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Mental health service utilization, knowledge, stigma, and protective factors in a college student sample: The influence of racial categories and student-athlete status

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Mental Health Service Utilization, Knowledge, Stigma, and Protective Factors in a

College Student Sample: The Influence of Racial Categories and Student-Athlete Status

by

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Abstract

Students of color and student-athletes undergo unique stressors in college, such as discrimination and time constraints, that impact their mental health needs. They have shown more mental health stigma and less service utilization. This study explored these variables and groups using secondary data analyses from the 2019-2020 Healthy Minds Study (HMS). The current study hypothesized that utilization would be associated with stigma, knowledge, and resilience. Additionally, student-athletes and students of color would report less utilization and more stigma and resilience. Results indicated that students of color reported no difference in utilization and less stigma and resilience than White students. Student-athletes reported less utilization and more stigma and resilience. Resilience was found to be a moderator between mental health difficulties and utilization. Resiliency is an important component among aspects of mental health in college students. As such, this research provides important information about help-seeking habits and considerations for interventions in these populations.

Keywords: service utilization, stigma, resilience, student-athletes

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Introduction

Major life changes happen around the time of early adulthood. These changes include a multitude of events, such as moving away from caregivers, going off to college, adjusting to a new physical environment, and experiencing an increase in personal responsibility. These changes can be exciting but also distressing. In the United States, one in five adults experience mental illness every year (National Alliance on Mental Illness [NAMI], 2019). By the age of 24, 75% of lifetime mental illness has occurred. Of these disorders, anxiety and depressive disorders are the most prevalent with around 19% of adults reporting any anxiety within the past year, and 7.2% reporting a depressive episode within the past year. Given these important events that may dramatically shift one's life, the utilization of young adult mental health services remains a critical consideration in the field of mental health research. In particular, young adults who are enrolled in college may experience many life-changing experiences, each of which introduces several new life stressors. Across campuses there are some similarities including advanced classwork, the ages of peers, or adjusting to a change in routine, but individually the college experience can vary greatly. Institutions may differ in the type of institution (e.g., community, technical, or state), religious affiliation (or lack thereof), geographic location, or even student body population and demographics. College experiences may also contrast due to differences in identities of students who go to the same institution. For example, students of color, students with disabilities, and non-traditional students (e.g., part-time students, students who work full time, or students who care for children) may report very different college experiences than White, able-bodied, neurotypical, traditional students.

Moreover, the experiences may also vary greatly depending upon any high profile extracurricular activities students may encounter. According to the National Collegiate Athletic

Association (NCAA, 2021), there are over 460,000 student-athletes that compete every year. Each year, student-athletes encounter a unique set of stressors and responsibilities that they must juggle while attending college. Students who are not athletes may be concerned with completing assignments, working campus jobs, and applying to internships among other events, whereas student-athletes have some of these stressors coupled with training, team meetings, travel, and games. Specifically, 27% of student-athletes rank injury, 19% rank big games, and 11% rank athletic conditioning as their top stressors (Madrigal & Robbins, 2020). In a different study, academic requirements were the highest ranked stressor among participating athletes, and it was most strongly correlated with perceived stress (Davis et al., 2019). However, it should be noted that the stress related to "academic requirements" was more about managing time between athletics and academics, and less about the content of academic responsibilities. Student-athletes spend roughly the same amount of time physically participating in their sport (i.e., practicing, training, and competing) as they do on academic activities (Paskus & Bell, 2016). These two activities take up over 40% of a student-athlete's full week, not including time spent sleeping. This figure further illustrates the stressor of time management for this population. Pritchard and Wilson (2005) also found that student-athletes reported higher stress related to romantic relationships, and with sleep. It does appear that student-athlete status may also serve as a protective factor. Student-athletes also reported less stress related to academic decision-making, higher body satisfaction, and less social stress. Unsurprisingly, it appears that stress for athletes peaks during competitive seasons and then wanes during the off-season (Hamlin et al., 2019). Given the complex relationship between unique stressors and student-athletes, it is important to evaluate mental health knowledge, mental health service utilization, and mental health stigma in order to support healthy coping and lifestyle choices within this population.

In recognition of these differences, the NCAA provides some guidelines related to mental health services outlined in the *Inter-Association Consensus Document: Best Practices for Understanding and Supporting Student-Athlete Mental Wellness (Mental Health Best Practices)*. This document outlines clinical licensure, referrals, mental health screenings, and fostering environments that support student-athlete mental health (NCAA, 2016). One of the most notable recommendations includes creating a Mental Health Emergency Action and Management Plan (MHEAMP) that addresses suicidal/homicidal ideation, sexual assault, psychosis, delirium, and alcohol/drug overdoses. Additionally, the NCAA recommends making all non-clinical personnel aware of the signs and symptoms and receive training in the appropriate protocol for making referrals to mental health services. The NCAA provides some materials for this training related to stigma reduction and psychoeducation. The content of pre-participation screenings are left to the discretion of the school in collaboration with the athletic department, but must not be the only form of psychological services provided. Lastly, the NCAA recommends reviewing best practices and protocols with athletes and personnel each year. Although these are important guidelines, there appears to be no formal evaluation for adherence to these guidelines, which, if there was greater adherence, could improve client outcomes and reduce variation between athletic programs (Mazrou, 2013). Additionally, the handling of enduring mental health stigma is notably missing from this document. As part of that document, there are a few training slides comparing mental illness to injuries, but there does not appear to be anything more extensive. Although there is acknowledgment that the sports environment should be destigmatizing, this document does not further address how to truly foster this environment. Given how policies vary widely from program to program, and student-athletes bear different stressors than their non-

student-athlete peers, it is essential to evaluate student service utilization, stigma, and resilience on college campuses more broadly.

Young adults and college students experience enough life stressors that warrant the frequent use of mental health services (National Institute of Mental Health [NIMH], 2019). Their student-athlete peers also appear to endorse a potential benefit from mental health services, given the number of stressors they experience as athletes and as college students. This thesis seeks to further investigate the relationships between mental health service utilization, mental health knowledge and stigma. These relationships were evaluated using racial categories as a potential moderator. Additionally, student-athlete status (student-athlete vs. non-student-athlete) was evaluated as a potential moderator as well. Lastly, this study explored protective factors (i.e., sense of belonging, resilience, and flourishing) as a potential mediator in the relationship between mental health service utilization and mental health outcomes (i.e., depression and anxiety).

Service Utilization

In the United States over two million students attend college in a given year, and it is estimated that close to half of these students might experience a need for mental health services (Blanco et al., 2008; U.S. Bureau of Labor Statistics, 2020). Many colleges have mental health counseling centers, with over 500 institutions being members of the Association for University and College Counseling Center Directors Annual Survey (LeViness et al., 2019). Although these counseling centers may differ in size, effectiveness, and approaches, they are there for college students when faced with mental health difficulties or concerns. In 2017, 38.4% of adults between the ages of 18 and 25 received mental health treatment in the United States (NIMH, 2019). However, at colleges and universities, only about 13.3% of students are being served by

counseling centers, although the rates at smaller colleges tend to be higher (LeViness et al., 2019). Although this figure does not include students who seek off-campus services, it is still disparate from those in the same age group as the general population who receive services. However, in a brighter trend, the utilization of mental health services at colleges and universities has been found to be increasing within the past few years (Lipson et al., 2018). Moreover, the prevalence of diagnosed mental health disorders has also increased by two-thirds, with over one-third of college and university students reporting a disorder in the 2016-2017 academic year.

Although there appears to be an increase in service utilization, it is still important to explore reasons why college mental health services may be underutilized. In a study assessing why students are not seeking mental health services, 66.2% of students indicated that they did not believe their problems were sufficient enough to receive mental health treatment (Czyz, 2013). Additionally, students commonly reported a lack of time or a preference for navigating problems on one's own. Roughly 16% of college students discussed pragmatic barriers to seeking treatment such as waiting times, finances, or not knowing where to receive services on campus. One of these pragmatic barriers may include session limits, in which approximately half of all college and university counseling impose a fixed number of sessions a student can be seen by an on-campus therapist. These session limits average at about 12.6 sessions or roughly 3 months considering 41.6% of clients are seen on a weekly basis (LeViness et al., 2019). Students may make the decision to seek off-campus treatment when considering continuity of care and if the student is in the financial state to do so.

Another potential barrier may be based on demographics of those seeking, or not seeking, treatment. It is essential to examine the demographics of race, sexual orientation, and gender of the students who are utilizing mental health services on their college campuses. Self-identified

females are more than twice as likely to seek campus services than self-identified males (LeViness et al., 2019). Student clients are also more likely to identify as gender non-binary than as student clients who identify as transgender. Additionally, although a majority of students identify as heterosexual, around 10% identify as bisexual and 5.8% identify as gay or lesbian. With a total of over 15% of students presenting for treatment identifying as LGBTQ+, it appears that this group is overrepresented in those seeking mental health services, compared to those in this community in the general student population. This population makes up 10% of the current college student population (Postsecondary National Policy Institute [PNPI], 2020).

According to data collected by the Association for University and College Counseling Center Directors (AUCCCD), over 50% of college students seeking mental health services are White (LeViness et al., 2019). Of the other 50% of students seeking services, Black students are the second most represented race with 12.4% of students presenting for treatment identifying as such. The third most represented group were Hispanic students, representing 11.4% of students seeking treatment. Following them, Asian/Asian-American students seek services with 8.5% of those presenting for treatment identifying as such. Native Americans seek services at the lowest rates with 0.8% of students identifying as such. However, given the representation of the student population in higher education, both Black and Hispanic students appear to be underrepresented in those receiving mental health services, when 14% of college students identify as Black and 19% as Hispanic (de Brey et al., 2019). Conversely, Asian/Asian-American students appear to be overrepresented in those receiving mental health services, with about 6% of all college students identifying as Asian. Both White and Native American students appear to be accurately represented in treatment. The demographics of the counseling staff is also of particular importance. It is comprehensible that students may not feel comfortable receiving mental health

treatment if they are not represented by those in the facility. Seventy percent of counseling center staff are White, 11.7% are Black, 6.6% are Hispanic, 0.4% are Native American, and 6.6% are Asian/Asian-American (LeViness et al., 2019). Black, Hispanic, and Native American folks are underrepresented as staff in counseling centers; and White and Asian/Asian-American appear to be overrepresented. The discrepancy in racial representation within counseling center staff may be a clue into why Black and Hispanic students are presenting for mental health treatment at lower rates.

Student-Athlete Service Utilization

According to the NCAA, 44% of student-athletes are racial/ethnic minorities (NCAA, 2019). Since such a large portion of this population are racial/ethnic minorities, it is a critical consideration for this project to examine how student-athletes, in general, are utilizing mental health services. According to Counseling and Psychological Services (CAPS) at the University of Michigan, only 10% of student-athletes with depression or anxiety seek treatment from their university mental health services (University of Michigan Counseling and Psychological Services, 2016). Given that around 13% of all college students receive mental health treatment, and over 40% of those with diagnosed disorders receive treatment, this figure is less than one would expect (LeViness et al., 2019; NAMI, 2019). Further highlighting this underutilization of services by student-athletes, 78% of racial minority student-athletes indicated a need for mental health services, and only 11% actually reported receiving services (Ballesteros & Tran, 2018). Many student-athletes are simultaneously undergoing the stress of being a student and an athlete but also the stress of being a racial/ethnic minority in the United States, therefore introducing a number of additional stressors in the life of a young adult. It is also important to consider the general attitudes athletes have about mental health services. Moore (2017) found that student-

athletes are more comfortable receiving athletic or academic support than mental health services. In particular, student-athletes who play in Division I are even less comfortable with these services than student-athletes in Division II or Division III. Additionally, this researcher concluded that the "profile" of the sport (i.e., high or low) had no significant impact on the level of comfort indicated. Essentially, football players and tennis players showed no differences in the level of comfort with mental health services. It is also important to note that this study found that 43% of student-athletes that participated indicated little to no comfort with receiving treatment for suicidal ideation. Although it is indicated that athletic participation is a protective factor related to general well-being, depression rates are the same for student-athletes as they are for the general population (Downs & Ashton, 2011; Rao & Hong, 2016). Suicide is the fourth leading cause of death among student-athletes and ranks third within the general population, illustrating similar instances of suicide (Rao & Hong, 2016). Specifically, Black male football players appear to be at an increased risk for suicide, as indicated by a nine-year analysis of student-athlete deaths (Rao et al., 2015). Among the suicides under evaluation, 82.9% were men, 20% were Black, and 37.1% were football players. Given that 14% of NCAA Division I athletes, and almost 50% of Division I football players are Black men, these findings illustrate the essential nature of further analysis of mental health services within athletic programs (NCAA, 2019). This study sought to expand on the literature by analyzing not only the utilization of mental health services by athletes across institutions, but the use of services by their social circles and the perceived quality of services provided through athletic departments.

Depression and Anxiety

Depression and anxiety consistently rank among the top reasons why college students seek campus college mental health services (LeViness et al., 2018; LeViness et al., 2019). In a

sample of over 150,000 college students, 26.9% screened positive for depression (Lipson et al., 2018). This rate was found to be comparable to the rates of depression in student-athletes, with 23.7% of student-athletes at an NCAA Division I school endorsing clinically relevant depressive symptoms (Wolanin et al., 2016). According to the American College Health Association (ACHA, 2018), around 60% of college students report feeling overwhelming anxiety within a year prior to survey completion. Additionally, in 2011, researchers found that roughly 30-50% of student-athletes reported feeling overwhelming anxiety (Davorean & Hwang, 2014). It appears that both student-athletes and non-student-athletes endorse similar levels of both depression and anxiety. The present study sought to further assess these rates, as well as the impact of these disorders on service utilization.

Mental Health Knowledge

The state of mental health literacy within the young adult population is a concept that has not been extensively researched (Cheng et al., 2018). Coles and Coleman (2010), found that over 50% of participating college students were unable to correctly identify clinical presentations of generalized anxiety disorder (GAD). However, depression was found to be more easily identifiable, which is hypothesized to be due to the perception of "biological factors" being the "cause" of such difficulties. Moreover, mental health literacy appears to vary based on race. In a study of Black college students, only 34% were able to identify depression based on a collection of vignettes (Stansbury et al., 2011). They instead tended to attribute difficulties to stress or personal stressors such as family conflict. Although the concept of mental health literacy calls for more extensive research, it is an important consideration when exploring the implications of mental health stigma. In particular, given that almost half of student-athletes are racial or ethnic

minorities, it is essential to explore the existing knowledge around student-athlete mental health stigma, and knowledge.

The construct of mental health knowledge is often the target of stigma reduction interventions (Thornicoft et al., 2016). The more holistic term, *mental health literacy*, is defined as "the ability to differentiate a mental health condition from general stress, attributions of mental disorders, and knowledge and beliefs about risk factors and available professional help" (Jorm et al., 1997; Cheng et al., 2018, p. 65). Those with higher mental health literacy are more likely to seek out mental health services and to recommend these services to others, and those with higher stigma have less favorable attitudes toward help-seeking (Cheng et al., 2018; Coles & Coleman, 2010). In a study utilizing an online study format conducted by Cheng et al. (2018), they sought to examine the roles of, and interactions between, mental health literacy and stigma in predicting the use of mental health services. Mental health literacy and stigma were found to explain help-seeking behaviors, regardless of demographic variables (i.e., race and ethnicity). Additionally, this study provides some support for Thornicoft et al.'s (2016) call to action in which they found that a reduction in stigma, aided by an increase in mental health literacy, did lead to an increase in mental health services utilization.

Mental Health Stigma

Stigma is broadly defined as how a person may view others (or themselves) in a deeply discrediting light, that makes that person feel reduced or depreciated in some way (Goffman, 1963). Stigmas may vary from physical deformities to socially held beliefs about a person or group. In particular, mental health stigma is defined as, "a cluster of negative attitudes and beliefs that motivate the general public to fear, reject, avoid, and discriminate against people with mental illnesses" (President's New Freedom Commission on Mental Health, 2003, p. 7).

Mental health stigma can manifest as personal or perceived public stigma. Personal stigma is conceptualized as how one would treat someone with a mental illness and perceived public stigma is conceptualized as how one believes a society would treat someone with a mental illness (Pedersen & Paves, 2014; Eisenberg et al., 2009). Although an important concept, perceived public stigma has not been found to have a significant impact on behaviors related to treatment, nor the intention to seek treatment. The internalization of stigma can manifest negative consequences, particularly when it is reinforced at a school-level (Gaddis et al., 2018). School-level stigma is associated with a decrease in the reporting of suicidal ideation and self-injury. Additionally, school-level stigma has been associated with a decrease in the use of psychiatric medications and attendance to therapy sessions. The internalization of stigma appears to be a consistent factor when considering behavioral outcomes (Brown et al., 2010; Krill et al., 2019).

Race and ethnicity can also be related to the level and type of stigma minorities experience, and therefore impact one's relationship to mental health treatment. More often than not, these stigmas only decrease the use of mental health treatments for these groups. However, this relationship appears to be more complicated than once thought. Brown et al. (2010) investigated this relationship in which they found results that supported the idea that race and stigma may not have a sole impact on seeking mental health treatment, but the internalization of stigma appears to be the significant factor. In this particular study, Black and White participants did not differ in their use of mental health treatment, nor their intention to receive treatment. However, the role of internalized stigma varied across the race of participants. In White participants, internalized stigma functioned as a mediator between public stigma and attitudes toward mental health treatment. However, in Black participants, internalized stigma and attitudes toward mental health treatment had a direct relationship, even without the influence of public

stigma. Additionally, attitudes toward mental health treatment and resulting intentions to seek treatment by Black participants, are more impacted by the negative views about oneself because they have a mental health difficulty than what they believe others may think of them. Moreover, the experience of racial discrimination also has an impact on stigma (Krill et al., 2019). Racial discrimination has been defined by the U.S. Equal Employment Opportunity Commission (n.d.) as, "treating someone...unfavorably because he/she is of a certain race or because of personal characteristics associated with race (such as hair texture, skin color, or certain facial features)". The impact of this discrimination includes an increased risk of psychological distress, suicidal ideation, anxiety, and depression (Hwang & Goto, 2008). Additionally, people of color who had experienced more recent instances of discrimination reported higher negative beliefs about mental health problems and concern about stigma from friends and family (Krill et al., 2019). However, attitudes about mental health treatment and treatment-seeking were not directly impacted by instances of discrimination. These findings also further support the idea that the internalization of stigma is the main factor in resulting attitudes and intention to seek treatment. Rao et al. (2007) expanded on racial categories when assessing stigma by including Latinx, Asian, Black, and White participants in their study on how stigma changes after an anti-stigma intervention. They found that at baseline both Asian and Black participants found those with mental illness to be more dangerous than both Latinx and White participants. After the intervention, Latinx and Asian participants endorsed less perceived danger of those with mental illness than White participants, but Black participants still indicated the highest perceived danger. These results give a broader picture of the complexity of stigma related to race and mental health service utilization.

In recognizing the harmful impacts of stigma in presenting for mental health treatment, there have been a number of initiatives created to reduce stigma in college and university students. Yamaguchi et al. (2013) conducted an analysis of 35 studies that addressed reducing stigma using a variety of methods. These studies targeted mental health knowledge, attitudes toward those with mental illness, and behavioral intentions as a means of reducing stigma. The analysis of these studies found that social contact with those with mental health disorders, particularly those that described instances of normal life and successful events, were more effective at improving attitudes toward those with mental health disorders than the use of educational lectures. However, this outcome's relationship to a reduction in stigma was unclear. Moreover, the use of social contact in addition to video-based education was found to have more positive long-term impacts on attitudes and knowledge related to mental health disorders than the alternative methods. Thornicoft et al. (2016) conducted a similar analysis in which they concluded that social contact with those who have mental health difficulties had short term benefits for improving mental health knowledge, but weaker evidence that this method reduced long term stigma. Their conclusion called for the need for more robust research in the realm of stigma reduction, particularly those that aim to more effectively connect stigma reduction to an increase in service utilization.

Student-Athlete Stigma

Given the similar prevalence of mental health disorders, student-athletes do not appear to be seeking out treatment very frequently (University of Michigan Counseling and Psychological Services, 2016). Researchers have explored an elevated perception of stigma as a potential driving factor for this lack of mental health service utilization (Moreland et al., 2018; Kaier et al., 2015; Hilliard et al., 2019; Wahto et al., 2016). In a meta-analysis conducted by Moreland et al.

(2018), student-athletes indicated a number of factors as reasons why they did not seek mental health services. It was found that less service utilization was reported by participants with a stronger male identity, more stigma and less supportive attitudes toward teammates, coaches with negative attitudes towards services, and limited access to providers well-versed in athletics. Support for these claims has been varied. In 2015, Kaier et al. found that student-athletes endorsed higher rates of both public and personal stigma for people seeking mental health services. Essentially, this study indicated that student-athletes are more likely to believe that the public holds stigma against mental health services, and they are also more likely to hold that stigma themselves. However, Hilliard et al. (2019) found that when controlling for gender and previous experience with treatment, there was no significant difference in stigma between student-athletes and non-athletes. As such, this study implies that stigma can be altered or reduced once people actually experience mental health treatment. This also further highlights the importance of availability of services. Stigma has also been analyzed for its role in the referral process. Wahto et al. (2016) evaluated if individuals making referrals have any relationship to stigma (i.e. increase or decrease stigma) or the ultimate utilization of services by the person receiving the referral. It was found that student-athletes are more likely to seek services if the referral is coming from a family member. They were found to have a more positive effect on an athlete's willingness to receive services than a referral from coaches, teammates, or oneself. In their evaluation of stigma, however, they found that stigma predicted 66% of the variance in attitudes toward mental health services, even when considering gender and previous treatment. To address these conflicting conclusions within the literature, this study evaluated the role of stigma related to service utilization by student-athletes while controlling for race and gender with a more robust sample.

Additionally, researchers have assessed mental health literacy in student-athletes. Gulliver et al. (2012) conducted a study aimed at increasing help-seeking among young elite athletes through internet interventions focused on mental health literacy. These researchers found that this intervention reduced stigma and improved knowledge but, consistent with previous research, did not increase help-seeking. However, Chow et al. (2020) created a 4-week intervention to reduce stigma and increase mental health literacy in Division I NCAA athletes. In addition to mental health literacy, they also utilized empathy, counter-stereotyping, and social contact. They found that this approach resulted in not only an improvement in stigma, but also intentions to seek mental health services both at post-intervention and at one-month follow up.

These studies highlight that mental health literacy is an important aspect of consideration when evaluating knowledge and stigma in young adults and specifically student-athletes. More knowledge and less stigma related to mental health services has been shown to potentially be more adaptive when experiencing mental health difficulties. This present study seeks to support these previous findings in a robust student-athlete sample. Additionally, this study will attempt to explore a stronger relationship between stigma, knowledge, and ultimate utilization of services, should one exist.

Protective Factors

It is reasoned that constructs such as resilience, sense of belonging, and flourishing act as protective factors in relation to mental health stressors and ultimate service utilization. (Davidson, 2000; Wang et al., 2016; Gopalan & Brady, 2019, Sargent et al., 2002; Hagerty et al., 1996; Fredrickson & Losada, 2005). These factors are particularly important on college campuses. Early life factors such as upbringing, previous experiences, and biological predispositions interact with recently present factors such as social networks and changes in

environment (e.g., dormitories or roommates). Protective factors are particularly important in the college environment, in which this environment also includes a number of factors that may threaten mental health quality, such as alcohol, academic stress, or time management difficulties. Therefore, it was important to evaluate these protective factors in related research.

Resilience

Emotional resilience has been defined as "the ability to generate positive emotion and recover quickly from negative emotional experiences" (Davidson, 2000; Wang et al., 2016, p. 727). Resilience has been identified as a byproduct of a number of different elements including genetics, biology, family, community, social and environmental determinants (Davydov et al., 2010). During the stressful life events present in early adulthood, it is important to also identify factors that may help combat the negative impacts of this stress. These factors have been labeled by researchers as *protective factors*. The Substance Abuse and Mental Health Services Administration (SAMHSA, 2019) defined protective factors as "characteristics associated with a lower likelihood of negative outcomes or that reduce risk factor's impact" (p. 1). SAMHSA goes on to note that protective factors can also include positive events that counter negative impacts. Hartley (2011) conducted a study assessing if interpersonal factors or intrapersonal factors had an influence on academic outcomes or sense of belonging for college students. Interpersonal factors included social support and intrapersonal factors included tenacity, stress tolerance, acceptance of change, control, and spirituality. Mental health was also assessed as being a potential moderator. Both interpersonal and intrapersonal factors were found to be positively correlated to mental health, although mental health was not found to be significantly associated with resilience. However, Hartley also concluded that more research needs to be done to tease apart the more complex nature of this relationship. College may foster and challenge one's

interpersonal and intrapersonal behaviors. As such, research has shown that being enrolled in college introduces a lot of risk factors as well as protective factors in difficulties related to suicidal ideation (Lamis & Lester, 2013). For example, alcohol, sense of belonging, reasons for living, and social support all have an influence on one's consideration of suicide. These findings further illustrate the complex impacts college has on mental health.

Protective factors, or lack thereof, can be influenced by individual identity in relation to a group. It is reasoned here that protective factors include aspects such as resilience (see the previous paragraph), and aspects such as sense of belonging and/or flourishing (see the following section). In particular, gender appears to be related to differential protective factors in men and women. Lamis and Lester (2013) found that men appear to report fewer symptoms related to depression; however, they also report fewer reasons to live. Essentially, although men report fewer risk factors related to suicide, they also report fewer protective factors. However, it should also be considered that men are also more likely to under-report symptoms of depression although they may be experiencing them. Race and ethnicity also present a complicated relationship when being defined as protective factors that foster resilience. One's relationship to ethnic identity has been identified as a potential protective factor against mental health disorders (Williams et al., 2012). Ethnic identity involves a commitment to an ethnic group, positive feelings toward the group, and involvement within the group. However, those with a lower sense of ethnic identity, have been associated with poorer mental health outcomes. Consistent with previous research, Williams et al. (2012) found that among Black participants, those with higher ethnic identity endorsed fewer symptoms of anxiety and depression and less psychological distress. Similar to that of gender, racial identity appears to be a tradeoff in which ethnic minorities are more likely to experience acts of discrimination and therefore experience stress

and resulting psychological impacts; however, the affiliation to their ethnic identity also appears to combat some of the impacts of this discrimination (Soto et al., 2011; Williams et al., 2012). Although these studies may have implications for other races and ethnicities, these researchers examined Black and White race/ethnicities as the independent variables in these works.

There are also protective factors such as practices or habits that vary individual to individual. As mentioned, these individual differences can be related to genetic and life events (Lyubomirsky et al., 2005). Layous et al. (2014) expanded on this idea by examining the role of "positive activities" as a protective factor. These authors identified positive activities as writing letters of gratitude, counting blessings, practicing optimism, practicing acts of kindness, using strengths in new ways, affirming important values, and meditating on positive feelings. It was hypothesized that these positive activities can mitigate risk factors related to psychopathology, disrupt rumination, inhibit loneliness, and facilitate coping. All of these factors contribute to identifying the engagement in positive activities as protective factors in mental health. Additionally, physical activity was examined as a protective factor against the impact of mental health disorders (Taliaferro et al., 2010). It was found that engaging in physical activity reduced the risk of hopelessness, depression and suicidal behaviors in men and women enrolled as college students. Simple practices that can be incorporated into day to day life appear to show meaningful impacts on mental health outcomes. Given the prevalence of men and people of color involved in college athletics, and also considering their involvement with athlete peers and physical activity, it is important to examine how resilience manifests in student-athletes.

Flourishing and Sense of Belonging

Both flourishing and sense of belonging are important considerations when assessing protective or resilient components of mental health. Sense of belonging has been defined as, "the

experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment" (Hagerty et al., 1992, p. 1). Sense of belonging has been associated with more positive mental health outcomes in addition to persistence and engagement (Gopalan & Brady, 2019, Sargent et al., 2002; Hagerty et al., 1996). However, students of color and first-generation college students have displayed a lower sense of belonging than their peers (Gopalan & Brady, 2019). Flourishing has been defined as "[having] means to live within an optimal range of human functioning, one that connotes goodness, generativity, growth, and resilience" (Fredrickson & Losada, 2005, p. 1). A number of factors have been found to contribute to flourishing including faith, life purpose, optimism, substance use, and exercise (Fink, 2013). Fink (2013) also went on to identify sense of belonging as an important factor in mental health flourishing. For student-athletes, it has been found that within this population that sense of belonging is also associated with believing one will graduate from college and buffers potential burnout (Fearon et al., 2011). However, an interesting finding also found that more investment in academics or athletics decreased sense of belonging (Huml et al., 2020). Less surprisingly, this study also found that student-athletes who transferred indicated less sense of belonging, along with those who identified as men. This study sought to explore sense of belonging and its relationship to flourishing, as well as how these concepts differ between athletes and non-student-athletes.

Student-Athlete Resilience

Stressors. Sarkar and Fletcher (2014) conducted a review of the unique daily demands related to athlete stressors and protective factors such as practice, nutrition, training, and time management. These researchers make an important note that the term *adversity*, commonly used in research, is typically associated with negative circumstances. However, even something like

winning a game, a typically positive event, still comes with heightened expectations that the team or individual will continue to perform at this level and therefore presents a potential stressor or "adverse" impact (Kreiner-Phillips & Orlick, 1993). This review compiled athlete stressors into three categories including competitive stressors, organizational stressors, and personal stressors (Sarkar & Fletcher, 2014). Competitive stressors encompass performance-related expectations including injury worries, preparation, or rivalries. Organizational stressors included four subcategories, leadership and personal issues, cultural and team issues, logistical and environmental issues, and performance and personal issues. These categories encompass stressors related to diet, coach behaviors, athletic equipment, and many others. Lastly, personal stressors outside of sport include factors such as work-life balance, family difficulties, or the death of loved ones. The present study sought to explore some of these variables by assessing time spent on activities during the week as well as hours of sleep.

Student-Athlete Protective Factors. Although athletes are presented with these unique day to day stressors, a byproduct of this identity also comes with a number of protective factors. Sarkar and Fletcher (2014) identified five categories of these factors including positive personality, motivation, confidence, focus, and perceived social support. Positive personality includes adaptive perfectionism, which has been conceptualized as one having high personal standards but having little concern for mistakes or doubts. This characteristic has been associated with more positive attitudes, self-confidence, and lower levels of anxiety and burnout. Optimism, hope, and proactivity are collectively associated with bouncing back after failure, better performance, and less anxiety within competitive athletes. Motivation was also identified as an accompanying factor to positive personality. Optimal motivation has been found to be essential in athletes along with the ability to integrate environmental demands with intrinsic values and

beliefs. The construct of confidence was found to be important for the reactions and responses of athletes to adverse events, but also serves as a barrier to the negative impacts of stressors. Specifically, it was found to be associated with effective cognitions, positive affect, and effective behaviors in athletes. The construct of focus/concentration has been shown to have beneficial impacts on an athlete's ability to utilize effective cognitions while under pressure. Lastly, perceived social support was associated with higher self-confidence, lower burnout, and athletes' appraising challenging situations as challenges rather than threats. It should be noted that the results discussed come from studies that examined athletes of all levels including recreational and Olympic level athletes. However, given the training college student-athletes receive and their broad social networks (i.e., teammates, coaches, families, trainers), this present study expects these protective factors to show an increase in resilience among student-athletes. Additionally, we expect a sense of belonging and flourishing to contribute to protective factors among student-athletes.

Study Aims

The above research suggests that there is a need for supportive findings of the relationship between mental health service utilization and possible related constructs. Additionally, there appears to be a need for research to cover a broader range of topics with a larger sample size. The purpose of this study seeks to understand the relationship between mental health service utilization with mental health knowledge, mental health stigma, and protective factors (i.e., resilience, sense of belonging, and flourishing). These relationships were also examined for the specific mental health reports of depression and anxiety. Finally, these relationships were also examined for potential differences between college students based on racial categories, and based upon status (or not status) as student-athletes in a sample of NCAA Division I universities.

The aims of the present thesis are four-fold. The first aim was to predict service utilization from the amount of knowledge, stigma, and protective factors that students report. The second aim examines the extent to which these predictions are qualified by racial category. The third aim is similar; however, it investigated these predictions as qualified by student-athlete status (athletes vs non-athletes) for Division I colleges and universities. Finally, the fourth aim examines the relationship between specific mental health outcomes and service utilization as potentially mediated by mental distress protective factors. The hypotheses associated with these specific aims are as follows:

Aim 1 Hypotheses:

> 1a. Those who endorsed more mental health knowledge indicated more service utilization (Cheng et al., 2018).

1b. Those with higher reported stigma indicated less service utilization (Gaddis et

al., 2018).

1c. Those with a greater amount of reported protective factors (resilience, sense of

belonging, and flourishing) indicated less service utilization (Gopalan &

Brady, 2019; Williams et al. 2012).

Aim 2 Hypotheses:

2a. Students of color reported less mental health service utilization than White

students (LeViness et al., 2019, de Brey et al., 2019).

2b. Students of color reported more mental health stigma than White students

(Krill et al., 2019; Rao et al., 2007).

2c. Students of color endorsed more protective factors than White students (Soto

et al., 2011; Williams et al., 2012).

Aim 3 Hypotheses:

3a. Student-athletes reported less mental health knowledge than non-student-

athletes (Ballesteros & Tran, 2018).

3b. Student-athletes reported more mental health stigma than non-student-athletes

(Kaier et al., 2015).

3c. Student-athletes endorsed more protective factors than non-student-athletes

(Fearon et al., 2011; Gopalan & Brady, 2019).

Aim 4 Hypothesis:

4. Students with higher depression and anxiety reported more service utilization

and less protective factors. Therefore, protective factors are expected to

have mediated the relationship between depression and anxiety and

service utilization. (Fink, 2013; Gopalan & Brady, 2019; Sargent et al., 2002; Hagerty et al., 1996).

Method

Participants

All invited participants were students enrolled in NCAA Division I colleges and universities in various regions of the United States. Both graduate students and undergraduate students were able to participate. All participants were between the ages of 18 years old and 27 years old ($N = 48,610$). The makeup of this sample included student-athletes ($n = 1,024$) and non-student-athletes ($n = 47,586$). Student-athletes for this study were defined as those participating in varsity sports at the time of data collection (2019-2020 school year). For students who were not athletes, 600 participants were sampled. For student-athletes, 250 were sampled. Participants who indicated race/ethnicity, gender, and are between the ages of 18 and 27 were included in the final sample. Those who entered responses for race, gender, or age that were deemed invalid by the researcher were excluded from the sample ($n = 111$). The final sample consisted of 739 participants.

Procedure

The present study is part of a larger ongoing study called the "Healthy Minds Study" (HMS). HMS examines mental health, service utilization, and related concepts among undergraduate and graduate students at colleges and universities around the world. Since its launch, HMS has been fielded at over 180 colleges and universities, and has accrued over 200,000 survey responses. Qualtrics, a web-based survey, and communications company, was used to both create and disseminate the survey. This survey is a web-based, self-report study aimed to collect cross-sectional data. The survey takes 20-25 minutes, on average, for respondents to complete. Institutions that participate in the survey provide a sample file of students from the Registrar's Office. As part of recruitment, various combinations of the

following information are collected from participating institutions including first name, email address, sex, race/ethnicity, degree level (undergraduate/graduate), year in program, and cumulative GPA. This information was obtained prior to the recruitment of individual students. Upon receiving the sample file, a unique numeric identifier was assigned to each participant. These numeric identifiers are kept separate from any identifying information in order to maintain confidentiality of participants. Some students may be entered for a chance to win monetary or material prizes if their institution "opted-in" to participating in the national or school-specific sweepstakes. Any prizes won were received after recruitment for the survey was completed. The national sweepstakes does not require completion of the survey to win.

For the purposes of the present study, a stratified random sample of around 700 participants was taken from the total sample of over 48,610 participants from NCAA Division I schools who completed the survey in the 2019-2020 school year. This sample strategy attempted to equally sample for Black, White, and other race students. This decision was made to more accurately identify any potential significant differences between these racial groups, while maintaining comparable sample sizes. Specifically, the study utilized stratified random sampling to account for student-athlete status, gender, and race. A stratified random sample for both men and women was taken for White, Black, and Other student-athletes and White, Black, and Other non-student-athletes. The participants in this study were not aware of their participation in this specific study, but were made aware of, and consented to, participation in the original HMS study and subsequent projects.

Measures

Demographics

The present study included demographic variables including race/ethnicity, gender, and student-athlete status. Race/ethnicity was categorized as "White" and "students of color." Student-athlete status were categorized as "student-athlete" and "Non-student-athlete." These demographic characteristics were used to further analyze the unique relationships of mental health and related services.

Service Utilization

The construct of treatment utilization was assessed by using two items. First, participants were asked, "Have you ever received counseling or therapy for mental health concerns?" (1 = *No, never*; 2 = *Yes, prior to college*; 3 = *Yes, since starting college*; 4 = *Yes, both of the above [prior to and since]*. Next, participants were asked, "In the past 12 months, I needed help for emotional or mental health problems such as feeling sad, blue, anxious or nervous" (1 = *Strongly agree* to 6 = *Strongly disagree*). These measures were used to evaluate if students are utilizing mental health services or informal forms of these services. These scores were totaled and the latter item was reversed scored so that higher scores indicate more service utilization. Scores can range between 2 and 10.

Mental Health Knowledge

In order to assess the construct of mental health and treatment knowledge, participants were asked, "How helpful on average do you think therapy or counseling is, when provided competently, for people your age who are clinically depressed?" (1 = *Very helpful* to 4 = *Not helpful*). Next participants were asked, "How helpful on average do you think medication is, when provided competently, for people your age who are clinically depressed?" (1 = *Very*

helpful to 4 = *Not helpful*). Participants were asked, "Relative to the average person, how knowledgeable are you about mental illness (such as depression and anxiety disorders) and their treatments?" (1 = *Well above average* to 5 = *Well below average*). Most importantly, participants were asked, "How much do you agree with the following statement?: If I needed to seek professional help for my mental or emotional health, I would know where to go on my campus." (1 = *Strongly agree* to 6 = *Strongly disagree*). These questions were totaled in order to evaluate different aspects of mental health knowledge. Items were reversed to indicate that higher scores mean more mental health knowledge. The range of these scores is between 4 and 19.

Mental Health Stigma

In order to assess the construct of mental health and treatment stigma, participants were asked, "How much do you agree with the following statement?: Most people think less of a person who has received mental health treatment" (1 = *Strongly agree* to 6 = *Strongly disagree*). Next, participants were asked, "How much do you agree with the following statement?: I would think less of a person who has received mental health treatment" (1 = *Strongly agree* to 6 = *Strongly disagree*). Then participants were asked, "When I feel depressed or sad, I tend to keep those feelings to myself" (1 = *Strongly agree* to 6 = *Strongly disagree*). These items were totaled to create a "stigma score" ranging from 3 to 18. Higher scores indicate less mental health stigma and lower scores indicate higher mental health stigma. Those who indicate "Don't know" were removed from subsequent analyses. These measures were used to evaluate both public and perceived mental health stigma.

Resilience

Brief Resilience Scale (BRS). The Brief Resilience Scale (BRS) is a six-item self-report scale developed by Smith et al. (2008). This scale assesses one's ability to emotionally recover

from stressful events. Participants indicate the degree to which they agree with each item (1 = *Strongly disagree* to 5 = *Strongly agree*). Example items include the following: "I bounce back quickly after hard times," "I have a hard time making it through stressful events," and "It does not take me long to recover from a stressful event." Three of the items are reverse coded and summed (ranging from 6 to 30). This total is then divided by the total number of items for a composite score on the scale. However, for the purposes of this paper, the items were evaluated as totals rather than averages in order to mirror the scoring of the other resilience measures. This scale demonstrated acceptable reliability with a Cronbach's alpha ranging from .80 to .91.

Sense of Belonging

Sense of belonging was measured using a single item, "I see myself as a part of the campus community," adapted from the Perceived Cohesion Scale (Bollen & Hoyle, 1990). Responses were measured using a 6-point Likert-type scale from 1 (*Strongly agree*) to 6 (*Strongly disagree*). This item was reversed so that higher scores indicate a higher sense of belonging and lower scores indicate a lower sense of belonging.

Flourishing

Flourishing was measured using the Flourishing Scale (FS), an eight-item self-report measure that requires participants to rate their agreement or disagreement with each of the items (Diener et al., 2009). These items measure the respondent's self-perceived success in relationships, self-esteem, purpose, and optimism. Example items include the following: "I lead a purposeful and meaningful life," and "I am engaged and interested in my daily activities." The FS uses a 7-point Likert-type scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Individual item scores are summed to assess overall flourishing, with scores ranging from 8 to 56. Higher scores indicate higher levels of flourishing. The FS shows a high rate of internal consistency with

a Cronbach's alpha of 0.87 (Hone et al., 2014). Additionally, the FS showed a strong positive correlation with both the Ryff Scales of Psychological Well-being ($r = 0.78$) and Ryan and Deci's Basic Need Satisfaction in General scale ($r = 0.73$), therefore affirming strong validity (Diener et al., 2009).

Depression and Anxiety

Patient Health Questionnaire-9. The Patient Health Questionnaire-9 (PHQ-9) is a nine-item self-report measure developed by Kroenke et al. (2001) that screens for depressive symptoms. Participants indicate the frequency to which they engage with each item (0 = *Not at all* to 3 = *Nearly every day*) over the past two weeks. Example items include: "Little interest or pleasure in doing things?"; "Feeling down, depressed, or hopeless?"; and "Trouble falling or staying asleep, or sleeping too much?". These items are summed (ranging from 0 to 27). A score above 15 is considered to be an indication of moderately severe to severe depressive symptoms. This scale demonstrated acceptable reliability with a Cronbach's alpha ranging from .84 to .89.

Generalized Anxiety Disorder-7. The Generalized Anxiety Disorder-7 (GAD-7) questionnaire is a seven-item self-report measure developed by Spitzer et al. (2006) that screens for anxiety symptoms. Participants indicate the frequency to which they engage with each item (0 = *Not at all* to 3 = *Nearly every day*) over the past two weeks. Example items include: "Feeling nervous, anxious or on edge," "Not being able to stop or control worrying," and "Worrying too much about different things." These items are summed (ranging from 0 to 21). A score above 15 is considered to be an indication of severe anxiety symptoms. This scale demonstrated acceptable reliability with a Cronbach's alpha of .92.

Results

The study examined main variables as a function of their associations (e.g., Hypotheses 1a-1c), as a function of the differences observed between students of color and white students (Hypotheses 2a-2c), and as a function of observed differences for student-athlete and non-athlete students (Hypotheses 3a-3c). Additionally, as service utilization was of specific interest, utilization was also examined by the extent to which it was related to reports of depression/anxiety, and whether or not the effect therein was mediated by the protective factors of resilience, belongingness, and flourishing (Hypothesis 4). Additionally, exploratory analyses were also conducted to investigate the extent to which protective factors also played a role in mean differences of the variables of interest (reported as unstandardized coefficients).

The initial sample of NCAA Division I universities included 48,610 students. The make-up of this sample included student-athletes ($n = 1,024$) and non-student-athletes ($n = 47,586$). The final sample included 739 students. The demographics of this sample included 539 non-student-athletes, 200 student-athletes, 545 White students, and 194 students of color (Table 1). These data were collected to ensure a sufficient sample of students of color, and of students of color across both athlete and non-athlete samples. The main variables of interest were utilization ($M = 5.59$, $SD = 2.51$, range: 1-10), knowledge ($M = 9.91$, $SD = 1.69$, range: 1-12), and stigma ($M = 9.47$, $SD = 2.60$, range: 1-12). Resilience was also a main outcome measure; however, this construct will be discussed as both a composite score ($M = 51.36$, $SD = 9.40$, range: 7-67) and individual constructs. These individual measures include the BRS ($M = 19.85$, $SD = 4.59$, range: 6-30), sense of belonging ($M = 4.10$, $SD = 1.25$, range: 1-6), and the flourishing scale ($M = 44.21$, $SD = 7.91$, range: 8-56).

Aim One: Predicting Service Utilization

Hypotheses 1a - 1c.

It was hypothesized that more mental health knowledge would be positively correlated with more service utilization. This hypothesis, however, was not supported in that knowledge was unassociated with reports of service utilization, $r(737) = .004$, $p = .92$ (see Table 2). It was hypothesized that more stigma towards mental health difficulties would be negatively correlated with less service utilization. This hypothesis was also not supported in that more stigma was not significantly correlated with less service utilization, $r(735) = -.010$, $p = .79$ (see Table 2). Finally, it was hypothesized that more resilience would be negatively correlated with less service utilization. This hypothesis was supported by the data in that those with higher resilience (i.e. more protective factors) reported significantly less service utilization, $r(739) = -.327$, $p < .05$ (see Table 2). As such, the hypotheses concerning the bivariate relationships between the key variables of interest were not fruitful. Additional analyses, between groups based on race and athletic status were therefore performed.

Aim Two: Utilization, Knowledge, Stigma, and Protective Factors by Race

Hypothesis 2a

For race, and concerns of mental health, it was hypothesized that students of color would report less service utilization than White students. This hypothesis was not supported in that students of color ($M = 5.62$, $SD = 2.38$, $n = 194$) and White students ($M = 5.58$, $SD = 2.55$, $n = 545$) do not report significant differences in service utilization, $t(737) = -0.167$, $p = .867$. As such, exploratory regression analyses were conducted to examine whether or not the protective factors (i.e., reported resilience, belongingness, and flourishing) moderated these results. When examining the scales related to resilience, there was a significant difference in utilization of

services. That analysis found for utilization, the main effect of race was significant, β = -2.124, $t(737)$ = -2.55, p < .05, and the main effect of BRS was also significant, β = -0.373, $t(739)$ = -6.77, p < .001. Those effects, however, were qualified by the race by BRS interaction, β = -0.098, $t(739)$ = 2.32, p < .05. Simple slopes analysis indicated that White students are more likely to use services when resilience is low as compared to students of color or when resilience was average or high (see Figure 1). A similar set of analyses were conducted for reports of the sense of belonging. That analyses found a main effect for race, β = -1.504, $t(735)$ = -2.19, p < .05, a main effect for belonging, β = -0.847, $t(735)$ = -3.81, p < .001. That effect however, was also qualified by the race by belongingness interaction, β = 0.360, $t(735)$ = 2.16, p < .05. As shown in Figure 2, White students were more likely to report using services when belonging was low. There was also a main effect of race, β = -2.299, $t(733)$ = -2.04, p < .05 and a main effect of the flourishing scale, β = -0.162, $t(733)$ = -4.76, p < .05. The interaction of these variables was also significant, as White students were more likely to use services when flourishing is low, β = 0.050, $t(733)$ = 1.97, p <. 05 (Figure 3).

Hypothesis 2b

Stigma was also examined, and it was hypothesized that students of color would report more stigma toward mental health difficulties than White students. This hypothesis was not supported. Although there was a significant difference in how students reported their stigma, $t(735)$ = 3.20, p <.05, it was found that students of color (M = 8.95, SD = 2.84, n = 193) reported significantly less stigma than White students (M = 9.65, SD = 2.49, n = 544). As was done for utilization, additional exploratory analyses were also conducted. When also analyzing resiliency, there was no main effect of the BRS , β = -0.004, $t(735)$ = -.07, p = .95, no effect of race, β = -0.455, $t(735)$ = -0.470, p = .639, nor was there an interaction β = -.013, $t(735)$ = -0.28, p = .78.

When belongingness was also considered, there was also no main effect of race, β = -0.864, $t(734)$ = -1.48, p = .14, no effect of sense of belonging, β = -0.006, $t(737)$ = -0.02, p = .98, nor an interaction, β = 0.050, $t(734)$ = 0.28, p = .78. Similarly, with the flourishing scale, there was no main effect of race, β = 0.735, $t(731)$ = 0.60, p = .55, the flourishing scale, β = -0.000, $t(731)$ = -0.00, p = .99, and no significant interaction, β = -0.034, $t(731)$ = -1.24, p = .22. Based on this data, there are no significant differences in stigma based on race.

Hypothesis 2c

When considering differences in the concept of resilience, it was hypothesized that students of color would report more resilience than White students. Contrary to the hypothesis, when using a resilience total (i.e. the BRS, sense of belonging, and flourishing summed), White students (M = 51.82, SD = 9.65) reported significantly more resilience than students of color (M = 50.06, SD = 8.55), $t(737)$ = 2.25, p < .05. When that composite resilience total was decomposed into the individual scales, this effect was still observed for the BRS, $t(737)$ = 2.90, p < .05, sense of belonging, $t(735)$ = 3.30, p < .05, and the flourishing scale, $t(733)$ = 2.34, p < .05.

Aim Three: Utilization, Knowledge, Stigma, and Protective Factors by Athlete Status

Hypothesis 3a

Consistent with the reviewed literature above, non-student-athletes were hypothesized to report more service utilization than student-athletes. This hypothesis was supported in that non-student-athletes (M = 5.88, SD = 2.46) reported significantly more service utilization than student-athletes (M = 4.82, SD = 2.47), $t(737)$ = -5.20, p <.05. As was done for differences between students by color, tests of moderation (e.g., interaction) were also explored for each of the protective factors' scales. When considering the BRS measure of resilience, the effect of athlete status was no longer significant, β = 0.547, $t(737)$ = 0.63, p = .53 and neither was the

interaction, β = -.06, t(739) = -1.39, p = .17. However, the main effect of the BRS on utilization

was significant, β = -0.224, t(737) = -10.69, p < .05. This was also the case for sense of

belonging. That analysis only found a main effect of belonging on utilization, β = -0.283, t(735)

= -3.39, p < .05, and no main effect of athlete status, β = -0.067, t(735) = -0.08, p = .94 or

significant interaction, β = -0.183, t(735) = -1.03, p = .30. And finally, a similar pattern was also

found for the main effect of the flourishing scale, β = -0.07, t(733) = -5.81, p < .05 and no main

effect of athlete status, β = 2.11, t(733) = 1,76, p = .08. That effect, however, was qualified by a

significant interaction between athlete status and flourishing, β = -0.06, t(733) = -2.47, p < .05. A

simple slopes analysis indicated a significant moderation of utilization due to flourishing for

moderate and high levels of flourishing, but not for low levels (see Figure 4). As such, lack of

resilience in student-athletes compared to non-student-athletes appears to be related to levels of

utilization.

Hypothesis 3b

When evaluating stigma, it was hypothesized that non-student-athletes would report less

stigma toward mental health difficulties than student-athletes. This hypothesis was supported in

that non-student-athletes (M = 9.33, SD = 2.73) report significantly less stigma than student-

athletes (M = 9.83, SD = 2.18), t(735) = 2.33, p <.05. When considering individual aspects of

protective factors, the analysis of the BRS shows there was no significant effect on stigma, β =

-0.008, t(735) = -0.33, p = .74, no main effect of athlete status, β = -1.70, (735) = 1.67, p = .10,

and no significant interaction, β = -0.056, t(735) = -1.16, p = .25. This was also the case with

sense of belonging with no main effect of sense of belonging, β = -0.106, t(734) = -1.19, p = .23,

no main effect of athlete status, β = -0.20, t(734) = -0.23, p = .82, and no significant interaction,

β = 0.17, t(734) = 0.89, p = .37. In terms of flourishing, there was no main effect of athlete

status, β = 1.70, t(733) = 1.30, *p* = .20 or significant interaction, β = -0.023, t(731) = -0.83, *p* = .41. However, flourishing does have a main effect in relation to stigma, β = -0.040, t(733) = -2.82, *p* < .05. In sum, it appears that resilience as a whole does not have a significant effect on stigma, however, level of flourishing may be related to some reported levels of stigma.

Hypothesis 3c

Additionally, it was hypothesized that non-student-athletes would report less resilience than student-athletes. This hypothesis was supported in that non-student-athletes (*M* = 50.4, *SD* = 9.23) report significantly less resilience than student-athletes (*M* = 53.95, *SD* = 9.38), t(735) = 4.63, *p* < .05. This also holds when considering the BRS, t(737) = -4.78, *p* < .05, sense of belonging, t(735) = -6.02, *p* < .05, and the flourishing scale, t(733) = -4.52, *p* < .05 individually.

Aim Four: The Mediation of Specific Mental Health Outcomes and Utilization

It was predicted that resilience (i.e., protective factors) would act as a mediator between depression and anxiety and service utilization. First, a relationship between service utilization and depression and anxiety was examined and found a significant effect, β = .127, t(737) = 14.85, *p* < .05). However, when resilience was included, it did not does not act as a significant mediator between these constructs, β = -0.006, t(737) = -.56, *p* = .57. That test showed only that the direct effect of depression and anxiety predicted utilization. As was done for student race and athlete status, exploratory tests of moderation were conducted, using Hayes' (2013) PROCESS marco for SPSS. In that analysis, depression/anxiety was the focal predictor and resilience was the moderator for the relationship between depression/anxiety and service utilization. The analysis found significant moderation, β = 0.002, t(737) = 2.94, *p* < .05. Specifically, when participants were low in resilience the association between depression/anxiety and utilization,

$\beta = 0.117$, t(735) = 12.79, $p < .001$, than when participants were higher in resilience, $\beta = 0.153$,

t(735) = 12.39, p < .001 (see Figure 5).

Discussion

The aims of this paper sought out to examine the relationships between mental health service utilization, knowledge, stigma, and resilience. Additionally, it explored how these aspects are impacted when considering race and athlete status of students at Division I colleges and universities. Finally, this research also examined the moderating effects of specific measures that could serve as some protection or resistance for mental health outcomes (i.e., resilience, belongingness, and flourishing). Although some of the above hypotheses were not supported, a number of them were. Knowledge and stigma did not appear to have any significant relationship to service utilization in the present research.

However, outcomes concerning resilience were of particular note. It was found that those with more resilience also indicate less service utilization. Resilience was important in predicting utilization for both student-athletes and White students and remains an important factor even with reported levels of depression and anxiety. Additionally, students of color report no difference in service utilization, less stigma, and less resilience than White students. Moreover, student-athletes do report less service utilization, more stigma, and more resilience. The data also shows that components of resilience are critical factors when evaluating the relationships between these variables. Moreover, in general, when mental health difficulties (i.e., depression and anxiety) are low, resiliency has more of an effect on mental health service utilization than when mental health difficulties are more severe. In short, once distress gets to a certain level of severity, resiliency has an insignificant effect. This was consistent with findings that show once mental health difficulties become more severe, individuals seek out more formal sources of support (Walters et al., 2008). This does provide some concern for students of color in that, if

they are lacking protective factors and not using services, then any distress they may feel, however low, would go without the proper resources.

The findings related to students of color were not consistent with some of the previous research explored for this study. Unlike data provided by LeViness et al. (2019), students of color appear to be utilizing services at the same rates as White students in the current research concerning a very wide sampling of students across division I universities. However, this finding was consistent with work done by Hayes et al. (2011) which found that in a sample of 45 institutions, neither students of color nor White students under- or over-utilized mental health services. Additionally, the findings of stigma were inconsistent with the research done by Brown et al. (2010). However, the work by Rao et al. (2007) may help guide these findings. With proper education and intervention, some people of color then indicated less stigma than White individuals. As such, given that the sample used in this study was highly educated, these findings may act more in line with the post-study results of this research. While the relationship with stigma was unaffected by resilience, the relationship between this population and utilization was impacted by resilience. When these protective factors were low, White students actually did report more utilization of services than students of color. With these considerations, the findings of this study do appear to be supported by the work by LeViness et al. (2019). Students of color were also found to be less resilient which was not consistent with the findings of Williams et al. (2012). However, this work also specifies that resilience was only high when ethnic identity was high. As such, this population of students of color at a predominantly White institutions (PWI) may be lacking some connection to ethnic identity. This also may be related to a lack of belonging by this population, as found in this work and discussed in the work by Gopalan and Brady (2020). Specifically, if students of color at PWIs have less resiliency and those with less

resiliency are less likely to seek services, students of color are likely struggling (Clark & Mitchell, 2019). These findings are consistent with some of the previous research when paying special attention to the fact these students of color are at PWIs. As such, these findings provide even more support for students of color to be given proper consideration and support in the realm of mental health.

The findings related to student-athletes were largely in line with previous research. As indicated by University of Michigan Counseling and Psychological Services (2016) and Ballesteros and Tran (2018), student-athletes in this current sample also appear to be less likely to utilize mental health services. Although not evaluated in this current study, student-athletes are also shown to have the same rates of mental health difficulties as their non-athlete peers (Wolanin et al., 2016; Davorean & Hwang, 2014). As such, it highlights this lack of utilization by this population as particularly important. Athletes are experiencing these same levels of difficulties, but not utilizing services. This also may be related to the elevated stigma previously found by Kaier et al. (2015), also confirmed by this study. Moreover, research has shown that this population is also more resilient in that just being a student-athlete serves as a protective factor (Sarkar & Fletcher, 2014) and this was also confirmed in the current study. Overall, it does appear that resilience (specifically flourishing) provides some reasoning for why student-athletes are using fewer services. However, this relationship is still meaningful in that this utilization is low even when flourishing is low. This is particularly concerning when also considering rates of suicide among this population (Rao & Hong, 2016). These findings are consistent with some of the previous research and adds to the growing body of literature that indicates athletes are in need of special supports.

Limitations

  The hypotheses that were not supported could still hold important implications for research in this field and thus deserve additional investigation. Several reasons for this exist. First, when considering the measures of stigma and knowledge, previous research assessed these aspects using different measures. For example, Brown et al. (2010) utilized more extensive measures of public and internalized stigma, including the 12-item Perceived Devaluation Discrimination Scale and the 29-item Internalized Stigma of Mental Illness Scale. Due to the length of the full Healthy Minds Survey, this current study's measure of stigma only included two items of personal and perceived public stigma. The restricted range of measuring stigma may explain the lack of correlation to service utilization, as well as, the unexpected lack of stigma in students of color. However, an alternative explanation may be the sample from which these students of color are being pulled from. Brown et al. (2010) recruited samples from areas with low percentages of Black people and an area with higher percentages of Black people. This, in turn, accounted for varying forms of culture and backgrounds. This current study only used students from NCAA Division I universities, which tend to be predominantly White institutions. Differences in institutions do appear to be important factors when considering stressors and stigma (Watkins et al., 2007; Watkins & Neighbors, 2007). However, White students had more representation in this sample and the amount of stigma in this population, therefore, differs from previous research.

  Although somewhat in line with previous research, the sense of belonging measure could have yielded more robust responses. The measure for this concept only included a single item and therefore gives a very restricted illustration of the true sense of belonging on these individuals. Had this study used a more extensive measure such as the Collective Self-Esteem

Scale (CSES), which evaluates one's value of their social group and value to their social group, these results may have looked differently (Crocker et al., 1994). As for why the knowledge variable was not supported, one could look at the previous research done by Stansbury et al. (2011) that evaluated 54 Black students. This present research not only had a much larger sample size, but also took into account additional racial categories not seen in much of the available literature, which typically focuses on Black and White individuals. Given the need for more research in this domain, maybe measures of mental health knowledge and literacy need more robust sample sizes than provided by Stansbury et al. (2011). Additionally, it may be the case that when considering not just Black individuals, but people of color as a whole, presentations of mental health knowledge changes. Also, as noted above, the concept of mental health knowledge and/or mental health literacy in this young adult population does not have a robust amount of empirical research (Cheng et al., 2018). In turn, these findings might be consistent with presentations of mental health knowledge in this population, but since there was no available data at the time of this study, these researchers cannot confirm.

Moreover, stigma does not appear to correlate with mental health service utilization. This lack of correlation may be explained by Czyz's (2013) finding that the majority of students who do not use mental health services describe their problems as insufficient for therapy. Additionally, it may be both stigmatizing for those seeking it out, but also stigmatizing for those to admit. As such, there is a possibility, in research on more general prejudices, that social desirability biases also exist in terms of people's willingness to admit to prejudices of mental health (Henderson et al., 2012; Henderson et al., 2014). As a result, it may be the case that even with higher stigma or lower knowledge, once the problem becomes sufficient enough, students will seek out mental health services. This is supported not only in this current study, but also

interesting when considering the increase in mental health disorders over time, and especially in the context of the COVID-19 pandemic (Lipson et al., 2018; Czeisler et al., 2020). Although there may not be an observed change in knowledge or stigma, service utilization may still occur. As seen in the results of this study, this also appears to be impacted by level resiliency.

Although this study still yields meaningful data and conclusions, there are other limitations to the study itself. First, this project utilized secondary data analysis. This means that the researchers were unable to control initial study factors related to data collection and survey building (Cheng & Phillips, 2014). As such, it is possible some variables and/or data analyses were misinterpreted. Second, varsity student-athletes were indicated when participants selected the "varsity athletics" category in the survey. As a result, student-athletes used in this study could range from fencing to football. These student-athletes have very different experiences and may have differences in these mental health variables that are unaccounted for in this study. Additionally, it should be kept in mind that colleges and athletic programs vary greatly. It could be argued that colleges more invested in mental health initiatives chose to participate in this study and therefore may influence the results seen (Gaddis et al., 2018). Lastly, this survey was advertised to participants as a mental health survey. Although plausible that those who hold more value or concern with mental health, felt more motivated to complete the survey and, as a result, may skew the full picture of college student mental health, this is unlikely (Gove & Geerken, 1977; Gove et al., 1976). Although some assumptions missed the mark, the hypotheses and methodology for this study were based on long utilized methods and empirical research. As such, while alterations could be made to further align with previous research, no previous studies have been conducted that assess the above variables with a robust college sample from a national dataset.

Future Directions

Considering all of the empirical information and limitations of the current project, there are a number of implications this research can have on future studies and programmatic interventions. If students are ultimately seeking out services, it may be beneficial to better understand the relationship between knowledge and stigma for early intervention. Although there does not yet appear to be a clear relationship, it is important to consider what aspects have an impact on service utilization and add to the limited existing literature (Cheng et al., 2018). This is uniquely important when considering resilience. The relationships surrounding resiliency seen in these populations can be used to inform interventions to foster resiliency (Chmitorz et al., 2018). Additionally, given that student-athletes are showing less service utilization and more stigma, more work should be done to provide mental health support for these individuals, which has been identified as a goal by the AUCCCD (Reetz, 2016). Even if this population has more resilience on average, there may be programmatic or team specific cultures that discourage the use of services in those without this level of resiliency. In regard to students of color, since this current study only assesses clinical services, it is possible that these students are actually utilizing informal resources (e.g., members of the clergy, friends, or family), as supported by previous research (Woodward et al., 2010; Woodward et al., 2011). As such, this could be an important follow-up study to evaluate these informal help-seeking behaviors with more extensive racial categories. Lastly, this study was taken from a very robust data set which is ideal for appropriate sample sizes. However, it may be interesting to also conduct a similar study with a different college population to potentially evaluate the role of institutional demographics. A critical takeaway point from this research is that while population averages are important, one must also consider what these conclusions mean in those who fall outside this norm, especially in

those with few protective factors. This research can ultimately be valuable to stakeholders in the realm of college mental health services.

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Tables and Figures

Table 1

Participant Demographics

Variable	N = 739	%
Race		
White	545	74%
Students of Color	194	26%
Athlete Status		
Student-athlete	200	27%
Non-student-athlete	539	73%

Table 2

Hypotheses 1 Correlations

Variable	*M*	*SD*	1	2	3
1. Stigma	9.47	2.60	--		
2. Knowledge	9.91	1.69	.60**	--	
3. Utilization	5.59	2.50	-.01	.004	--
4. Resilience	51.36	9.40	-.12**	.064	-.33**

**p < .01.

Figure 1

Hypothesis 2a: Interaction Between Resilience and Utilization by Race
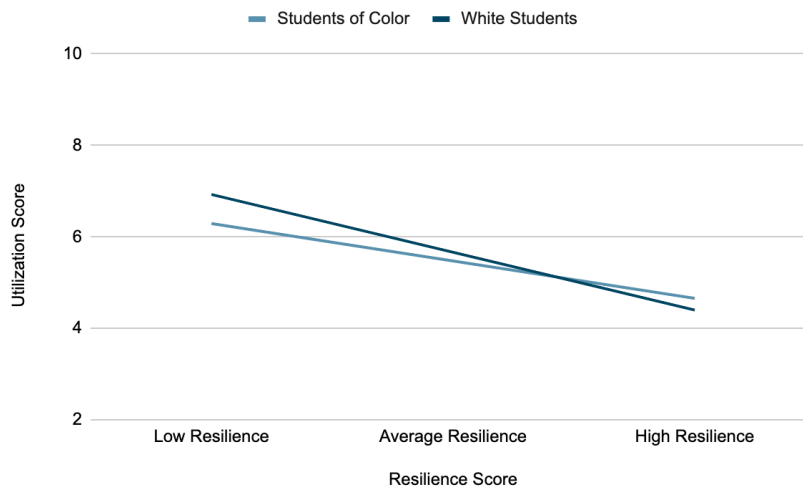
Note. The x-axis represents averages in the three categories of resilience based on the BRS. The y-axis represents the average utilization score in the respective groups. White students indicate more utilization when resilience is low.
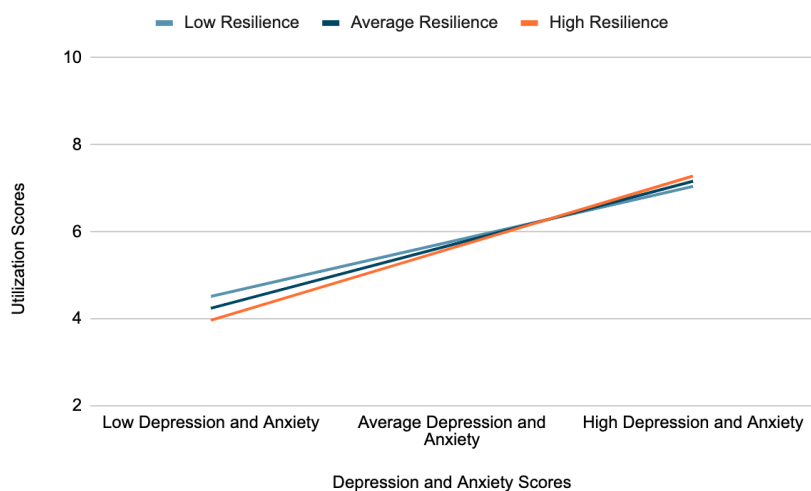
Figure 2

Hypothesis 2a: Interaction Between Belonging and Utilization by Race
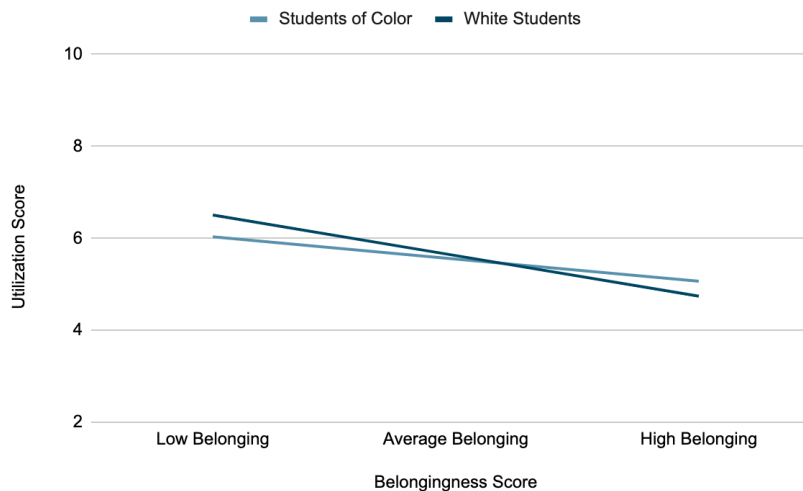
Note. The x-axis represents averages in the three categories of belonging. The y-axis represents the average utilization score in the respective groups. White students indicate more utilization when belonging is low.

Figure 3

Hypothesis 2a: Interaction Between Flourishing and Utilization by Race
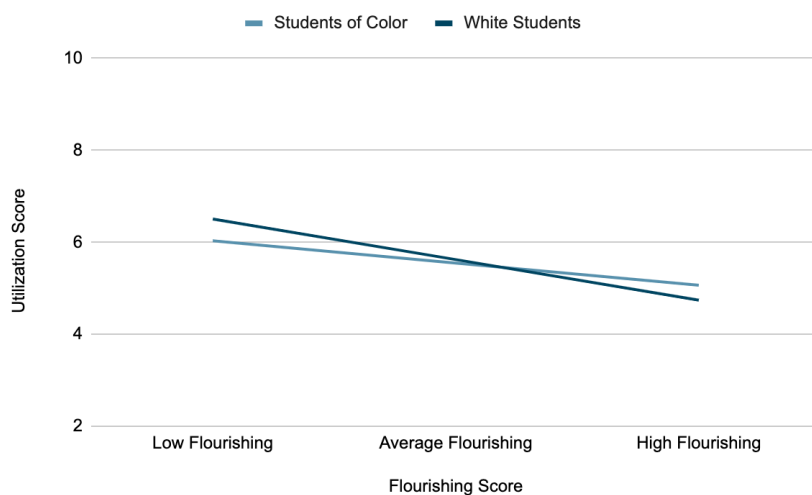
Note. The x-axis represents averages in the three categories of flourishing. The y-axis represents the average utilization score in the respective groups. White students indicate more utilization when flourishing is low.

Figure 4

Hypothesis 3a: Interaction Between Flourishing and Utilization by Athlete Status
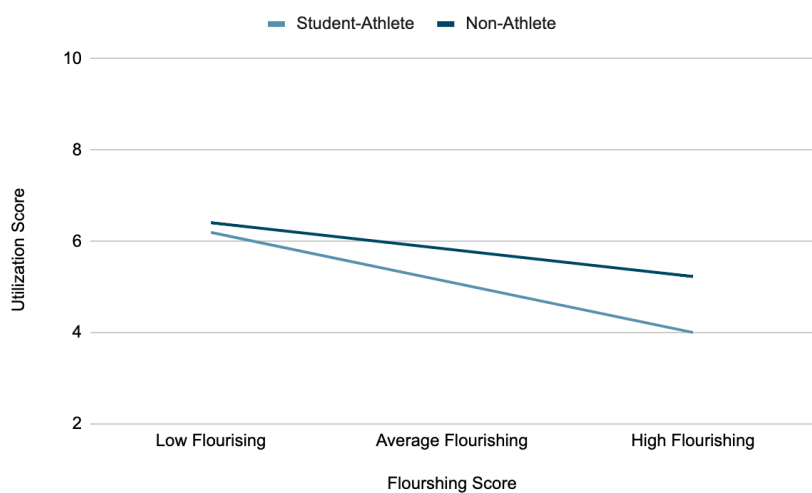
Note. The x-axis represents averages in the three categories of flourishing. The y-axis represents the average utilization score in the respective groups. Non-student-athletes indicate more utilization at all levels of flourishing.

Figure 5

Hypothesis 4: The Relationship Between Depression & Anxiety and Service Utilization Moderated by Resilience

Note. The x-axis represents averages in the three categories of depression and anxiety. The y-axis represents the average utilization score in the respective groups. Those with low resilience indicate more utilization when depression and anxiety is low.

Appendix: Study Items

Construct	Item	Response Categories	Citation
Knowledge	How helpful on average do you think medication is, when provided competently, for people your age who are clinically depressed?	1=Very helpful 2=Helpful 3=Somewhat helpful 4=Not helpful	
	How helpful on average do you think therapy or counseling is, when provided competently, for people your age who are clinically depressed?		
	Relative to the average person, how knowledgeable are you about mental illnesses (such as depression and anxiety disorders) and their treatments?	1=Well above average 2=Above average 3=Average 4=Below average 5=Well below average	
	How much do you agree with the following statement?: If I needed to seek professional help for my mental or emotional health, I would know where to go on my campus.	1=Strongly agree 2=Agree 3=Somewhat agree 4=Somewhat disagree 5=Disagree 6=Strongly disagree	
Service Utilization	Have you ever received counseling or therapy for mental health concerns?	1=No, never 2=Yes, prior to starting college 3=Yes, since starting college 4=Yes, both of the above (prior to college and since starting college)	
	How much do you agree with the following statement?: In the past 12 months, I needed	1=Strongly agree 2=Agree	

	help for emotional or mental health problems such as feeling sad, blue, anxious or nervous.	3=Somewhat agree 4=Somewhat disagree 5=Disagree 6=Strongly disagree	
	Do you believe counseling provided through the athletic department is more effective than counseling provided through the campus counseling center?	1=Yes 2=No 3=Don't know 4=Counseling isn't provided through my athletic department	
Stigma	How much do you agree with the following statement?: Most people think less of a person who has received mental health treatment.	1=Strongly agree 2=Agree 3=Somewhat agree 4=Somewhat disagree 5=Disagree 6=Strongly disagree	
	How much do you agree with the following statement?: I would think less of a person who has received mental health treatment		
	How much do you agree with the following statement?: When I feel depressed or sad, I tend to keep those feelings to myself.		
Resilience	I tend to bounce back quickly after hard times.	1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree	Brief Resilience Scale (BRS) (Smith et al., 2008)
	I have a hard time making it through stressful events.		
	It does not take me long to recover from a stressful event.		
	It is hard for me to snap back when something bad happens.		
	I usually come through difficult times with little trouble.		

	I tend to take a long time to get over set-backs in my life.		
Depression	Over the last 2 weeks, how often have you been bothered by any of the following problems? Little interest or pleasure in doing things	1=Not at all 2=Several days 3=More than half the days 4=Nearly every day	Patient Health Questionnaire-9 (PHQ-9) (Kroenke et al., 2001)
	Over the last 2 weeks, how often have you been bothered by any of the following problems? Feeling down, depressed or hopeless		
	Over the last 2 weeks, how often have you been bothered by any of the following problems? Trouble falling or staying asleep, or sleeping too much		
	Over the last 2 weeks, how often have you been bothered by any of the following problems? Feeling tired or having little energy		
	Over the last 2 weeks, how often have you been bothered by any of the following problems? Poor appetite or overeating		
	Over the last 2 weeks, how often have you been bothered by any of the following problems? Feeling bad about yourself—or that you are a failure or have let yourself or your family down		
	Over the last 2 weeks, how often have you been bothered by any of the following		

	problems? Trouble concentrating on things, such as reading the newspaper or watching television		
	Over the last 2 weeks, how often have you been bothered by any of the following problems? Moving or speaking so slowly that other people could have noticed; or the opposite—being so fidgety or restless that you have been moving around a lot more than usual		
	Over the last 2 weeks, how often have you been bothered by any of the following problems? Thoughts that you would be better off dead or of hurting yourself in some way		
Anxiety	Over the last 2 weeks, how often have you been bothered by the following problems? Feeling nervous, anxious or on edge	1=Not at all 2=Several days 3=Over half the days 4=Nearly every day	Generalized Anxiety Disorder (GAD-7) (Spitzer et al., 2006)
	Over the last 2 weeks, how often have you been bothered by the following problems? Not being able to stop or control worrying		
	Over the last 2 weeks, how often have you been bothered by the following problems? Worrying too much about different things		
	Over the last 2 weeks, how often have you been bothered by the following problems? Trouble relaxing		

	Over the last 2 weeks, how often have you been bothered by the following problems? Being so restless that it's hard to sit still		
	Over the last 2 weeks, how often have you been bothered by the following problems? Becoming easily annoyed or irritable		
	Over the last 2 weeks, how often have you been bothered by the following problems? Feeling afraid as if something awful might happen		
Sense of Belonging	How much do you agree with the following statement?: I see myself as a part of the campus community.	1=Strongly agree 2=Agree 3=Somewhat agree 4=Somewhat disagree 5=Disagree 6=Strongly disagree	Adapted from Perceived Cohesion Scale (Bollen & Hoyle, 1990)
Flourishing	I lead a purposeful and meaningful life.	1=Strongly disagree 2=Disagree 3=Slightly disagree 4=Mixed or neither agree nor disagree 5=Slightly agree 6=Agree 7=Strongly agree	Flourishing Scale (Diener et al., 2010)
	My social relationships are supportive and rewarding.		
	I am engaged and interested in my daily activities.		
	I actively contribute to the happiness and well-being of others.		

	I am competent and capable in the activities that are important to me.		
	I am a good person and live a good life		
	I am optimistic about my future. People respect me.		