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Factors Related to Formal and Online Help-seeking Behaviors Among Latinx College Students

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**Factors Related to Formal and Online Help-seeking Behaviors among Latinx College
Students**

A DISSERTATION

Submitted to the Faculty of
Montclair State University in partial fulfillment
of the requirements
for the degree of Doctor of Philosophy

by

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Montclair, NJ

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Dissertation Chair: Dr. Jazmin Reyes-Portillo

MONTCLAIR STATE UNIVERSITY
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DISSERTATION APPROVAL

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Factors related to Formal and Online Help-seeking Behaviors among Latinx College Students

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Abstract

The frequency of help-seeking behaviors among Latinx college students is low. Latinx college students are at an elevated risk for mental health problems, such as suicide ideation and behaviors, and there is an urgent need to understand the factors that most influence help-seeking in this population. This study aimed to understand how factors such as help-seeking intentions, suicide literacy, perceived need for help and levels of acculturation relate to help-seeking behaviors, as well as how these associations differed between formal and online sources of help among Latinx college students. Furthermore, this study assessed whether these relationships were moderated by an individual's level of acculturation. The current study capitalized on data collected as part of a larger survey of college students' (n=858) mental health at a public university. Hierarchical logistic regression analyses were conducted to test the study hypotheses. Perceived need for help was the most robust predictor of help-seeking behaviors. Notable differences emerged between correlates of formal and online help-seeking behaviors among high-risk and low-risk Latinx students. Clinical implications and future directions for research are also discussed.

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Chapter 1: Introduction

The Latinx population is an integral part of the demographic makeup of the United States (U.S.). It is the largest racially and ethnically minoritized population in the U.S. and one that consists of considerable variability among its members in terms of nationality of origin, immigration history, migration history, acculturation, education and socio-economic status. The Latinx population is one of the fastest growing, with a median age of 29.8 years (U.S. Census Bureau, 2020). Between 2010 and 2019, the Latinx population went from comprising 16% of the U.S. total population to 18%, representing over 60 million people (Noe-Bustamente et al., 2020). During this time, they also accounted for 52% of all U.S. population growth. Simultaneously, while the total undergraduate enrollment in postsecondary programs decreased by 5% between 2009 and 2019 (from 17.5 million to 16.6 million students), the number of Latinx students enrolled in undergraduate programs increased by 48%, amounting to over 3.5 million Latinx students enrolled in public and private colleges (National Center for Education Statistics, 2021). In 2019, Latinx students accounted for 21.7% of U.S. undergraduate college students (U.S. Census Bureau, 2017). Despite this remarkable achievement, Latinx students between the ages of 16 to 24 have higher high school dropout rates than their Black, White and Asian counterparts (Irving et al., 2021) and are also less likely than Black, White and Asian students to obtain a four-year college degree (Krogstad, 2016). Mental illness may play an important role in this college completion gap (Fletcher, 2008; Hjorth et al., 2016; Lee et al., 2009).

Previous research indicates that poor mental health is related to worse academic outcomes (Arria et al., 2013; Breslau et al., 2008; Eisenberg, Golberstein, et al., 2009; Hunt et al., 2010). In fact, individuals with mental health problems are significantly more likely than those without mental health problems to drop out of college (Kessler et al., 1995). College

students are particularly vulnerable to mental health problems. The transition to college represents a period of acute change for many students, which can be very challenging and stressful. In addition to the stress of new academic demands, students must start navigating adult-like responsibilities without yet having attained the skills and maturity of adulthood. For example, students may have to deal with stressors from full-time or part-time work, romantic relationships, or living and studying alongside individuals from different cultures and belief systems than their own (Arnett, 2000; Pedrelli et al., 2015). Stressful life events increase college students' risk for mental health disorders and suicidality (Lui et al., 2019). Most mental health disorders have their peak onset during young adulthood, which coincides with the age that most traditional students seek their college degrees (Kessler et al., 2007).

College students are experiencing more mental health problems today than students in the past. A national survey of college counselling center directors found that 94% reported an ongoing increase in students on campus with severe psychological problems, such as anxiety and depression (Gallagher, 2015). Data from the Healthy Mind Study, an annual web-survey of mental health, service use, and related behaviors of college students from over 60 institutions, indicated that approximately 42% of students met criteria for mental health problems between 2012-2015 (Lipson et al., 2018). Rates of depression, anxiety, and suicidality have steadily increased among U.S. college students in recent years (Lipson et al., 2019). In fact, suicide has become the second leading cause of death among college students (American Foundation for Suicide Prevention, 2022).

It is well-documented that depression and anxiety, the most prevalent mental health problems in college students (Auerbach et al., 2016), are major risk factors for suicidal ideation (Shim & Jeong, 2018). Alarming, most students with anxiety and depression do not seek

mental health care (Lipson et al., 2018). A nationally representative study found that less than half of college students reporting past-year suicide ideation, plans, and/or attempts had received mental health care (Han et al., 2016). Untreated mental illnesses during this time can have very negative implications for various aspects of a student's life, including academic success, occupational achievement, and social relationships, all of which may affect one's life trajectory (Andrews & Wilding, 2004; Kessler et al., 1995; Kessler et al., 1998). In addition, untreated mental health problems may lead to more serious mental illness or death by suicide (Kohn et al., 2004).

Latinx college students may face unique stressors beyond what other college students may experience, putting them at a heightened risk of mental health problems (Arbona & Jimenez, 2014). For example, Latinx students may have to navigate between two languages, have concerns about racial/ethnic discrimination, or live in fear one's immigration status and that of family and friends (Ayón et al., 2017; Gershon & Pantoja, 2011; Kahn et al., 2017). Latinx youth endorse high distress along with increased rates of depression and anxiety (Contreras et al., 2004; Gore & Aseltine Jr, 2003; Paxton et al., 2007; Potochnick & Perreira, 2010; Zayas et al., 2005). Among Latinx young adults between the ages of 18 and 25, the depression rate is estimated to have increased from 8% in 2015 to 12.8% in 2018, affecting over 956,000 individuals (Substance Abuse and Mental Health Services Administration, 2018). Specific research on the prevalence and severity of mental health problems among Latinx college students is severely lacking. However, the limited research that exists suggests that Latinx college students report a significantly greater history of past depression and a greater vulnerability to depression than their non-Latinx counterparts (Del Pilar, 2009; Gore & Aseltine Jr, 2003).

Depression, in turn, has been found to be a robust predictor of suicide risk among Latinx college students (Chang et al., 2019).

Data from national surveys like that Youth Risk Behavior Surveillance (YBRS) find that Latinx youth are particularly at risk of suicide. In the past decade, Latinx high school students have consistently been more likely to report suicidal thoughts and behaviors on the YBRS than their White and Black counterparts. Latinx youth continue to be at increased risk for suicidal ideation and behaviors beyond high school. A recent study among 153,635 racially/ethnically diverse college students found that of the 8,402 Latinx students in the sample, 8.55% reported past year suicidal ideation, 2.86% reported having made a plan, and 0.88% reported attempting suicide (Goodwill & Zhou, 2020). Another study conducted across 108 institutions of higher education in the U.S. found that 9% of Latinx students attempted suicide in the past year (Liu et al., 2019). Despite such elevated rates of suicidal ideation and behaviors, Latinx students are less likely to seek help (Lipson et al., 2018; Nash et al., 2017) and more likely to prematurely terminate treatment than their White, Black and Asian American counterparts (Kearney et al., 2005).

The elevated risk of mental health problems, coupled with low rates of help-seeking in this population is a major public health concern as it may affect college completion rates. College dropout can lead to unemployment, reduced earnings, and increased poverty, which can impact the Latinx population's upward mobility (Chatterji et al., 2007; Mora & Dávila, 2018; Saenz & Ponjuan, 2009). Therefore, understanding the factors that impact help-seeking behaviors in the Latinx college student population may improve college completion rates, as well as health and financial trajectories. The current literature on the factors that impact help-seeking behaviors among Latinx individuals has primarily focused on adults, and as such, our

understanding of help-seeking behaviors among Latinx college students is very limited. Additionally, most literature on help-seeking behaviors has treated the Latinx population as a homogenous group often overlooking the considerable variations in experiences, generational statuses, and heritage (e.g. Puerto Rican, Cuban, Mexican, Dominican, Peruvian), as well as different levels of education and socioeconomic statuses (Guarnaccia et al., 2007). Differences among the Latinx population likely impact both the risk and protective factors Latinx children and adolescents experience every day (Kuperminc et al., 2009). Thus, there may be meaningful subpopulations within the Latinx community in the U.S. who may have differing levels of risk for mental health problems and who may need further classification beyond simply demographics. The current study aims to address some of the gaps in the literature by exploring factors that influence help-seeking behaviors among Latinx college students in general as well as those at an elevated and low risk for suicide. Our hope is that this study will enhance understanding of help-seeking behaviors among Latinx college students, which will in turn enable us to identify specific targets for interventions aimed at improving mental health service use in this population.

Chapter 2: Literature Review

Despite the high prevalence of mental health problems among Latinx college students, they have been consistently found to underutilize mental health services (Kearney et al., 2005; Lipson et al., 2018). This study utilizes the framework from the Unified Theory of Behavior to examine how help-seeking intentions, suicide literacy and a perceived need for help impact help-seeking behaviors from formal (e.g. psychologist, social worker etc.) and online (e.g. mental health apps and website) sources of help among Latinx college students. Additionally, we investigate whether the relationships between these constructs and formal and online help-seeking behaviors are moderated by levels of acculturation. What follows is an overview of the extant literature related to help-seeking, suicide literacy, perceived need for help, and acculturation among Latinx college students.

Help-seeking

For several decades now, researchers have been attempting to understand the service gap or discrepancy that exists between mental health service needs of college students and actual service utilization (Hunt & Eisenberg, 2010; O'connor et al., 2014; Rickwood et al., 2005; Stefl & Proserpi, 1985). Help-seeking is understood as the process of making use of available resources to deal with a problem (Rickwood et al., 2005). This may include informal sources, such as parents, friends, or formal services, such as, mental health professionals (e.g., psychologists, social workers, psychiatrists), or online sources (e.g. apps and websites).

Formal Help-seeking

Ample research finds that psychotherapeutic interventions provided by mental health professionals can improve mental health treatment outcomes, including symptom reduction, relapse prevention, and improvement in functioning among individuals across the lifespan

(Butler et al., 2006; Carpenter et al., 2018; Cuijpers et al., 2016; Ewing et al., 2015; Hofmann et al., 2012; Weisz et al., 2006). However, a significant number of college students with mental health problems, including those at an elevated risk for suicide, do not seek any formal services (Czyz et al., 2013; Eisenberg et al., 2011). For example, Lipson et al. (2018) found that only 41% of college students meeting criteria for a mental health problem (i.e., depression, anxiety, eating disorders, non-suicidal self-injury and suicidal ideation) reported seeking help from a mental health professional in the past year. Another study found that 46% of college students who had seriously considered attempting suicide or had a plan in the past year did not disclose their ideation to anyone nor received any mental health services (Drum et al., 2009). It is estimated that about 81% of college students who died by suicide in the previous year never sought help from campus mental health services (Gallagher, 2009). The vast number of students experiencing suicidal crises, coupled with their reluctance to seek help, is a significant cause for concern.

Many barriers have been identified to seeking help from formal sources among college students. One of the most common barriers is a lack of perceived need for help or a student's lack of recognition that the behavioral or emotional problem they are experiencing warrants help (Eisenberg et al., 2012). Some common factors that influence college students' perceived need include viewing stress as normal, believing that their problems will get better on their own, and preferring to handle problems on their own (Eisenberg et al., 2011). Another major barrier to seeking help from formal sources is stigma. Research suggests that both self-stigma (i.e., negative attitudes towards oneself) and public stigma (i.e., negative attitudes held by others) may influence attitudes towards help-seeking (Corrigan, 2004; Eisenberg et al., 2011; Kosyluk et al., 2021). Other important barriers to seeking formal services include perceived ineffectiveness of treatment, difficulty accessing care, and inconvenience (Sareen et al., 2007).

Evidence suggests that formal help-seeking behaviors for mental health problems are less common among Latinx college students than their non-Latinx White counterparts. For example, one study among undergraduates across 60 universities found that Latinx students (33%) were less likely than White students (45.5%) to report any treatment use (Lipson et al., 2018). Even when Latinx students do attend treatment, they attend fewer sessions and are more likely to prematurely terminate than other groups of students. For instance, Kearney et al. (2005) found that Latinx students attended fewer therapy sessions relative to White, Black and Asian American college students. Similarly, in their survey of 14,175 undergraduate and graduate students, Eisenberg et al. (2011) found that Latinx students (10%) were less likely than White students (16%) to have used pharmacotherapy or psychotherapy for their behavioral health problems in the past year. Taken together, these studies suggest that Latinx college students are less likely than their non-Latinx counterparts to engage in formal help-seeking behaviors. Therefore, there is a need for a more nuanced understanding of the factors that might influence formal help-seeking behaviors among Latinx college students.

While very little research has explicitly sought to understand the specific barriers to formal help-seeking among the Latinx college student population, the existing literature suggests that among Latinx students with an elevated risk for suicide, concerns regarding loss of privacy, stigma and perceived lack of culturally competent therapists are significant barriers to seeking mental health care (Horwitz et al., 2020). Instead of seeking formal services, Latinx students prefer seeking help from family and community resources (De Melo & Farber, 2005). Both informal and formal sources of help may work in tandem to strengthen positive outcomes for Latinx students. Research suggests that social support has a positive effect on psychotherapy outcomes (Roehrlé & Strouse, 2008). Simultaneously, psychotherapy has a positive effect on the

social support people receive (Park et al., 2014). Additionally, while informal sources of help rely on their judgment and personal experiences, mental health professionals can draw on their training and experience to deliver interventions that have been proven to reduce mental health symptoms (Lauzier-Jobin & Houle, 2021). Thus, understanding the factors that influence formal help-seeking among Latinx college students is warranted.

Online Help-seeking

A number of barriers, such as stigma, prevent individuals from seeking formal help (Corrigan et al., 2009; Sareen et al., 2007). Online help-seeking offers the opportunity to avoid some of these barriers to seeking formal help (Pretorius et al., 2019). The last two decades have seen widespread use of internet technologies to access health information, especially among youth (Gray et al., 2005; Rickwood et al., 2007; Wood et al., 2005). Behavioral Intervention Technology (BIT) refers to a variety of health information technologies (e.g., websites, mobile apps) used to intervene in health conditions by facilitating cognitive, behavioral and emotional changes within individuals (Hermes et al., 2019). Online interventions are one such BIT that are accessed through a website and have previously been shown to reduce depression and anxiety symptoms (Harrer et al., 2019; Levin, Stocke, et al., 2018). Mental health apps (MHAs) or smartphone applications are another type of BIT that offer a promising approach for mental health interventions by allowing to track and/or treat symptoms. For example, a recent systematic review of mobile phone apps available for suicide prevention identified 123 apps that referred to suicide and 49 containing at least one suicide prevention feature (Larsen et al., 2016). In addition to providing information, education and training, these apps allow for the development of safety plans and other coping tools (Luxton et al., 2015).

Today more than 96% of young adults in the U.S. between the ages of 18-29 own a smartphone and 75% of these use it to access health information (Pew Research Center, 2019). BITs are highly accessible and convenient and may address many of the barriers to formal help-seeking that college students experience. They may be especially helpful for engaging college students given their high level of comfort and acceptance of technology (Kodish et al., 2021; Lattie et al., 2019). Such platforms may help save time that would be otherwise spent commuting to a therapist's office, and may be more cost-effective (Horgan & Sweeney, 2010). They also offer discreteness and easy access, which can help address student barriers such as, fear of stigma, limited time, and preference for self-help (Pretorius et al., 2019). BITs may be particularly important engagement tools for racially/ethnically minoritized college students who experience significant stigma. Due to all these reasons, BITs have become one of the proposed pathways to enhance mental health care equity in college settings (Kodish et al., 2021; Lattie et al., 2019; Muñoz, 2010; Schueller et al., 2019).

Currently there is insufficient knowledge of the factors that influence the utilization of online resources for mental health care among college students. The few studies that have investigated this have found a gap between students' willingness to use online resources and actual use of such services. For example, in their study of 6034 community college students Dunbar et al. (2018) found that among those who endorsed psychological distress, 60% of reported being open to using online mental health services, but only 3% used any online services. Similarly, Kern et al. (2018) found that while over a quarter of the 721 college students in their study were open to using mental health apps, only 7.3% indicated having used a mental health app in the past (Kern et al., 2018). Notably, significantly more non-White students (11.9%) endorsed a preference towards mental health apps compared to White students (7.3%). These

findings suggest that despite favorable attitudes, there is an underutilization of online resources among college students. A recent systematic review examining online help-seeking behaviors among individuals 25 years and under found that lack of mental health literacy, concerns about privacy, confidentiality, and doubts about the trustworthiness of online resources were barriers to using online help (Pretorius et al., 2019). Currently there is dearth of literature examining online help-seeking behaviors among racially/ethnically minoritized students. Examining the correlates of online help-seeking behaviors can help us identify factors that can be leveraged to increase online service utilization among Latinx students in need of help.

Unified Theory of Behavior

Several theoretical models of help-seeking behaviors exist in the extant literature, which typically conceptualize help-seeking as a complex process involving several interrelated behaviors. Broadly, the process involves an individual experiencing a psychological or emotional problem and determining whether they need help while considering subjective and social norms as well as environmental constraints (Downs & Eisenberg, 2012). The process is naturally much more complex than a simple cost-benefit analysis and requires consideration of multiple individual and social factors. Thus, health behavior theories may help shed some light on the constructs that are associated with the use of formal and online resources for mental health care among Latinx college students.

One such theory, the Unified Theory of Behavior (UTB), was developed as part of a workshop sponsored by the National Institute of Mental Health (NIMH) in 1991 where they invited the primary architects of the most influential theories of behavior to integrate the core constructs of their respective theories into a single theoretical framework (Fishbein et al., 2001). These theories included the Theory of Reasoned Action as developed by Fishbein and Ajzen

(Ajzen & Fishbein, 1977; Ajzen et al., 1980), Bandura's social learning theory (Bandura, 1986; Bandura & Walters, 1977), various versions of the Health Belief Model (Janz & Becker, 1984; Rosenstock et al., 1988), and Triandis's theory of subjective culture (Triandis, 1972). The core constructs of UTB can be divided into two smaller frameworks, the first focusing on the immediate determinants of behaviors, and the other on the determinants of behavioral intention. Because the current study seeks to better understand the immediate precipitants of help-seeking behaviors in the Latinx population, it only focusses on the first framework.

The UTB hypothesizes that any behavior, such as help-seeking, is influenced by five core constructs, including 1) intentions or desire to perform a behavior (e.g., individual intends to seek help); 2) knowledge and skills for behavioral performance (e.g., individual knows where, how and when to seek help); 3) environmental constraints (e.g., lack of insurance prevents individual from seeking help); 4) salience of behavior (i.e., individual considers help-seeking important); 5) and habit and automatic process (i.e., individual has sought help in the past). The theory posits that each of the variables interact in complex ways to determine behavior (Fishbein et al., 2001). However, it is unclear which variables are the most robust predictors of mental health help-seeking behaviors and whether a single variable alone can predict such behaviors. Furthermore, this theory has not been applied to the Latinx college student population to understand their help-seeking behaviors for mental health concerns. The current study will focus on the UTB constructs of intentions, knowledge, and salience of behavior.

Help-Seeking Intentions. Help-seeking intentions are defined as, “a conscious plan to exert effort to communicate about a problem, emotional pain or psychological issue, where that communication is an attempt to obtain perceived support, advice or assistance that will reduce personal distress” (White et al., 2018, p. 65). According to the UTB, an individual must first

intend and be willing to perform a behavior for it to occur. Unless one has the intention to act, it is unlikely that a behavior will occur. In fact, research suggests that intentions are one of the strongest predictors of behaviors (Armitage & Conner, 2001; Netemeyer & Burton, 1990). For this reason, help-seeking intentions are often used as a proxy for help-seeking behaviors in the literature (Cheng et al., 2015; Rickwood et al., 2005; Shaffer et al., 2006). While examining help-seeking intentions is useful, it is also important to differentiate between intentions and behaviors and study these independently as holding the intention to seek help is different from the steps needed to implement that intention (Nagai, 2015; White et al., 2018).

Some research finds a discrepancy between what people believe they would do if they needed psychiatric help and what they did when they needed the help. For example, Kim, Saw and Zane (2015) found that when college students were asked to hypothesize how they would deal with the experience of being depressed, most participants indicated that they would seek help from friends or family (63.3% and 59.9%, respectively), and 45.8% indicated that they would seek help from a psychiatrist. Yet, when researchers assessed help-seeking behaviors retroactively among those who reported having previously experienced depression, they found that less than a quarter indicated that they spoke to their friends and family. Furthermore, only 8.2% indicated they saw a psychologist and 5.7% a psychiatrist. Thus, the relationship between intentions to seek help and actual help-seeking behaviors warrants further examination.

At the same time, even if an individual intends to perform a behavior, it will not occur if they do not have the requisite knowledge and skills to perform the behavior. According to the UTB, knowledge and skills for behavioral performance is one of the core factors that may influence help-seeking behaviors. Some research suggests that knowledge of mental illnesses or mental health literacy may predict help-seeking intentions (Gorczyński et al., 2017; Rüscher et al.,

2011) and thus could be a useful avenue to influence formal and online help-seeking behaviors. Community-based research has also found that low mental health literacy is associated with reluctance to seek professional help, low adherence to treatment and negative health outcomes (Jorm et al., 2000; Jorm et al., 2006; Jorm et al., 2003). Lack of adequate mental health literacy is also identified as a barrier to seeking help by young adults (Gulliver et al., 2010). Suicide literacy is a closely related concept that holds the potential to enhance help-seeking behaviors among at-risk students.

Suicide Literacy. Suicide literacy is defined as public knowledge of suicide, and includes knowledge about the risk factors, treatments, and signs of suicidal ideation and behaviors (Batterham et al., 2013). Limited knowledge of suicide and mental health issues is a barrier to seeking formal help (Jin Han et al., 2018). Adequate knowledge may promote formal help seeking behaviors while false information may hamper it (Calear et al., 2012). Some research suggests that suicide literacy may impact suicide-related outcomes, such that those with low suicide literacy may be at a risk for increased suicidal ideation and behaviors (Callahan, 1996; Sharaf et al., 2012). Research also suggests that limited suicide literacy is related to low engagement with mental health services (Calear et al., 2014; Goldney et al., 2002). As previously discussed, Latinx college students tend to underutilize mental health services (Kearney et al., 2005), and low suicide literacy may put them at an additional risk. On the other hand, high suicide literacy may lead to increased help-seeking behaviors and can serve as a potential target to positively influence help-seeking behaviors in college students. Given these implications, the relationship between suicide literacy and help-seeking behaviors is important to investigate. To the author's knowledge, no study to date that has examined how suicide literacy may impact

help-seeking behaviors among Latinx college students. In fact, there have been no studies that have assessed this relationship in any population thus far.

Although no published study has examined how suicide literacy may impact help-seeking behaviors among Latinx college students, two studies have assessed the relationship between suicide literacy and help-seeking intentions, with contradictory findings. Caelear et al. (2014) examined the relationship between suicide literacy and help-seeking intentions among 1,808 Australian adults and found that even though higher suicide literacy was associated with more positive attitudes towards help-seeking in general, it was not associated with intentions to seek help from mental health professionals. However, higher suicide literacy was associated with greater intentions to seek help from family or friends and reduced intentions to not seek help.

In contrast, Chan et al. (2014) did not find an association between suicide literacy and help-seeking intentions among a sample of Australian students, including postgraduate medical students, undergraduate medical students, and general university students. Suicide literacy was not related to intentions to seek help from either formal (e.g., mental health professional) or informal (e.g., friend or family member) sources. Overall, both studies found that suicide literacy did not improve intentions to seek help from formal sources but had disparate findings regarding how suicide literacy impacts intentions to seek help from informal sources. It is possible that these differences are a result of the distinct samples used by both studies, and thus, emphasize the importance of replicating these findings in diverse populations. Clearly, more research is needed to understand these complicated pathways of help-seeking behaviors in different samples.

It is noteworthy that the above-mentioned studies on suicide literacy only assessed help-seeking intentions from mental health professionals, such as psychologists, social workers, and counselors. Their findings do not account for the vast array of online mental health resources

available to those experiencing distress, including online mental interventions and mental health apps. Thus, there is a need to investigate how suicide literacy affects not only in-person help-seeking behavior, but also the use of online resources.

Suicide literacy and help-seeking intentions are two important factors to investigate to aid our understanding of formal and online help-seeking behaviors in the Latinx college student community. However, intentions and knowledge may independently not be enough in mobilizing help-seeking behaviors. According to the UTB, the behavior must also be salient so people remember to engage in it. For a behavior to be salient, it is important an individual to recognize when they need help and that such help is available. Therefore, another important construct to consider is perceived need for help.

Perceived Need for Help. Perceived need for mental health care may be understood as the awareness within oneself that one is experiencing problems related to mental health and would benefit from help (Villatoro et al., 2018). The lack of perceived need for help is a commonly identified attitudinal barrier to care (Blumenthal & Endicott, 1996; Katz et al., 1997; Mojtabai et al., 2002; Yokopenic et al., 1983). Extant research suggests that perceiving a need for care is a very important precursor to engaging in help-seeking behaviors (Mojtabai et al., 2002; Mojtabai et al., 2011; Narendorf & Palmer, 2016). Perceived need for help also features prominently in various theories about help-seeking. For example, the Behavioral Model of Health Service Use posits that need, including both actual (biological/clinical) and perceived need, has a direct influence on help-seeking behaviors. Similarly, the Network Episode Model describes how social support systems and treatment systems impact people's perceptions of their own mental health and their need for help (Thoits, 1985; Thoits, 2011). Overall, research

suggests that this may be a very important construct implicated in mobilizing help-seeking behaviors.

Among college students, a lack of perceived need has been consistently found to be one of the top reasons for not seeking any formal mental health services, including among students with elevated ideation in the past year (Czyz et al., 2013; Downs & Eisenberg, 2012; Eisenberg et al., 2007). Research indicates that individuals who perceive a need for help are more likely to receive mental health care (Caldeira et al., 2009; Eisenberg et al., 2011). In fact, one study found that among students who experienced suicidal ideation in the past year, those who perceived a need for help were four times more likely to seek help than those who did not perceive a need (Downs & Eisenberg, 2012). Similarly, Eisenberg and colleagues found that approximately 50% of students with mental health problems who perceived a need for help sought treatment compared to 11% of students who did not perceive needing help (Eisenberg et al., 2011). Currently, there is a limited understanding of how a lack of perceived need for help may affect help-seeking behaviors among racially/ethnically minoritized college students.

People who experience psychological distress often deny the need for mental health care due to factors such as believing that their symptoms are temporary, not serious or that they will dissipate on their own (Mojtabai et al., 2002). Limited knowledge of mental health problems or resources, as well as failure to identify symptoms within oneself may also influence one's perceived need for help. For example, in the Latinx community, people are more likely to report somatic complaints in the face of psychiatric disorders, such as depression and anxiety, which may delay symptom recognition and access to the appropriate sources of care (Cabassa et al., 2008; Escobar & Gureje, 2007). A lack of perceived need for help has been previously found to contribute to racial/ethnic disparities in the utilization of mental health services (Nadeem et al.,

2009). Currently, there is a need for more research to understand how a perceived need for help influences help-seeking behaviors among Latinx college students.

Some research suggests that Latinx young adults have a low perceived need for help. For example, data from the Healthy Minds Study suggest that among students who met criteria for a mental health problem, only about 55% of Latinx students reported a perceiving a need compared to 70.2% White students (Lipson et al., 2018). This study also found that a perceived need for help was the strongest predictor of formal help-seeking behaviors. Yet, other research suggests that even when Latinx students have a higher perceived need for help than their White peers, they are less likely to engage in any help-seeking behaviors. For example, in their study of 7992 undergraduate students across 12 U.S. universities, Nash et al., (2017) found that despite being more likely to perceive a greater need for help than their White, Asian, and Pacific Islander counterparts, Latinx students were less likely to engage in any formal help-seeking behaviors (Nash et al., 2017). Given these disparate findings, more research is warranted to understand how a perceived need for help impacts formal behaviors among Latinx college students as well as how it relates to online help-seeking behaviors.

Research suggests that cultural factors may affect one's perceived need for help. For instance, in a sample of ethnically diverse depressed young women, Nadeem et al. (2009) found that U.S. born Latinas were more likely to perceive a need for help than immigrant Latinas. As such, given how diverse the Latinx community is, understanding the cultural factors that might attenuate or strengthen formal and online help-seeking behaviors is extremely important. One such cultural factor that has been shown to affect mental health trajectories is acculturation.

Acculturation

Acculturation is a complex process that can be understood as the psychological, social and behavioral changes groups and individuals undergo when they come in contact with another culture (Williams & Berry, 1991). Our understanding of the process of acculturation has changed and evolved multiple times over the last 80 years. For example, Redfield and colleagues (1936) explained acculturation as a phenomenon that occurs when a group of individuals belonging to different cultures come in direct contact, which then results in changes in the cultural patterns of one or both groups. Early theories emphasized a unilinear model where the process of acculturation occurs along a single continuum, such that, the more acculturated an individual becomes, the less socialized they are into their own cultural heritage (Yoon et al., 2011). However, today there is widespread consensus that acculturation is a bidirectional process, meaning that an individual can simultaneously develop orientations to both the dominant and host cultures and that these processes can occur independently (Yoon et al., 2011).

In addition to being a bidirectional process, acculturation is also a multidimensional process where individuals may have different levels of engagement and acceptance of various cultural domains such as, behaviors, values, attitudes, knowledge about the dominant and host cultures and cultural identity groups (Cuellar et al., 1995; Kim & Abreu, 2001; Matsudaira, 2006; Yoon et al., 2011). A substantial amount of research indicates acculturation may have both a direct and indirect impact on mental health service utilization (Berdahl & Torres Stone, 2009; Cabassa et al., 2006; Hansen & Aranda, 2012; Vega et al., 1999; Wells et al., 1987). These findings make intuitive sense as culture can greatly affect an individual's attitudes towards mental health problems and the need for treatment (Elkington et al., 2012; Guo et al., 2015; Lau et al., 2016). Latinx culture tends to be collectivistic (Rinderle & Montoya, 2008; Segal et al.,

2011) and emphasizes qualities like conformity, collective identity, in-group harmony, solidarity and integration (Kim, 1994; Triandis et al., 1990). Thus, those who are less acculturated may have negative attitudes toward treatment or be less likely to use mental health services. On the other hand, individuals who are more acculturated may take on the values of the American culture, which generally emphasizes the importance of mental health and treatment use (Ramos-Sánchez & Atkinson, 2009). Research suggests that high levels of acculturation are associated with increased willingness for service use (Berdahl & Torres Stone, 2009; Hansen & Aranda, 2012; Zemore et al., 2009)

Despite progress in both the help-seeking and acculturation literatures, there remains a vast gap in our understanding of the relationship between acculturation and help-seeking behaviors among Latinx college students. Previous research has primarily focused on adults and immigrant populations (e.g. (Berdahl & Torres Stone, 2009; Chang et al., 2013; Keyes et al., 2012). Young adults are at elevated risk for mental health problems, and as such there is a need to better understand the factors that mobilize help-seeking behaviors in this population. Only a handful of studies have examined how acculturation may impact help-seeking behaviors among the Latinx college students and have reported mixed results. Milville and Constantine (2006) conducted a study with 162 Mexican American college students and found that higher levels of attitudinal and behavioral acculturation were significantly related to seeking help from formal sources in the past year. Another study found that in a sample of Mexican American and Puerto Rican college students, acculturation was significantly related to attitudes towards mental health professionals, such that those with higher levels of acculturation had more favorable attitudes regarding counselors' trustworthiness and understanding, regardless of counseling style (Pomales & Williams, 1989). In contrast, one study with 121 Latina undergraduates on the West Coast

found no effect of acculturation on help-seeking attitudes (Gloria et al., 2010). More research is needed to clarify the relationship between acculturation and help-seeking behaviors among Latinx college students.

Some studies suggest that acculturation may also impact one's perceived need for care. For example, Nadeem and colleagues (2009) found that after controlling for demographic factors (e.g., marital status, employment status, education), immigrant Latina women were less likely than U.S.-born Latina and U.S.-born White women to report a perceived need for mental health care. No such differences emerged between U.S. born Latina women and their white counterparts, which suggest that acculturation may influence one's perceived need for care. Moreover, multiple studies have found that recent immigrants to the U.S. are less likely to seek help for a psychiatric condition than those who have been the country for a longer time (Alegría et al., 2007; Caplan, 2007; Vega et al., 1999).

Acculturation may also affect help-seeking behaviors through its impact on people's knowledge and beliefs about mental health. For example, in a study comparing Chinese-speaking Australian men and women (both Australian-born and immigrants), researchers found that younger and more acculturated women outperformed older and less acculturated men on tasks related to mental health symptom recognition. Older and less acculturated men also showed preferential attitudes towards traditional cultural explanatory models of mental health (e.g., an imbalance of yin-yang) and traditional treatments (e.g., seeing a Chinese medical doctor) (Wong et al., 2012). Therefore, acculturation may impact one's understanding of mental health.

Taken together, these studies suggest that acculturation may potentially impact help-seeking behaviors both directly and indirectly. Understanding if levels of acculturation impact

formal and online help-seeking behaviors among Latinx college students can help us make important decisions regarding intervention targets and future research.

Current Study

In sum, research suggests that Latinx college students are at heightened risk for mental health problems, such as depression and suicidality (Del Pilar, 2009; Goodwill & Zhou, 2020), but have low frequency of engaging in formal and online help-seeking behaviors (Lipson et al., 2018; Nash et al., 2017). We currently have a limited understanding of the factors that impact both formal and online help-seeking behaviors among Latinx college students. The UTB constructs that have been found to be associated with increased help-seeking behaviors, such as help-seeking intention, suicide literacy and perceived need, could help improve service utilization in this population. Additionally, levels of acculturation can also influence help-seeking behaviors among Latinx adults, however not much is known about its impact on service utilization among Latinx college students. Given these outstanding questions, the current study was conducted to help fill these important gaps in the literature.

A major limitation of the existing literature on help-seeking behaviors among Latinx college students is that studies have primarily focused on the general population of Latinx students (e.g. (Lipson et al., 2018; Miville & Constantine, 2006; Turner & Llamas, 2017), overlooking the heterogeneity of risk statuses within the population. Several studies have demonstrated that help-seeking intentions differ by levels of suicidality (Deane et al., 2001; Seward & Harris, 2016; Yakunina et al., 2010), such that, those with highest suicidality have are less likely to have intentions to engage in formal help-seeking behaviors (Deane et al., 2001; Wilson et al., 2010). Therefore, it is important to examine if factors impacting formal and online help-seeking behaviors vary among individuals with differing levels of risk to be able to hone in

on intervention targets. To the author's knowledge, no study to date has investigated how levels of risk among Latinx college students affect formal and online help-seeking behaviors.

Therefore, this study conducted analyses with the general Latinx student population as well as among those at a high-risk and low-risk for suicide.

Depression, suicidal ideation, and past history of suicide attempt are major risk factors for future suicide attempts and death by suicide in college students (Cheref et al., 2019; King et al., 2015). Thus, students with elevated depression or suicidal ideation or a history of suicide attempt(s) were classified as high-risk for suicide. Participants not meeting this criterion were classified as being at a low risk for suicide. It should be noted that those at a low-risk may still have other stressors or mental health symptoms that necessitate help-seeking even though they are not at high-risk for suicide. Research indicates that those with subclinical symptoms are also at a risk of developing suicidal behaviors (Cukrowicz et al., 2011; DeVlyder et al., 2015), and it is important to study these populations to further our understanding of ways to combat these problems and advance prevention efforts (Serras et al., 2010). As such, given the heterogeneity of the Latinx population, it is imperative to identify meaningful sub-populations who may be at different levels of risk.

The proposed study aims to examine the association between help-seeking intentions, suicide literacy, perceived need for help, acculturation, and formal and online help-seeking behaviors among Latinx college students in general, those deemed high-risk for suicide, and those considered low-risk for suicide. Specifically, the proposed study aims to examine the following questions:

1. *How do formal help-seeking intentions, suicide literacy, perceived need for help, and levels of acculturation relate to formal help-seeking behaviors among a) Latinx college students overall, b) high-risk students, and c) low-risk students?*

Based on the literature to date, we hypothesize that formal help-seeking behaviors will be significantly and positively associated with help-seeking intentions, suicide literacy, perceived need for help and acculturation.

2. *How do online help-seeking intentions, suicide literacy, perceived need for help, and levels of acculturation relate to online help-seeking behaviors among a) Latinx college students overall, b) high-risk students, and c) low-risk students?*

The current research examining online help-seeking behaviors is very limited, which constrains our ability to make inferences regarding the correlates of online help-seeking behaviors. Based on the literature examining formal help-seeking behaviors, we hypothesize that online help-seeking behaviors will also be significantly and positively associated with help-seeking intentions, suicide literacy, perceived need for help and acculturation.

3. *Are any significant relationships moderated by levels of acculturation?*

We also hypothesize that acculturation will be significantly and positively associated with the likelihood of engaging in one or more formal or online mental health services. Additionally, we hypothesize that acculturation will moderate the relationship between both formal and online help-seeking behaviors and formal and online help-seeking intentions, such that those who are more acculturated and have higher intentions to seek help will be significantly more likely to engage in help-seeking behaviors. Similarly, we hypothesize that acculturation will moderate the relationship between formal and online help-seeking

behaviors and suicide literacy, such that those who are more acculturated and have higher suicide literacy will be significantly more likely to engage in help-seeking behaviors. Finally, we expect to find similar results with perceived need for help, such that those with higher perceived need and higher levels of acculturation will be more likely to engage in formal and online help-seeking behaviors.

Chapter 3: Methods

Participants

Participants were drawn from a sample of 858 college students from a public university in New Jersey, who completed an online survey. In order to be included in the current study, participants needed to self-identify as Latinx. Three hundred and twenty-one students (37.4%) self-identified as Latinx. Most participants were female (79.2%, $n=255$). The mean age of the sample was 19.87 years ($SD= 3.32$; Range = 18-51). Approximately, 31% of the participants self-identified as White, 9.9% as Black, 2.2% as Asian, and 60.9% identified as Other. Regarding Latinx ethnicity, 41.4% identified as Other (for example, Argentinean, Colombian, Nicaraguan, Peruvian, Spaniard etc.), 25.5% as Puerto Rican, 24.3% as Dominican, 10.6% as Mexican/Mexican American/Chicano, 6.9% as Cuban, and 6.5% identified as Salvadorian. Majority of the participants were full-time students (91.9%, $n=296$). More than half the sample consisted of freshmen (53.1%, $n=171$), followed by sophomores (20.5%, $n=66$), juniors (18.9%, $n=61$) and seniors (7.5%, $n=24$). Most of the students received state or federal assistance for their education (79.5%, $n=256$).

Measures

Suicide Literacy

The 12-item version of the Literacy of Suicide Scale (LOSS; (Batterham et al., 2013) was used to measure suicide literacy. The LOSS was designed to assess all domains of the mental health literacy framework proposed by Jorm (2000). Each of the 12 items is scored on a 3-point scale with possible responses of “True,” “False,” and “I don’t know.” Four of the statements are true while eight are false. The scale assesses four domains of suicide knowledge, including signs and symptoms of suicidality (e.g. “Most people who suicide are psychotic”), risk factors (e.g.

“Talking about suicide always increases the risk of suicide”), causes or nature of suicide ideation and behaviors (e.g. “There is a strong relationship between alcoholism and suicide”), and treatment and prevention (e.g. “Seeing a psychiatrist or psychologist can help prevent someone from suicide”). Correct responses received a score of one while incorrect and “I don’t know” responses received a score of zero. Sum scale scores range from zero to 12. Since items are rated as either True or False, item response theory has been used instead of classical testing theory to assess the psychometrics of this scale. The scale has shown evidence of high internal reliability based on this approach and has also been previously validated for use in online surveys and with university-based samples (Batterham et al., 2013; Calear et al., 2014; Chan et al., 2014; Cruwys et al., 2018). Since the scale measures knowledge based on correctly answering multiple true or false questions, classical psychometric testing was not conducted with this scale (Han et al., 2017).

Perceived Need for Help

Participants’ perceived need for mental health care was measured using the question, “In the past 12 months, did you think you needed help for emotional or mental health problems such as feeling sad, anxious, or suicidal?” Possible responses to the item included “yes,” “no,” and “prefer not to disclose.” Yes responses were coded as one while the latter two responses were coded zero. Similar versions of this question have been used in previously in the National Comorbidity Survey (Mojtabai et al., 2002) and various psychiatric studies (e.g., (Downs & Eisenberg, 2012; Eisenberg, Downs, et al., 2009; Nadeem et al., 2009; Villatoro et al., 2018). Although reports of perceived need are at the risk of being compromised by memory and other distortions, the recall period of 12 months may reduce the chances of such error (Mojtabai et al., 2002).

Acculturation

Single-item proxy variables have been commonly used in acculturation and help-seeking research. Duration of time in the U.S., language spoken, age at immigration, and birthplace are the most frequently used proxy items that show the most internal consistency (Cruz et al., 2008). While using a full-length multidimensional acculturation scale is ideal, in settings where that is not possible, Cruz et al. (2008) have found that a three-variable measure, which assesses language used at home, the language a participant uses to complete study measures (survey language), and the proportion of life lived in the U.S., works well with samples of Latinx adults in the U.S. A similar approach was used in the current study. Because all participants completed the survey in English, survey language was excluded. Thus, the final acculturation measure consisted of proportion of life lived in the U.S. and preferred language.

To assess the proportion of life lived in the U.S., a commonly used method to measure levels of acculturation (Bauldry & Szaflarski, 2017; Cruz et al., 2008), participants were asked to indicate their current age and the year they came to the U.S. (if immigrated). Proportion of life lived in the U.S. was calculated by dividing the number of years a participant lived in the U.S. by their age. The values of the resulting variable ranged from 0 to 1.

Language preference was assessed using the four-item Brief Acculturation Scale for Hispanics (BASH) (Norris et al., 1996). The greatest proportion of variance in acculturation is attributed to language, and it is one of the most frequently used and strongest indicators of levels of acculturation (Hammer, 2017; Marin et al., 1987; Norris et al., 1996). The four items of the BASH ask participants to indicate the language they use to read and speak, the language they most often use to think, the language they most often speak at home, and the language they most often use with friends. Response options for each item range from 1 (Only Spanish) to 5 (Only

English), with higher responses indicating an increased preference for English. Mean BASH scores range from one to five. The BASH has been used in various studies (e.g., (Hsin et al., 2010; Mills et al., 2014)). The scale has been shown to have good convergent and incremental validity and be a reliable and valid measure of acculturation among Hispanic Americans (Mills et al., 2014). Cronbach's alpha for the BASH in our sample was .87.

The composite acculturation measure was created by summing the proportion of life lived in the U.S. with the mean BASH score. This item ranged from 1 to 6, with higher scores indicating greater levels of acculturation.

Help-Seeking Intentions

Intentions to seek help were assessed using a modified version of the General Help Seeking Questionnaire (GHSQ), a psychometrically validated instrument used to measure intentions to seek treatment from various formal and informal resources (Wilson et al., 2005). Modified versions of this questionnaire have been used in other studies (e.g., (Eisenberg, Downs, et al., 2009; Levin, Krafft, et al., 2018)). Participants were asked how likely they were to seek help from one of six sources if they needed help for an emotional or mental health problem, such as depression or anxiety. These sources included 'mental health professional (i.e., Psychologist, Social Worker, Counselor)', 'primary care or other medical doctor', 'psychiatrist', 'crisis hotline', an 'online program for mental health' or a 'mental health app'. Participants rated their responses using a 5-point Likert scale with options ranging from one, "Extremely Unlikely" to five, "Extremely Likely." 'Formal help-seeking intentions' was calculated as a linear variable by summing responses to the mental health professional, primary care or other medical doctor and psychiatrist. 'Online help-seeking intentions' was calculated as a linear variable by summing responses to the online program for mental health and a mental health app. Preliminary research

has found the GHSQ and modified items assessing intentions to be valid and reliable (Wilson et al., 2005).

Help-Seeking Behaviors

Treatment use was assessed using a question adapted from Levin et al. (2018) and Eisenberg et al. (2009). Participants were asked to indicate which of the resources from a list they had used in the past year. The resources included formal sources ('mental health professional (i.e., Psychologist, Social Worker, Counselor)', 'primary care or other medical doctor', 'psychiatrist') and online sources (i.e., 'online program', 'mental health app'). Response options included "Yes," "No," and "Prefer to not disclose." "Prefer not to disclose" was scored as zero. Formal help-seeking behavior was calculated as a dichotomous variable, with a score of one indicating that a participant had endorsed using either a mental health professional or a primary care/medical doctor, or a psychiatrist for a mental or emotional health problem in the past year. Online help-seeking behavior was calculated as a dichotomous variable, with a score of one indicating that a participant had endorsed using either an 'online program for mental health' or a 'mental health app' for a mental or emotional health problem in the past year.

Mental Health Measures

Depression. The Patient Health Questionnaire (PHQ-9; (Spitzer et al., 1999) is a 9-item self-report measure that evaluates the presence of depressive symptoms in the past two weeks. Participant responses ranged from zero (not at all) to three (nearly every day). The PHQ-9 has been found to be highly correlated with a diagnosis of major depressive disorder (Henkel et al., 2004) and scores on other depression instruments (Spitzer et al., 1999). Studies have also shown the PHQ-9 to function similarly across racial/ethnic groups, with high internal consistency and similar mean total scores across groups (Huang et al., 2006). The first two items of the PHQ-9

(PHQ-2) that inquire about the frequency of depressed mood and anhedonia over the past two weeks were used to screen for depression. The psychometric properties of PHQ-2 have been previously found to be comparable to longer depression scales, and good sensitivity and specificity relative to a diagnostic interview (Richardson et al., 2010). A score of 3 has been previously identified as an optimal cut-off for depression and was used in the current study as being indicative of a positive screen (Kroenke et al., 2003). A similar approach has been used by other studies with college students to screen for probable depression (e.g. (Busby et al., 2020; Horwitz et al., 2020; King et al., 2015)). Cronbach's alpha for this measure in the current study was .897.

Suicidal Ideation. Participants were classified as having elevated suicidal ideation if they select a response greater than zero ("not at all") on item nine of the PHQ-9 ("thoughts that you would be better off dead, or of hurting yourself"). This approach has been used in previous research to measure endorsement of suicide ideation among college-aged individuals (e.g. (Eichen et al., 2016; Goel et al., 2018)).

Suicide Attempt History. Item 20 from the Beck Scale for Suicide Ideation (BSS; (Beck & Steer, 1991) was used to assess for a history of suicide attempt. The question asked participants to indicate whether they have made a suicide attempt in the past. Response options included "I have never attempted suicide," "I have attempted suicide once," "I have attempted suicide two or more times," and "Prefer not to disclose." Participants were classified as "attempters" if they report having made at least one suicide attempt in the past.

Procedure

Participants were recruited through an online subject pool to earn research participation credits for an undergraduate psychology course. The study advertisement invited students to

participate in an online survey about cultural factors and mental health symptoms. The survey was developed to examine a range of mental health symptoms (i.e., anxiety, depression, sleep disturbance, alcohol use, etc.), cultural factors (i.e., experiences of discrimination and racial microaggressions, ethnic identity, acculturation, etc.), and associated behaviors (e.g., social media use, online victimization, treatment use, etc.). The survey was administered via Qualtrics and took approximately 15-30 minutes to complete. Data were collected between March 2018 and December 2019. Students were able to receive either course credit or a \$5 gift card for their participation. Online informed consent was obtained at the beginning of the survey. The study was approved by the Institutional Review Board of Montclair State University.

Data Analysis Plan

All study analyses were conducted using SPSS 23.0 (IBM Corp, 2015). First, we ran descriptive statistics for all study variables. Means and standard deviations were computed for continuous variables and frequencies for categorical variables. Second, differences in all study variables were assessed for complete versus non-complete cases. Next, participants were distinguished by levels of risk. Study analyses were conducted on three different samples of students for computational ease. The overall Latinx student sample was divided into a sample of students at high risk for suicide and another at a low risk for suicide. Students who met the cut-off for either depression or suicidal ideation or a suicide attempt history were classified high-risk students. Those who did not meet the criteria were classified as low-risk students.

Next, hierarchical binary logistic regression analyses were conducted in each sub sample to examine how formal help-seeking intentions, suicide literacy, perceived need for help and acculturation relate to formal help-seeking behaviors. For each analysis, participants' sex and age were entered as covariates in Block 1, followed by predictor variables (i.e. formal help-seeking

intentions, suicide literacy, perceived need for help and acculturation) in Block 2, followed by interaction terms to test for moderation effect of acculturation in Block 3. A similar set of analyses were conducted to explore how online help-seeking intentions, suicide literacy, perceived need for help and acculturation relate to online help-seeking behaviors.

Chapter 4: Results

Preliminary analyses

Of the 858 students who completed the survey, 322 self-identified as Latinx. To be included in the current study, participants needed to complete at least 75% of the questions on the measures of interest. About 91% ($n=293$) of participants had complete data. Only one participant had completed less than 75% of the questions and was excluded from the study. No significant differences in study variables emerged between this participant and those included in the study.

Appendix 1 provides descriptive statistics for all students (column 1), as well as the high-risk and low-risk students (columns 2 and 3, respectively). Three hundred and twenty-one participants were included in the overall sample. Of these, 118 (36.76%) met criteria for the high-risk group, while 203 (63.24%) were included in the low-risk sample. Overall, 112 (34.89%) participants met criteria for probable depression, 49 (15.26%) for current SI, and 24 (7.47%) for a lifetime suicide attempt. The average age of the overall sample was 19.87 years ($SD= 3.32$ years). The difference in mean age among the high and low-risk student samples was statistically significant, with low-risk students being slightly older ($t(320)= 2.20, p<0.05$). About 79% ($n= 255$) of the total sample was female, with comparable rates among both high-risk and low-risk students. Approximately 60% ($n= 71$) of the high-risk students were freshmen. In comparison, freshmen comprised 49% ($n=100$) of participants in the low-risk group.

On average, participants reported high levels of acculturation with no significant differences emerging between high and low-risk students (All Students $M= 4.59, SD= 0.88$; High-Risk Students $M= 4.60, SD= 0.90$; Low-Risk Students $M= 4.58, SD= 0.87$). Majority of the participants reported having lived their entire lives in the U.S ($n=284, 88.47%$). For the

remaining participants ($n=37$, 11.53%), years spent in the U.S. varied between two to 22 years. Participants also had high BASH scores on average, indicating a preference towards the use of English over Spanish (All Students $M= 3.63$, $SD= 0.81$; High-Risk Students $M= 3.65$, $SD= 0.83$; Low-Risk Students $M= 3.62$, $SD= 0.81$).

The mean suicide literacy scores for all students ($M= 8.89$, $SD= 1.36$) was above average, with no significant differences emerging by risk status. Appendix 2 presents responses to the LOSS items. Across the groups, participants had most difficulty with items related to risk factors as well as signs and symptoms of suicide. For example, less than 30% of the participants in all three samples got the question, “there is a strong relationship between alcoholism and suicide” correct. Significant differences were found between the high-risk students and low-risk students on the question, “seeing a psychiatrist or psychologist can help prevent someone from suicide.” Significantly more participants in the low-risk sample answered this question correctly than those in the high-risk sample ($t(306) = 2.72$; $p<.01$). Overall, participants in the low-risk sample scored significantly higher than those in the high-risk sample in the “Treatment and prevention” category ($t(311) = 2.15$; $p<.05$).

Significantly more participants in the high-risk sample (65.3%) reported a perceived need for help in the last year. In contrast, only 32.4% in the low-risk group reported thinking they needed help for emotional or mental health problems in the past year. On average, participants reported having highest intentions to seek help from a mental health professional (such as, psychologist, social worker, or counselor), with no significant differences emerging by risk status. On average, low-risk students reported having greater intentions to seek help from a primary care provider or other medical provider compared to those in the high-risk group. All

students, including both high-risk and low-risk students, reported the lowest intentions to seek help from online programs compared to all other formal and online sources.

In terms of actual service use, 68.9% participants reported not seeking formal help and 87.9% denied seeking online help. Significantly fewer individuals in the low-risk group sought help from either formal or online sources than those in the high-risk group. Approximately one-third of high-risk students (33.1%) reported seeking help from one or more formal sources in the past year compared to 25.4% of the low-risk students. Help from one or more online sources was sought by 14.4% of high-risk students and 6.9% of the low-risk students.

Multivariate Analyses of Formal Help-seeking Behaviors

Hierarchical logistic regression models were run to test the study hypotheses by subsample (i.e., sample with all students, high-risk students and low-risk students). For each analysis, demographic variables (i.e., sex and age) were entered as covariates in Block 1, followed by predictor variables (i.e., formal help-seeking intentions, suicide literacy, perceived need for help and acculturation) in Block 2, followed by relevant interactions to test for the presence of moderating effect of acculturation in Block 3. Tables 1, 2 and 3 provide the results of hierarchical logistic regression models examining the impact of the above-mentioned predictors on formal help-seeking behaviors in all students, high-risk students and low-risk students, respectively.

Model with All Students

The results of the hierarchical logistic regression model predicting formal help-seeking behaviors among all Latinx college students is shown in Table 1.

Table 1***Hierarchical Logistic Regression Predicting Formal Help-seeking Behaviors in the Overall Sample***

Outcome: Formal Help-Seeking Behaviors			
Predictor Variables	Block 1 OR (95% CI)	Block 2 OR (95% CI)	Block 3 OR (95% CI)
Female	1.42 (0.73- 2.78)	1.19 (0.55-2.56)	1.23 (0.56-2.66)
Age	0.99 (0.91- 1.08)	0.97 (0.88-1.07)	0.97 (0.87-1.07)
Formal Intentions		1.31*** (1.19-1.45)	1.31*** (1.19-1.45)
SL		0.35 (0.03-3.74)	0.38 (0.04- 4.12)
Perceived Need		5.14*** (2.77-9.55)	5.11*** (2.74-9.54)
Acculturation		0.93 (0.67-1.29)	0.45 (0.12-1.64)
Perceived Need*Acculturation			0.42 (0.10- 1.85)
Formal Intentions*Acculturation			1.05 (0.94- 1.17)

Note. OR = Odds Ratio; CI = Confidence interval; SL= Suicide Literacy.

$\chi^2(8) = 67.23, p < .001$;

-2 log-likelihood = 283.24; Cox and Snell $R^2 = 0.21$.

*** $p < .001$

Results indicated that both formal help-seeking intentions and perceived need for help were significantly associated with higher odds of formal help-seeking behaviors. More specifically, each additional unit increase in formal help-seeking intentions was associated with 1.31 the odds of engaging in formal help-seeking behaviors (95% CI= 1.19-1.45, $p < .001$). Each additional unit increase in perceived need for help was associated with 5.11 the odds of engaging in formal help-seeking behaviors (95% CI= 2.74-9.54, $p < .001$). Results from the moderation analyses revealed that neither the relationship between formal help-seeking intentions and formal help-seeking behaviors, nor perceived need and formal help-seeking behaviors were moderated by levels of acculturation.

Model with High-Risk Students

The results of the hierarchical logistic regression model predicting formal help-seeking behaviors among high-risk Latinx college students is shown in Table 2.

Table 2***Hierarchical Logistic Regression Predicting Formal Help-seeking Behaviors in the High-Risk Sample***

Outcome: Formal Help-Seeking Behaviors			
Predictor Variables	Block 1 OR (95% CI)	Block 2 OR (95% CI)	Block 3 OR (95% CI)
Female	1.56 (0.52-4.69)	1.96 (0.46-8.66)	1.96 (0.42- 9.16)
Age	1.09 (0.86-1.36)	0.99 (0.73- 1.34)	0.96 (0.69-1.32)
Formal Intentions		1.65*** (1.33- 2.04)	1.71*** (1.35-2.17)
SL		0.98 (0.02-50.57)	0.67 (0.01- 36.43)
Perceived Need		3.01 (0.84-10.75)	2.78 (0.75-10.33)
Acculturation		1.43 (0.80-2.57)	0.34 (0.03-3.73)
Formal Intentions*Acculturation			1.16 (0.91-1.48)

Note. OR = Odds Ratio; CI = Confidence interval; SL= Suicide Literacy.

$\chi^2(7) = 47.39, p < .001$;

-2 log-likelihood = 90.06; Cox and Snell $R^2 = 0.36$.

*** $p < .001$

Only formal help-seeking intentions were significantly associated with higher odds of engaging in formal help-seeking behaviors, such that, each additional unit increase in formal help-seeking intentions was associated with 1.71 the odds of engaging in formal help-seeking behaviors (95% CI= 1.35-2.17, $p < .001$). The relationship between formal help-seeking intentions and formal help-seeking behaviors was not moderated by levels of acculturation.

Model with Low-Risk Students

The results of the hierarchical binary logistic regression model predicting formal help-seeking behaviors among low-risk Latinx college students is shown in Table 3.

Table 3***Hierarchical Logistic Regression Predicting Formal Help-seeking Behaviors in the Low-Risk Sample***

Outcome: Formal Help-Seeking Behaviors			
Predictor Variables	Block 1 OR (95% CI)	Block 2 OR (95% CI)	Block 3 OR (95% CI)
Female	1.41 (0.59-3.36)	1.04 (0.40-2.71)	1.06 (0.40- 2.81)
Age	0.98 (0.89-1.09)	0.97 (0.87- 1.08)	0.97 (0.86- 1.08)
Formal Intentions		1.21** (1.08-1.36)	1.21** (1.07- 1.36)
SL		0.17 (0.01-4.44)	0.28 (0.01-7.57)
Perceived Need		5.46*** (2.47-12.06)	5.34*** (2.37-12.03)
Acculturation		0.75 (0.49-1.16)	0.25 (0.05-1.19)
Perceived Need*Acculturation			0.10 (0.01-1.39)
Formal Intentions*Acculturation			1.07 (0.94- 1.22)

Note. OR = Odds Ratio; CI = Confidence interval; SL= Suicide Literacy.

$\chi^2(8) = 32.75, p < .001$;

$-2 \log\text{-likelihood} = 177.25$; Cox and Snell $R^2 = 0.17$.

** $p < .01$ *** $p < .001$

Results indicated that both formal help-seeking intentions and perceived need for help were significantly associated with higher odds of engaging in formal help-seeking behaviors. More specifically, each additional unit increase in formal help-seeking intentions was associated with 1.21 the odds of engaging in formal help-seeking behaviors (95% CI= 1.07-1.36, $p < .01$).

Similarly, each additional unit increase in perceived need for help was associated with 5.34 the odds of engaging in formal help-seeking behaviors (95% CI= 2.37-12.03, $p < .001$).

Acculturation did not emerge as a significant moderator of the association between formal help-seeking intentions and formal help-seeking behaviors or perceived need for help and formal help-seeking behaviors

Multivariate Analyses of Online Help-seeking Behaviors

Following multivariate analyses to test for the predictors of formal help-seeking behaviors, a second set of multivariate analyses were conducted to predict correlates of online help-seeking behaviors among each subsample (i.e., sample with overall participants, sample with high-risk

participants and sample with low-risk participants). Similar to the first set of multivariate analyses, hierarchical binary logistic regression models were conducted for each subsample. For each analysis, demographic variables (i.e., sex and age) were entered as covariates in Block 1, followed by predictor variables (i.e., online help-seeking intentions, suicide literacy, perceived need for help and acculturation) in Block 2; followed by relevant interactions to test for moderation effect of acculturation in Block 3. Tables 4a, 4b and 4c provide the results of the analyses examining the impact of above-mentioned predictors on online help-seeking behaviors in overall sample, high-risk sample and low-risk sample, respectively.

Model with All Students

The results of the hierarchical binary logistic regression model assessing predictors of online help-seeking behaviors in the overall sample can be found in Table 4.

Table 4

Hierarchical Logistic Regression Predicting Online Help-seeking Behaviors in the Overall Sample

Outcome: Online Help-Seeking Behaviors			
Predictor Variables	Block 1 OR (95% CI)	Block 2 OR (95% CI)	Block 3 OR (95% CI)
Female	4.21 (0.98-18.20)	2.37 (0.52- 10.89)	2.50 (0.54-11.62)
Age	0.85 (0.67-1.07)	0.88 (0.68- 1.14)	0.88 (0.68-1.14)
Online Intentions		1.28* (1.06-1.56)	1.31** (1.07-1.60)
SL		0.25 (0.01-7.04)	0.31 (0.01- 8.58)
Perceived Need		7.99***(2.91-22.01)	9.61*** (3.09- 29.90)
Acculturation		0.84 (0.53-1.31)	0.25 (0.05-1.26)
Perceived Need*Acculturation			0.30 (0.02-4.07)
Online Intentions*Acculturation			1.12 (0.91-1.39)

Note. OR = Odds Ratio; CI = Confidence interval; SL= Suicide Literacy.

$\chi^2(8) = 40.55, p < .001;$

$-2 \log\text{-likelihood} = 168.30; \text{Cox and Snell } R^2 = 0.13.$

* $p < .05;$ ** $p < .01;$ *** $p < .001$

Both online help-seeking intentions and perceived need for help were significantly associated with higher odds of engaging in online help-seeking behaviors. More specifically, each

additional unit increase in online help-seeking intentions and perceived need for help was associated with 1.31 (95% CI= 1.07-1.60, $p < .01$) and 9.61 (95% CI= 3.09-29.90, $p < .001$) the odds of engaging in online help-seeking behaviors, respectively. Acculturation did not emerge as a significant moderator of the relationship between online help-seeking intentions and online help-seeking behaviors or perceived need and online help-seeking behaviors.

Model with High-Risk Sample

The results of the hierarchical binary logistic regression model assessing predictors of online help-seeking behaviors among high-risk Latinx college students sample can be found in Table 5.

Table 5

Hierarchical Logistic Regression Predicting Online Help-seeking Behaviors in the High-Risk Sample

Outcome: Online Help-Seeking Behaviors			
Predictor Variables	Block 1	Block 2	Block 3
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Female	1.56 (0.52-4.69)	1.73 (0.50-5.93)	1.62 (0.47-5.61)
Age	1.09 (0.86-1.36)	1.07 (0.84-1.36)	1.08 (0.84-1.38)
Online Intentions		0.94 (0.75-1.18)	0.94 (0.75-1.18)
SL		1.35 (0.05-39.20)	1.54 (0.05-47.65)
Perceived Need		4.96**(1.64-15.06)	6.40**(1.72-23.81)
Acculturation		1.29 (0.78-2.12)	2.58 (0.70-9.49)
Perceived Need*Acculturation			6.10 (0.29-126.64)

Note. OR = Odds Ratio; CI = Confidence interval; SL= Suicide Literacy.

$\chi^2(7) = 13.66, p < .01$;

-2 log-likelihood = 123.79; Cox and Snell $R^2 = 0.12$.

** $p < .01$

Only a perceived need for help was significantly associated with online help-seeking behaviors.

Each additional unit increase in a perceived need for help was associated with 6.40 (95% CI=

1.72-23.81) the odds of engaging in online help-seeking behaviors. The association between

perceived need for help and online help-seeking behaviors was not moderated by acculturation.

Model with Low-Risk Sample

In terms of the model predicting online help-seeking intentions among low-risk Latinx college students, only a perceived need for help was significantly associated with higher odds of engaging in online help-seeking behaviors (see Table 6).

Table 6***Hierarchical Logistic Regression Predicting Online Help-seeking Behaviors in the Low-Risk Sample***

Outcome: Online Help-Seeking Behaviors			
Predictor Variables	Block 1	Block 2	Block 3
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Female	1.41 (0.59-3.36)	1.02 (0.40-2.59)	1.04 (0.40-2.67)
Age	0.98 (0.89-1.09)	0.99 (0.90-1.10)	0.99 (0.89- 1.09)
Online Intentions		0.95 (0.82-1.12)	0.96 (0.82- 1.13)
SL		0.20 (0.01-4.27)	0.29 (0.01-6.38)
Perceived Need		4.44*** (2.10-9.37)	4.37*** (2.01-9.46)
Acculturation		0.85 (0.56-1.29)	0.58 (0.31-1.07)
Perceived Need*Acculturation			0.10 (0.01-1.28)

Note. OR = Odds Ratio; CI = Confidence interval; SL= Suicide Literacy.

$\chi^2(7) = 21.33, p < .01;$

$-2 \log\text{-likelihood} = 188.67; \text{Cox and Snell } R^2 = 0.11.$

*** $p < .001$

Specifically, each additional unit increase in perceived need for help was associated with 4.37 (95% CI= 2.01-9.46, $p < .001$) the odds of engaging in online help-seeking behaviors.

Acculturation did not emerge as a significant moderator of the relationship between perceived need and online help-seeking behaviors.

Chapter 5: Discussion

Latinx college students are at an elevated risk of mental health problems, such as depression, anxiety, and suicidality, and are less likely to utilize mental health services (Lipson et al., 2018; Nash et al., 2017). Untreated mental illnesses during this critical developmental period may affect academic outcomes in addition to increasing the risk of worsening mental health symptoms that may persist into later life (Andrews & Wilding, 2004; Arria et al., 2013; Breslau et al., 2008; Hunt et al., 2010; Kessler et al., 1995; Kessler et al., 1998). The current study aimed to understand the factors that influence the utilization of formal and online resources for mental health care among Latinx college students overall and those at high and low risk of suicide. We hypothesized that some constructs of the UTB, which included help-seeking intentions, suicide literacy and perceived need for help would be significantly and positively associated with increased formal and online help-seeking behaviors in these samples. We also hypothesized that the strength of these relationships may vary based on level of acculturation. The study hypotheses were partially confirmed, and the results have important implications for future research. Overall, a perceived need for help and help-seeking intentions emerged as the most robust predictors of formal and online help-seeking behaviors. Suicide literacy and acculturation were not significantly related to formal or online help-seeking behaviors in the sample.

Formal Help-seeking Behaviors

As hypothesized, increased intentions to seek formal help and greater perceived need for help were significantly associated with formal help-seeking behaviors in the overall sample of Latinx college students (i.e. model including both at-risk and low-risk students) and among low-risk students. Among high-risk students, only increased formal help-seeking intentions impacted formal help-seeking behaviors.

Our findings are in line with previous research, which indicates that one of the key variables in deciding to seek formal help is the perception of need (Mojtabai et al., 2002; Mojtabai et al., 2011; Narendorf & Palmer, 2016; Villatoro et al., 2014). For example, data from the Healthy Minds Study suggests that perceived need for help is one of the strongest predictors of help-seeking among college students and is associated with nine times the odds of treatment utilization (Lipson et al., 2018). Thus, targeting perceived need in outreach efforts may increase formal help-seeking behaviors. Research suggests that stigmatizing attitudes towards mental health negatively affect perceived need for help among college students (Eisenberg, Downs, et al., 2009; Schomerus et al., 2012).

Contrary to our hypotheses, greater perceived need for help was not associated with formal help-seeking behaviors among high-risk students. While approximately 65% of the high-risk students reported a perceived need for help in the last 12 months, only about 33% engaged in one or more formal help-seeking behaviors. These findings mirror previous research on service usage among Latinx students, which indicates that despite perceiving a need for help, Latinx students underutilize services (Nash et al., 2017). Nash and colleagues (2017) found that students who did not utilize services despite a greater perceived need had higher levels of distress, financial problems, increased work demands, lower academic engagement, and limited social connection than students who engaged in help-seeking behaviors or those who did not perceive a need for help. Such challenging experiences can act as barriers from seeking help when students perceive a need for it. It is also possible that our findings speak to high risk Latinx students' preference for informal sources of help, such as family or friends or opting to be self-reliant (De Melo & Farber, 2005; Leong et al., 1995). More thorough research is needed to understand why

students do not seek help when they perceive a need for it, as well as how the compounding effect of multiple stressors may impact formal help-seeking behaviors.

Another noteworthy finding is that despite being at an elevated risk, over 30% of the high-risk sample did not perceive a need for help. Others have reported similar results. For example, Nadeem et al. (2009) found that despite being depressed, over a third of Latina young adults in their study did not perceive a need to seek help for emotional or mental health problems. Nadeem and colleagues (2009) interpreted these findings as suggesting that sometimes even when people are aware of their mental health symptoms, they may attribute them to external circumstances, which prevents them from perceiving a need and subsequently from accessing mental health care.

Since individuals may struggle with recognizing that they may benefit from formal help or may be unable to access help due to multiple stressors or other external barriers, general practitioners should assess for mental health problems and suicidal behaviors among individuals as they are most likely to be first source contact for them (McNab & Meadows, 2005). General practitioners may also then inform them of appropriate resources for help. In addition, gatekeeper training programs and public awareness campaigns at community levels may help in the identification and linkage of at-risk individuals to appropriate services (Eisenberg et al., 2012; Pagura et al., 2009). Such programs may provide people in the community or college campuses skills and education to recognize, intervene and appropriately refer those with mental health problems (Eisenberg et al., 2012). Gatekeeper training programs have been found to be effective in improving gatekeepers' knowledge about mental health problems and available resources, a reduction of reluctance to intervene, increased self-efficacy in intervening appropriately and improvement of stigmatized attitudes among gatekeepers (Holmes et al.,

2021). However, the trainings have been criticized for decline in knowledge and efficacy over time. Researchers have suggested that these outcomes can be improved by the addition of refresher courses, interactive learning (e.g. the use of role plays, online technology etc.) (Holmes et al., 2021). Some researchers also emphasize the importance of selecting gatekeepers on a voluntary rather than mandatory basis to ensure that they are intrinsically motivated (Coppens et al., 2014).

In addition to a perceived need for help, formal help-seeking intentions also significantly influence formal help-seeking behaviors (Armitage & Conner, 2001; Netemeyer & Burton, 1990), so much so that they are often used as a proxy for help-seeking behaviors in the literature (Cheng et al., 2015; Rickwood et al., 2005; Shaffer et al., 2006). Negative attitudes towards mental health and high levels of stigma can negatively impact young adults' help-seeking intentions (Lally et al., 2013; Zorrilla et al., 2019). Indeed, the pattern of responses to some of the LOSS items in the current study suggest that students may hold negative attitudes and false beliefs regarding mental health and related services. For example, over a quarter of the high-risk students reported believing that talking about suicide increases the risk of suicide, and approximately 60% did not think that there was a strong relationship between alcoholism and suicide. Furthermore, high-risk students were less likely than low-risk students to answer the question "seeing a psychiatrist or psychologist can help prevent someone from suicide" correctly, suggesting low confidence in formal mental health services among those at a high-risk for suicide. Therefore, interventions aimed at reducing stigma and negative attitudes may increase both help-seeking intentions and perceived need for help, which may, in turn, lead to greater formal help-seeking behaviors.

Online Help-seeking Behaviors

Overall, help-seeking behavior from online sources, including both mental health apps and/or online programs, was very low among all Latinx students with only 9.6% of the overall sample reporting using either or both in the past year. These findings mirror previous research that report an underutilization of online resources among college students (Dunbar et al., 2018; Kern et al., 2018). Among both high-risk and low-risk students, only a higher perceived need for help was related to increased online help-seeking behaviors. Previous research suggests that one of the most common reasons college students do not use mental health apps is not having current mental health needs (Kern et al., 2018). Our findings suggest a greater perceived need for help significantly impacts online help-seeking behaviors. Therefore, interventions aimed at improving student's awareness about mental health problems, their symptoms and available resources, may help students understand when they might benefit from seeking online help. To the author's knowledge, no such intervention exists to improve perceived need for help among Latinx college students.

Presently, the literature examining factors that promote online help-seeking behaviors is scarce despite the many benefits of online platforms (Pretorius et al., 2019). A limitation of the current literature assessing online help-seeking behaviors among young people is that these studies are conducted with samples not selected based on mental health status (Pretorius et al., 2019). The current study fills in this gap in the literature by assessing correlates of online help-seeking behaviors among both high-risk and low-risk Latinx college students. The patterns of our findings potentially suggest that some psychological factors associated with engaging in online help-seeking behaviors may be unaffected by one's risk-status, which may potentially speak to the accessible and discreet nature of online services, which are such that anyone with internet

access can utilize them. In addition, our finding that online help-seeking intentions do not significantly influence online help-seeking behaviors in either high or low risk students points to the importance of studying help-seeking intentions independently from help-seeking behaviors in future research.

Suicide Literacy and Help-seeking Behaviors

Overall, participants in this study had above-average suicide literacy scores, which were similar between the three groups. The suicide literacy scores for participants in this study were comparable to that reported in other university samples (Calear et al., 2012), but higher than that reported in community samples (Batterham et al., 2013). The current study found that levels of suicide literacy did not significantly differ by risk status, which is in line with previous research suggesting that mental health status does not have a relationship with suicide literacy (Batterham et al., 2013). Contrary to study hypotheses, suicide literacy was not significantly associated with either formal or online help-seeking behaviors. While previous research studies have not directly tested the relationship between suicide literacy and help-seeking behaviors, they also failed to find a significant relationship between help-seeking intentions and suicide literacy (Calear et al., 2014; Chan et al., 2014; J. Han et al., 2018). These findings may imply that simply improving literacy around suicide may not be sufficient to improving formal or online help-seeking behaviors.

One possible explanation for the lack of significant findings is that the LOSS does not include any questions regarding when and how to utilize formal or online services. Thus, even though students may have had above average suicide literacy scores, it may not have been representative of the actual knowledge needed to engage in the help-seeking process. Future research should utilize a more comprehensive measure of suicide literacy. In addition, many

students in the high-risk sample did not endorse current SI or past suicide attempts and only had a positive depression screen. While many people with depression experience suicidal thoughts, it is not always the case (Liao et al., 2018; Van Gastel et al., 1997). Thus, suicide literacy may have been too specific an aspect of mental health literacy to have a meaningful impact in the current sample. However, the null findings in previous research studies with diverse samples raise questions about the effectiveness of suicide literacy in improving help-seeking outcomes regardless of risk status (Batterham et al., 2013; Calear et al., 2014; Chan et al., 2014; J. Han et al., 2018). Therefore, future studies should test whether general assessments of mental health literacy are more robustly associated with help seeking behaviors among Latinx college students. Additionally, future interventions for enhancing formal and online help-seeking behaviors may benefit from aiming to improve knowledge and attitudes towards seeking help from formal and online sources, rather than focusing solely on suicide-related knowledge.

Acculturation and Help-seeking Behaviors

Contrary to our hypothesis, acculturation was not significantly related to formal or online help-seeking behaviors. Acculturation also did not emerge as a significant moderator of the relationship between formal and online help-seeking intentions and formal and online help-seeking behaviors in any of the sub-samples. Similarly, no moderating effect of acculturation was observed in the relationship between perceived need and formal or online help-seeking behaviors. Overall, our sample was highly acculturated on the dimensions that were assessed, which may have masked any effect of acculturation on help-seeking behaviors. Furthermore, our measure of acculturation was unidirectional and did not assess all potential domains impacted by acculturation, and thus the findings are not generalizable to all aspects of acculturation. As previously discussed, acculturation is a multidimensional and bilinear process. The context of

this research study did not allow for a more thorough assessment of acculturation. However, whenever possible and practical, future studies should consider using full length, multidimensional measures of acculturation.

Our findings contradict previous research finding higher levels of acculturation to be related to greater help-seeking behaviors among Latinx college students (Miville & Constantine, 2006). These disparities may be attributed to the different methodological approaches used for the measurement of acculturation and the sample characteristics of both studies. Miville and Constantine's (2006) study utilized an instrument that measured the behavioral and attitudinal aspects of acculturation and enculturation. Additionally, their sample consisted of only Mexican American college students, while the current study comprised of a more diverse sample of Latinx college students. Moreover, the former study was conducted at a predominantly White university in the southern region of the U.S. while the current study was conducted in a diverse university in the northeastern region of the U.S. It is possible that the impact of acculturation on help-seeking behaviors varies across Latinx subgroups. Future studies should assess differences by subgroups in larger and more diverse samples of Latinx college students.

Limitations

This study has several limitations. First, this study utilized a convenience sample, and it is possible that survey responses may systematically vary from the general Latinx student college population at large. Additionally, it is limited by a small sample size. Future work is needed to test the generalizability of these findings. Moreover, the Latinx population is very diverse consisting of people from varying backgrounds, religions, race, generational status and cultural practices. Future research should examine help-seeking behaviors in specific Latinx populations.

Second, there were some limitations to our measures. Our measure of acculturation was not bilinear or multidimensional, and thus, risks the possibility of misclassification of individuals. Future research should use full-length multidimensional scales for a thorough understanding of how this complex cultural variable influences help-seeking behaviors among Latinx college students. Third, the cross-sectional nature of the analyses does not allow us to determine the causality of the investigated relationships. Future studies would benefit from collecting longitudinal data of help-seeking behaviors to understand the directional effect of the relationships under study.

Fourth, the constructs measured in this study were assessed using self-reports and were vulnerable to the limitations inherent with the use of self-reports such as response bias or recall bias. It is possible that participants manipulated their responses to make them socially desirable. It is also possible that they underreported symptoms and their frequency. Future studies may benefit from using different methodological approaches that utilize behavioral markers and manifestations of some risk factors, such as, sleep hygiene, substance use, academic performance, missing class or schoolwork etc. In addition, the current study did not include measurements for all constructs of the UTB, and thus was unable to evaluate the full model in the current context. In order to have a more comprehensive understanding of whether this model might inform formal and online help-seeking behaviors in this population, it is important include all relevant constructs in future endeavors.

Sixth, both online and formal help-seeking sources encompass a wide range of modalities and platforms. Patterns of help-seeking behaviors may vary among formal sources based on the treatment provider (e.g. social worker, psychiatrist, psychologist etc.). Similarly, online mental health services include a wide array of platforms, such as text-based programs,

psychoeducational apps and websites etc., that may appeal differently to diverse populations. It is possible that by examining them together, we are missing important information regarding the correlates of the specific help-seeking behaviors. While conducting an individualized assessment of the various sources of mental health care is beyond the scope of this study, a future undertaking in this direction may help strength implementation and dissemination efforts.

Conclusion

There are significant disparities in mental health service utilization among Latinx college students. The current study examined the psychological factors that impact formal and online help-seeking behaviors among high-risk and low-risk Latinx college students. Despite its limitations, this research fills in important gaps in the help-seeking literature among Latinx college students. Findings from this study highlight the complexity of factors that impact Latinx college students' formal and online help seeking behaviors and underscore the importance of understanding these relationships by levels of risk. Further, the results indicate that the factors that influence formal help-seeking behaviors are slightly distinct from the ones that motivate online help-seeking behaviors, thus emphasizing the importance of examining different forms of service utilization independently in research.

Overall, a perceived need for help emerged as one of the most robust predictors of both formal and online help-seeking behaviors among Latinx college students. Hence, implementing culturally sensitive mental health literacy programs aimed at improving students' recognition of mental health problems, and improving stigma and negative attitudes towards mental health as well as formal and online sources of help, may improve both formal and online help-seeking behaviors in this population. Gatekeeper training programs and mental health assessments by

general practitioners may also help in early identification and appropriate referrals for those in need of mental health services.

The research on suicide prevention and treatment underutilization has consistently emphasized that these are systemic problems and need to be addressed as such. Therefore, in addition to understanding the problem at an individual level, prevention efforts need to be considered at the community and societal levels as well (Dahlberg & Krug, 2006). An essential component of prevention is to identify ways to strengthen access to and delivery of timely, cost-effective, and quality mental health care for individuals in need (Stone et al., 2017). Having behavioral health care systems set up in a way that overcomes some of the barriers to help-seeking and enables effective access and delivery of services may bolster these efforts. Some of these approaches include improving coverage of mental health conditions in insurance policies, reducing provider shortage, and providing care within a system that supports suicide prevention and patient safety through strong leadership, workforce training, systematic identification and assessment of suicide risk, and implementation of evidence-based treatments (Stone et al., 2017). In college settings, this may mean implementing policies and culture from the top down that promote prosocial behaviors (such as, asking for help), referrals and access to services, postventions etc. Such systematic shifts may help prevent suicide and related risk factors (e.g. depression) and improve treatment utilization (Stone et al., 2017).

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Appendix 1

Descriptive Statistics

Variables	Overall	High-Risk	Low-Risk
	Sample	Sample	Sample
	M (SD) or no. (%)	M (SD) or no. (%)	M (SD) or no. (%)
No. of observations	321	118	203
Age	19.87 (3.32)	19.34 (1.82)	20.18 (3.90)
Female	255 (79.2%)	93 (78.8%)	162 (79.4 %)
White	99 (30.7%)	37 (31.4%)	62 (30.4%)
Black	32 (9.9%)	13 (11%)	19 (9.3%)
Asian	7 (2.2%)	3 (2.5%)	4 (2%)
American Indian or Alaska Native	4 (1.2%)	1 (0.8%)	3 (1.55)
Native Hawaiian or Pacific Islander	3 (0.9%)	1 (0.8%)	2 (1%)
Other	196 (60.9%)	67 (56.8%)	129 (63.25)
Freshmen	171 (53.1%)	71 (60.2%)	100 (49%)
Sophomore	66 (20.5%)	23 (19.5%)	43 (21.1%)
Junior	61 (18.9%)	18 (15.3%)	43 (21.1%)
Senior	24 (7.5%)	6 (5.1%)	18 (8.8%)
Outcome variables			
Formal HS Behaviors			
None	222 (68.9%)	74 (62.7%)	148 (72.5%)
1 or more	91 (28.3%)	39 (33.1%)	53 (25.4%)
Online HS Behaviors			
None	283 (87.9%)	96 (81.4%)	187 (91.7%)
1 or more	31 (9.6%)	17 (14.4%)	14 (6.9%)
Predictor Variables			
Suicide Literacy	8.89 (1.36)	8.73 (1.40)	8.98 (1.33)
Acculturation	4.59 (0.88)	4.60 (0.90)	4.58 (0.87)
PLL in US	0.96 (0.15)	0.96 (0.14)	0.95 (0.16)
BASH	3.63 (0.81)	3.65 (0.83)	3.62 (0.81)
Perceived Need	143 (44.4%)	77 (65.3%)	66 (32.4%)
Formal Intentions			
MHP	3.36 (1.35)	3.22 (1.40)	3.45 (1.31)
PCP	2.88 (1.30)	2.51 (1.23)	3.10 (1.30)
Psychiatrist	2.88 (1.32)	2.73 (1.31)	2.97 (1.37)
Online Intentions			
OP	2.48 (1.19)	2.49 (1.13)	2.47 (1.23)
App	2.90 (1.22)	2.93 (1.16)	2.89 (1.26)

Note. HS= Help-Seeking; PLL in US= Proportion of Life Lived in US; MHP= Mental Health Professional (i.e., Psychologist, Social Worker, Counselor); PCP= Primary care provider or other medical doctor; OP= Online Program; App= Mental Health Application

Appendix 2

Responses to Items from the Literacy of Suicide Scale

Item	Theme	n correct (% correct)		
		Overall Sample	High-Risk Sample	Low-Risk Sample
People who have thoughts about suicide should not tell others about it (F)	T/P	277 (86.3%)	98 (83.1%)	179(87.7%)
Seeing a psychiatrist or psychologist can help prevent someone from suicide (T)	T/P	299 (93.1%)	102 (86.4%)	197 (96.6%)
Most people who suicide <u>are</u> psychotic (F)	RF	288 (89.7%)	104 (88.1%)	184 (90.2%)
Talking about suicide always increases the risk of suicide (F)	C/N	268 (83.5%)	94 (79.7%)	174 (85.3%)
Not all people who attempt suicide plan their attempt in advance (T)	S/S	220 (68.5%)	79 (66.9%)	141 (69.1%)
A suicidal person will always be suicidal and entertain thoughts of suicide (F)	C/N	250 (77.9%)	86 (72.9%)	164 (80.4%)
Very few people have thoughts about suicide (F)	C/N	268 (83.5%)	101 (85.6%)	167 (81.9%)
If assessed by a psychiatrist, everyone who kills themselves would be diagnosed as depressed (F)	C/N	177 (55.1%)	72 (61%)	105 (51.5%)
Men are more likely to suicide than women (T)	RF	128 (39.9%)	43 (36.4%)	85 (41.7%)
People who talk about suicide rarely kill themselves (F)	S/S	199 (62%)	66 (55.9%)	133 (65.2%)
People who want to attempt suicide can change their mind quickly (T)	S/S	123 (38.3%)	47 (39.8%)	76 (37.3%)
There is a strong relationship between alcoholism and suicide (T)	RF	89 (27.7%)	29 (24.6%)	60 (29.4%)

Note. T/P= Treatment/Prevention; RF= Risk Factor; C/N= Cause/Nature; S/S= Sign/Symptom.