvitz, & Watson, 2004). While there is a wealth of evidence on racism, stereotyping, and microaggressions and its impact on depression, anxiety, and suicidality among APIDA adolescents and emerging adults, the research is insufficient in characterizing the variation of mental health across different APIDA identities in relation to these factors (Chia-Chen Chen, Szalacha, & Menon, 2014; Kim, Kendall, & Cheon, 2017; Kim & Lee, 2014; Sue et al., 2009). As a result of this body of evidence, my fifth hypothesis is that financial stress, the experience of being a first-generation student, and experience of discrimination will be adversely associated with mental health.

My project is also designed from an Intersectionality perspective, which highlight the interconnectedness and power dynamics of race, gender and class, among other aspects of an individual's identity. Intersectionality is a conceptual framework proposing that all individuals are positioned within socially created categories of oppression and domination, all of which are located within a historical context (Collins, 1989; Crenshaw, 1991; King, 1988). This perspective examines a convergence of experiences at micro, meso, and macro levels. Intersectionality itself currently consists of a loose set of principles or assumptions that have been applied and tested by many researchers in a variety of contexts, with the overarching recognition of multiple social identities as necessary to understand complex individual experiences and well-being (Veenstra, 2011; Viruell-Fuentes et al., 2012). My final hypothesis is motivated by the paradigm of Intersectionality, in which I hypothesize that the correlates of mental health at each Social-

ecological level will vary significantly across APIDA identities, and the adverse effects will be attenuated in male, cisgender, heterosexual, and non-international APIDA students.

Throughout this chapter and this dissertation, I will use the terms “mental health problems”, “mental health conditions”, “mental health disorders”, “mental illness” and “mental health symptoms” interchangeably. This is consistent with the use of these terms in the literature examined and will also be defined more clearly when relevant (i.e. what the specific criteria is to meet “any mental health problem” within analytical models).

## **Methods**

### ***Data***

#### ***The Healthy Minds Study***

The Healthy Minds Study (HMS) is an annual web survey examining mental health, service utilization, and related factors among students in higher education. In this chapter, I analyze aggregated data from three waves of HMS (academic years 2017, 2018, and 2019), which include 178,703 undergraduates and graduate students from 177 institutions. Of these students, 28,026 identified as Asian (including East, South, Southeast Asian) or Pacific Islander. Response rates were 23% in 2017, 24% in 2018, and 16% in 2019. At each institution with more than 4,000 students, HMS recruited a random sample of 4,000 from the full student population; on campuses with less than 4,000 students, we recruited all students to participate. Recruitment was conducted by email. HMS was approved by Institutional Review Boards at all participating institutions.

To adjust for potential differences between survey responders and non-responders, sample response weights were created using the following variables, when available, to estimate

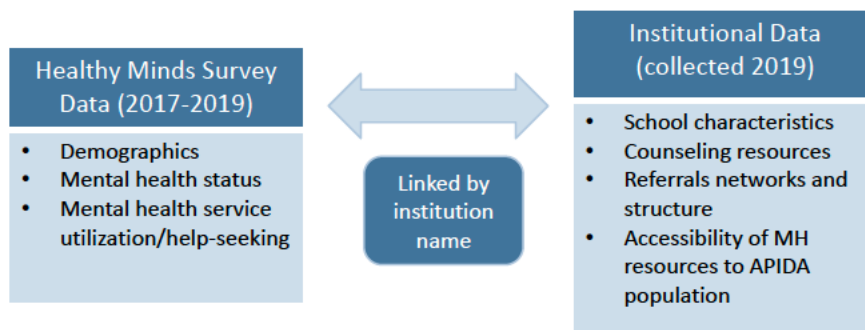
which types of students were more or less likely to respond: gender, race/ethnicity, academic level, and grade point average on each campus. These variables were then used to estimate the response propensity of each type of student (based on multivariate logistic regressions), and then response propensity weights were assigned to each student who completed the survey. The less likely a type of student was to complete the survey, the larger the weight they received in the analysis, such that the weighted estimates are representative of the full student population in terms of the administrative variables available for each institution. These sample weights give equal aggregate weight to each school in the national estimates. These weights allow for the calculation of estimates that are more representative of each institutions' student population.

#### *Institutional-level Data Set*

In addition to the HMS survey data, and in order to evaluate institutional level factors identified in the Social-ecological model, I developed a unique national dataset of institutional characteristics for all HMS-participating universities and colleges. The characteristics include institutional-level information about psycho-education programs, APIDA student resources, and accessibility of mental health resources. These data were compiled based on searching and coding relevant information from each college or university's website, the National Center for Education Statistics, and the United States Census. The specific information coded from each website were: (1) Mental health and psychoeducation resources (2) Counseling resources and accessibility (3) APIDA student connection to mental health resources (4) Other campus characteristics, which included institutional size, type, graduation rate, academic rank, and geographic location. Coding took place in the summer and fall of 2019 (See Table A.1 and A.2 in the appendix).

The characteristics chosen were based on informational interviews and seminars with college counselors and researchers affiliated with the Asian American Psychological Association, as well as a review of the literature (Chu & Sue, 2011; Lê Cook et al., 2019). I linked the HMS data with my institutional dataset by institution name and created a novel dataset for my analyses, that includes individual student survey responses on mental health and related information, as well as institutional-level characteristics and resources of the institutions in the Healthy Minds Study (see Figure 2.1).

Figure 2.1. Dataset overview



## ***Measures***

### *Mental health conditions*

Throughout this chapter, I report results based on a set of eight binary mental health outcomes. I focused on the following binary measures because most of these measures have been validated based on the described standard cutoffs.

(1) *Positive mental health*: To estimate the proportion of students who are exhibiting positive mental health, I used an eight-item Diener Flourishing scale, designed to assess major aspects of psychological wellbeing through a summary measure of the respondent’s self-perceived success in important areas such as relationships, self-esteem, purpose and optimism. Scores range from 8 to 56, with higher scores indicating higher well-being (Diener et al., 2010). This scale does not have a recommended cutoff; rather a score of 48 was selected because it best matches rates of



flourishing in other scales (e.g., the Mental Health Continuum) in U.S. college populations and has been previously used in other published studies (Keyes, 2002; Lipson et al., 2018). Thus a score of  $\geq 48$  was indicative of positive mental health (=1), and a score of  $< 48$  was not (=0).

(2) *Depression*: HMS examines symptoms of depression using the Patient Health Questionnaire-9 (PHQ-9), which has been validated as internally consistent and highly correlated with clinical diagnosis among people of color (Huang, Chung, Kroenke, Delucchi, & Spitzer, 2006). I used the standard cutoff of  $\geq 10$  for symptoms of moderate depression (=1), with  $< 10$  scores as indicative of not meeting the criteria for depression (=0).

(3) *Anxiety*: HMS utilized the Generalized Anxiety Disorder 7-item (GAD-7) scale, which has been validated in Asian populations (Spitzer, Kroenke, Williams, & Löwe, 2006). I used the standard cutoff of  $\geq 10$ , as indicative of the presence of anxiety (=1) which has shown to have high sensitivity and specificity with clinical diagnosis of moderate anxiety (Spitzer et al., 2006). Students with scores  $< 10$  were indicated as not meeting the criteria for anxiety (=0).

(4) *Eating disorders*: Symptoms of eating disorders were assessed in HMS using the five-item SCOFF questionnaire. Scores range from 0 to 5, with  $\geq 2$  constituting a positive screen (=1), and those with  $< 2$  constituting a negative screen (=0). While prior studies have determined high sensitivity and specificity, there have not been validation studies of the SCOFF done on populations of color (Luck et al., 2002).

(5) *Non-suicidal self-injury (NSSI)*: HMS uses the following item to assess for NSSI, “*This question asks about ways you may have hurt yourself on purpose, without intending to kill yourself. In the past year, have you ever done any of the following intentionally?*” Response options included: “cut myself”, “burned myself”, “punched or banged myself”, “scratched myself”, “pulled my hair”, “bit myself”, “interfered with wound healing”, “carved words or

symbols into skin”, “rubbed sharp objects into skin”, “punched or banged an object to hurt myself”. Indication of NSSI was determined if students selected one or more of the previous response options (=1), while those who selected the response “no, none of these” were categorized as not meeting the criteria for NSSI (=0).

(6) *Suicidal ideation*: A single question measured suicidal ideation: “In the past year, did you ever seriously think about attempting suicide?”. Students were categorized based on “yes” (=1) or “no” (=0) answer to this item.

(7) *Suicidal attempt*: A single question measured suicidal attempt: “In the past year, did you attempt suicide?”. Students were categorized based on “yes” (=1) or “no” (=0) answer to this item.

(8) *Any mental health problem*: The primary outcome of interest is a binary measure of any mental health problem, which is defined as the presence of one or more positive screens for depression, anxiety, eating disorders, suicidal ideation, or non-suicidal self-injury (=1). Those that did not meet the criteria for any of the conditions were categorized as not having a mental health problem (=0).

### *Individual Characteristics*

I explore variations in mental health outcomes across six different individual characteristics within APIDA students. These include:

(1) age, defined in three age groups: 18-22 years, 23-30 years, and 31 year or older; (2) sexuality, a binary variable of heterosexual (=1), versus non-heterosexual self-reported identification (=0); (3) gender was defined by self-reported female, male, or transgender; (4) international student or domestic residence student; (5) age at immigration, defined as the following groups: US-born,

less than 12 years, 12-17 years, 18-35 years, and more than 35 years; (6) acculturation, measured with an item about *primary language spoken with friends*, defined with the following groups: high acculturation or assimilated (“only/mostly English language spoken with friends”), low acculturation or transitional (“mostly/only native language spoken with friends”) and bicultural (“both English and native language spoken with friends”). These acculturation dimensions have been widely used in the literature (Berry, 1997; Flannery, Reise, & Yu, 2001; Shen & Takeuchi, 2001). Utilizing language as a proxy for acculturation is also in line with previous work focused on acculturation (Lee, Nguyen, & Tsui, 2011).

#### *Socio-ecological level measures*

Drawing from the Social-ecological model and theoretical evidence, I study APIDA students’ mental health across ecological levels, including the individual characteristics described above, as well as interpersonal, organizational, community, and structural levels. The operationalization of these levels and the data sources are described in more detail in the appendix (see Table A.3).

At the interpersonal level, I measured quality of social relationships using an item from the Diener flourishing scale (Keyes, 2002) that asked students to respond to the following statement on a 7-point Likert scale of strongly agree to strongly disagree: “*My social relationships are supportive and rewarding.*” Responses were coded as quality social relationships (=1) if responses were “slightly agree”, “agree” or “strongly agree,” versus unsupportive relationships (=0) if responses were “neither disagree or agree”, “slightly disagree”, “disagree” or “strongly disagree”. I characterized current relationship status by categorizing students who identified as “in a relationship” or “married, in a domestic partnership,

or engaged” as partnered (=1), a second group for those that identified as single (=2), and a third group for those who identified as divorced, separated or widowed (=3).

At the organizational level, measures were created for having a chief diversity officer (=1, else=0) and a designated multicultural center on campus (=1, else=0). I also included a measure for public (=1) or private (=0) institution.

At the community level, percent APIDA population is based on the percentage within the city that the institution is located, using the most recent census data. For the measure of sense of belonging, responses to the HMS survey question “*I see myself as part of the campus community*” were coded as yes (=1) versus no (=0).

At the societal or structural level, I use a binary measure to assess experiences of discrimination, in which students who reported “sometimes,” “a lot,” “most of the time,” or “all of the time” to the question “*In the past 12 months, how many times have you been treated unfairly because of your race, ethnicity, gender, sexual orientation or cultural background?*” were coded yes (=1), and those that reported “once in awhile” or “never” were coded as no (=0). I operationalized socioeconomic status using measures for financial stress and first-generation status. Financial stress was assessed by the HMS questions “*How would you describe your financial situation right now?*”. I used a binary measure to assess current and past experiences of financial stress, in which students who reported “always” or “often” stressful were coded as having financial stress (=1) and those who reported “sometimes,” “rarely,” and “never” were coded as not having financial stress (=0). In order to assess first-generation student status, I created a measure in which non-first-generation students included students where one or more parents received at least a bachelor’s degree (=1, else=0).

### *Controls*

At the organizational level, I adjusted for institutional type, and graduation rate to account for differences in school level resources. I used dummy variables for doctorate-granting universities, master's colleges and universities, baccalaureate colleges, associate colleges, and special focus institutions for institutional type. Graduation rate was determined by 4-year undergraduate graduation rate based on US News rankings and reports (US News & World Report, 2019). Each model at every Social-ecological level controlled for survey year, a measure that grouped all schools by respective academic year that the survey was fielded, to account for any inter-year variation across sample waves.

### *Analytic Approach*

#### *Data Analysis Overview*

This chapter presents bivariate and multivariate analyses of mental health outcomes for APIDA students, using the socio-ecological measures and control variables defined above. The analyses conducted in this chapter are descriptive in nature, intended to elucidate variation in mental health outcomes across APIDA subpopulations and to examine correlates of mental health across Social-ecological levels within a large sample of APIDA undergraduate and graduate students. I show descriptive statistics of the sample by age, gender, sexuality, financial stress, parent education, citizenship, acculturation level, age of immigration, and academic level (see Table 2.1). The bivariate and multivariate analyses are described in detail below. All analyses were conducted using Stata 15.1 and weighted using the sample probability weights described above.

### *Bivariate Analysis*

First, I calculate bivariate statistics for each of the eight behavioral health outcomes, reporting the overall rate (percentage) of students screening positive for those outcomes to compare APIDA students with all students who participated in HMS (see Figure 2.2). I then examine variations in mental health symptoms across subpopulations of APIDA students, across the six different individual characteristics listed above (see Tables 2.2-2.6). I evaluate the differences in binary behavioral outcomes across subgroup using Pearson's two-tailed chi-square tests of independence, with significant differences determined between students who identify as APIDA compared to those that did not.

### *Multivariate Analysis*

I ran a multivariate logistic regression model to estimate the relationship between any mental health problem and variables from each of the levels of the Social-ecological model. My first model used the individual-level correlates of any mental health problem (see Table 2.7). Next I estimate separate multivariate regression models for any mental health problem, utilizing predictors at the interpersonal, organizational, community, and societal level of the Social-ecological model (Tables 2.8). Each models' standard errors are clustered by campus. For each multivariate model, I report the odds ratios (ORs) and 95% confidence intervals, with the p-value based on two-tailed t-tests.

In addition to reporting findings in the overall APIDA population, I show models stratified by international students, males and non-heterosexuals. These subpopulations were chosen based on sample size and the bivariate analyses, which demonstrated these groups had significant deviations from overall APIDA students in mental health patterns.

## **Results**

### ***Participants***

The analyses of this chapter focused on 28,026 APIDA undergraduate and graduate programs across 177 colleges and universities. Although the sample contains a convenience sample of campuses, the institutions represented are diverse along several dimensions, including geographic location, institutional type (including community colleges, art schools, private, and public schools), as well as enrollment size. Total school enrollments range from less than 1,000 to over 40,000 students.

The majority (64.2%) of students in the sample are between the ages of 18-22, and just over half (54.4%) are female. Over two-thirds of students are at the undergraduate level (68.3%), and 31.7% are graduate students. Most students identify as heterosexual (83.4%). The percentage of students who currently always or often experience financial stress (30.6%) is comparable to those that sometimes experience (37.7%) and never or rarely experience (31.7%) financial stress, at the time of taking the survey. Less than one-third of students are first generation (30.8%) and just over a third are international students (35.5%). Approximately 74% of students screened into the high or assimilated acculturation category, 11.4% of students screened into a low or transitional acculturation category, and 15.1% of students were bicultural or fit within the medium acculturation category. Less than half of the sample were US-born (47.1%), with the next biggest group immigrating to the US after 18 years (26.5%). A large proportion of students, 18.5%, also immigrated to the US at ages 12 years or less (see Table 2.1). Table values are percentages of the weighted sample.

Table 2.1. Sample characteristics of APIDA students in HMS 2017-2019 [weighted]

	<i>n</i> =28,026	%
<i>Age</i>		
	18-22	64.2
	23-30	29.5
	31+	6.3
<i>Gender</i>		
	Female	54.4
	Male	43.5
	Transgender	2.1
<i>Sexuality</i>		
	Heterosexual	83.4
	Bisexual	8
	Gay	3.2
	Lesbian	1.2
	Other*	4.2
<i>Current financial stress</i>		
	Always/often	30.6
	Sometimes	37.7
	Never/rarely	31.7
<i>Parent education</i>		
	First generation	30.8
<i>Citizenship</i>		
	US	64.5
	International	35.5
<i>Acculturation</i>		
	Assimilated	73.5
	Bicultural	15.1
	Transitional	11.4
<i>Age of immigration</i>		
	US-born	47.1
	12 years or less	18.5
	12-17 years	7.9
	18+ years	26.5
<i>Degree level</i>		
	Undergraduate	68.3
	Graduate	31.7

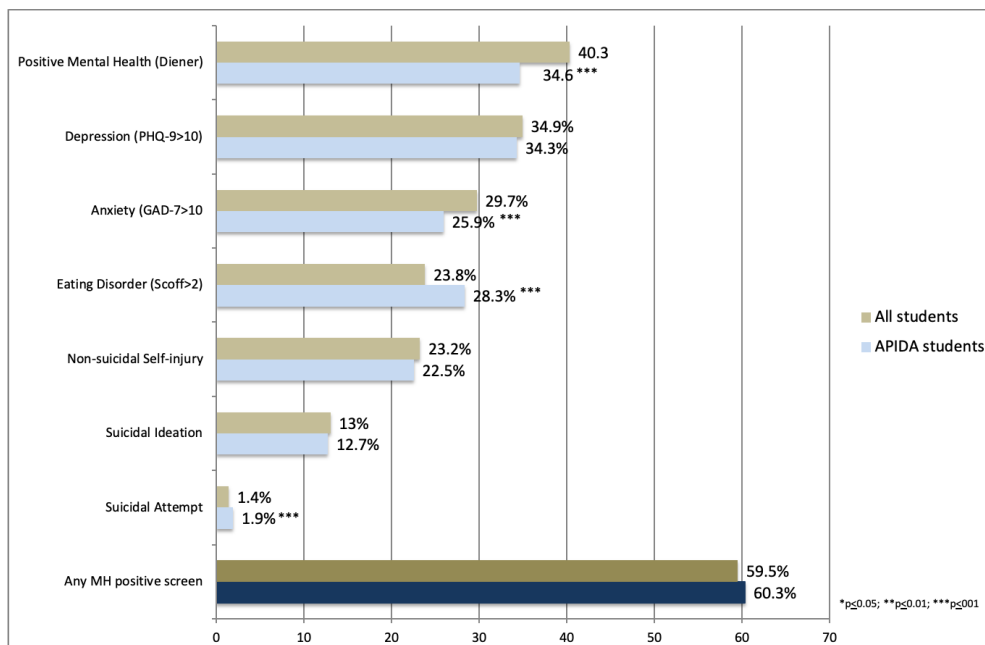
\*questioning, queer, or self-identify



## Mental Health Among College students

Before looking at the results for mental health outcomes among APIDA students, it is helpful to look at how APIDA students compare to other students in the Health Minds Study. Figure 2.2 shows how APIDA students compare with all students in the full HMS sample. APIDA students in the HMS are fairly similar to all students on mental health outcomes. When looking at any positive screen for any mental health conditions, a slightly higher percentage of APIDA students have any mental health symptoms, but this is not significantly different from students overall. There is no significant difference between APIDA and all students for depression, NSSI, or suicidal ideation. APIDA students screen slightly lower for anxiety (25.9% compared to 29.7%), but screen slightly higher for eating disorders (28.3% versus 23.8% among all students), as well as suicidal attempt (1.9% versus 1.4% among all students). APIDA students also report significantly lower positive mental health (34.6%) compared to overall students (40.3%).

Figure 2.2. Mental health conditions among APIDA and all students in HMS 2017-2019



Note: p-values are based on two-tailed chi-square tests, with significant differences determined between students who identify as each particular group and those who do not (e.g. those who identify as APIDA students versus those who do not)

## ***Mental Health Patterns Among APIDA students***

### *By Age*

There are several notable variations in mental health by age group among APIDA students (Table 2.2). Mental health symptoms seem to decline with age in my sample. A significantly greater percentage of 18-22 year olds screen higher for all the examined mental health conditions, with 64% of 18-22 year old APIDA students meeting the criteria for any mental health problem, compared with 56.3% of 23-30 year olds, and 40.6% of the 31+years group. The biggest percentage differences between groups occurred for students who screen positive for depression, NSSI, and suicidal ideation. In looking at depression, 37.5% of 18-22 year olds meet the criteria for depression compared to 21.4% of 31+ year olds. In looking at NSSI, 7.7% of 31+ year old students reported NSSI which is less than half of the percentage of 23-30 year old students (at 16.9%) and less than one-third of the percentage of 18-22 year old students (at 26.4%). Almost 15% of 18-22 year old students report suicidal ideation, which is almost three times greater in percentage than those who are 31+ year old (at 5.5%).

Table 2.2. APIDA student mental health by age group in HMS 2017-2019

	<b>18-22</b>	<b>23-30</b>	<b>31+</b>
<i>Mental Health Conditions</i>			
Depression (PHQ-9 $\geq$ 10)	37.5***	30.1***	21.4***
Anxiety (GAD-7 $\geq$ 10)	28.1***	23.2***	16.1***
Eating Disorder (Scoff $\geq$ 2)	30.1***	26.7*	16.9***
Non-suicidal Self-injury	26.4***	16.9***	7.7***
Suicidal Ideation	14.9***	9.3***	5.5***
Suicidal Attempt	2.2***	1.4*	0.7**
Any Mental Health Problem	64***	56.3***	40.6***

Notes: \* $p \leq 0.05$ ; \*\* $p \leq 0.01$ ; \*\*\* $p \leq 0.001$ ; p-values are based on two-tailed chi-square tests, with significant differences determined between students who identify as each particular age category and those who do not (e.g. those who are 18-22 versus students who are not).

### *By Gender and Sexual Orientation*

Gender and sexual minorities report worse mental health compared with their cis-gender and heterosexual-identifying peers (Table 2.3). Transgender students screen the highest rates for all observed mental health conditions, screening approximately twice as high for depression (65.7%) compared with female students (37%) and male students (29.2%); nearly three times higher for NSSI at 62% compared to 23.8% of females and 18.6% of males; and approximately four times higher for suicidal ideation, at 40.7% compared with 13.5% of females and 10.1% of males. Not surprisingly, a greater percentage meet the criteria for any mental health symptom (87.5%), compared to female students (65.2%) and male students (52.2%).

A significantly higher percentage of APIDA students that did not identify as heterosexual, which includes bisexual, gay, lesbian, queer, questioning, and self-identifying students, screen positive for all observed mental health conditions compared with heterosexual students, with 77% of non-heterosexual students meeting the criteria for any mental health problem, compared with 56.6% of heterosexual students. Over twice the percentage of non-heterosexual students report both NSSI (40.3%) and suicidal ideation (24.7%), compared with heterosexual students at 18.8%% and 10.3%, respectively. Moreover, non-heterosexual students report attempting suicide (4.1%) at three times the rate of heterosexual students (1.4%).

Table 2.3. APIDA student mental health by gender and sexual orientation in HMS 2017-2019

	Female	Male	Trans gender	Nonhetero sexual	Hetero sexual
<i>Mental Health Conditions</i>					
Depression (PHQ-9 $\geq$ 10)	37***	29.2***	65.7***	51.9***	30.6***
Anxiety (GAD-7 $\geq$ 10)	29.4***	20.1***	49.9***	39***	23.2***
Eating Disorder (Scoeff $\geq$ 2)	33.7***	20.5***	39.7***	35.7***	26.6***
Non-suicidal Self-injury	23.8**	18.6***	62***	40.3***	18.8***
Suicidal Ideation	13.5**	10.1***	40.7***	24.7***	10.3***
Suicidal Attempt	1.9	1.5	6.4***	4.1***	1.4***
Any Mental Health Problem	65.2***	52.2***	87.5***	77***	56.6***

\*p $\leq$ 0.05; \*\*p $\leq$ 0.01; \*\*\*p $\leq$ 0.001; p-values are based on two-tailed chi-square tests, with significant differences determined between students who identify as each particular gender/sexual orientation category and those who do not (e.g. those who are transgender versus those who do not identify as transgender).

#### *By Citizenship*

There was significant variation across all mental health outcomes among international and non-international APIDA students (Table 2.4). A lower percentage of international students screen positive for almost all mental health conditions, with the exception of eating disorders, in which 31.1% meet the criteria for an eating disorder, compared with 26.9% of non-international students. 20% of International students meet the criteria for anxiety, which is about one-third lower than non-international students, in which 29% meet the criteria for anxiety. While international students report slightly greater percentage in suicidal attempt at 1.9%, this was not significantly different than non-international students at 1.8%. Despite similarity in reports of suicidal attempt, reports of suicidal ideation are significantly lower among international students at 9.3% compared with 14.4% of non-international students. Overall, 61.7% of non-international students reported any mental health problem, which was slightly but significantly higher than the 57.6% of international students who reported any mental health problem.

Table 2.4. APIDA student mental health by citizenship in HMS 2017-2019

	International	Non-international
<i>Mental Health Conditions</i>		
Depression (PHQ-9 $\geq$ 10)	29.9 <sup>***</sup>	36.6 <sup>***</sup>
Anxiety (GAD-7 $\geq$ 10)	20 <sup>***</sup>	29 <sup>***</sup>
Eating Disorder (Scoff $\geq$ 2)	31.1 <sup>***</sup>	26.9 <sup>***</sup>
Non-suicidal Self-injury	18.7 <sup>***</sup>	24.4 <sup>***</sup>
Suicidal Ideation	9.3 <sup>***</sup>	14.4 <sup>***</sup>
Suicidal Attempt	1.9	1.8
Any Mental Health Problem	57.6 <sup>***</sup>	61.7 <sup>***</sup>

\*p $\leq$ 0.05; \*\*p $\leq$ 0.01; \*\*\*p $\leq$ 0.001; p-values are based on two-tailed chi-square tests, with significant differences determined between students who identify as each particular citizenship category and those who do not.

*By Acculturation Level*

While there was variation in mental health across acculturation levels of APIDA students, the vast majority of these findings are not significant in comparison with those that did not belong in the respective acculturation group (Table 2.5). APIDA students who were categorized in the transitional group, or low identification with US culture, have significantly lower positive screens for depression (24.5%) compared with those who were not transitional, including the bicultural group, or those who identified with both US and heritage culture (33.7%), and assimilated group, or those who identified highly with US culture (34.3%). The transitional APIDA students also screen lower for anxiety, at 18.6% compared with 28.4% of assimilated students and 20.6% of bicultural students. The percentage of students who experience suicidal ideation are also lower in the transitional group, at 6.7% compared with 15.9% of assimilated students and 10.1% of bicultural students.

Table 2.5. APIDA student mental health by acculturation in HMS 2017-2019

	<b>Assimilated</b>	<b>Bicultural</b>	<b>Transitional</b>
<i>Mental Health Conditions</i>			
Depression (PHQ-9 $\geq$ 10)	34.3	33.7	24.5**
Anxiety (GAD-7 $\geq$ 10)	28.4	20.6	18.6*
Eating Disorder (Scoff $\geq$ 2)	27.4	25.5	34.3
Non-suicidal Self-injury	21.8	16.8	17.3
Suicidal Ideation	15.9*	10.1	6.7**
Suicidal Attempt	2.9	1.9	2.3
Any Mental Health Problem	57.8	57.4	52.2*

\* $p \leq 0.05$ ; \*\* $p \leq 0.01$ ; \*\*\* $p \leq 0.001$ ; p-values are based on two-tailed chi-square tests, with significant differences determined between students who identify as each particular assimilation category and those who do not (e.g. those who are bicultural-level assimilated versus those who are not).

### *By Age of Immigration*

APIDA students who immigrated to the US between the ages of 12-17 generally had more mental health symptoms compared with students who were US-born or immigrated to the US at other ages. The exception to this pattern is experiences of NSSI and suicidal ideation, in which the highest percentage was reported by US-born students, at 24.5% and 17.9%, respectively. Notably, compared with US-born students, which was the second highest group, nearly two-times the percentage of APIDA students who immigrate to the US between 12-17 years of age reported attempting suicide, at 5.9% (versus 3.1% among US-born students). Those who first arrived in the US at 18+ years, which likely comprise mostly of international students, report less symptoms across nearly all mental health conditions, with the exception of eating disorders. This higher percentage of meeting the criteria for eating disorders, however, was not significant when compared with those who did not arrive in the US at 18+ years old.

Table 2.6. APIDA student mental health by age of immigration in HMS 2017-2019

	US-born	Less than 12	12-17	18+
<i>Mental Health Conditions</i>				
Depression (PHQ-9 $\geq$ 10)	36.1	32.4	40.1	25.8***
Anxiety (GAD-7 $\geq$ 10)	29.8	23.5	29	20.4**
Eating Disorder (Scoff $\geq$ 2)	25.8	29.2	36.2	28.2
Non-suicidal Self-injury	24.5	19.6	18.6	15.1***
Suicidal Ideation	17.9**	13.9	11.5	8.2**
Suicidal Attempt	3.1	1.3	5.9**	2
Any Mental Health Problem	58.8	55.5	67.3	51.5***

\*p $\leq$ 0.05; \*\*p $\leq$ 0.01; \*\*\*p $\leq$ 0.001; p-values are based on two-tailed chi-square tests, with significant differences determined between students who identify as each particular age of immigration category and those who do not (e.g. those who are immigrated to the US at less than 12 years old versus all those who did not).

### ***Mental Health Correlates***

Correlates of any mental health problem, a binary measure defined as the presence of one or more positive screens for depression, anxiety, eating disorders, suicidal ideation, or NSSI, is presented in Tables 2.7 through 2.9. With the exception of the individual level model in Table 2.7, all other models (Tables 2.8 and 2.9) adjust for gender, sexual orientation, international student status, and age. For all models, I estimated robust standard errors at the institution level, to account for clustering of students within campuses.

#### *Individual level (hypothesis 1)*

The smaller sample size in individual level model in Table 2.7 is due to the acculturation and “age of immigration to the US” measures, which were only asked in an elective module of HMS, focused on diversity, equity and inclusion, and not fielded to the entire sample of schools that participate in the survey. Among APIDA students, increasing age is predictive of lower odds any mental health problem. Both female (OR= 1.77, CI: 1.35-2.34) and transgender (OR=3.52, CI: 0.80-15.50) students have higher odds of meeting the criteria for any mental health problem compared with male students, though the correlation was not significant among transgender

students. International students are 8% the odds less likely to have any mental health problems, though this finding was not significant. Non-heterosexual students have 2.33 times the odds of screening for any mental health problem compared to heterosexual APIDA populations. The odds of any mental health problem among APIDA students who immigrated to the US between the ages of 12-17 years old have approximately 14% higher odds of screening for any mental health problem than that of US-born APIDA students. This correlation, however, is not significant.

Table 2.7. Individual level correlates of any mental health problem among all APIDA students

n = 2,831	Any Mental Health Problem	
	OR (95% CI)	P-value
Gender (ref= male)		
<i>Female</i>	1.77*** (1.35-2.34)	<0.001
<i>Transgender</i>	3.52 (0.80-15.50)	0.096
Age (ref=18-22 yrs old)		
<i>23-30 years old</i>	0.76 (0.56-1.03)	0.072
<i>31+ years old</i>	0.47** (0.29-0.75)	0.002
Non-heterosexual	2.33*** (1.53-3.56)	<0.001
International student	0.92 (0.53-1.58)	0.755
Acculturation (ref= high)		
<i>medium</i>	1.16 (0.72-1.88)	0.541
<i>low</i>	0.97 (0.61-1.55)	0.900
Age in US (ref = US born)		
<i>less than 12 years</i>	0.95 (0.64-1.42)	0.810
<i>12-17 years</i>	1.14 (0.59-2.21)	0.692
<i>18+ years</i>	1.06 (0.61-1.87)	0.824
<i>Model statistics:</i>		<i>PseudoR<sup>2</sup> = 0.04, p&lt;0.001</i>

\*p≤0.05; \*\*p≤0.01; \*\*\*p≤0.001

*Interpersonal level (hypothesis 2)*

Compared to APIDA students who identified as single, the odds of partnered APIDA students to meet the criteria for any mental health problem were 1.2 times higher.

Divorced/widows students had 37% higher odds of screening positive for a mental health



problem compared to single APIDA students, though this finding was not significant. Not surprisingly, APIDA students who report rewarding social relationships had 73% lower odds of positive screen for a mental health problem, compared to those that did not (see Table 2.8).

#### *Organizational level (hypothesis 3)*

The logistic regression model estimating organizational level correlates of any mental health problem also adjusts for institutional type (highest degree granted by institution) and graduation rate, in attempt to account for differences in school resources (Table 2.8). Controlling for school resources, APIDA students that attend institutions with a Chief Diversity Officer (CDO) have 12% lower odds to meet the criteria for any mental health symptoms, compared to those that attend institutions without a CDO. In addition, APIDA students who attend schools with a multicultural center have 24% lower odds of screening positive for a mental health problem compared to those who attend schools without a multicultural center. Student enrollment in a public institution, compared to private institution, was not a significant correlate of mental health.

#### *Community level (hypothesis 4)*

At the community level, a higher percentage of APIDA population in an institution's surrounding community was a significant predictor of slightly lower odds in meeting the criteria for any mental health problem (OR=0.98; CI: 0.97-0.99). APIDA students who reported high sense of belonging had 59% lower odds of screening positive for mental health symptoms, compared to those who report low belongingness (Table 2.8).

#### *Societal level (hypothesis 5)*

At the societal level, financial stress as a socioeconomic proxy was a statistically significant correlate of any mental health problem, while first generation student status was not.

APIDA students that experience current financial stress had almost 2.7 times the odds of meeting the criteria for any mental health problem, compared to those who did not report current financial stress. Discrimination was also a significant predictor, as APIDA students who reported experiences of discrimination had 72% higher odds of screening positive for mental health symptoms, compared to those who did not (Table 2.8).

Table 2.8. Interpersonal, Organizational, Community, and Societal level correlates of any mental health problem among all APIDA students

<b>APIDA Students</b>		
<i>Any Mental Health Problem</i>		
<i>n= 28,026</i>	<b>OR (95% CI)</b>	<b>P-value</b>
<b>Interpersonal level</b>		
Relationship (ref= single)		
partnered	1.21*** (1.10-1.33)	<0.001
divorced/widowed	1.37 (0.72-2.60)	0.331
Social relationships	0.27*** (0.24-0.30)	<0.001
<i>Model statistics:</i>	<i>PseudoR2 = 0.07, p&lt;0.001</i>	
<b>Organizational level</b>		
Chief Diversity Officer	0.88* (0.77-0.99)	0.050
Multicultural Center	0.76** (0.60-0.95)	0.002
Public institution	1.05 (0.92-1.21)	0.451
<i>Model statistics:</i>	<i>PseudoR2 = 0.07, p&lt;0.001</i>	
<b>Community level</b>		
Percent APIDA	0.98*** (0.97-0.99)	0.001
Sense of Belonging	0.41*** (0.37-0.46)	<0.001
<i>Model statistics:</i>	<i>PseudoR2 = 0.06, p&lt;0.001</i>	
<b>Societal level</b>		
Financial stress	2.68*** (2.28-3.15)	<0.001
First generation	1.09 (0.93-1.29)	0.283
Discrimination	1.72*** (1.49-1.98)	<0.001
<i>Model statistics:</i>	<i>PseudoR2 = 0.08, p&lt;0.001</i>	

\*p≤0.05; \*\*p≤0.01; \*\*\*p≤0.001

*Comparisons across individual characteristics (hypothesis 6)*

Table 2.9 presents correlates of any mental health problem comparing APIDA subpopulations: international students, male students, and those who do not identify as heterosexual. These subpopulations were chosen based on sample size and previous analyses, which demonstrated these groups had significant deviations from overall APIDA student mental health patterns. These models conveyed some notable and distinct findings when compared with the overall APIDA population models. APIDA male students who were divorced or widowed had 17% lower odds of meeting the criteria for any mental health problem, compared to single students in other groups, which all observed higher odds. This relationship, however, was not statistically significant.

APIDA international students who attended an institution with a multicultural center were also significantly less likely to exhibit mental health symptoms compared to those who do not, though the odds were attenuated – international APIDA students had 16% less odds compared to overall APIDA students who had 24% less odds. Male APIDA students and Non-heterosexual APIDA students who attended universities with multicultural centers also observed lower odds of mental health symptoms, but these findings were not significant.

APIDA international students who attended public institutions also had 9% less odds of having any mental health problem, compared to those who attended private institutions. For other groups, students who attended public institutions were more likely to have mental health symptoms, though these findings are not statistically significant. Finally, discrimination had the strongest correlation with mental health for APIDA non-heterosexual students compared with other groups, where experiences of discrimination were associated with almost 2 times the odds of meeting the criteria for any mental health problem, compared to 1.8, 1.6, and 1.7 times the odds for international students, males, and overall APIDA students, respectively (Table 2.9).

Table 2.9. Any mental health problem correlates across subpopulations of APIDA students

	International APIDA <i>n=10,504</i> <i>Any Mental Health Problem</i>		Male APIDA <i>n=9,817</i> <i>Any Mental Health Problem</i>		Non-heterosexual APIDA <i>n=4,130</i> <i>Any Mental Health Problem</i>	
	<i>OR (95% CI)</i>	<i>P-value</i>	<i>OR (95% CI)</i>	<i>P-value</i>	<i>OR (95% CI)</i>	<i>P-value</i>
<b>Interpersonal level</b>						
Relationship (ref= single)						
partnered	1.21* (1.04-1.40)	0.011	1.43***(1.22-1.68)	<0.001	1.36* (1.06-1.74)	0.017
divorced/widowed	2.36 (0.52-10.6)	0.263	0.83 (0.22-3.06)	0.78	5.12 (0.62-42.52)	0.131
Social relationships	0.30***(0.25-0.35)	<0.001	0.23***(0.19-0.27)	<0.001	0.26***(0.19-0.35)	<0.001
<b>Organizational level</b>						
Chief Diversity Officer	0.81 (0.63-1.04)	0.099	0.81 (0.62-1.04)	0.095	0.89 (0.62-1.29)	0.53
Multicultural Center	0.84* (0.73=0.96)	0.011	0.93 (0.79-1.08)	0.324	0.94 (0.75-1.17)	0.581
Public institution	0.91 (0.79-1.04)	0.159	1.03 (0.89-1.18)	0.727	1.09 (0.87-1.37)	0.458
<b>Community level</b>						
Percent APIDA	0.99 (0.97-1.00)	0.089	0.99 (0.97-1.00)	0.129	0.98 (0.95-1.00)	0.079
Sense of Belonging	0.38***(0.31-0.46)	<0.001	0.36***(0.30-0.44)	<0.001	0.40***(0.29-0.54)	<0.001
<b>Societal level</b>						
Financial stress	2.69***(2.08-3.47)	<0.001	2.97***(2.23-3.95)	<0.001	2.41***(1.62-3.58)	<0.001
First generation	0.98 (0.76-1.24)	0.84	1.15 (0.86-1.54)	0.338	0.98 (0.67-1.44)	0.923
Discrimination	1.78***(1.44-2.20)	<0.001	1.56***(1.22-1.99)	<0.001	1.95***(1.35-2.82)	<0.001

\*p≤0.05; \*\*p≤0.01; \*\*\*p≤0.001

## **Discussion**

This chapter explored the intragroup variation of mental health outcomes among APIDA subpopulations and assessed the correlates of mental health among APIDA students. Present findings are consistent with prior research and provide compelling evidence that elucidate different dimensions of APIDA identity, which is salient in understanding variation in mental health symptoms and factors the influence mental health in this student population.

Among APIDA students, mental health symptoms seemed to decline with age. There is some evidence that corroborates these findings, and delineate that mental health disorders increase longitudinally from late childhood to late-adolescence, and then decrease in adulthood (Newman et al., 1996). This aligns with the age of onset for most mental health problems, which coincides with traditional undergraduate years, between ages 18 to 25 (Kessler et al., 2007). Depression, anxiety, and suicidality rates among college students in general have increased in the past decade, which may reflect more stressful campus environments as well as more dramatic rises in digital media use in younger students (Eisenberg, 2019; Twenge, 2020).

Female APIDA students report significantly greater mental health symptoms than male APIDA students, a finding that is consistent with other studies that have reported rates of Major Depressive Disorder and dysthymia to be twice as high in females compared to males (Young et al., 2010). There is currently, however, a dearth of evidence that specifically examines APIDA female mental health. The exceptionally high levels of mental health symptoms among sexual and gender minorities among APIDA populations underscores another salient intersecting identity that confers unique risks for stress and experiences of oppression. One 2018 study by Ching and colleagues validates the intersectional trauma among queer identifying APIDA, largely perpetuated by structural and interpersonal discrimination, poor social support, and cultural stigma (Ching, Lee, Chen, So, & Williams, 2018). My findings provide further support on the disproportionate adverse impact of experiences of discrimination and protective influence of high quality of social relationships on sexual and gender minority APIDA populations.

A smaller proportion of international students met the criteria for any mental health problem compared to domestic students, which departs from my original hypothesis. Despite this overall pattern, however, a significantly greater proportion of international students screened

positive for an eating disorder, and a greater number report experiencing a suicidal attempt. Eating disorders among APIDA populations have been explored qualitatively, and pointed to the excess stress produced by effects of mainstream American values and standards of beauty on minority women, though not specifically international APIDA (Brady et al., 2017; Javier & Belgrave, 2018). One potential interpretation of the disproportional impact on international students is that the compounding stressors of a major life transition (high school to college) and for many, the first time in a non-homogenous society where they are a minority, increases vulnerability to disordered eating.

Higher suicidal attempts among international APIDA aligns with previous HMS research on public stigma and suicidality, showing that international students experience highest levels of stigma, low levels of help-seeking, and consequently the greatest severity of distress upon intake at campus treatment centers (Goodwill & Zhou, 2020; Zhang & Dixon, 2003). International students are an especially vulnerable population on campus, holding double-marginalized status as students of color and non-citizens, and also often separated from informal support systems such as family and childhood friends (Goodwill & Zhou, 2020). My findings underscore this unique predicament of international students, and suggest that compared with overall APIDA students, discrimination was a stronger correlate to poorer mental health among international APIDA students. The lower depression and anxiety levels among APIDA international students compared with domestic students revealed in my results also brings to question the cultural validity of the PHQ-9 and GAD-7 measures in assessing international APIDA students, a concern that has been cited before in other Asian American mental health scholarship on adult populations (Chu & Sue, 2011; Nagayama & Yee, 2012; Takeuchi et al., 2007).

While there was some variation in mental health across acculturation levels of APIDA students, the vast majority of these findings were not significant in comparison with those that did not belong in the respective acculturation group. APIDA students who were categorized in the transitional group, or low identification with US culture, had significantly lower positive screens for depression, anxiety, and suicidal ideation compared with those who were not transitional, including the bicultural group, or those who identified with both US and heritage culture, and assimilated group, or those who identified highly with US culture. These, however, may reflect overlapping patterns in other subpopulations, as transitional students are more likely to be international students.

In general, the evidence on acculturation and its impact on mental health is mixed, with some studies pointing to the protective effects of acculturation on mental health, while others suggesting that great assimilation to American culture increases acculturative stress and intergenerational conflict, leading to higher distress (Hwang & Ting, 2008; Miller et al., 2011b; Rahman & Rollock, 2004; Yoon et al., 2017; Young et al., 2010; N. Zhang & Dixon, 2003). It is important to note that the use of acculturation as a model for explaining health disparities, focusing on changes in individual cultural orientation, has been criticized for failing to consider the intersection of socio-structural factors and policies shaping immigrant health, including the socioeconomic and political contexts of migration, racism, and colonialism, and the effects of these interacting factors on health outcomes. The objection of this model stems from the essentialization of immigrant groups, blaming individuals for health outcomes and looking at culture as a source of dysfunction (Viruell-Fuentes, 2007; Viruell-Fuentes et al., 2012). A paradigm that considers structural factors in producing mental health inequities among

marginalized populations may be more appropriate, based on the view that cultural explanations do not mask the impact of social inequalities on outcomes (Viruell-Fuentes et al., 2012).

Results of my study also revealed that APIDA students who immigrated to the US between the ages of 12-17 generally had more mental health symptoms compared with students who were US-born or immigrated to the US at other ages, including older groups. The additional developmental context during this period and potential intercultural stressors experienced as an adolescent may also uniquely position this group to be more vulnerable to mental health symptoms. This finding departs from previous research that identifies length of residence in the United States as negatively associated with psychological distress symptoms (Wilton & Constantine, 2003). Wilton & Constantine's study, however, focused only on international students. There is no other study, to my knowledge, that examines age of immigration on APIDA colleges students as a whole. More specific queries, that intentionally explore the interpersonal and structural determinants associated with age of immigration is needed to disentangle the mental health disparities experienced by this APIDA subpopulation. This type of analyses was unfortunately not possible with the current sample size of APIDA individuals who immigrated to the US between 12-17 years.

While intrapersonal level variables, such as gender and sexual orientation were strong correlates of mental health in APIDA populations, I found that structural level factors have the strongest association with any mental health problems among APIDA students. As discussed earlier, discrimination was a strong correlate of adverse mental health for APIDA students as a whole, but even more so for marginalized subpopulations such as sexual minorities and international students. The societal perpetuation of model minority stereotyping may also contribute to this association, especially on its impact on belongingness for APIDA groups who



don't ascribe to this mold (Kim et al., 2017). There is also evidence that APIDA students who have internalized this stereotype develop maladaptive perfectionism, which has severe psychological consequences (Young et al., 2010). The experience of discriminatory microaggressions, which are sustained at a structural level, are often fueled by the perpetual foreigner status of APIDA populations which dichotomizes "Asian" and "American" into mutually exclusive categories due to strict boundary policing of white hegemony, and has implications on cultural mistrust and vulnerability to mental health issues (Dennis, 2018; Kim & Lee, 2014).

Organizational and interpersonal level influences of mental health were also salient. In particular, organizational level investments into diversity and inclusion, as evidenced by having a Chief Diversity Officer and designated multicultural center, was associated with lower mental health symptoms, even after adjusting for institutional resources. This is consistent with other studies that have found student perceptions of negative campus climate were predictive of Asian American students' depression levels in spite of students' entering proclivities toward depression and varying institutional types (Cress & Ikeda, 2003). Not surprisingly, strong social relationships are a strong protective factor against mental health symptoms across all APIDA subpopulations, highlighting the benefit of fostering social support within APIDA communities and implicating interpersonal relationships as a potentially important protective factor to further explore.

The results of this chapter should be interpreted in the context of some key limitations. Most importantly, I recognize that the experiences of APIDA students, even when disaggregated by different subgroups, are not monolithic. HMS did not collect specific APIDA ethnic group demographic information across the years of my study, and as a result, it is difficult to parse out

potential ethnicity-related correlates and variations. HMS, however, now includes more specific country of origin survey questions, which I plan to use for future studies. Additionally, while HMS uses validated screens to measure mental health, my study does rely on self-reported data. It is unclear how the self-report nature of this study may yield bias among APIDA students. The current measures used in HMS are somewhat crude in capturing certain correlates. For example, I use a unidimensional measure of acculturation when evaluating mental health correlates at an intrapersonal level. Studies, however, have shown this proxy is reliable in among APIDA populations (Lee et al., 2011). HMS also does not include a random sample of campuses, as schools themselves elect to participate in the study. The institutional sample, however, is diverse, with every type of institution of higher education represented. Finally, the cross-sectional nature of the data/analyses presented in this chapter makes it complicated to infer causality. Reverse causality is a possibility, though this does not diminish the importance of identifying the relationships explored in this chapter.

Operationalizing intersectionality in quantitative health outcomes research is difficult because it is a social phenomenon operating at multiple levels. My goal was to provide an initial context for mental health research centered on APIDA students that addresses some interactions across different aspects of identity. I plan to expand on these analyses in the future, and to assess other pathways of influences, in an effort to identify other potential avenues to improve mental health outcomes among diverse APIDA populations.

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## **Chapter 3 Mental Health Help-seeking and Factors Related to Treatment Utilization Among APIDA and APIDA International Students**

### **Introduction**

Throughout this chapter, I will be frequently using the term *help-seeking*, which is defined as the behavior of actively seeking support from others regarding mental or emotional health concerns. Help-seeking can be formal, such as therapy, counseling or medication provided by mental health professionals and other health providers, or informal, including support from friends, family, or other non-professionals (Rickwood, Deane, Wilson, & Ciarrochi, 2005). I will investigate both formal and informal help-seeking avenues for this study.

In past decades, Asian Pacific Islander Desi Americans (APIDA) have consistently shown more negative help seeking attitudes towards mental health services compared to their non-APIDA counterparts (Abe-Kim et al., 2007; Kim & Zane, 2016; Le Meyer, Zane, Cho, & Takeuchi, 2009; Liang, Liu, Nguyen, & Song, 2017; Loya, Reddy, & Hinshaw, 2010). As seen in Chapter 2, APIDA students tend to report similar levels of mental health symptoms compared with their peers, yet research has demonstrated that APIDA populations underutilize service relative to their level of need (Cheng, Kwan, & Sevig, 2013; Cheng, Wang, McDermott, Kridel, & Rislin, 2018; Kim & Omizo, 2003; Lipson et al., 2018). In a large study of college students with depression, Asian Americans were the least likely of all racial and ethnic groups to perceive a need for services (Lipson et al., 2018).



Recent studies have examined factors related to help seeking among APIDA populations, including cultural barriers (including stigma, loss of face, causal beliefs), culturally unresponsive services (such as lack of ethnic match and poor cross-cultural understanding), perceived discrimination, and perceived severity of disorder (Cheng, Wang, McDermott, Kridel, & Rislin, 2018; Kim & Lee, 2014; Kim & Park, 2009; Liao, Rounds, & Klein, 2005; Miller, Yang, Hui, Choi, & Lim, 2011; Uehara, Takeuchi, & Smukler, 1994). Few studies, however, have used theoretical models to examine what factors influence help-seeking intentions among APIDA young adults who are currently experiencing psychological distress. Additionally, there are very few studies, to my knowledge, that focus on APIDA college and university students, and use a national sample of college students to examine factors related to help-seeking, with most research employing data drawn from a single geographic region (predominately on the West or East coast) or single campus (Han & Pong, 2015; Kim & Lee, 2014; Loya, Reddy, & Hinshaw, 2010; Miller et al., 2011; Ting & Hwang, 2009).

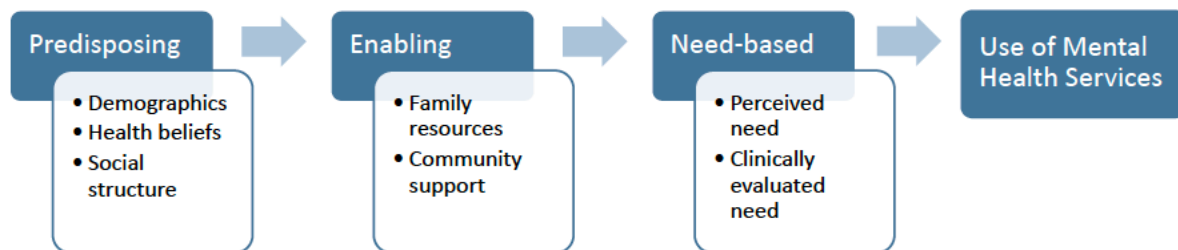
A better understanding of factors related to help-seeking is needed to inform prevention and intervention strategies to eliminate inequities in the utilization of mental health care. This is especially relevant because left untreated, mental health symptoms usually become more frequent, severe, and treatment resistant. Exploring influences of help-seeking among APIDA subpopulations are particularly important to assess, because APIDA international students and APIDA women have emerged as some of the highest risk groups for suicidal attempt (Augsberger, Yeung, Dougher, & Hahm, 2015; Goodwill & Zhou, 2020). On an institutional level, mental health problems, such as depression, are associated with a two-fold increase in the risk of student departure from an institution. Thus, increasing the availability of evidence-based services or preventive programs can reduce this risk and increase student retention, saving

significant tuition revenue for the institution and increasing total lifetime earnings for the affected students (Eisenberg, Golberstein, & Hunt, 2009; Hunt & Eisenberg, 2010).

### ***Theoretical Approach***

An adapted version of Andersen’s Behavioral Model of Health Service Use has frequently been used to examine factors associated with mental health treatment use among various racial and ethnic groups in the United States and have demonstrated to yield reliable results (Andersen, 1995; Cho, Kim, & Velez-Ortiz, 2014). Figure 3.1 conveys the three subcategories of resources: predisposing, enabling, and need-based, that comprise the foundation of this model (Andersen & Newman, 1973).

Figure 3.1. Andersen’s Behavioral Model of Health Services Use



The predisposing category represents the proclivity to utilize health care services. According to Andersen, an individual is more or less likely to use health services based on demographics, position within the social structure, and beliefs of health service benefits (Kim, Jang, Chiriboga, Ma, & Schonfeld, 2010). When evaluating sociodemographic characteristics, studies examining gender differences among APIDA suggest that women not only have more favorable help-seeking attitudes compared to males, but also are more likely to seek help when distressed (T. Chang, Chang, & Zhang, 2004; Tata & Leong, 1994). Help-seeking beliefs, including stigma and perceived benefits of mental health treatment, have also been found to adversely impact help-seeking behavior, with consistent evidence delineating that APIDA

populations hold higher levels of stigma and lower perceived benefits of treatment compared to non-APIIDA counterparts (Kim & Zane, 2016; Lipson et al., 2018; Wong, Tran, Kim, Van Horn Kerne, & Calfa, 2010; Wynaden et al., 2005)

Enabling characteristics either facilitate or impede access to mental health services and include both resources available to the individual and its sociocultural characteristics. This category includes resources found within the family and the community. Health insurance and financial status can influence decision-making on whether to access mental health services, especially for populations of color. The magnitude of impact of financial factors, however, varies across race and ethnicity (Alegria et al., 2012; Jang, Chiriboga, & Okazaki, 2009; Kim et al., 2010; Landerman, Burns, Swartz, Wagner, & George, 1994). Care-seeking may also be affected by knowledge of mental health resources available, and the community or institutional support available for use of those resources, including trust in provider confidentiality as well as cultural competency (Campos-Castillo & Anthony, 2019; Kohn-Wood & Hooper, 2014; Yorgason, Linville, & Zitzman, 2008). The limited studies on the influence of knowledge of resources and community support among APIIDA populations in the context of mental health care confirm the salience of these enabling factors in seeking treatment, though the extent of influence is unclear, with a dearth of evidence specifically focused on young and emerging adult APIIDA populations (Cheng et al., 2018; Hyun, Quinn, Madon, & Lustig, 2007; S. Sue, Cheng, Saad, & Chu, 2012).

Need based characteristics include the perception of need for health services, whether it be individual, social, or clinically evaluated perceptions of need. Need factors have been shown to have definitive effects on mental health service use, including among APIIDA populations (Andersen, 2008; Katz et al., 1997; Spencer & Chen, 2004; Wang et al., 2005). These factors often include DSM-IV diagnosis, though self-reported assessment of overall mental health status

and the level of psychological distress have also been associated with mental health service use (Kim, Chiriboga, Bryant, & Huang, 2012). Need factors, however, when adjusted for in previous analyses, have not been shown to eliminate utilization disparities among communities of color, indicating that it is one of many factors predicting utilization (Fiscella, Franks, Doescher, & Saver, 2002). The research is also scarce on studies include multiple measures on how mental health need is conceptualized, especially among APIDA college and university student populations.

Andersen's theoretical framework collectively considers the personal and contextual factors, characteristics, and circumstances that surround the use of mental health services (Andersen, 2008). In this chapter, I will use this framework to examine the extent in which information regarding predisposing, enabling, and need characteristics improve the understanding of individual and institutional factors associated with mental health treatment utilization in APIDA populations. I specifically explore APIDA international students separately because approximately 36% of the overall APIDA sample identified as an international student. Previous studies have also identified distinct help-seeking trends among international APIDA students (Chang & Chang, 2004; Goodwill & Zhou, 2020; Lipson et al., 2018). Using a nationally representative sample of APIDA and APIDA international college and university students, I will answer the following questions:

1. What are rates of mental health help-seeking and reported barriers among APIDA and APIDA international students with mental health symptoms?
2. What are the individual and institutional factors associated with mental health treatment utilization among APIDA students who meet the criteria for any mental health problem?

## **Methods**

### ***Data***

Data were collected from the Healthy Minds Study (HMS), an annual online survey designed to address the unique mental health needs of undergraduate and graduate students in the United States, as described in Chapter 2. Complementary with Chapter 2, this study also uses data from the last three waves of HMS, from academic years 2017, 2018, and 2019, which include 178,703 undergraduates and graduate students from 177 institutions. Of these students, 28,026 identified as Asian or Pacific Islander. I linked HMS data to the institutional-level dataset I developed focusing on psycho-education programs, APIDA student resources, and accessibility of mental health resources, as described in detail in Chapter 2. These two data sources were linked by school name of HMS-participating universities and colleges, which created a novel dataset for analyses (see Figure 2.1).

### ***Measures***

#### ***Mental health help-seeking***

Throughout this chapter, I examined six binary behavioral outcomes related to help-seeking. The primary binary measure of any past-year mental health treatment utilization is based on the following two survey items: “*How many total visit or sessions for counseling or therapy have you had in the past 12 months?*” and “*In the past 12 months, have you taken any of the following types of perception medicines?*”. Students who reported receiving counseling/therapy one or more times, or taking any prescribed psychotropic medications were considered any treatment users (=1, else=0). I examined any treatment users among students with any mental health problem, defined as the presence of one or more positive screens for

depression, anxiety, eating disorders and/or a “yes” response to non-suicidal self-injury and/or suicidal ideation in the past year. These mental health measures are described in more detail in Chapter 2.

The other five help-seeking outcomes were past year: (1) any counseling/therapy (2) any medication (3) any informal help from family (4) any informal help from friends (5) any informal help broadly, which was captured by selecting any of the following sources for counseling or support for mental or emotional health – roommate, friend, significant other, family member, religious counselor, support group, or other non-clinical source. These outcomes were examined only among students with any mental health problem.

#### *Barriers to treatment*

I used the following HMS survey item to explore barriers to mental health treatment, among students with positive screens for any mental health problem: “*In the past 12 months, which of the following factors have caused you to receive fewer services (counseling, therapy, or medications) for your mental or emotional health than you would have otherwise received?*”.

Students were instructed to “select all that apply” among the following options: no need for services, financial reasons (too expensive, not covered by insurance), not enough time, not sure where to go, difficulty finding an available appointment, prefer to deal with issues on my own or with support from family/friends, other, or no barriers.

#### *Correlates of help-seeking*

I examined correlates of help-seeking among APIDA and APIDA international students, that were motivated by the sequencing of Andersen’s Socio-behavioral Model of Health Service Use and the existing literature on APIDA mental health help-seeking (Andersen & Newman,

1973; Cho et al., 2014; G. Kim et al., 2010). The operationalization of these factors and the data sources are further delineated in the appendix (Table A.4).

In the investigation of predisposing influences on help-seeking, I assessed demographic factors by using a continuous measure for age, gender as a binary variable for female (=1) versus students who did not identify as female (=0), sexual orientation as a binary measure for heterosexual (=1) versus non-heterosexual identification (=0). For the models on all APIDA students, I used an additional binary measure of citizenship for international (=1) versus non-international students (=0). I assessed help-seeking attitudinal factors by using three binary measures: (1) personal stigma, measured by a “strongly agree” “agree” or “somewhat agree” (=1, else=0) response to the HMS item “*I would think less of a person who received mental health treatment*” (2) public stigma, measured by a “strongly agree” “agree” or “somewhat agree” (=1, else=0) response to the HMS item “*Most people think less of a person who has received mental health treatment*” and (3) belief in treatment efficacy, which is captured by the response of “very helpful” or “helpful” (=1, else=0) to the HMS items “*How helpful on average do you think medication/therapy or counseling is, when provided competently, for people your age who are clinically depression?*”.

In the evaluation of enabling influences on help-seeking, I assessed personal and family resources using: (1) a binary measure of current financial stress, in which students who reported “always” or “often” stressful were coded as having current financial stress (=1) and those who reported “sometimes” “rarely” and “never” were coded as not having current financial stress (=0) (2) a binary measure for having health insurance, which grouped students who did not select the option “I do not have any health insurance coverage” to the HMS item “*What is the source of your current health insurance coverage*”, as having insurance (=1) versus those who did select

that option as not having insurance (=0) and (3) a binary measure for students who reported spending 16 hours or more per week on studying/doing homework (=1, else=0) as a proxy for time constraint.

To understand institutional and community enabling support, I used binary measures for: (1) sense of belonging, derived from a “strong agree” “agree” or “somewhat agree” response (=1, else=0) to an HMS question *“I see myself as part of the campus community”* (2) subjective knowledge of mental health resources, captured by “strongly agree” “agree” or “somewhat agree” (=1, else=0) responses to the HMS item *“If I needed to see professional help for mental or emotional health, I would know where to go on my campus”* (3) APIDA student website links to mental health resources, determined by collected institutional data on whether campus mental health resources were linked to on APIDA student group webpages (=1) or not linked (=0) (4) ability to schedule counseling appointments online, determined by institutional data collection on whether appointment scheduling for campus counseling was available online (=1) or not available online (=0).

In the examination of need factors on help-seeking, I used a binary measure of (1) self-perceived need, captured by a response of “strongly agree” “agree” or “somewhat” agree (=1, else=0) to the HMS item *“In the past 12 months, I needed help for emotional or mental health problems such as feeling sad, blue, anxious or nervous”* (2) personal life impairment due to mental health by the response “extremely difficult” “very difficult” or “somewhat difficult” (=1, else=0) to the HMS item *“how difficult have [PHQ-9 problems] made it for you to do your work, take care of things at home, or get along with other people?”* and (3) decline in academic performance due to mental health, by a response of “1 or more days” (=1, else=0) to the HMS



item “during the past 4 weeks, how many days have you felt that emotional or mental difficulties have hurt your academic performance”.

## ***Analytic Approach***

### *Data Analysis Overview*

The analyses conducted in this chapter are intended to quantify unmet need for mental health treatment, examine factors that impede help-seeking, and elucidate correlates of and variations in mental health counseling, therapy or medication use within APIDA college and university students. The bivariate analyses are described in detail below. All analyses were conducted using Stata 15.1 and weighted using sample probability weights described in Chapter 2.

### *Bivariate Analyses*

First, I calculate bivariate statistics for six behavioral help-seeking outcomes, reporting overall percentage in the past-year among students who meet the criteria for any mental health problem (Figure 3.2). I then examined rates of students who did not seek treatment among students who meet the criteria for each of the six different binary mental health conditions, to quantify the treatment gap (Figure 3.3). These calculations were stratified by overall APIDA students, international APIDA, and overall students. I evaluate differences in binary help-seeking behavioral outcomes across subgroups by using Pearson’s two-tailed chi-square tests of independence, with significant differences determined between students who identify within the group compared to those that did not. I also examined barriers to help-seeking among students with symptoms and reported rates of endorsement for each barrier among the overall APIDA sample as well as just among APIDA international students (Table 3.2).

### *Multivariate Analyses*

I employ hierarchical multivariate logistic regression models to estimate the independent correlates of my binary measure of past year counseling, therapy, or psychotropic medication use and examine if the addition of information regarding predisposing, enabling, and need factors improved prediction of mental health treatment utilization (Wong & Mason, 1985). These correlates were motivated by the sequencing of the Andersen model's predisposing, enabling, and need categories. These models are estimated across all APIDA students and also among just APIDA international student (Tables 3.3 & 3.4). I specifically explore APIDA international students separately because approximately 36% of the overall APIDA sample identified as an international student.

The first models test the effects of predisposing demographic and help-seeking attitudinal factors on treatment utilization. The second models add enabling personal, family, institutional and community resources and support factors. The third models add self-evaluated need characteristics. This analytic strategy, following Andersen's Behavioral Model of Healthcare Service Use framework, has been used in previous sociological investigations of care-seeking across racially and ethnically diverse populations (Cho et al., 2014; Walton & Anthony, 2017). For each regression, I estimated robust clustered standard errors, allowing for correlation of regression residuals within schools. I also adjusted for school type (public versus private) and graduation rate to account for differences in school resources. I use survey year controls to account for inter-year variation across sample waves that I'm not otherwise capturing with my variables. I report two-tailed t-tests of the significance of odds ratios (ORs), 95% confidence intervals, and significance levels in my analytic models.

## **Results**

### ***Study population***

This chapter's analyses focused on 28,026 APIDA undergraduate and graduate students across 177 colleges and universities. Of these students, 10,504 identified as international students. The description of the overall APIDA student population is discussed in more detail in the "participants" section of Chapter 2. Table 3.1 below describes the characteristics of the sample in this chapter. While almost two-thirds (64.2%) of APIDA students are between the ages of 18-22, slightly less than half (48.9%) of international APIDA students are within that age range. There's almost equal representation of APIDA international female versus APIDA international male students, and the percentage distribution of sexual orientation identification is similar to overall APIDA students, with most, 86.1% identifying as heterosexual, 7.4% identifying as bisexual, 4.2% identifying as gay or lesbian, and 2.3% identifying as other, which includes students who are questioning, queer, or who self-identified. A greater percentage of international subgroup are graduate students, at 48.1%, compared to the overall APIDA students at 31.7%. International APIDA students also report less financial stress, at 30.6% versus 24.9%, respectively, and fewer identify as first-generation students when compared with the overall APIDA group, at 27.4% versus 30.9%, respectively. While a greater percentage of APIDA international students (58.2%) report experiencing discrimination compared to the overall sample (55.7%), they also report a higher sense of belonging (75.3%) compared to overall APIDA students (69.1%). APIDA international students also report experiencing greater personal (26.7%) and perceived public (57.1%) stigma compared to the overall APIDA sample, of which 14.2% report personal stigma and 51.8% report perceived public stigma. Table values are percentages of the weighted sample.

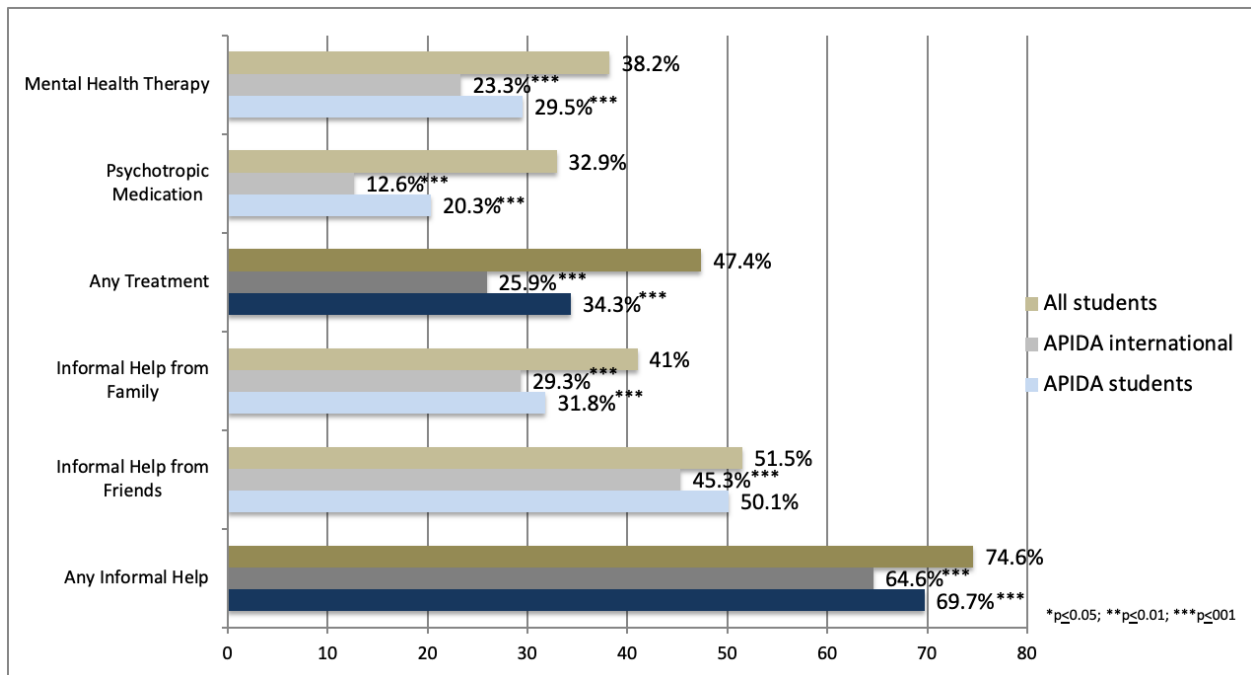
Table 3.1. Sample Characteristics of All APIDA and APIDA international students in HMS 2017-2019 [weighted]

	All APIDA (n=28,026)	APIDA international (n=10,504)
	%	%
<i>Age</i>		
18-22	64.2	48.9
23-25	17.5	26.2
26-30	12.0	18.1
31plus	6.3	6.7
<i>Gender</i>		
female	54.4	49.5
male	43.5	49.4
transgender	2.1	1.1
<i>Sexual orientation</i>		
heterosexual	83.4	86.1
gay	3.2	3.2
lesbian	1.2	1.0
bisexual	8.0	7.4
Other	4.2	2.3
<i>Degree level</i>		
undergraduate	68.3	51.9
graduate	31.7	48.1
<i>Current financial stress</i>		
always/often	30.6	24.9
sometimes	37.7	37.7
never/rarely	31.7	37.4
<i>Parent education</i>		
first generation student	30.8	27.4
<i>Community/societal</i>		
experiences of discrimination	55.7	58.2
sense of belonging	69.1	74.3
<i>Stigma</i>		
personal	14.2	26.7
perceived public	51.8	57.1

**Help-seeking trends**

Figure 3.2 displays different avenues of mental health help-seeking among all students, APIDA students, and international APIDA students who meet the criteria of any mental health problem. Across the board, APIDA students utilize all help-seeking avenues less than the overall student sample – including both formal (therapy, psychotropic meds) and informal avenues (family, and any informal help which includes staff, faculty, roommates and partners). International APIDA students with symptoms have the lowest past year treatment and informal help use percentages, at 25.9% for any therapy, counseling, or psychotropic medicine (compared to 47.4% among all students and 34.3% among all APIDA students) and 64.6% for any informal help (compared to 74.6% of all students and 69.7% of all APIDA students).

Figure 3.2. Help-seeking among students with any mental health problem in HMS 2017-2019

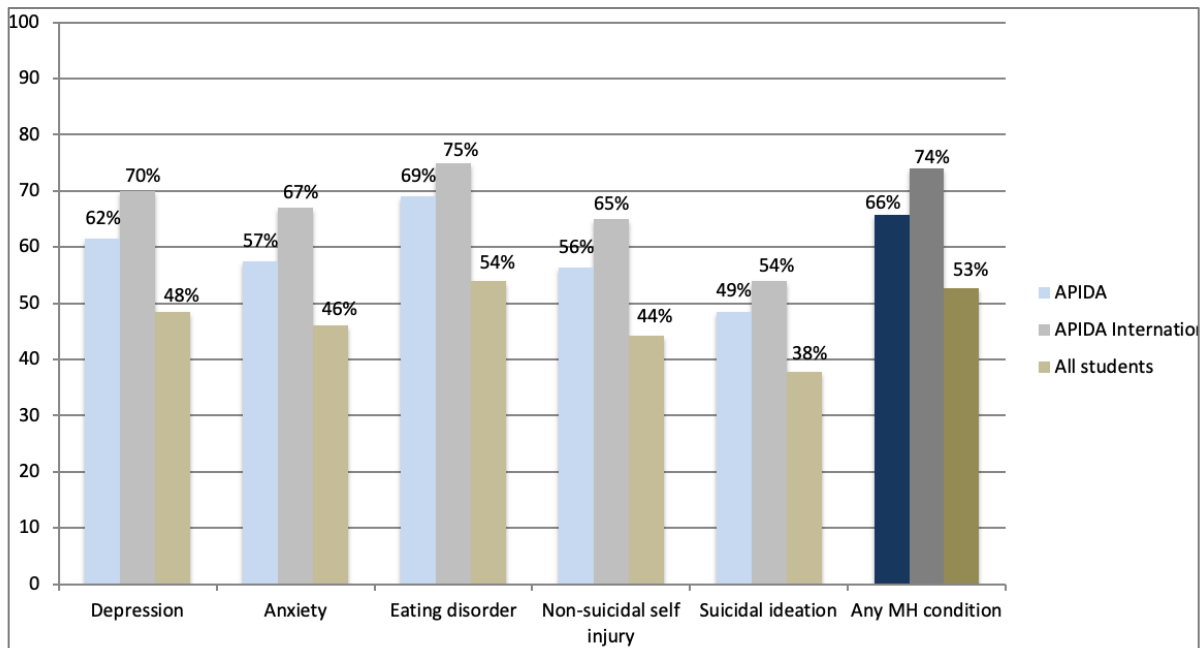


Note: p-values are based on two-tailed chi-square tests, with significant differences determined between students who identify as each particular group and those who do not (e.g. those who identify as APIDA international students versus those who do not)

Figure 3.3 conveys the treatment gap, which is the percentage of students who have clinically significant symptoms who are not being reached by treatment services (past year

counseling, therapy, or psychotropic medication). A significantly greater percentage of APIDA students have untreated mental health symptoms, with a treatment gap of 74% among international students, 66% among all APIDA students, and 53% among overall students. This pattern of service utilization is consistent across all mental health conditions. The greatest treatment gap differences between APIDA and APIDA international students occur among those who meet the criteria for anxiety (57% versus 67%, respectively) and non-suicidal self-injury (56% versus 65%, respectively). The most significant treatment gap differences between APIDA and overall students occur for students who met the criteria for depression (62% versus 48%, respectively) and students who screened positive for eating disorders, in which 69% of APIDA students versus 54% of overall students did not seek past-year treatment.

Figure 3.3. Treatment gap: Students with untreated mental health symptoms in HMS 2017-2019



Note: statistical significance was captured for differences across all subgroups (APIDA versus non-APIDA and APIDA international versus non-APIDA international), for each mental health condition, at  $p < 0.001$

### ***Barriers to help-seeking***

Table 3.2 describes barriers to help-seeking among students who screen positive for mental health symptoms. APIDA students with untreated symptoms most commonly report not seeking help due to preference to deal with problems on their own, or with family or friends (35.3%), compared to APIDA international students who most commonly report lack of a need for services (35.4%). Other top reasons for not seeking help among APIDA students with untreated symptoms include reports of “not enough time” (34.8%), “no need for services” (31.3%), “financial reasons” (21.4%), and “not sure where to go (18.7%). This was slightly different than what APIDA international students with untreated symptoms report as top reasons for not seeking help, which include “prefer to deal with problems on own” (32.2%), “not enough time” (27.1%), and “not sure where to go” (16.9%).

Table 3.2. Reported barriers to help-seeking among APIDA students with mental health symptoms in HMS 2017-2019

	<b><u>All APIDA</u></b>	<b><u>APIDA international</u></b>
Prefer to deal on my own/with family/friends	35.3	32.2
Not enough time	34.8	27.1
No need for services	31.3	35.4
Financial reasons	21.4	14.6
Not sure where to go	17.8	16.9
Difficulty finding available appointment	12.6	8.2
No barriers	11.6	14
Plans to go but hasn't had a chance	6.3	6.6
Other	8.1	5.5

### ***Correlates of mental health treatment***

Tables 3.3 and 3.4 report the results of multivariate logistic regression models on a sequential set of factors related to predisposing characteristics, enabling characteristics and self-perceived need on mental health treatment (counseling, therapy or psychotropic medication) among APIDA students and APIDA international students who screened positive for any mental health problem. In Table 3.3's Model 1 on all APIDA students, females report 1.7 greater odds ( $p < 0.001$ ) of receiving treatment relative to who did not identify as female. Heterosexual-identifying students and international students reported significantly less odds of treatment compared to their counterparts, at 0.42 ( $p < 0.001$ ), and 0.69 ( $p < 0.05$ ), respectively. APIDA students who reported personal stigma have 44% lower odds ( $p < 0.05$ ) of using mental health treatment, while those who reported perceived public stigma have greater odds of treatment use ( $OR = 1.26$ ,  $p < 0.05$ ). APIDA students who believed in treatment efficacy are 2 times the odds more likely to receive treatment ( $p < 0.001$ ). The direction, magnitude, and significance of predisposing correlates of treatment utilization were similar among APIDA international students (see Table 3.4), with the exception that identifying as female ( $OR = 1.93$ ,  $p < 0.001$ ), perceived public stigma ( $OR = 1.55$ ,  $p < 0.001$ ), and belief in treatment efficacy ( $OR = 3.15$ ,  $p < 0.001$ ) are stronger predictors of treatment use, compared to APIDA students overall.

In Model 2 of Table 3.3, the effects of gender, sexual orientation, international student status, and stigma remained unchanged with the addition of enabling factors among APIDA students, while the influence of belief about treatment efficacy is attenuated. This indicates that with the exception of beliefs about treatment efficacy, differences in treatment utilization observed in the other predisposing characteristics are not explained by differences in enabling factors. Of all enabling factors explored, subjective knowledge of mental health resources



(OR=3.05,  $p<0.001$ ) and APIDA student website links to mental health resources (OR=1.46,  $p<0.01$ ), are associated with the greatest odds of treatment use among APIDA students with mental health symptoms. Time spent on schoolwork (OR=0.75,  $p<0.001$ ) and a high sense of belonging (OR=0.70,  $p<0.01$ ) are associated with lower odds of treatment.

Among APIDA international students observed in Model 2 of Table 3.4, the addition of personal, family, institutional, and community enabling resources left predisposing correlates relatively unchanged in comparison with Model 1, with the exception of reducing the positive association between belief in treatment efficacy and treatment use, and eliminating the significant positive correlation between perceived public stigma and treatment use. This may indicate that enabling factors are responsible for treatment utilization among those who believe in treatment efficacy or endorsed perceived public stigma. Both subjective knowledge mental health resources (OR=3.58,  $p<0.001$ ) and APIDA student website links to mental health resources (OR=1.95,  $p<0.01$ ) are stronger correlates of treatment utilization among APIDA international students, compared with the overall APIDA group. Greater than 16 hours spent on schoolwork also predict 40% lower odds of treatment utilization ( $p<0.01$ ) among international APIDA compared to 25% lower odds ( $p<0.001$ ) in the overall APIDA sample. Additionally, while financial stress and sense of belonging are significant correlates of treatment utilization among APIDA students, they are not significant correlates among APIDA international students, though the direction and magnitude of the odds ratios are similar among the two groups of students.

Model 3 in both Tables 3.3 and 3.4 additionally considers self-evaluated need factors. Perceived need is the strongest correlate of treatment use among all APIDA students with mental health symptoms, with those who perceived a need for care using treatment at 6.3 times the odds

in the overall APIDA sample (Table 3.3,  $p < 0.001$ ), and 8.2 times the odds in the international APIDA sample (Table 3.4,  $p < 0.001$ ), compared to those who do not perceive a need for care. Among students in the overall APIDA sample in Table 3.3, a decline in academic performance due to mental health is associated with 46% greater odds of treatment ( $p < 0.05$ ). While the direction of this association was similar among APIDA international students, the relationship between decline in academic performance and treatment utilization was not statistically significant (Table 3.4).

Among the overall APIDA sample, the addition of need factors eliminated the significance of financial stress and perceived public stigma on treatment utilization. The correlation between belief in treatment efficacy and treatment use is also reduced in magnitude with the addition of need-based factors, which suggests that variation in perceived need and decline in academic performance is responsible for some treatment use among those who believe in mental health treatment efficacy (Table 3.3). Among international APIDA students, the direction and statistical significance of predisposing and enabling factors generally do not change with the addition of need-based characteristics to Model 3. The exception is age, which becomes statistically significant, with a 6% increase in odds of treatment use associated with each increasing year. The magnitude of influence of personal stigma also increased in Model 3 among international APIDA students and is associated with 63% less odds of treatment use ( $p < 0.01$ ) compared to 55% less odds of treatment use ( $p < 0.05$ ) in Model 2. In APIDA students overall, however, the magnitude of association between personal stigma and treatment utilization did not change across the three models. The addition of need characteristics also increased the magnitude of positive association between subjective knowledge of mental health resources and

APIDA student website links to mental health resources with treatment use among international APIDA students.

Table 3.3. Multivariate correlates of mental health treatment among all APIDA students with mental health symptoms

<i>APIDA Students (n=3,960)</i>	<b>MODEL 1</b> OR (95% CI)	<b>MODEL 2</b> OR (95% CI)	<b>MODEL 3</b> OR (95% CI)
<i>Demographics (predisposing factors)</i>			
Age	1.02 (0.99 - 1.04)	1.03** (1.01 - 1.05)	1.03** (1.01 - 1.06)
Female	1.67*** (1.28 - 2.18)	1.66*** (1.26 - 2.20)	1.50* (1.07 - 2.10)
Heterosexual	0.42*** (0.32 - 0.55)	0.44*** (0.33 - 0.58)	0.51*** (0.36 - 0.73)
International student status	0.69* (0.50 - 0.96)	0.70* (0.49 - 1.00)	0.65* (0.47 - 0.91)
<i>Help-seeking attitudes (predisposing factors)</i>			
Personal stigma	0.56* (0.36 - 0.89)	0.56** (0.36 - 0.87)	0.56** (0.36 - 0.86)
Perceived public stigma	1.26* (1.00 - 1.59)	1.30* (1.04 - 1.63)	1.21 (0.94 - 1.56)
Belief in treatment efficacy	2.00*** (1.47 - 2.71)	1.81*** (1.37 - 2.39)	1.59*** (1.24 - 2.05)
<i>Personal &amp; family resources (enabling factors)</i>			
Financial stress		1.24* (1.05 - 1.47)	1.16 (0.95 - 1.42)
No insurance		0.68 (0.30 - 1.56)	0.74 (0.30 - 1.85)
Time spent on schoolwork (16+hrs/wk)		0.75*** (0.64 - 0.89)	0.66*** (0.53 - 0.83)
<i>Instit. &amp; community support (enabling factors)</i>			
Sense of belonging		0.74** (0.59 - 0.92)	0.79* (0.63 - 0.99)
Subjective knowledge of MH resources		3.04*** (2.27 - 4.05)	2.95*** (2.10 - 4.15)
APIDA student website links to MH resources		1.46** (1.14 - 1.86)	1.47** (1.14 - 1.88)
Can schedule appointments online		1.17 (0.95 - 1.44)	1.28 (0.94 - 1.75)
<i>Self-evaluated need (need factors)</i>			
Perceived need			6.26*** (4.32 - 9.07)
Personal life impairment due to mental health			1.16 (0.85 - 1.58)
Academic performance decline due to mental health			1.46* (1.02 - 2.10)
<i>Pseudo R<sup>2</sup></i>	<i>0.046</i>	<i>0.091</i>	<i>0.184</i>

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

Table 3.4. Multivariate correlates of mental health treatment among international APIDA students with mental health symptoms

<i>International APIDA Students (n= 1497)</i>	<b>MODEL 1</b> <b>OR (95% CI)</b>	<b>MODEL 2</b> <b>OR (95% CI)</b>	<b>MODEL 3</b> <b>OR (95% CI)</b>
<i>Demographics (predisposing factors)</i>			
Age	1.01 (0.95 - 1.06)	1.03 (0.98 - 1.09)	1.06* (1.00 - 1.12)
Female	1.93** (1.21 - 3.06)	1.89** (1.26 - 2.83)	1.93** (1.19 - 3.13)
Heterosexual	0.48*** (0.32 - 0.73)	0.52** (0.32 - 0.83)	0.54** (0.34 - 0.85)
<i>Help-seeking attitudes (predisposing factors)</i>			
Personal stigma	0.49* (0.28 - 0.86)	0.45* (0.24 - 0.83)	0.37** (0.20 - 0.69)
Perceived public stigma	1.55* (1.02 - 2.35)	1.49 (0.97 - 2.30)	1.47 (0.86 - 2.51)
Belief in treatment efficacy	3.15*** (1.73 - 5.76)	2.85*** (1.55 - 5.22)	2.38** (1.36 - 4.15)
<i>Personal &amp; family resources (enabling factors)</i>			
Financial stress		1.29 (0.86 - 1.94)	1.22 (0.83 - 1.80)
No insurance		0.87 (0.06 - 12.11)	0.8 (0.08 - 7.88)
Time spent on schoolwork (16+hrs/wk)		0.60** (0.42 - 0.87)	0.51** (0.32 - 0.80)
<i>Instit. &amp; community support (enabling factors)</i>			
Sense of belonging		0.79 (0.53 - 1.19)	0.85 (0.56 - 1.30)
Subjective knowledge of MH resources		3.58*** (1.92 - 6.68)	3.73*** (1.88 - 7.38)
APIDA student website links to MH resources		1.95** (1.21 - 3.15)	2.10** (1.31 - 3.37)
Can schedule appointments online		1.1 (0.60 - 2.04)	1.41 (0.74 - 2.67)
<i>Self-evaluated need (need factors)</i>			
Perceived need			8.22*** (3.54 - 19.06)
Personal life impairment due to mental health			1.05 (0.65 - 1.69)
Academic performance decline due to mental health			1.24 (0.75 - 2.03)
<i>Pseudo R<sup>2</sup></i>	<i>0.029</i>	<i>0.076</i>	<i>0.178</i>

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

## **Discussion**

Understanding the national prevalence in help-seeking and role of predisposing, enabling, and need factors on mental health service use among APIDA college and university students is a timely and critical issue for campus providers, counseling directors, faculty and other higher education leaders. Yet, evaluating APIDA mental health underutilization has not been studied extensively, and the existing analyses has yielded mixed and often marginal results. This study is

first of its kind, to the best of my knowledge, that utilizes a national sample of APIDA students, where previous studies focused on APIDA student mental health help-seeking in higher education have been confined to single campuses or single regions (Han & Pong, 2015; Kim & Lee, 2014; Loya et al., 2010; Miller et al., 2011; Ting & Hwang, 2009). Using my novel dataset that combines HMS national survey data and institutional data, I examined variations in mental health help-seeking behaviors among overall APIDA and APIDA international students, and identified the correlates of treatment use among students who meet the criteria for any mental health problem, in an effort to intuit the most promising avenues that will improve existing disparities in untreated mental health symptoms in this population.

In this chapter, I found that APIDA students far underutilize help-seeking avenues for their mental health symptoms in comparison with the overall college sample, with the largest treatment gap occurring among APIDA international students. These results align with prior research in college contexts (Lipson et al., 2018; Zhang & Dixon, 2003). One of the most significant treatment gaps when comparing APIDA students with overall students, occurred for those who screened positive for an eating disorder – a concerning finding especially given that Chapter 2 demonstrated APIDA students met the criteria for eating disorders at a significantly higher percentage compared to the general student population, with the proportion of international APIDA students screening positive for eating disorders at 1.5 times higher compared to the general population. This departs from previous research using the last nationally representative study on eating disorders in Asian adults from the National Latino Asian American Survey from 2003, which found lower prevalence estimates in Asian adults compared to other racial groups (Nicdao, Hong, & Takeuchi, 2007). APIDA populations unfortunately remain underrepresented in existing reports on eating disorders, and research that focuses

exclusively on their experiences is limited. My findings on the treatment gap among APIDA who screen positive for eating disorders highlight the importance of more race-specific queries that intentionally explore determinants associated with help-seeking, as well as why greater efforts are needed towards targeted screening and early intervention.

The most significant treatment gap differential between overall APIDA and international students were among students who met the criteria for Generalized Anxiety Disorder. There is scant previous research that provide insight into this finding. One study found that while Asian international students scored higher in anxiety measures compared to their European international student counterparts, very few would choose to seek counseling “when in need” (Fritz, Chin, & DeMarinis, 2008). APIDA international students are also further separated from informal support systems, such as family and childhood friends, compared to their domestic peers, which could result in less formal help-seeking avenues, and aligns with results from this chapter on APIDA international students’ use of family and friends for informal mental health support. The extant literature have also suggested that international Asian students, often endorse more collectivistic Asian cultures, which likely exacerbate feelings of mental health stigma, due to their individual problems being implicated upon their families as well (Fritz et al., 2008; Sümer, Poyrazli, & Grahame, 2008). The vast majority of studies that include investigations on APIDA international students’ anxiety and help-seeking examined international students as a homogenous group (e.g. all international students within a University), which results in the loss of specific culturally diverse needs, socialization patterns and psychosocial adjustment strategies of APIDA students through homogenous categorization (Clough, Nazareth, Day, & Casey, 2019; Ebert et al., 2019; Sümer et al., 2008; Szabo, Ward, & Jose, 2016). Additional efforts should be

made to emphasize the importance of assessing cultural groups separately in order to gain a deeper understanding of both problem and resource areas.

There was also variation in the most common barriers to help-seeking among APIDA international students versus overall APIDA students with mental health symptoms. For overall APIDA students with untreated symptoms, the most frequently reported barrier to not seeking help was due to preference to deal with problems on their own, or with family or friends. This is a concerning finding in light of APIDA students with mental health symptoms also reporting significantly lower rates of using informal help-seeking avenues to support their mental health. Taken together, these results suggest that a large proportion of APIDA students may not have adequate support in managing their mental health symptoms. The most commonly reported barrier among APIDA international students was the lack of a need for services. Investigations into perceived need among APIDA populations have found that lower perceived need was more prevalent among first generation immigrants. Potential predictors included the presence of physical symptoms as well as family conflict, which were both found to result in higher rates of perceived need and mental health service use (Bauer, Chen, & Alegría, 2012; M. Lee et al., 2017). Few explanations for perceived need, however, have been offered to specifically address the unique lived experiences of APIDA college and university students.

My results also provide new insights on the correlates of help-seeking among APIDA students and compelling evidence on the differential effects of correlates related to Andersen's predisposing, enabling, and need factors on overall APIDA compared with APIDA international students. In evaluating predisposing demographic factors, female and non-heterosexual APIDA with mental health symptoms are significantly more likely to utilize treatment. There is a dearth of evidence that specifically examines APIDA female or APIDA sexual and gender minority

mental health treatment utilization, but this pattern is consistent with existing evidence on general college female and sexual and gender minority populations (Dunbar, Sontag-Padilla, Ramchand, Seelam, & Stein, 2017; Eisenberg et al., 2007). This may be attributable to several factors. These students may experience higher distress levels and are thus more willing to engaged in mental health care. Sexual and gender minority students may also have better access to mental health resources through engagement with lesbian, gay, bisexual, trans, queer, or questioning (LGBTQQ) organizations. It would be pertinent for future studies to examine potential factors such perceived norms of mental health treatment seeking, and engagement in LGBTQQ campus or community organizations among APIDA students.

Knowledge of resources, beliefs of treatment efficacy and perceived need have the strongest associations with mental health treatment utilization among APIDA populations. This is consistent with studies on college populations in general, though departs from previous studies on APIDA students that emphasize personal stigma and public perceived stigma as significant determinants of mental health treatment utilization (Eisenberg, Speer, & Hunt, 2012; Hunt & Eisenberg, 2010; Lipson et al., 2018; Loya et al., 2010a; Ting & Hwang, 2009; Yoon & Jepsen, 2008). While personal stigma did play a more significant role in lower odds of treatment for APIDA international students than for APIDA students overall, this factor only partially explained the high prevalence of underutilization in these populations. Surprisingly, perceived public stigma was found to be positively and significantly associated with mental health treatment in Model 1 and Model 2 among APIDA students, and Model 1 among APIDA international students. The direction of this relationship remained consistent across all models, though it is unclear from the literature what is behind this relationship. One possible explanation



is that those who utilize help-seeking services may be more sensitive of the stigma surrounding mental health treatment.

The inclusion of APIDA student website links to mental health resources also emerged as a significant predictor for both populations, especially among international students. This finding, in combination with the salience of subjective knowledge of mental health resources in treatment use, reveals that current mental health resource outreach efforts to APIDA student populations may be insufficient, and should coincide with existing campus strategies to reduce stigma. Decline in academic performance due to mental health significantly also predicted increased odds for APIDA students overall, but not for APIDA international students, bringing to question how different groups of APIDA students conceptualize need for treatment. It would be worthwhile for future research to consider more nuanced ways that prevent or facilitate the perception of need for mental health services among APIDA student subgroups.

This study is not without limitations. The brevity of the measures is important to consider, especially given the complexity of some of the potential determinants explored. The cross-sectional nature of the data presented in this chapter also makes it difficult to infer causality in the relationships I explored. The addition of need characteristics, for example, increased the magnitude of positive association between subjective knowledge of mental health resources and APIDA student website links to mental health resources with treatment use among international APIDA students (Model 3, Table 3.4). This may suggest the possibility of reverse causality/confounding factor in which student's knowledge of resources increased as a result of seeking treatment in the past. The significance of the age variable in Model 3 (Table 3.3 and Table 3.4) that was previously not significant also could suggest omitted variable bias. I am unfortunately confined to the limits of my data, which does not support more sophisticated

econometric models that could test a good instrument and resolve some potential biases. Nevertheless, even if the correlates are not causal or are capturing confounders, the relationships found in this study are still strong and worth exploring, especially given that current conceptualizations are insufficient for understanding the full picture of APIDA students' help-seeking behavior. In particular, my findings underscore to how mental health treatment utilization is more complex than individual level characteristics, and provide evidence that contextual factors within the campus and community are salient in the evaluation of mental health help-seeking behaviors. In my next chapter, I will collect and analyze qualitative data in an effort to confirm and further elucidate on some of the relationships I've captured in Chapters 2 and 3.

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## **Chapter 4 A Qualitative Investigation of APIDA Student Mental Health and Help-seeking**

### **Introduction**

In general, qualitative approaches enhance mental health research by expanding our perspectives on modes of inquiry and theory, investigating participant life experiences within a socially constructed context by drawing on their own words to understand those experiences. For these reasons, qualitative methods have been used to investigate a range of ethnic minority experiences, including those of Asian Pacific Islander Desi Americans (Gergen, Josselson, & Freeman, 2015; Morrow & Smith, 2000; Nagata, Wu, & Kim, 2017; Ponterotto, 2010). Correlational and quantitative research designs, however, have been predominant in the existing literature on APIDA mental health and help-seeking. The illumination of risk and protective factors in APIDA college student mental health and influences on treatment utilizations remains a ubiquitous and salient challenge, particularly in light of limited qualitative approaches on youth and emerging adults to provide insight into the lived experiences of APIDA populations. Additionally, the prior literature on APIDA population is notably sparse in understanding specific experiences of APIDA youth and emerging adult populations, and those whom reside in regions outside of the West and East coast, are also vastly understudied (Nagata et al., 2017).

Focus groups are a qualitative research technique that collects data through group discussions on a topic determined by the researcher. The source of data is the interaction in group discussion, and the researcher has an active role in facilitating this discussion (Morgan,



1996). Focus groups are commonly used in disciplines such as public health and sociology, to further elucidate context surrounding race, ethnicity, inequality, and mental health (Morgan, 1996; Vaughn, Schumm, & Sinagub, 1996). This research method is advantageous for explanatory research, that seeks to gain more insight into complex behaviors, motivations, and experiences that emerge from the interactions between group members, which are difficult to interpret from survey data. A further strength comes from the researcher's ability to ask the participants themselves for comparisons among their views, rather than aggregating individual data from in-depth individual interviews, in order to speculate about the reasons why interviewees differ (Carey & Smith, 1994; Morgan & Krueger, 1993).

The limited qualitative data on APIDA young and emerging adults found that model minority stereotyping, difficulty balancing different cultures and communication with parents, as well as discrimination and isolation due to racial or cultural background as sources that adversely influence mental health (Constantine, Kindaichi, Okazaki, Gainor, & Baden, 2005; Lee et al., 2009; Yoon et al., 2017). In one study utilizing focus groups with 1.5 and 2<sup>nd</sup> generation East and Southeast Asian Americans, researchers identified cultural norms and associated stigma as the primary element that undermines mental health help-seeking behavior (Lee et al., 2009). While these studies make important contributions to the literature, they were not sufficient in delineating the various levels of influence on mental health and help-seeking behaviors in this population. To maximize efforts towards a more nuanced and complete consideration of APIDA student mental health, we need to identify effective and feasible measures at individual, intrapersonal and contextual levels for future intervention or program development.

This study represents the final phase of an explanatory sequential design. Findings from the analyses of my survey and institutional data probed more questions that I wanted to break

down, such as what the mechanisms were behind the variation and significance of the coefficients in my quantitative models. In this chapter, I will describe the design and findings of focus groups that I conducted with the objective of understanding what are the key influences on mental health, and the key barriers and facilitators driving help-seeking behaviors in this population. My analysis uses an abductive approach (which is described in more detail in my methods), and is also guided by the Socioecological model, as well as Andersen's Socio-behavioral Theory of Health Services Use, as described in Chapters 2 and 3.

## **Methods**

In order to gain a deeper understanding on factors that influence the mental health and help-seeking among APIDA college students, I recruited college students from a large Midwestern public University to participate in focus groups.

### ***Focus Groups***

I used an active approach recruitment strategy through listserv emails to the campus United Asian American Organization (a coalition group representing various Asian Pacific Islander Desi American organizations on campus) and snowball sampling, where participants recruited other potential participants (Krueger & Casey, 2015). Study eligibility included individuals who were (1) 18 years old or older (2) enrolled undergraduate or graduate student (3) identified as Asian Pacific Islander Desi American (APIDA). Twenty dollars cash was offered as an incentive. Three focus group discussions were held between November 2019 and January 2020. Prior to the focus group discussion, each participant provided verbal consent and completed a demographic questionnaire.

I used the same semi-structured guide for all the focus groups, which was developed based on findings from my analyses of the Healthy Minds Survey and Institutional data. Focus groups sought feedback from APIDA-identified students about mental health help-seeking facilitators and barriers as well as policies or programs that could assist help seeking, and APIDA mental health overall. Specifically, focus groups discussed these questions:

1. Why do you think APIDA students are less likely than white students or even other students of color to seek treatment for mental health problems or symptoms?
2. What are some facilitators and barriers that impact APIDA students in help-seeking? Are these unique to APIDA students?
3. What are some programs or policies that you think colleges, universities, or larger society can implement to improve APIDA student mental health and help-seeking?
4. What are some identity and interpersonal factors that you think might be at play to influence either mental health or help-seeking among APIDA students?

Focus groups lasted 75 minutes and were all held within a conference room at a central location on campus. Participants were given blank sheets of paper to write down thoughts they were not comfortable sharing with the group at the beginning of each focus group. These comments were collected at the end. The study was granted permission with exemption by the University's Institutional Review Board.

### ***Data analysis***

Focus groups were digitally recorded and professionally transcribed. There were two additional trained qualitative researchers who served as both an observer and part of the subsequent coding team. Both observers/coders identified as APIDA women. We analyzed

transcripts using the Rigorous and Accelerated Data Reduction (RADaR) technique, with an abductive approach in generating codes and themes (Timmermans & Tavory, 2012; Watkins, 2017) in effort to maximize the dependability of the results.

The RADaR technique is a systematic analysis method that has been used in over a dozen qualitative and mixed methods projects (Goodwill et al., 2019; Jefferson, Watkins, & Mitchell, 2016; Kales et al., 2015; Watkins, 2017). We utilized this technique in tandem with an abductive framework to inform our coding process, which rests on the cultivation of empirical findings against a background of multiple existing sociological theories and systematic methodological analysis. This approach to data does not use full inductive grounded theory, but rather a recursive process of double-fitting data and theory (Corbin, 2009; Kools, McCarthy, Durham, & Robrecht, 1996; Timmermans & Tavory, 2012). This type of inference involves making preliminary assessments based on the interplay between existing theories and data when anomalies or unexpected findings occur. If the existing theories partially account for the empirical phenomena, then the existing theory is used as a lens to view to view the data. Empirical and theoretical anomalies then require the development of tentative new theories built on inductive conceptualization of this data, through further intensive coding (Timmermans & Tavory, 2012).

In following the steps of the RADaR technique, I initiated the analyses process by reviewing all the transcripts and entering all the data into Microsoft Excel, with descriptive titles placed in the column headings that reflected the data collection time point, interviewer question, and participant responses. I then placed the research question at the top of the spreadsheet to prompt the removal of unrelated data, repeating until I jettisoned all the data that were not relevant to my research question. Data reduction tables in the present study underwent two

reduction phases, with each phase representing a narrower and more concise focus that was more closely linked to the study objectives (Watkins, 2017).

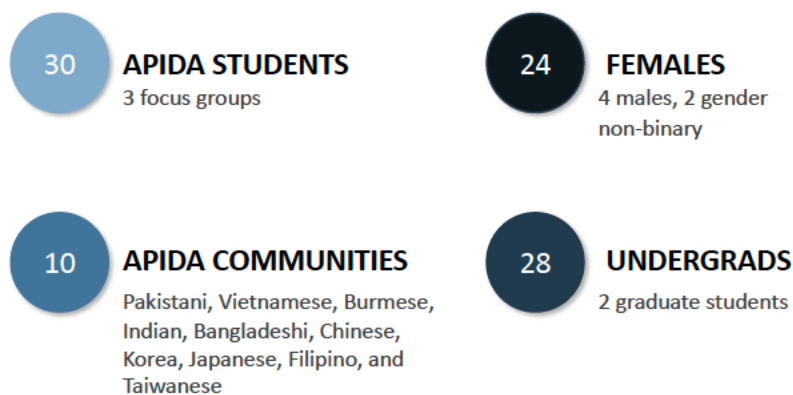
In collaboration with my coding team, we used a two-stage coding process, with an open coding procedure, followed by a more extensive focused coding sequence to identify how codes related to one another. During the open coding stage, provisional codes were developed based on individual-level influences and institutional-level drivers and challenges to mental health and help-seeking behavior. These codes were constructed iteratively utilizing an abductive framework, through the consultation of theory, including the Socio-Ecological Model, Andersen's Socio-behavioral Theory of Health Services Use (Andersen, 2008; Aneshensel, 2015), my quantitative analyses from chapters 2 and 3, as well as inductive reasoning to fill the gaps. Focused coding was then utilized to identify how the codes related to each other, and eventually sorted into broader themes and subthemes. The coding team used group consensus measures at each stage of the coding process to strengthen the credibility of coded themes and subthemes. Analyzing the data utilizing this two-stage coding process enabled the robust understanding of the individual and contextual level influences to mental health and treatment utilization, as well as opportunities to improve help-seeking behavior in APIDA student populations. In the final step, direct quotes were highlighted to identify exemplar quotes that represented each of the overarching themes and subthemes.

## **Results**

A total of 30 students participated in the focus groups. This included 4 males, 24 females and 2 gender non-binary students. All students identified as APIDA, representing 10 different APIDA communities (Pakistani, Vietnamese, Burmese, Indian, Bangladeshi, Chinese, Korea,

Japanese, Filipino, and Taiwanese). The vast majority of the participants were undergraduate students, with a total of two graduate students in attendance. Figure 4.1 summarizes the participants in each focus group. While both mental health and help-seeking domains were prompted throughout the focus group data collection process, the most frequently addressed topics emerged around help-seeking attitudes and treatment utilization. Overall, APIDA students not only described their own experiences and the experiences of their peers, but also how APIDA are viewed and stereotyped by others outside their racial/ethnic community, and then extrapolated how perceptions of the way APIDA are viewed impacted their own beliefs in relation to mental health, the validation of mental health symptoms, and help-seeking attitudes.

Figure 4.1. Sample Characteristics of APIDA Student Focus Groups

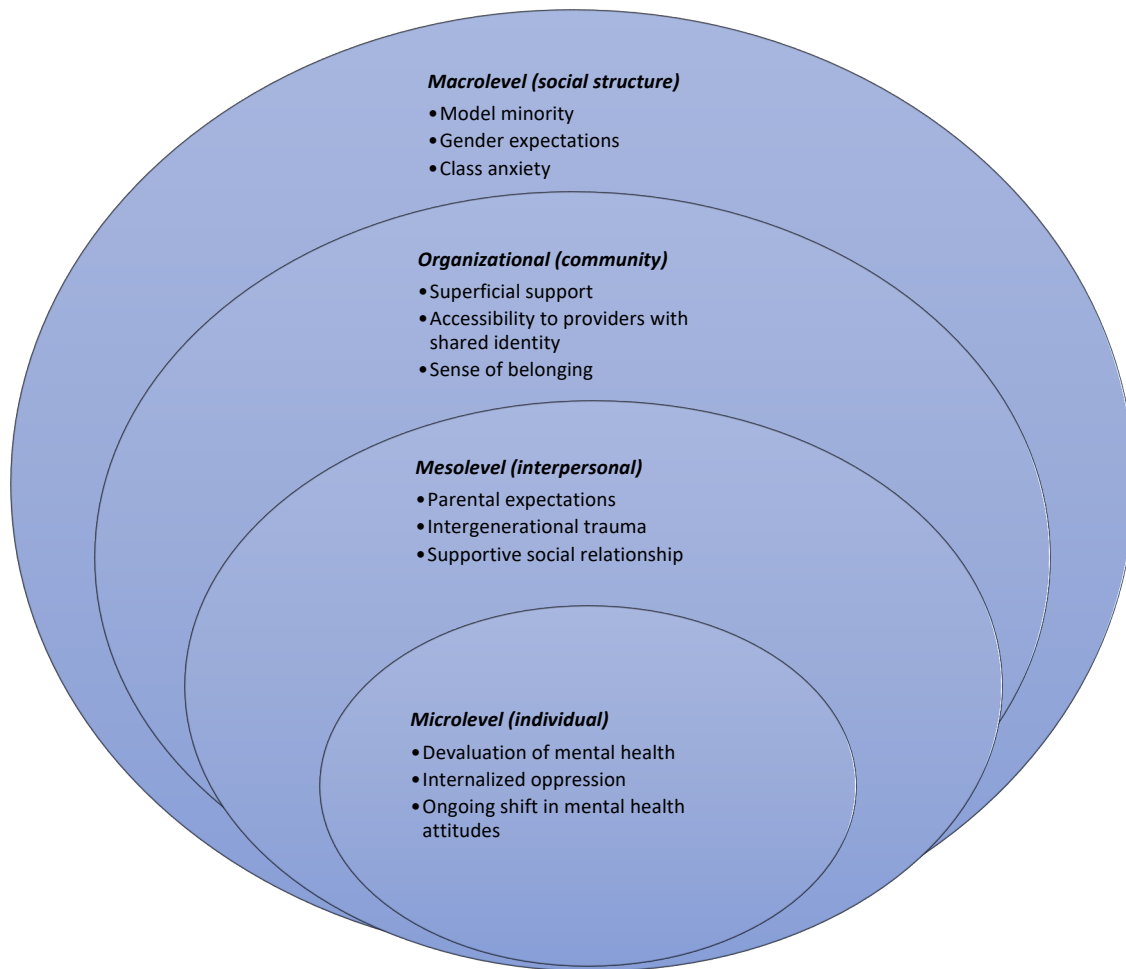


### ***Mental Health***

Using the socio-ecological framework, which identifies influences of wellbeing at multiple levels, participants described microlevel (individual), mesolevel (interpersonal), organizational (institutional) and macro-level (social structure) factors affecting both potential risks to and protection of their mental health. The socio-ecological framework considers a complex interplay between individual, intrapersonal, community, and societal factors that influence psychological well-being (Guo, Hopson, & Yang, 2018). My data indicated that the

established framework agreed with my participants' descriptions of potential risk and protective factors for mental health problems. Figure 4.2 summarizes the themes and subthemes that emerged.

Figure 4.2. Potential risk and protective factors for mental health identified by APIDA students



### *Microlevel*

The critical role of cultural norms in participants' mental health experiences was apparent across all focus group discussion. In particular, cultural messaging about mental health and internalized oppression led to not prioritizing own emotional wellbeing and exacerbated mental health symptoms.

Students reported various ways in which their APIDA communities and families devalued their emotional wellbeing and undermined mental health symptoms. Chinese students, for example, discussed the concept of “*saving face*” or having a public persona, and keeping any concerns within the family. One undergraduate female noted that in her Chinese American community, “*you cover things up. Your reputation, your status...all prevents parents from wanting to acknowledge anything that's going wrong with their own kid.*” Another Chinese American female graduate student described that she doesn’t actually “*know what the word mental illnesses are in Chinese, because they've only ever used derogatory terms.*” One male undergraduate discussed a similar debasement of mental health symptoms in the context of the church, and its salient role in the Korean American community. He described that from the perspective of the Koreans he grew up with “*if you're truly spiritually healthy or whatever, you shouldn't have any mental and emotional problems*”. Another female undergraduate also identified a complementary attitude in the Indian community, with the following reflection: “*I felt I had depression, sure, but I think for the most part it seemed very attention seeking or everyone has it hard and you're just being really dramatic.*” The cultural messaging students received about their mental health often led to feelings of shame and embarrassment, and as one undergraduate female emphasized “*added to the distress*”.

Students also described experiencing microaggressions, but for the most part condoning these indignities due to social pressures and internalized oppression. One female graduate student attributed this complacency and subsequent impact on mental health to “*playing the game...that white people exhaustion game, it's that. You just have to go along with it...I put myself through all these white spaces just so I can try to get to the top at some point.*” Another



female undergraduate student reflected *“Especially in more white spaces...it's hard for me to feel I'm equal. I think I internalized so much oppression. I always feel I'm lower than white people.”*

In addition to the individual-level inputs that students attribute to adversely affecting their mental health, participants also discussed that the ongoing shift in their own attitudes and understanding of mental health as a protective factor against mental health challenges.

Participants noted that though mental health issues have always existed in their communities, they've only recently come to light, partially due to the influx of narratives related to mental health among young APIDA populations. There seemed to be a growing sense of solidarity within APIDA student populations around the salience of mental health, which influenced participants' own conceptualization of their mental health needs. One female undergraduate, for example, explained, *“I think it's really powerful that that narrative has shifted. There's a long way to go as our stories have showcased that. But I think now, it's coming into light...people have the language to describe it now....and it [mental health symptoms] makes more sense”*.

### *Interpersonal*

Participants agreed over the mental health toll of parental pressure to strive for certain career paths and succeed academically. Students discuss the struggle in fulfilling these expectations, especially with the weight of their immigrant parents' sacrifice in mind. A female undergraduate explains this burden:

*“I think in our community there's the feelings of gratitude that we are supposed to be feeling towards our parents for raising us in this country and giving us all these opportunities that we wouldn't have had if we were back where they grew up. I think we don't want to feel ungrateful. I think admitting that we're not living up to our quote*

*unquote fullest potential, would disappoint them. One major strain is being afraid to disappoint our parents because they gave us so much.”*

Not surprisingly, the concern over meeting parents’ expectations also impacted students’ confidence in their own academic path, with some students compelled to concentrate in STEM areas that they are “not passionate about” which as one undergraduate male reported “*really affects your mental health*”. On the other hand, students who did choose their own aspirations in spite of parent protest also reported mental health strain, as one female upperclassman discussed

*“Doing something you are passionate about but your parents hate it- that is the worst thing. You know that your parents have done so much and they didn't do what they love just so that you can live the life that you're living... it's hard to do what you want to do when you just feel like you're disappointing your parents all the time.”*

This duty to live up to parental expectations consequently prevented students from utilizing informal support through their family as well. For example, one male undergraduate explained “*why bother my parents or my family with my mental health when there's more important things like my education and how successful I am that I have to think about. So there's kind of that...it's not pressure that they put on me directly, but it's indirect. I know it's there.*”

Other students discuss the difficulty in communicating with their parents due to the difference in culture and language barriers, in addition to the generation gap that many of their non-APIIDA peers face. One female undergraduate emphasized, “*A lot of my Asian friends back home tell me they're not as close to their parents compared to a white person, for example. And I think that's part of it because they know their parents are struggling themselves. So why burden them with their feelings?*”.

The influence of family on mental health was also discussed in the context of transgenerational trauma, especially in relation to coping and adaptation strategies adopted from family members. Students discussed their family's immigration experience and the resulting loss of cultural identity and social stability that anchored their collective sense of self. One undergraduate female, for example, discussed her sister's diagnosis of PTSD, and that the therapist "*wouldn't be surprised if our entire family had some form of that.*" She further explained:

*"I think there's something that you lose in the relationship when you do come over. I think when we actually made that trip from Burma to here, I think there was something that my parents and I just don't have any more, that we can never have. And I don't know what it is. It's probably intergenerational trauma, but I think for my sister and me, it was like how do we reconcile everything that my parents have sacrificed with everything that they also did put us through because none of us ever talked."*

The difficulty in accepting the "western" modality of mental illness among family members also exacerbated this experience of transgenerational trauma, with participants not only commiserating over the immigration hardships and assimilation stressors of their parents, but also the impact that this had on their own conceptualization of mental health and salience of individual emotional needs. One female undergraduate captured this through a description of her parents' attitude towards mental health as a result of their immigration experience as refugees from Vietnam.

*"It wasn't really something that was ever on their mind because their main worry was we need to find jobs, we need to learn English, we need to find a way to survive here. And if*

*you can't get food on the table, then to them it was, 'What's the point of worrying about anything else if we can't feed our kids, if we can't send them to school?'"*

Participants noted the beneficial effects of supportive social relationships on their mental health and provided examples of different APIDA and other peer networks whose shared values were particularly integral in creating belongingness and maintaining overall emotional well-being. For example, a female graduate student discussed her search for an APIDA network after not finding success in general groups for students of color, *"I finally found a group of faculty, grad students and undergrad students who are like me; Asian or mixed race individuals. And that's been the only space that I've found where I felt super great."* Another undergraduate female student described her culture shock coming from a diverse high school to a predominately White university, and how that led her to seek out APIDA organizations and provided her *"a comfort to kind of balance out the whiteness."* Many students also discussed peer networks with shared values, particularly social values, as well as transparency regarding mental health as particularly important.

### *Organizational/community*

Many participants described past and ongoing struggles to find a sense of belonging within the campus community. Both undergraduate and graduate students described experiences in attending events or groups intended for students of color, only to find themselves the only APIDA student in that space, and subsequently feeling the need to justify their presence or *"put their foot in the door"* with their own struggles as indicative of the minority experience. There was also a general consensus of feelings of exhaustion trying to conform to predominately white spaces on campus among the participants. Students reported feeling exclusionary behaviors

among their white peers as well as faculty and staff, such as being overtly ignored or overlooked. For example, one female undergraduate explained:

*“I'm in a very white field, I'm in political science, I'm currently in the college Democrats and it's a very, very white organization. It's a lot, constantly being around white people. I don't know directly what kind of toll it takes on my mental health but I definitely get emotionally exhausted from being in those spaces. In those white organizations, people don't talk to you...and I have a very outgoing personality.”*

Another undergraduate male student described a class discussion on discriminatory experiences based on race.

*“I thought that would kind of prime them to think, ‘We should step back and let's see what some students of color want to say,’ but they just dominated the conversation....And when I said, ‘We should address what people actually need’ ....they talked over me and that's when I felt maybe there isn't the space for me.”*

The lack of mental and emotional wellbeing support systems on campus also emerged as a theme. Students acknowledged that the institution promotes mental health as a priority, but the accessible support systems are perfunctory. One female undergraduate described that there's a lack of engagement about mental health at the institutional level, and as a result, *“it's hard to break that stigma because the university provides no data on mental health and no activities on it. It's just mindless go here, go there. Then they don't really do anything to help.”* In general, students were frustrated by support options offered at the university, and cost associated with them. One female undergraduate student captured this sentiment:

*“I feel like it takes so much courage to actually admit that you need help and then to find out when you finally go to get help, the help that is being offered by the university that*

*they claim is going to help you, it's there for you, it's so completely superficial. You feel like, well is there any point then? Because a lot of times, a lot of insurances don't even accept a lot of psychologists or psychiatrists. So you have literally no choice but to convene with the people who are around you and friend support and not actually pursue professional help.”*

The negative mental health impact of the campus environment was also discussed. Students specifically attributed superficial promotion of diversity, equity and inclusion as adversely influencing their mental health. Students reported that diversity at the University is often just treated as a requirement to check off, that’s often not taken seriously by students or instructors. One male undergraduate student emphasized *“they push their diversity, equity, inclusion, which is a joke because we have one day a semester about it...it's frustrating as a student of color to know that in reality, the classrooms are still not what they portray it to be”*. Another female undergraduate student highlighted *“they teach diversity like it's a tool to be more productive and to be a better team, not cause it's just important to people.”*

Participants did emphasize the value associated with supportive mental health providers, especially those with shared identities. One female undergraduate student recalled *“I have a friend back home who identifies as an Asian queer woman and it's very hard for her to come out...the psychologist that she saw was the first person that she ever actually officially came out to. She felt uplifted by that because she was the first person she actually got support from and shared the same identity.”* Another female graduate student discussed having a counselor who was a black woman with shared experiences in mental health stigma was beneficial to her own mental health because it *“validated the fact that external help was needed”*.

### *Macrolevel*

The critical roles of conceptions of masculinity, model minority stereotyping and class anxiety in students' mental health experiences were apparent in their responses. The emasculation of admitting mental health struggles was an important stressor among the men of the group. One male undergraduate student described how toxic masculinity had an adverse impact his mental health *"some of my friends, if I was actually upset at something, would just make fun of me, and be like "bro why are you mad dude it's just a joke" and stuff like that. It creates an environment where you feel like you have to be cool or easy-going or else everyone will talk bad about you'.*

Asian American mental health is often dismissed at the structural level, to the extent that the complexities of the model minority myth perpetuates assumptions that Asian Americans are well-adjusted and do not experience mental health problems. Participants described the invisibility of their struggles as a result of the model minority belief. A male undergraduate student reported *"the model minority kind of belief... and stigma that if you admit that you have mental health problems, it's like a black mark over the image of you...and the surrounding society won't stand up for you"*. One female undergraduate student emphasized how mental health issues *"was never really something that we associated that could be possible for ourselves. So it was always something that wasn't associated with Asian Americans. And just because of that, since no one really talks about it, it wasn't something that we were allowed to put on ourselves."*

There was a clear mental health toll as a result of both societal perceptions and the internalization of this myth by important people in their lives (family, friends, and partners) and by the participants themselves. One female graduate student described *"the model minority myth*

*is everywhere, only the success stories are usually highlighted...you never really hear about people actually reaching out, and the hardships, and when they actually reached out and sought out mental health counselors.”* Students also discussed the ways in which upholding this myth has created mental health problems. One female undergraduate emphasized how model minority expectations led to a lot of her anxiety, and when trying to discuss this connection, people are generally dismissive and assume, *“Oh, you're Asian. You don't have to work as hard, you're smart or whatever because you're Asian. They dismiss how academics and striving for success and stuff like that has also impacted my mental health in itself because people think because you're Asian you're smarter or more successful.”* The internalization of the model minority also brought up issues of belongingness, both within APIDA communities as well as the falsehood of being the right type of minority in American culture. One female undergraduate student recalled *“growing up and having that ‘certain type’ indoctrinated in us really also causes identity issues and saying that being successful is inherent to being Asian. If you aren't successful, then you aren't truly in this community.”* Another female undergraduate student suggested that *“because of the model minority, I think a lot of people within the community as well think that everything's okay and there's this proximity to whiteness that people are content sitting in that they don't want to acknowledge otherwise.”*

Many participants described past and ongoing struggles with class anxiety. Common social beliefs and attitudes about APIDA students, often about socioeconomic background, were perceived to affect emotional wellbeing. One male undergraduate student discussed

*“It's almost like you have to put on a facade that you fit into the normative culture of having money and having successful parents and then you're going to be successful and if you even show a marker that you're not part of that label or the idea that's put on you, it's*



*done. It's that Model Minority myth where your experience is like, 'Oh, so you're not one of the regular Asian Americans on campus?'"*

Some students discussed this class anxiety as an overall campus issue that is exacerbated by model minority assumptions, a female undergraduate student discussed this struggle: *"Class anxiety I think is super real on this campus and no one brings it up. Because I think my entire four years, I've just tried to hide how much I struggle every day financially... they [other students] see me, and then they assume your parents may be doctors or whatever."* In addition to carrying this burden, students also discussed that belongingness and limited help-seeking options for individuals who do not fit the class mold on campus contribute to poor mental health. One female undergraduate student noted that *"I think if you're coming from a background of not being as well off... it is really hard for those students to find their place to the university or even seek help...if you're already alone from the beginning, I don't think that's going to push you to enter a space, even if it does exist."*

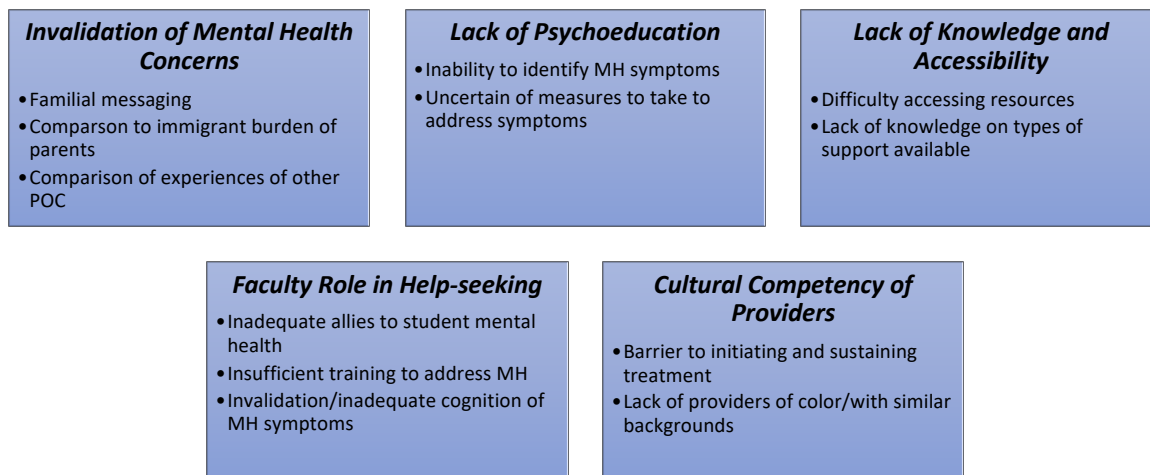
### ***Help-seeking and Treatment utilization***

An in-depth analysis of the focus group discussions revealed participant perceptions of challenges and potential facilitators to help-seeking in APIDA student populations. My data indicated that the established Andersen's framework of predisposing, enabling, and need-based determinants of treatment utilization was congruent with participants' descriptions of major influences to help-seeking attitudes and behavior. Within this framework, however, specific domains at each level of Andersen's model operated in a unique context for APIDA students.

Participants reflected upon both individual and interpersonal factors that shaped their attitudes related to help-seeking, as well as school and structural level barriers that contribute to

low levels of mental health treatment utilization in APIDA populations. Respondents described five key themes that presented as challenges for treatment utilization, including low use due to invalidation of mental health concerns, lack of psychoeducation, lack of knowledge and accessibility of campus resources, inadequate faculty support, and deficient cultural competency of providers. These key themes and subthemes are summarized in Figure 4.3.

Figure 4.3. Mental health treatment utilization themes and subthemes



### *Invalidation of Mental Health Concerns*

Students reported the invalidation of mental health concerns across several different contexts. The first source often came from familial messaging surrounding the idea that mental health concerns are not authentic pain. This was illustrated by a female undergraduate who described pain from the perception of her family, as something that is visible:

*“For example, if you're injured, then my family will say, oh you should go to the doctor, but if they know someone who has a mental health problem, they [my family] don't really consider that as enough pain to actually seek help.”*

A male undergraduate student reinforced this notion, commenting that Asian people in general don't see a mental health issue as *“an illness that requires treatment”*.

Other students described similar experiences when approaching family members with their own mental health symptoms. One female undergraduate student approached her dad about concerns over her anxiety, but he retorted with *“that’s not a real thing”*. She went on to express how *“invalidating”* these types of interactions were, and how *“as an adult, you internalize it, and think well this doesn’t matter, it’s not important enough to go seek help”*. Other students also reported a desire for validation within one’s family and/or close peer networks. One female undergraduate student elucidated how validation related to later treatment seeking attitudes.

*“One of the biggest things is wanting to feel validated in having some mental health concern. If your informal systems or networks aren't enough to validate you in that and [they] tell you that you're overreacting, it leads to 'I don't want to go', or 'I don't want to waste professionals time' or 'I don't want to waste money going to see a professional' type of thought process.”*

Participants also emphasized the comparison of their issues to the immigrant burden of their parents, which contributed to another layer of invalidation of their mental health concerns. The vast majority of participants were children of immigrants, either one or both parents. Consequently, the reflection on the immigrant journey of their parents often engendered the assumption that their own struggles were irrelevant. One female undergraduate student described the sacrifice of her mother, and how *“something happened in her life that is a lot worse compared to what's happening in mine, so I should probably be able to handle this [mental health challenges] better”*. In light of this comparison to the immigrant experiences of their parents, participants suggested that their struggles were a burden for others.

Female undergraduate: *“My parents were immigrants, they raised me to be grateful for what I have, which they didn't have at my age, and it primed me to not want to talk about my problems until they were super serious”*

Male undergraduate: *“Growing up we knew our parents were struggling themselves, so why burden them with our feelings?”*

Another source of invalidation of mental health symptoms came from cultural messaging, and the conceptualization of the APIDA experience compared to the historical oppression of other communities of color. Similar to the discussion on the immigrant burden of parents, participants also emphasized that their problems seemed trivial compared to other students of color as evidenced by a female undergraduate's description that *“historically, LatinX and Black communities have gone through a lot more, and my problems aren't as big or justifiably need as much help”*.

#### *Lack of psychoeducation*

In addition to invalidation of mental health concerns, students also reported the inability to identify mental health symptoms, which presented an obstacle to perceiving a need for treatment. Participants discussed a disconnect between the presentation of distressing symptoms and recognition of mental health illness. One gender non-binary undergraduate recalled that because mental health was never discussed in her childhood, *“it was hard to educate myself on if I was feeling sad, what that meant, or why I was feeling sad other than big emotions”*.

Participants reflected on their upbringing, and its contribution to their knowledge about mental health, especially with regard to the limited conversations about mental health which led students

to not to recognize their own distress. This was illustrated by a female undergraduate, who explained:

*“There wasn't a lot of time talking about my feelings growing up, and it contributed to me not even processing my mental health or reflecting on how I'm doing. Then I took a mental health survey they sent out to all students and the survey told me "Oh you possibly have this condition" - and I was like okay, I should probably have known that earlier.”*

Participants also weighed in on the impact of not being cognizant of their symptoms, with one female undergraduate noting *“If I knew more and had a diagnosis earlier on, instead of just dealing with symptoms of depression for a really long time, maybe things would have gotten better, sooner.”*

If participants were able to perceive signs of mental illness, they were still unsure on what measures to take to address their symptoms. A male undergraduate explained how the *“culture of silence”* in *“Asian American spaces”* prevented further action to be taken even when symptoms are observed.

*“You don't talk about your problems, you just go with it, you roll with the punches and that's what you're taught. I feel like for a lot of people it's 'your problems, just forget about them'.”*

The students also reflected that the measures taken by themselves or their APIDA peers often involved suppressing their feelings, to prevent being a burden for their family or peers. For example, a female graduate student delineated that *“in general talking, actually talking about what I'm going through has been a real challenge. I don't want to be a burden on others, not only my parents.”* Another male undergraduate student revealed *“Growing up we knew our parents were struggling themselves, so why burden them with our feelings?”*. Students did

believe institutions had a role to facilitate psycho-education and help-seeking, and expressed desires to *“have a way to connect to people [providers] in the community without feeling like a huge burden. Especially because of insurance and stuff could show up with our parents”*.

### *Lack of Knowledge and Accessibility of Campus Resources*

Despite the availability of counseling services and numerous mental health support groups on campus, students still reported difficulty in accessibility as well as lack of knowledge of resources in general. Those that sought or had friends who sought treatment services reported tedious processes to complete forms and then still having to wait between three weeks to three months for an initial appointment. One female undergraduate student noted that the long waitlist at the campus counseling and psychological services center (CAPS) point to the fact that *“it is not an accessible resource because they [the university] just don't put enough into it.”* The inaccessibility is so notorious on campus that its even *“a regular meme”* on the University’s Facebook meme page, according to participants across all focus groups.

Students were also unaware of the existence of other types of resources on campus. One female undergraduate student revealed that she didn’t *“know of any student groups that talk about mental health...I think that goes to show that maybe they're not as effective”*. Another female undergraduate further emphasized that *“the compounded stigma and lack of resources could account for some of those numbers [low treatment rates]”*. Participants that held roles as student leaders on campus were aware of other resources but emphasized the need to *“send out these services to more students or do more outreach”*.

Many participants were also unclear about the costs of CAPS, citing concerns over pursuing campus treatment avenues and the financial burden it would place on themselves or

their family as a major barrier to treatment. For example, a female undergraduate explained “*as a first gen student, money is definitely a big barrier. I think I would feel bad throwing them money even though my family does emphasize mental health as something important. I just feel like with the money... this is so expensive that I don't really know if I can I put my needs above my family*”.

I responded by asking the group if they knew that CAPS services were offered free of cost to students, and in one focus group, the vast majority of students assumed it was reduced costs, or that the service was mostly a referral mechanism for outsider providers.

In general participants were pessimistic about the existing treatment services available on campus, and unfamiliar with alternatives. The few students that were aware of mental health support networks on campus did not find them helpful or the students relatable, because the groups were dominated by white students and white student leadership. One female undergraduate student captured the sentiment by expressing:

*“We know mental health issues exists in Asian communities, but what can we do with that information to build a support system where we all feel like we can be heard about our issues?”*

### *Faculty Role in Help-seeking*

The role of faculty and staff in student help-seeking also emerged as a theme, particularly in that faculty and staff were inadequate allies to student mental health and help-seeking for various reasons. The participants assumed good intentions on behalf of faculty and staff, and that the responsibility fell on the university to provide proper training and coordinate a help-seeking or gatekeeping plan. For example, female undergraduate student explained:

*“I’m sure so many staff and faculty want to help, but they don’t know how to help because the university doesn’t equip them with the right resources or training to help. Doing a one-hour seminar or webinar online is not going to give you anything on how to help students and even help yourselves”*

The institutional obligation to provide adequate guidance for faculty and staff to address mental health issues was viewed as a major shortcoming of the University. A female graduate student highlighted this subtheme:

*“Another critique I have is not having workshops for professors, especially because they are so out of it. Just by adding the small paragraph on the syllabus doesn’t define mental health and they don’t understand because they went through graduate school and college in a different era...so just informing them, ‘What is an issue? What isn’t?’”*

Participants discussed that themselves or their peers also experiencing the invalidation of mental health symptoms from faculty and staff and/or inadequate recognition of mental health symptoms. There was, however, debate on whether this concern disproportionately impacted APIDA students, with some participants feeling that they were siloed by the model minority status, and their wellbeing was overlooked because *“the model minority is everywhere. It’s almost inescapable. Everyone just automatically assumed things about you in class”*. Others explained this deficiency in symptom recognition as a broader issue that is situational and compounded with cultural stigma.

Female undergraduate: *“I just feel like being a student sometimes, your worth is equated to your productivity. So obviously when your mental health is not good, you’re not as productive. But they only see you as being lazy...a lot of professors, they definitely do want to help. Some also just assume she’s being lazy or she’s doesn’t care.”*



Female undergraduate: *“It's so circumstantial, what kind of faculty is going to be sensitive to your issues too which is really unfair. I think it's compounded with the cultural norms, as well as how the people that you can rely most on campus are your peers and it's not like any of us are equipped with professional experience. So you end up feeling like you're also taking so much out of your friends too.”*

Despite the divergent opinions on what motivates the challenges with faculty and staff in student help-seeking, the participants unanimously described that faculty and staff play a critical role in identifying and referring students in distress, as well as creating learning environments that support mental health and wellbeing.

#### *Cultural Competency of Providers*

Participants described personal and anecdotal experiences with ways in which provider cultural competency served as a barrier to initiating and sustaining mental health treatment. Participants discussed negative experiences with CAPS counselors, which dissuaded them from receiving further care. For example, one female undergraduate student described:

*“When I started to go to therapy, I saw a white therapist at first. I was telling her what was going on and she blamed it on my heritage because I'm biracial...so I saw her once, but I never went back.”*

Another female undergraduate described a similar experience.

*“When I first tried to seek help in the beginning, it didn't help me to see people who weren't people of color because I felt they didn't understand why I was feeling the way I did. I remember going in sometimes and it'd be all white therapists and I'd talk about problems with feeling a lot of piety towards my parents. I owe them everything, that kind*

*of thing. Then she told me stuff like, but no, do it for you, and what you want to do. I'm like, yeah, logically. But not helpful.”*

Participants attributed provider-related help-seeking challenges both to the lack of cultural competency of white providers, as well as the general lack of providers of color.

*Female undergraduate: “It’s really hard to be able to see someone in CAPS. Then also trying to request someone who was a person of color. I know I’ve had friends who have tried to request a woman of color and then they’ll get a white man. Then that also makes me afraid to go see them because I don’t want to have a negative experience that will turn me off forever. I think this not knowing whether or not I can trust CAPS has really prevented me from going.”*

This perception of lack of access to providers of similar background was concern that was consistent across all focus groups. While many participants drew on both personal and peer experiences, participants in other cases described concerns more based on anecdotal knowledge or assumptions. For example, one undergraduate female discussed:

*“There’s a lot more prevalence of white clinicians and white psychologists and psychiatrists that are working, so a lot of times POC don’t feel safe to go to these places because they’re like, ‘Oh, maybe I won’t be heard about certain issues or they just don’t know what it’s like to be oppressed in this certain way and this is what I’m dealing with. They just won’t relate to me and they’re really not going to help me.’ So I think that really prevents a lot of Asian Americans from going and seeking treatment and help.”*

In general, Participants emphasized the need to “*improve worker constituency of CAPS and psychiatrist offices*”. Students were particularly doubtful about counselors’ abilities to help with some specific APIDA cultural issues within their family, and the burden of “*getting this across*”

to a White provider and/or provider with low cultural competency. The following female graduate student captured the general consensus across focus groups, and the perceived need for institutions to:

*“hire people that look like us and have the same kind of experiences as us, so if we do need to use CAP services or other kinds of services, there are people that can relate to us and we feel like we can relate to them rather than someone who feels condescending when they talk to us.”*

## **Discussion**

Through in-depth focus group discussions, I found that mental health is an important health concern among APIDA undergraduate and graduate students. Students were also aware that help-seeking was an issue among their communities. Participants discussed major influences of mental health, how societal perceptions of APIDA populations affect individual attitudes and beliefs towards mental health, as well as deterrents and facilitators of help-seeking behaviors.

My findings indicate that the devaluation of mental health at the individual and interpersonal level among APIDA students had a negative impact on mental health. Cultural messaging within their families and communities led to low prioritization of mental health and the undermining and suppression of mental health symptoms. This often also exacerbated existing mental health concerns. This finding aligns with the previous work that have found that East and Southeast Asian cultural values of emotional self-control when experiencing mental health symptoms can manifest into psychological problems (Lee et al., 2009; Liang, Liu, Nguyen, & Song, 2017).

Focus group discussions also revealed that experiences with the model minority stereotype and subsequent internalization of model minority myth were perceived to affect mental health directly (e.g. through anxiety associated with achievement orientation) and indirectly, through effects on interpersonal relationships (e.g. distress associated with parental expectations and belongingness within the community), as well as on students' sense of self-worth and self-esteem. There is some evidence for negative psychological outcomes connected with the model minority myth. One study examining Asian American students' feelings toward the model minority myth found that the majority of Asian students reported negative feelings towards this stereotype (Kim & Lee, 2014). Similarly, a stronger endorsement of Asian stereotypes was associated with an increase in distress among Asian American students (Gupta, Szymanski, & Leong, 2011).

Race-based stereotypes has been shown to have harmful effects on Asian American youth and is an interconnected consequence of individual, intrapersonal and structural level factors (Lee, 2015). Microaggressions that are often fueled by these stereotypes and play a role in denying the racial reality of APIDA populations by strongly perpetuating the "model minority" myth and the belief that APIDA are somehow immune to the effects of racism (Sue, Bucceri, Lin, Nadal, & Torino, 2009). In the process of upholding model minority expectations, students' in my focus groups described experiencing microaggressions, but for the most part condoning these indignities due to social pressures and internalized oppression. This highlights students' complex struggle with racism and culturally congruent coping. Some studies suggest that reactive coping strategies actually heightened the strength of association between racial discrimination stress and depressive symptoms (Wei, Heppner, Ku, & Yu-Hsin Liao, 2010). This

link may imply that strong and perceived unregulated emotional reactions are incongruent with Asian expected values of emotional control (Liang et al., 2017).

The cumulative effects of microaggressions and racism are concerning. Alvarez and his colleagues (2006) found that 99% of their diverse Asian American college student sample encountered a racial microaggression within the past year. Experiences of racism are associated with higher levels of psychological distress, anxiety, and depressive symptoms among Asian Americans even after accounting for general stress (Lee & Ahn, 2011; Wei et al., 2010). The findings from my focus group discussions and the existing evidence points to the salience of recognizing the role of culturally congruent coping in dealing with racial discrimination.

My findings also suggest APIDA college students are less likely to seek help because of invalidation of their mental health concerns both from family members and societal messaging, as well as lack of accessibility of campus resources and knowledge of other support systems. Shame and stigma is most prominently believed to be tied with lower utilization rates of mental health services in APIDA communities (Department of Health and Human Services, 2001; Lee et al., 2009). While these are still salient obstacles in APIDA communities, my focus group discussions painted a more complicated picture regarding barriers to help-seeking. In particular, lack of knowledge of mental health symptoms and invalidation of mental health concerns underpinned feelings of stigma and presented as a major impediment in perceiving a need for care. These issues were also related to lack of perceived benefits of care, another theme that presented a substantial deterrent in help-seeking. These issues were alluded to in other studies, which suggested relatively greater stigma-related barriers among Asian Americans did not significantly explain racial/ethnic differences in help-seeking intentions, but it was rather the

knowledge of perceived benefits of care that influenced help-seeking intentions, especially in younger generations (Kim & Zane, 2016; O'Connor, Martin, Weeks, & Ong, 2014)

The perceived lack of provider cultural match and cultural sensitivity in mental health care also emerged as a barrier to help-seeking among APIDA students. The relationship between counselor background and client adherence and satisfaction of care has been examined in the extant literature (Gamst et al., 2003; Kang, Tucker, Wippold, Marsiske, & Wegener, 2016). My findings revealed that perceived cultural mismatch also had an impact on initiating mental health counseling all together, given anecdotes from friends who have received care and the disproportionate number of White therapists working in campus counseling centers. This conveys that improving help-seeking in APIDA populations it not only an issue of cultural competency and sensitivity, but the constituency of providers themselves and the implications it has on student trust in services.

A potential key facilitator to help-seeking included peer validation of mental health struggles. Peer social support played an important role in APIDA student recognition of mental health symptoms and normalization of help-seeking for mental health. The experience and utilization of social support, however, was not uniform across all participants. Some students discussed worrying or burdening their family and friends with their problems and sought to avoid criticism by concealing their problems. This complexity aligns with some limited evidence that while collectivist Asian values fostered family support and social networks, this typically involved implicit support which entails a sense of solace in the presence of group members but does not involve self-disclosure of personal problems. In contrast, explicit support refers to enlisting and utilizing help to navigate problems but is found more frequently in Western societies (Chang, 2015). The variation in social support throughout focus group discussion points

to the importance of further research that further unpacks the role of peer support across the intersectional identities of APIDA students.

My study is not without limitations. While I was able to acquire in-depth information on many mental health topics, my findings should be interpreted in light of several considerations. The number of participants was moderate and represented a convenience sample. The topic of the focus group was released in recruiting emails, and thus may have drawn a bias sample of APIDA students who have an existing interest in mental health. It may not be possible to generalize findings of this study to larger groups of APIDA students in non-Midwest, private school settings. Given the diversity of APIDA communities represented across focus groups, however, the transferability of the explored mental health experiences could be applicable to APIDA students in comparable large public research institutions.

The extant literature on APIDA college student mental health and help-seeking lacks sufficient evidence that delineate the unique obstacles faced by APIDA students. In the context of the perceived multilevel significance of structural factors on the mental health of APIDA populations, meaningful improvements might be expected only once problems in surrounding society have been addressed. This raises the question of how, from a public health perspective, the development of a more supportive environments can be facilitated. My study adds to the existing literature by demonstrating the complex connectedness of supports and stressors across different ecological levels that affect APIDA student perceptions of mental health and help seeking behaviors, providing insight towards effective and culturally responsive avenues for intervention and practice.

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## **Chapter 5 Conclusion**

In recent decades, colleges and universities have been faced with large increases in psychopathology among its students (Duffy, Twenge, & Joiner, 2019; Twenge et al., 2010). Concurrently, there is also evidence to suggest that mental health service utilization has increased substantially, as a result of rising prevalence of mental health symptoms and decreased stigma over time (Lipson, Lattie, & Eisenberg, 2019). There is, however, significant variation in this trend across race and ethnicity, with concerning disparities still pervasive in help-seeking behaviors, particularly among APIDA undergraduate and graduate students (Lipson, Kern, Eisenberg, & Breland-Noble, 2018).

This body of work takes a multi-pronged approach to generating new evidence that advances our understanding on ways individual and contextual factors influence the mental health and treatment utilization of diverse APIDA populations. In Chapter 1, I introduced the APIDA panethnicity, discussed the extant literature on mental health and treatment utilization on APIDA populations, and highlighted the significance of this body of work to mental health research and practice.

In Chapter 2, I elucidated individual and structural factors that influence the mental health wellbeing of APIDA undergraduate and graduate students. Through the guidance of the Social-ecological theory, I identified significant intragroup variation in both the mental health outcomes and correlates of mental health among APIDA subpopulations. Mental health symptoms decline with increasing age, while females and sexual minority students report higher

levels of mental health distress. A lower percentage of international students screen positive for almost all mental health conditions, with the exception of eating disorders. APIDA students who immigrated to the US between the ages of 12-17 generally have more mental health symptoms compared with students who were US-born or immigrated to the US at other ages. I found that structural level factors, including discrimination and income associated with marginalized status, have a strong association with any mental health problems among APIDA students, particularly for non-heterosexual APIDA students. Organizational level influences on mental health are also salient, with implications on the positive impact of investments into diversity, equity, and inclusion, as evidenced by the association of having Chief Diversity Officer and designated Multicultural Center with decreased mental health symptoms, after adjusting for institutional resources.

In Chapter 3, I used the Andersen's Behavioral Model of Health Service Use to inform my analyses on the association between demographic, health attitude, personal and family resources, institutional and community support, and self-evaluated need factors on mental health treatment utilization among overall APIDA students and international APIDA students. In general, female and non-heterosexual APIDA students with mental health symptoms are more likely to seek treatment compared to male and heterosexual APIDA students. Perceived need, subjective knowledge of campus resources, belief in treatment efficacy and APIDA student website links to mental health resources are associated with highest odds of treatment utilization, while personal stigma and greater than 16 hours spent on schoolwork are associated with lowest odds of treatment utilization across all APIDA students. Personal stigma plays a more significant role in lower odds of treatment for APIDA international students than for APIDA students overall, though this factor only partially explains the high prevalence of underutilization in these

populations. The magnitude of influence regarding knowledge of mental health resources, resources links on APIDA student websites, and perceived need on treatment utilization is stronger for APIDA international students compared to all APIDA students.

In Chapter 4, I describe the design and findings of focus group discussions that I facilitated, with the objective of further elucidating the major influences on mental health, and the key barriers and facilitators driving help-seeking behaviors captured in Chapters 2 and 3. Participants discussed major influences of mental health, how societal perceptions of APIDA populations affects individual attitudes and beliefs towards mental health and treatment utilization, and the deterrents and facilitators of help-seeking behaviors.

### ***Integrated mental health findings***

The themes that emerged from my qualitative analyses substantiate my quantitative findings and also further illuminate on some of the relationships captured in Chapters 2 and 3. In the quantitative investigation of major influences on mental health of APIDA students, the relatively high correlation between sense of belonging and decreased odds of mental health symptoms was a notable finding and validated at multiple Social-ecological levels throughout my focus group discussions. Many participants described past and ongoing struggles to find a sense of belonging within the campus community. Both undergraduate and graduate students recounted experiences in attending events or groups intended for students of color, only to find themselves the only APIDA student in that space, and subsequently feeling the need to justify their own struggles as indicative of the minority experience. There was also a general consensus of feelings of exhaustion trying to conform to predominately white spaces on campus among the

participants. Students reported exclusionary behaviors among their white peers, other students of color, as well as faculty and staff, such as being overtly ignored or overlooked.

The duality of struggling with the fallacies and realities of proximity to whiteness, as well as racial microaggressions related to perpetual foreigner status was identified by participants as inducing distress. This mental health toll was intensified among students who identified as sexual and gender minorities and from APIDA communities with refugee histories, given double marginalized identities and experiences. The ability of racial microaggressions to adversely impact belongingness and mental health is particularly noteworthy. While it stems from interpersonal interactions, many of these microaggressions are repercussions of discrimination upheld at a societal level. The view of APIDA as perpetual foreigners, for example, is reflective of the process of racializing people in terms of their presumed affiliation with foreign place (Dennis, 2018; Omi, 2008). Even the model minority stereotype, which allegedly comes from a place of admiration, includes “minority” in the name of the stereotype to reinforce APIDA position as outsiders—APIDA are considered a “model” but only amongst minorities (Bablak, Raby, & Pomerantz, 2016). There are also intrapersonal level impacts of microaggressions because they are often ambiguous in nature, with the targets of microaggressions often forced to ascertain whether another individual, in fact, perpetrated a discriminatory act. This state of uncertainty on whether negative interactions are due to prejudices against ones group or other factors is inherently stressful, and differs from overt discriminatory acts which can be attributed with more conclusiveness (Major, Quinton, & McCoy, 2002; Sue, Bucceri, Lin, Nadal, & Torino, 2009). As such, the influence of racial microaggressions on belongingness and psychological functioning may lie at the uncertainty that emerges from such race-related interactions (Torres, Driscoll, & Burrow, 2010).

The internalization of the model minority also brought up issues of belongingness, both within APIDA communities as well as the falsehood of being the right type of minority in American culture. Students discussed difficulty in upholding these expectations and identified how poor mental health can be a result of not fitting with the socioeconomic mold on campus. This corroborates with previous reports on the consequences of the model minority stereotype, and how it creates a monolithic narrative that hard work automatically equates to success, negating diasporic experiences, as well as past and present structural barriers that interrupt success for different marginalized groups within APIDA populations (Kawai, 2005).

Consistent with the high correlation between social relationships and lower odds of mental health problems found in Chapter 2, APIDA participants in my focus groups noted the beneficial effects of supportive social relationships, providing examples of different APIDA and other peer networks whose shared values were particularly integral in creating belongingness and maintaining overall emotional well-being. Not surprisingly, unsupportive social relationships adversely impacted well-being. The devaluation of mental health at an interpersonal level, for example, through cultural messaging within APIDA students' families, led to low prioritization of psychological functioning and the undermining and suppression of mental health symptoms. Focus group participants recalled how this neglect often exacerbated existing mental health symptoms.

Another major quantitative finding was the strong association between the presence of a Chief Diversity Officer and the existence of a designated space for a Multicultural Center with lower odds of mental health problems. This relationship was present even when other factors such as institution type and graduation rate, which addresses variation in institutional resources, was accounted for. These results provide preliminary evidence that concrete investments into

diversity, equity, and inclusion (DEI) may positively impact mental health for APIDA students and consistent with existing research on the role of campus climate on depressive symptoms among Asian American college students (Cress & Ikeda, 2003). My qualitative findings validate the salience of this finding, as students specifically attributed the superficial promotion of DEI to negatively influence their mental health. Participants described that diversity at the University is often just treated as a requirement to check off, and recalled the frustration and distress felt when it is not taken seriously by other students or applied in classrooms by instructors. Students did address, however, that there was a lot of variation in this experience across different classrooms and groups of students, and they valued spaces that held more genuine DEI practices. Interacting in an environment that is not culturally diverse, as is the experience of APIDA students enrolled at the predominately white institution (PWI) in my focus groups, also significantly limits the availability of social supports which have been thought to be a key resource in ameliorating psychological distress. This is implicated in my findings as well as in other existing studies (Cress & Ikeda, 2003; Liang, Liu, Nguyen, & Song, 2017; Torres et al., 2010). Accordingly, the impact of having a multicultural center may serve as a physical space to foster these support networks, and a Chief Diversity Officer who champions for a more inclusive campus climate may be critical to promoting better mental health not only among APIDA populations, but other marginalized student communities.

### ***Integrated mental health help-seeking findings***

In the investigations of key barriers and facilitators driving help-seeking behaviors, my qualitative analysis further illuminates on the findings from my quantitative models. There was a high correlation between the inclusion of APIDA student website links to mental health



resources and general knowledge of mental health resources with treatment utilization for all APIDA students, and especially for international students. Many APIDA students in my focus groups reported unknowing how accessible counseling and other types of mental health support services were on campus; students were unclear about cost of campus counseling, had concerns about matching with a culturally competent provider, and were generally unaware of alternative structured support avenues (e.g. student-led mental health groups and support networks). The interconnectedness of my quantitative and qualitative findings reveals that current mental health resource outreach efforts to APIDA student populations may be insufficient.

Findings from my quantitative models revealed that perceived need has the strongest association with mental health treatment utilization among APIDA populations, with particular relevance for international APIDA students. Personal stigma and belief in treatment efficacy also play significant roles in treatment use and resulted in a higher correlation with treatment for APIDA international students compared to APIDA students overall. My qualitative findings provided more insight into these significant correlates in my quantitative models. My focus group analyses suggest that APIDA college students are less likely to seek help because of the invalidation of their mental health concerns both from family members and societal messaging, particularly in the comparison of their problems with their parents' immigrant burden and the perceived triviality of their issues compared with other communities of color. In addition to invalidation of mental health concerns, students also reported the inability to identify mental health symptoms as there was limited discussion on these topics in their household and a "*culture of silence in Asian American spaces*" in regard to mental disorders. Students emphasized a disconnect between the presentation of distressing symptoms and recognition of mental illness. The invalidation of mental health concerns and difficulty identifying mental

health symptoms seemed to underpin feelings of stigma and served as a major impediment in perceiving a need for help with psychological functioning. These issues were also related to lack of perceived benefit of mental health treatment, which was another theme that emerged from the focus groups and presented as a significant correlate with lower odds of help-seeking in my quantitative models. It's important to note that these relationships were more significant for international students in the quantitative models, but there was low representation of international students within the focus groups. Additional efforts should be made to elucidate the specific aspects of the international APIDA student experience that impact perceived need, knowledge of resources, stigma, and belief in treatment efficacy.

In my quantitative models, I found that academic performance decline due to mental health is a significant correlate of increased odds of treatment use for overall APIDA students, but not for international APIDA students. This finding is related to another theme that surfaced in my focus groups. Faculty and staff were described to be inadequate allies to student mental health and help-seeking for various reasons. Participants discussed themselves or their peers as experiencing the invalidation of mental health symptoms from faculty and staff, especially as their work output struggles. There was, however, debate on whether this concern disproportionately impacted APIDA students, with some participants feeling that they were siloed by model minority status, and their wellbeing was overlooked. Others explained this deficiency in symptom recognition as a broader issue that is circumstantial and varies greatly across faculty and staff. This concern may be especially pertinent to APIDA students with other marginalized identities, such as international students, who may feel even more disempowered in classrooms to reach out to faculty and address their mental health, even if it is affecting their academic performance.

### *Policy and practice implications*

While the findings of my studies are not a result of directly testing campus policy or practice approaches, this body of work does highlight priority areas for APIDA populations and identified important avenues to move the college mental health research field forward with respect to institutional policy and practice strategies.

The first implication of this work is that concrete investments in diversity, equity, and inclusion may have a positive impact on the mental health of APIDA students. Perceptions of DEI on college campuses are shaped by many factors – including structural and compositional diversity, university policies and institutional history (Vaccaro, 2014). While the factors I observed in my study may only account for one of many elements that impact the relationship between DEI and student mental health, the benefits of creating and supporting leadership positions and structured spaces for APIDA students to connect around gender, sexual orientation, religious, or other social identities is also implicated in other studies on APIDA mental health and campus climate (Cress & Ikeda, 2003; Liang et al., 2017). More evidenced-based investments into DEI efforts may reduce prejudicial attitudes and incidents of microaggressions, improve belongingness and build towards a campus climate that promotes better mental health not only among APIDA student populations, but also other marginalized student communities.

My findings also point to a need for culturally tailored mental health and psychoeducation. APIDA students in my focus groups came from communities with limited discussion and reflection on supporting psychological wellbeing, and many recalled unknowing steps to take to cope and receive help with mental health concerns. My quantitative findings also show personal stigma is significantly associated with decreased odds of treatment, while belief in the perceived benefits of treatment is significantly correlated with increased odds of treatment.

Psychoeducation may thus be crucial to destigmatize overall mental health concerns and provide foundational knowledge in both recognizing symptoms and what can be done to alleviate distress.

Current efforts for screening and referral of APIDA students to mental health services are insufficient. Perceived need was the strongest correlated of help-seeking among APIDA students with symptoms, and as discussed, my focus groups revealed several reasons that presented an obstacle in perceiving a need for care. This highlights the importance of increasing opportunities for screening and referral, especially among APIDA males and international students who disproportionately underutilize mental health treatment. Expanding contexts for mental health gatekeeping may also be prudent. This could be done by finding natural allies within campus structures, including housing, academic advising, departments of Asian studies as well as various existing online platforms (Denering & Spear, 2012; Kim, Coumar, Lober, & Kim, 2011; Zhang, 2016). Related to expanding screening and referral, collaborative care models may improve detection of mental health symptoms and address personal stigma barriers, by integrating mental health care into features of the campus infrastructure. One example could be combining campus health centers and counseling centers into a single space, to not only remove the layer of stigma of solely going to therapist office, but also provide an additional setting to engage students in mental health screening. There is also evidence to suggest collaborative care models increase early initiation of treatment and improves quality of care and care management (Chung et al., 2011).

I found in my dissertation a compelling indication that APIDA students often don't know what mental health resources are available on campus and how accessible these resources are to them. This underscores the need for more targeted promotion of available mental health

programs and services through multiple channels. In focus group discussions on suitability of available mental health resources, participants described personal and anecdotal experiences with ways in which provider cultural competency served as a barrier to initiating and sustaining mental health treatment. Improving help-seeking in APIDA students is not only an issue of accessibility and provider cultural sensitivity, but also the constituency of providers themselves and the implications it has on student trust in services. Thus, we need more active recruitment of diverse mental health providers to facilitate help-seeking.

Finally, my findings also emphasize a need for more structured, continuous, and culturally diverse faculty and staff training regarding issues of mental health. APIDA students described many ways in which it felt like faculty and staff addressed mental health and treatment superficially. This presents as a missed opportunity for gatekeeping, mental health resource promotion, and also creating healthy learning environments that support overall wellbeing.

### ***Future research***

The Chapters presented in this dissertation point to myriad opportunities for future research. This body of work is the first take on looking at various APIDA subpopulations, and the confines of my data did not fully allow me to disaggregate this category into distinct ethnicities. Given the number of distinct ethnic and cultural groups within the APIDA panethnicity and the inclusion of more specific ethnic data within the Healthy Minds Study in future iterations of the survey, there is significant opportunity to investigate the diverse experiences of an even more disaggregated APIDA student population and produce more nuanced examinations of mental health and help-seeking behaviors across this group.

APIDA populations' immigration history also varies substantially in recency of arrival. In the 1960s, Asian Americans constituted 0.5% of the U.S. population and consisted primarily of descendants of earlier Japanese and Chinese immigrants (Uba, 1994). In the 1990s, the number of Asian Americans had increased to 2.9% of the U.S. population with most still foreign born. By 2010, APIDA now represent 5.6% of the U.S. population and the fastest growing racial/ethnic group, with some family histories dating back to six generations and others recently immigrating to the United States (Liang et al., 2017). Future studies should consider generational differences that can occur among Asian American college students which can potentially affect racial identity, sense of belonging, issues of stress, and help-seeking attitudes.

My study and others have found large variance in mental health prevalence based on the clinical problem and APIDA subgroup (Chu & Sue, 2011). APIDA also exhibit cultural variations in the way distress is expressed – a term coined “idioms of distress” in the DSM-IV. These idioms of distress affect the likelihood and type of service utilization, and the way mental health symptoms are reported in research (Chu & Sue, 2011; Saint Arnault & Kim, 2008). For example, there is a line of research that has found that East and Southeast Asians are more likely to experience mental health symptoms in somatic rather than psychological terms (Mak & Zane, 2004; Ryder et al., 2008; Tseng et al., 1990). The mental health assessment methodologies and language administered to APIDA populations, particularly international students, continues to be a challenge in assessing APIDA psychopathology. This calls attention for additional research that focuses on determining cross-cultural validity of mental health screening tools, possible occurrence of culture bound syndromes, and quantification of cultural reporting biases.

Finally, the findings generated by this mixed methods analysis create promising opportunities to engage in collaborative, interventional work that blends research and practice.

The mental health influences and help-seeking facilitators and barriers identified in this body of research could be of great interest to college and university leadership, especially given growing proportion of APIDA populations on campus and the vast majority of international students studying in the United States from Asian countries of origin (Barta, Chen, Jou, McEnaney, & Fuller, 2016). There is also significant need on the evaluation side on what population level mental health and help-seeking interventions work best, particularly for diverse student communities. There is currently a scarcity of definitive randomized control trials on APIDA communities and other students of color that demonstrate effectiveness of current practices. Higher education institutions are increasingly focused on supporting translational research that integrates newly acquired knowledge into everyday practice. Through working with higher education leaders and mental health professionals to inform and support their efforts to counter the increase of mental health symptoms on their campuses, and embedding an evaluative research component, there is great potential to create innovative research-practice partnerships to improve the mental health of APIDA students, many of whom are still struggling in silence.

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## Appendix

Table A.1 Institutional Data Collection Questions and Coding, Chapters 2 & 3

<i>Q#</i>	<i>Question</i>
<b>Mental Health Resources and APIDA Connections (institutional website)</b>	
1	Is there a mental health resource page?
1a	if #1 [YES] what is the # of clicks to get from main campus site to MH resource page? [#] *if missing from list, put "." in place of "#"
2	Listed goals or mission statement of campus Mental Health/wellness?
3	Does the school have links to mental health support organizations?
3a	if #3 [YES] Are there student-run organizations?
3b	if #3 [YES] Are there mental health support organizations for students of color?
3c	if #3 [YES] Are there MH support orgs for APIDA students?
4	Does campus website provide information to educate parents/guardians about MH support or services for their kids?
4a	if #4 [YES] are there specific training or workshops for parents?
5	Does campus website provide information to educate faculty/staff about MH support or services for their students?
5a	if #5 [YES] are there specific training or workshops for faculty/staff
6	Are there student testimonials about mental health issues on website?
6a	if #6 [YES] are there students of color testimonials about mental health issues/treatment?
6b	if #6 [YES] are there APIDA testimonials about mental health issues/treatment?
7	Campus statistics or prevalence of mental health issues?
8	General descriptions/definitions of things like anxiety, depression, suicide, etc.?
9	Is there available online self-screenings for mental health conditions?
10	Accessible programs/campaigns that link mental & emotional health to physical health?
11	Accessible programs/campaigns that link mental & emotional health to academic success?
12	Are there APIDA-specific student groups?
12a	if #12 [YES] is group information searchable on school's main page?
13	Are there international student groups?
13a	if #13 [YES] is group information searchable from main page?
14	Are there Diversity, Equity, and Inclusion efforts on campus?
15	Is there a Chief Diversity Officer?
16	Is there a multicultural center?
16a	if #16 [YES]: # of staff?
17	US New and World report diversity index? [#] *if missing from list, put "." in place of "#"
18	Are there emergency funds or grants for students to apply for?
19	% of Asian students at institution? [put in as decimal ie 10% = 0.1] *if missing, put "." in place of "decimal"
<b>Counseling-center Specific (institutional website)</b>	

20	Are both counseling (psychologist/social worker) and clinical services available (psychiatrist)?
21	Are mental health professionals available in a non-CAPS setting?
21a	if #21 [YES] Is there a mental health professional embedded in academic advising?
21b	if #21 [YES] Is there a mental health professional embedded in academic departments?
21c	if #21 [YES] Are there a mental health professionals that work with specific student communities (ie is there a counselor in Black Student Cultural Center, etc.)?
21d	if #21 [YES] Are there mental health professionals that work specifically with Asian student communities? (ie in Asian Studies departments, Asian cultural centers, etc.)
22	Are there mental health services available within University Health Services?
23	Is there appointment scheduling online?
24	Is there appointment scheduling over the phone?
25	Are there walk in appointments available?
26	Is there descriptions of the appointment process?
27	Are there provider biographies?
28	Are there provider pictures?
29	Are there APIDA providers?
30	Are there APIDA providers that speak APIDA languages?
31	Can you get to CAPS site from international students page? *if no international students page, type in "."
32	Can you get to CAPS site from Asian students page? *if no asian students page, type in "."
33	Is there a searchable limit on the number of mental health services (counseling sessions) provided for students?
33a	if #33 [YES] what is the maximum number of services provided to students per year?
<b>Community Factors (census)</b>	
34	% of APIDA in the surrounding city? [put in as decimal ie 10% = 0.1]
35	% of people of color in the surrounding city? (100-%white) [put in as decimal ie 10% = 0.1] *if missing, put "." in place of "decimal"
<b>Additional Questions (institutional website)</b>	
36	Is there an institutional Asian American resource center? (check Asian American department pages too)
37	if #36 [YES] Are there mental health resources available in the AA resource center?

Table A.2. Institutional Characteristics Description and Sources, Chapters 2 & 3

Characteristic	Categories	Source
<i>Institutional type</i>	Doctoral granting Universities; Masters Colleges and Universities; Baccalaureate Colleges; Associate's Colleges Special Focus Institutions	Carnegie Classification
<i>Sector type</i>	0=private, 1=public	College Board
<i>Academic rank</i>	1= most competitive 2= highly competitive 3= very competitive 4= competitive 5= less competitive 6= noncompetitive 7= special/missing	Barron's score
<i>Geography</i>	1=Northeast Region New England Division (CT, ME, MA, NH, RI & VT)	US Census

2=Northeast Region Middle Atlantic Division (NJ, NY & PA)  
 3=Midwest Region East North Central Division (IL, IN, MI, OH & WI)  
 4=Midwest Region West North Central Division (IA, KS, MN, MO, NE, ND & SD)  
 5=South Region South Atlantic Division (DE, DC, FL, GA, MD, NC, SC, VA & WV)  
 6=South Region East South Central Division (AL, KY, MS & TN)  
 7=South Region West South Central Division (AR, LA, OK & TX)  
 8=West Region Mountain Division (AZ, CO, ID, MT, NV, NM, UT & WY)  
 9=West Region Pacific Division (AK, CA, HI, OR & WA)

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*Graduation rate*    4-year graduation rate (0-100%; missing)    US News and Rankings

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Table A.3. Delineation of mental health factors at each Social-ecological level, Chapter 2

<b>Empirical Indicators</b>	<b>Operationalization</b>	<b>Data source</b>
Intrapersonal/individual	Gender, Age, Sexual orientation, Citizenship, Acculturation, Age in US	HMS demographics and DEI modules
Interpersonal/relational identity	Relationship status, Quality of social relationship	HMS demographics and mental health modules
Organizational/social institutions	Investment in mental health (CDO, Multicultural center), Institutional sector (public vs private)	New institutions dataset
Community/belonging	Sense of belonging, out-group status (% APIDA)	HMS demographics, new institutions dataset
Structural and societal determinants	SES growing up (financial stress), Parent education, Discrimination	HMS demographics and mental health climate modules

Table A.4. Summary of measures within Andersen’s Behavioral Model of Health Services Use that influence mental health treatment utilization, Chapter 3

<b>Characteristic</b>	<b>Operationalization</b>	<b>Data source</b>
Demographics	Age, gender, sexual orientation, international student status	HMS demographics
Health attitudes	Personal stigma, perceived public stigma, belief in treatment efficacy	HMS MH utilization
Personal and family resources	Financial stress, no insurance, time spent on school work	HMS demographics
Institutional and community support	Sense of belonging, subjective knowledge of MH resources, APIDA student website link to MH resources, ability to schedule appointments online	HMS MH utilization + Institutional Data
Self-evaluated need	Perceived need, personal life impairment due to mental health, decline in academic performance due to mental health	HMS MH status + HMS MH utilizationf