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Preference for Online Psychotherapy: A Comparison Study of Stigma, Attitudes, and Intentions

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Abstract

Objective: There is clear evidence that rates of mental health disorders among college students are increasing, and many students experiencing mental health difficulties do not engage in treatment. Some evidence suggests that telehealth may be a way to increase access to care. Research conducted prior to the pandemic suggests that students generally favor in-person treatment over online treatment, but little data has been collected following the onset of the COVID-19 pandemic to clarify if this trend persists. The proposed research sought to understand how treatment perceptions may have shifted following the COVID-19 pandemic.

Methods: Data was collected from 350 college students from a large, Northeastern, private university. Participants completed measures on treatment preference, intentions, and attitudes, as well as stigma and psychological distress.

Results: Results indicated that students generally prefer face-to-face treatment over online treatment on multiple measures. Mediation analyses identified an indirect association of public stigma on both online and face-to-face treatment intentions by way of help-seeking self-stigma and treatment attitudes. Additionally, results confirmed indirect associations of psychological distress on both online and face-to-face treatment intentions by way of help-seeking self-stigma. Subgroup analyses indicated that for sexual minority students, greater public stigma was associated with a preference for online treatment.

Conclusion: Results confirm that face-to-face treatment is still viewed more favorably than online treatment. Collectively, findings provide support for the complex role of stigma in shaping perceptions of treatment. Findings suggest that stigma has a negative effect on treatment attitudes and intentions for both online and face-to-face treatment.

Preference for Online Psychotherapy:

A Comparison Study of Stigma, Attitudes, and Intentions

by

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Introduction

Mental Health in College Students

Over the past 15 years, prevalence rates of common mental health disorders such as anxiety disorders and depressive disorders have steadily increased, with estimates from 2020 indicating that 38% of college students have been diagnosed with a mental health disorder by a professional (ACHA, 2020). More recent data further highlights the rising prevalence of mental health disorders among college students, with 44% of college students reporting ever receiving a mental health diagnosis from a professional (ACHA, 2022). Importantly, research indicates that of students diagnosed with a mental health disorder, only 16%-25% were engaged in treatment in the past 12 months (ACHA, 2022; Ebert et al., 2019). Data suggests that delayed diagnosis and treatment of psychological disorders are linked to poorer long-term outcomes across a variety of conditions, including anxiety disorders, depressive disorders, and bipolar disorder (Bukh et al., 2013; Johnson & Coles, 2013; Patel et al., 2015).

The burden of untreated mental illness exerts a significant toll on society, with an estimated $300 billion in lost wages annually and significant reductions in quality of life (NAMI, 2022). For college students, having a mental health disorder is a significant predictor of lower GPA and an increased risk of dropout (Eisenberg et al., 2009). Additionally, depression and anxiety in college students have been associated with increased risk of acute infectious illness, increased alcohol consumption, and smoking (Adams et al., 2008; Oswalt et al., 2020). The impact of mental illness extends beyond a young adult's time in college, as mental illness is associated with poorer economic circumstances and social functioning across the lifespan (Gibb et al., 2010; Kosyluk et al., 2016). Given the far-reaching consequences of untreated mental

illness, there is a need to better understand factors that impede treatment uptake and facilitate treatment-seeking in college students.

Stress and related challenges stemming from the COVID-19 pandemic led to a dramatic rise in mental health concerns among college students (ACHA, 2020). At the same time, the COVID-19 pandemic also prompted a remarkable uptick in the use of online therapy for mental health treatment on college campuses and community based settings (Wind et al, 2020), a trend that appears to have persisted post-pandemic (Li, 2023). By providing access to care in a potentially less stigmatizing format than for patients seeking in-person care, the rise in online mental health treatment points to an important new focus for research on access to mental health care. A key perspective advanced in the present study is that online therapy may be a preferred mode of treatment for a subset of vulnerable college students because it may be perceived as less stigmatizing than seeking care in a student counseling center or psychological services center.

The major goal of the present study is to characterize differences in attitudes and acceptability of face-to-face versus online psychotherapy among college students and address whether preferences for online psychotherapy are associated with higher levels of help-seeking self-stigma. Hypotheses were developed based on a review of the literature on prominent barriers to accessing mental health care, telemental health, and online psychotherapy, including a focused review of the literature on the association of stigma and access to telemental health care. In the following sections, the literature on barriers to care is reviewed for both general populations and college-based samples, the focus of the present study.

Barriers to Mental Health Care

Both structural and individual level barriers to seeking mental health treatment have been identified in the literature (Vidourek et al., 2014). Structural barriers reflect system-level factors

such as policies or practices that systemically affect members of a community (Tomczyk et al., 2020). At the broadest level, lack of health insurance, or insufficient coverage, is strongly associated with poor treatment uptake (Walker et al., 2015). The cost of treatment is another barrier that is especially prominent among lower socioeconomic status populations and racial/ethnic minority groups (Andrade et al., 2014; Cook et al., 2014). Several studies have identified other barriers, including lack of transportation, inability to get time off work, and not knowing where or how to seek services (Ebert et al., 2019; Walker et al., 2015). In addition to these structural barriers, barriers endemic to health care settings in general include a lack of providers, long waitlists, and high turnover rates (Butryn et al., 2017). Although structural barriers are important for improving access to mental health care, research has also focused on person-specific barriers such as psychopathology, attitudes, and stigma.

Psychological Factors

Evidence from multiple studies confirms that psychological distress and mental health comorbidities are associated with treatment-seeking. In a longitudinal sample of 591 adults, Angst and colleagues (2010) found that while psychological diagnosis was unrelated to help-seeking, psychological distress was a strong, positive predictor of help-seeking. Mackenzie and colleagues (2012) examined data from 34,653 adults from the United States and found that help-seeking increased as symptom severity and the number of comorbid mental health conditions increased. On the other hand, in one sample of Australian college students, Ryan and colleagues (2010) found that psychological distress was negatively related to intentions to seek in-person treatment but positively related to intentions to use an online intervention, defined as “a program available online that was designed to promote the wellbeing of university students.” Seward and Harris (2016) found that for adults experiencing suicidal ideation, greater distress was associated

with less willingness to seek face-to-face services but increased willingness to seek help from informal online sources. Wallin and colleagues (2018) echoed these findings in a sample of college students, finding that greater psychological distress was associated with a preference for online treatment over face-to-face treatment, particularly among individuals with higher levels of mental health self-stigma. Benjet and colleagues (2020) conducted a correlational study examining treatment delivery preferences of 7,849 first-year Mexican undergraduate students. Having a lifetime major depressive episode and concerns about stigma were associated with a preference for online treatment delivery. Among individuals with anxiety or depressive symptoms, the presence of mental-health stigma has also been associated with more negative attitudes toward treatment and lower intentions to seek treatment (Calear et al., 2021; Nearchou et al., 2018). Across these studies, a core observation is that greater psychological distress and endorsed stigma are associated with a preference for online treatment over face-to-face treatment.

Attitudinal Barriers

Models of help-seeking and treatment utilization posit a series of stages involving careful consideration of perceived benefits and need, culminating in a decision about whether or not to initiate treatment (Cornally & McCarthy, 2011). Guiding this process are attitudes, which may facilitate the initiation of treatment or impede the process (Tomczyk et al., 2020). Attitudes can be defined as the extent that a person assigns either good or bad qualities to a behavior (Ajzen, 1996). Attitudes are a robust predictor of intentions, which strongly increase the likelihood of engaging in a given behavior (Ajzen, 1996). This simple premise forms the basis of the Theory of Planned Behavior, a model that has been applied to numerous behaviors including mental health treatment-seeking (Bohon et al., 2016). Importantly, attitudes are malleable, making them

an important target for mental health interventions and public health campaigns (Sickel et al., 2019).

Attitudinal barriers reflect the cognitions or emotions around having a mental health disorder, help-seeking, and treatment itself (Tomczyk et al., 2020). Attitudinal barriers are affixed to each phase of the help-seeking process and can interact with structural or personal barriers to affect help-seeking decisions (Clement et al., 2015). A recent systematic review of mostly cross-sectional studies by Clement and colleagues (2015) found that treatment-related stigma and internalized stigma were the two factors most strongly associated with negative attitudes toward seeking help. Another common attitudinal barrier is self-reliance, as many young adults either prefer to, or believe they should, manage their symptoms on their own (Eisenberg et al., 2012; Gulliver et al., 2010). Low mental-health literacy, which refers to knowledge and beliefs about mental health disorders, has also been linked to untreated mental illness and low treatment initiation (Calear et al., 2021; Gulliver et al., 2010). Other less frequently identified attitudinal barriers include the perceived inconvenience associated with treatment, beliefs that treatment will not work, and concerns about confidentiality (Andrade et al., 2014; Tomczyk et al., 2020; Vidourek et al., 2014). In sum, attitudes represent a diverse array of psychological barriers that are relevant at each phase of the help-seeking process.

Many barriers to treatment found in general population samples are also common among college samples. For college students, treatment uptake is often facilitated by access to a counseling center or psychological services center, which provides “low-threshold” access to mental health treatment, including telemental health services (Bruffaerts et al., 2019). The most common barriers to seeking treatment identified in this study were attitudinal in nature rather than structural, such as a preference for handling the problem alone, embarrassment, or

preferring to talk with family or friends instead. A cross-sectional study conducted by Vidourek and colleagues (2014) mirrored these findings in a sample of Midwestern college students: embarrassment, denial, and not wanting to be labeled as "crazy" were the most commonly identified barriers to seeking mental health treatment. Taken together, the reviewed studies highlight the complexity of attitudinal treatment-seeking barriers and the need to identify malleable impediments to care.

Stigma as a Barrier to Treatment Seeking

Stigma has been widely regarded as one of the most important barriers to mental health treatment (Clement et al., 2015; Gaddis et al., 2018; Hilliard et al., 2020). At the broadest level, stigma can be described as an attribute that is marked by real or perceived devaluation and an overt or subtle recognition of *difference* (Bos et al., 2013; Link & Phelan, 2001). In his seminal work, Goffman (1963) defined stigma as "an attribute that is deeply discrediting." In the context of mental health, researchers have found several types of stigma to impede the treatment-seeking process: public stigma, mental health self-stigma, and help-seeking self-stigma (Sickel et al., 2019; Tucker et al., 2013; Vogel et al., 2009). In this context, public stigma refers to the belief that society views help-seeking as a sign of weakness or even as unacceptable (Bird et al., 2020; Corrigan & Miller, 2004). Mental health self-stigma refers to the internalization of negative stereotypes about mental illness and the impact of holding a stigmatizing trait (Bathje & Pryor, 2011; Sickel et al., 2019). Help-seeking self-stigma captures the belief that seeking mental health treatment is either socially unacceptable, deviant, or undesirable (Tucker et al., 2013). Although mental health self-stigma is sometimes operationalized to include treatment-seeking stigma, there is research to suggest these are distinct constructs (Tucker et al., 2013). Some authors have posited that seeking mental health treatment reflects an active choice that a person has agency

over, while having a mental health disorder is less controllable (Vogel et al., 2009). In turn, treatment-seeking may be more stigmatizing than having a mental health disorder, as treatment-seeking is an active decision of a person's own volition and represents acknowledgement of the presence of a mental health concern.

Importantly, a number of studies have found mental health stigma to be higher among racial/ethnic minority and sexual minority persons groups, which historically have lower treatment utilization (Hilliard et al., 2020; Liu et al., 2019; Miranda et al., 2015; Nestor et al., 2016; Stojanovski et al., 2021). For example, community samples have found that Black and Hispanic adults are less likely to receive mental health treatment than White adults, regardless of whether they had health insurance (Tomczyk et al., 2020; Walker et al., 2015). In college students, Defreitas and colleagues (2018) found that Latino and African American college students endorsed high levels of mental health stigma. Further, African American students reported greater mental health self-stigma than Latinos, which was driven by beliefs that mental illness may be highly visible to others. In another cross-sectional study of college students, Masuda and Boone (2011) found that Asian American students endorsed greater mental health stigma and self-concealment than European American students in a cross-sectional study. Research on sexual minority adults has found lower treatment utilization compared to heterosexual or cisgender adults (Romanelli & Hudson, 2017). There is some evidence that LGBTQ+ young adults also endorse higher levels of mental health stigma and fear of discrimination in mental health settings (Stojanovski et al., 2021).

Central to the present study, greater mental health stigma has consistently been associated with more negative attitudes toward mental health treatment and lower treatment initiation across a wide variety of populations (Corrigan & Miller, 2004; Hilliard et al., 2020;

Sickel et al., 2019; Tucker et al., 2013). For example, in a systematic review of 144 studies, Clement and colleagues (2014) identified negative associations between both mental health self-stigma and help-seeking, and help-seeking self-stigma and help-seeking (d = -.41). In a sample of college students pursuing an online degree, Sickel, Seacat, & Nabors (2019) found that greater mental health self-stigma was associated with lower self-efficacy and increased anxiety levels, which subsequently predicted more negative attitudes toward seeking mental health treatment. In another study of undergraduate students and community members, Tucker and colleagues (2013) found that greater mental health self-stigma and help-seeking self-stigma each uniquely predicted more negative attitudes toward mental health treatment and lower intentions to seek treatment. Given the strong link between help-seeking self-stigma and treatment attitudes, researchers have tried to understand the underlying process connecting these two variables.

A key perspective in the literature on stigma and help-seeking is that over a period of weeks to years, mental health public stigma becomes internalized, eventually leading to higher levels of mental health and help-seeking self-stigma (Vogel et al., 2009). For example, a person with a mental illness who believes that society views having a mental illness or seeking treatment for a mental illness as weak or undesirable will, over time, adopt beliefs that they are also weak or undesirable (Corrigan & Miller, 2004; Vogel et al., 2009). Further, these self-directed negative beliefs will directly contribute to more negative attitudes toward mental health treatment and subsequently, lower intentions to seek treatment (Vogel et al., 2013).

To summarize, an individual who believes that most people view seeking mental health treatment as socially unacceptable will eventually internalize those beliefs and view themselves as socially unacceptable or undesirable. This results in more negative attitudes toward help-seeking and decreases the likelihood that the person initiates treatment (Vogel et al., 2009). This

relationship was recently confirmed by Yu and colleagues (2023) via meta-analytic structural equation modeling methods. Pooling results from 115 heterogenous samples, the authors confirmed a strong, positive relationship between public stigma and help-seeking self-stigma. Further, the authors found that when controlling for public stigma, help-seeking self-stigma was still associated with attitudes and intentions. When controlling for help-seeking self-stigma, public stigma was not associated with attitudes or intentions, demonstrating that help-seeking self-stigma mediates the relationship between public stigma on attitudes and intentions. These results provide strong evidence that help-seeking self-stigma plays a pivotal role in determining treatment-seeking attitudes and intentions.

The relationship between public stigma or help-seeking self-stigma on attitudes and intentions has also been demonstrated in a number of college samples. For example, in one sample of undergraduate students from a Southeastern university, Jennings and colleagues (2015) found, through serial mediation analyses, that public stigma predicted more negative attitudes toward treatment-seeking and lower odds of seeking face-to-face treatment by way of help-seeking self-stigma and self-reliance. In another sample of college students from a Midwestern university, Bathje & Pryor (2011) found that greater public stigma predicted greater help-seeking self-stigma, which predicted more negative attitudes toward treatment-seeking, and in turn, lower intentions to seek face-to-face counseling. Taken together, these findings demonstrate that help-seeking self-stigma is driven by public stigma and both constructs represent prominent barriers to mental health treatment.

One promising way to address the negative attitudes toward treatment and high levels of stigma that have been associated with face-to-face mental health treatment may be the provision of telemental health services (Bird et al., 2020; Cohen et al., 2020; Hadler et al., 2021; Wallin et

al., 2018). The COVID-19 pandemic of early 2020 resulted in the swift expansion of telemental health services, creating an opportune moment to elucidate whether this expanded range of services can reduce the impact of stigma as a barrier to care.

Telemental Health and Videoconferencing Technology

Given the importance of improving access to care, a number of researchers have examined the question of whether offering telemental health services and, more specifically, video-based treatment can serve to improve access to mental health care. Telemental health encompasses a wide array of treatment modalities such as internet-based interventions, video or phone calls, and online self-directed treatments (Whaibeh et al., 2020). Telemental health has been identified as one of the most promising avenues to reduce both structural and attitudinal treatment barriers to improve access to mental health care (Cohen et al., 2020; Hadler et al., 2021). With technological advancements improving the capacity for high-quality video-based conferencing services over the past decade, telemental health has been adopted in many real-world settings leading to increased research attention and support (Whaibeh et al., 2020). For example, an estimated 60% of colleges offered some form of telemental health in 2018, compared to less than 10% in 2015 (LeViness et al., 2018).

Interest in telemental health accelerated following the onset of the COVID-19 pandemic in early 2020, as many community therapists and college mental health centers began offering remote services to ensure continuity of care (Whaibeh et al., 2020). Following stay-at-home orders issued in response to the COVID-19 pandemic, most universities shifted to incorporate online learning, used either in combination with in-person instruction or as the sole mode of instruction (Batastini et al., 2021; Erekson et al., 2020). As a result, students gained experience with video-based technology as they continued their academic studies remotely or in hybrid

format (Erekson et al., 2020). The COVID-19 pandemic served as a catalyst for many mental healthcare facilities to implement telemental health services efficiently, and certain previously identified obstacles were quickly overcome (Wind et al, 2020). For example, many health care providers were reluctant to adopt telemental health due to concerns about confidentiality or efficacy, as well as anxiety about learning new technology (Wind et al, 2020). The COVID-19 pandemic forced many providers to learn and implement telemental health as a means of providing care in the face of lockdowns and social distancing restrictions (Whaibeh et al., 2020). Research has found that providers were successful in adopting digital resources into their practice, with many coming to appreciate some of the advantages of telemental health, such as flexibility, screen sharing, and accessibility (Tomaino et al, 2022). Those with prior telemental health experience endorsed more positive attitudes and confidence, with most providers reporting more favorable attitudes compared to before the COVID-19 outbreak (Békés & Aafjes-van Doorn, 2020; Connolly et al., 2020).

Although telemental health encompasses a wide variety of treatments, the predominant treatment medium adopted by practitioners since the onset of the COVID-19 pandemic has been videoconferencing technology, which refers to the use of video-based software such as Zoom or Webex (Thomas et al., 2021). A wide range of terms has been used in the literature to describe mental health treatment delivered via videoconferencing technology (e.g., telemental health, online therapy, videoconferencing counseling, etc.). For the present study, the terms *online psychotherapy* or *online treatment* are used for efficiency to describe synchronous, one-on-one psychotherapy conducted via a HIPAA-compliant videoconferencing platform (Batastini et al., 2021; Fernández-Álvarez & Fernández-Álvarez, 2021). In various forms, online psychotherapy has been used in healthcare settings for more than a decade, and a sizable body of literature

supports the efficacy for many commonly diagnosed psychological disorders including: Anxiety Disorders, Depressive Disorders, Post Traumatic Stress Disorder, and Substance Use Disorders (Batastini et al., 2021; Benavides-Vaello et al., 2013; Osenbach et al., 2013; Rees & Maclaine, 2015; Shaker et al., 2023). Studies of college populations have found that online therapy demonstrates comparable efficacy to face-to-face therapy (Ierardi et al., 2022; Novella et al., 2022; Simpson et al., 2015). Although students rate online treatment favorably, some research conducted prior to the pandemic indicated that college students prefer face-to-face treatment (Bathje et al., 2014; Bird et al., 2020). Importantly, research has found that experience with videoconferencing and comfort with technology are associated with more positive attitudes toward online or video-based treatments (Joyce, 2012; Quarto, 2011). With the advent of the COVID-19 pandemic, exposure to videoconferencing has increased as video-based platforms have become a mainstay of communication and healthcare around the world (Whaibeh et al., 2020).

Data collected during the COVID-19 pandemic indicated that between 60%-80% of patients in treatment at college counseling centers remained enrolled after switching to online psychotherapy (Erekson et al., 2020; Hawke et al., 2021). Further, comfort with online education grew exponentially as a significant number of students shifted to complete coursework virtually during the following academic years (Gonzalez-Ramirez et al., 2021). Many universities opted for a hybrid approach of online and in-person courses during the pandemic, suggesting that experience and comfort with videoconferencing technology likely increased (Redden, 2021). Importantly, empirical research collected during the COVID-19 pandemic has found that online treatment resulted in better treatment attendance and fewer stigmatization concerns for patients (Avalone et al., 2021; Chen et al., 2020). For example, a recent systematic review of clinics that

transitioned to telemental health during the COVID-19 pandemic found better clinic attendance and improved accessibility across a range of settings (Appleton et al., 2021). Results confirmed that telemental health services were acceptable for both patients and providers, while some clinicians reported difficulty building therapeutic alliance. Early in the pandemic, Chen and colleagues (2020) observed that for some patients, the increased privacy afforded by telepsychiatry appointments may have helped reduce the impact of stigma as a barrier to treatment.

With both clinicians and patients gaining familiarity with videoconferencing technology, questions were raised about the extent to which online treatment would remain as healthcare transitions back to in-person services (Chen et al., 2020; Wind et al, 2020). The sustainability of online treatment may depend, in part, on whether online treatment does in fact increase access to care for some patients because it is more convenient and less stigmatizing than pursuing in-person treatment (Chen et al., 2020; Wind et al, 2020). A key question addressed in the present study is whether online psychotherapy represents a less stigmatizing form of treatment.

Stigma and Telemental Health Treatment

One of the most commonly purported advantages of videoconferencing technology is that online services may be associated with less stigma than traditional face-to-face psychotherapy (Hadler et al., 2021; Martin et al., 2020). College counseling or psychological services centers are often located on campus, which can lead to stigmatization concerns about being visible to peers (Gaddis et al., 2018). Telemental health services such as videoconferencing have the ability to overcome these barriers to care through the delivery of services from a distance, allowing students to access treatment from a private location while limiting contact with members of their social network (Nobleza et al., 2019). Studies are needed that examine whether

help-seeking self-stigma exerts less of a negative influence on treatment uptake for online psychotherapy compared to in-person treatment, as well as studies that identify highly stigmatized populations that may derive the most benefit in terms of improved access to care. In the following sections, the extant research comparing attitudes and stigma between telemental health and face-to-face treatment is reviewed, followed by a more explicit focus on online psychotherapy and face-to-face psychotherapy.

A total of three studies have compared levels of help-seeking self-stigma associated with various forms of telemental health treatment compared to face-to-face mental health treatment. Joyce (2012) conducted a cross-sectional study of 499 students from a Midwestern university that examined differences in help-seeking self-stigma between telemental health and face-to-face counseling. Telemental health was defined as interaction with a counselor through e-mails or "real-time text chat." Consistent with hypotheses, the author found that help-seeking self-stigma predicted more negative attitudes toward both treatment formats. Notably, help-seeking self-stigma was less strongly associated with attitudes toward telemental health compared to face-to-face counseling. Additionally, the author found that help-seeking self-stigma was negatively associated with intentions to seek face-to-face treatment but unrelated to intentions to seek telemental health counseling. These findings suggest that individuals with higher help-seeking self-stigma may have a more favorable view of online treatment compared to face-to-face treatment.

Ballesteros & Hilliard (2016) conducted a correlational study investigating attitudes toward face-to-face and online counseling among a sample of Latina/o undergraduate students. A notable limitation of this study is that online counseling was not defined for the participants. The authors found that students reported positive attitudes toward both formats, expressing a slight

preference for face-to-face over online counseling. Help-seeking self-stigma was more strongly associated with face-to-face counseling than online counseling attitudes. This finding suggests that for populations with low mental health service utilization and higher experiences of stigma, online treatment may be a preferred treatment modality.

In a cross-sectional study of 267 undergraduate students and 195 primary care patients from Sweden, Wallin and colleagues (2018) tested the hypotheses that help-seeking self-stigma would predict a difference in intentions to seek online treatment compared to face-to-face treatment. Online treatment was defined as "psychological treatment delivered through the internet, typically involving educational material, homework assignments and sometimes support by a therapist." The authors found that participants preferred face-to-face treatment when seeking help for a general mental health problem. These results shifted when the mental health problem was embarrassing or stigmatized, as participants were more likely to choose online treatment over face-to-face treatment (OR = 6.41, 95% CI [4.05, 10.14]. Results demonstrated that individuals experiencing greater psychological distress, as measured by The Depression, Anxiety and Stress Scale - 21 Items (DASS-21), reported greater intentions to seek online treatment over face-to-face treatment. Additionally, results showed that individuals with higher help-seeking self-stigma expressed greater intentions for online treatment compared to face-to-face treatment.

These findings suggest that for individuals with higher endorsed stigma and greater psychological distress, online treatment may be the preferred treatment modality. A limitation of these studies is that online treatment is not analogous to video-based treatments, and stigma may not affect different treatment modalities equivalently.

Stigma and Online Psychotherapy Versus Face-to-Face Psychotherapy

A total of six studies provide data on differences in the experience of help-seeking stigmatization between video-based online psychotherapy and face-to-face psychotherapy. Lee and colleagues (2018) conducted a randomized controlled trial for patients with trichotillomania comparing Acceptance and Commitment Therapy delivered via video to a delayed treatment waitlist control group. The authors found that for patients who successfully completed online treatment, 40% reported that they would not have sought treatment if face-to-face was the only option; shame was cited as a significant barrier to willingness to seek face-to-face treatment. Thus, the provision of online treatment resulted in a significant minority of patients receiving care they otherwise would not have initiated.

Bathje, Rau, & Bassiouny (2014) examined attitudes and stigma between online and face-to-face counseling in a cross-sectional sample of 228 Korean college students. Results confirmed that participants endorsed more favorable attitudes towards face-to-face counseling versus counseling provided through online treatment. Using path analysis, the authors found that greater help-seeking self-stigma was associated with more negative attitudes toward face-to-face counseling. In contrast, for online counseling, help-seeking self-stigma was unrelated to either positive or negative attitudes. Thus, while findings point to a greater overall preference for face-to-face treatment, help-seeking stigma was only related to negativity regarding face-to-face counseling and showed no relation to attitudes towards online treatment.

Bird and colleagues (2019) investigated differences in help-seeking self-stigma and attitudes between online counseling and face-to-face counseling in a sample of 588 college students from a Southeastern university. The authors hypothesized that public stigma would be positively associated with help-seeking self-stigma, and in turn, that help-seeking self-stigma would be negatively associated with attitudes toward both online and face-to-face counseling.

The authors also expected that both forms of stigma would be more strongly associated with negative attitudes towards face-to-face counseling over online counseling. These hypotheses were confirmed, finding that help-seeking self-stigma mediated the relationship between public stigma and treatment attitudes. Importantly, results from a path analysis indicated that both forms of stigma had less of an effect on attitudes toward online counseling than face-to-face counseling. These findings are notable, as they suggest that stigma may be less of a barrier when treatment is delivered online.

Shin & Xyle (2022), using cross-sectional data collected during the COVID-19 pandemic, found that self-stigma was more strongly correlated with attitudes for face-to-face counseling compared to online counseling. Additionally, the authors found that self-stigma was negatively correlated with intentions for both face-to-face and online counseling, with a slightly stronger relationship to face-to-face counseling.

Lauricella & Tuliao (2021) tested the relationship of self-stigma on attitudes and intentions to seek treatment for relationship issues in a sample of undergraduate students. The authors found that students endorsed more value and less discomfort with face-to-face therapy compared to online therapy. Additionally, private stigma was more strongly associated with attitudes for face-to-face than online therapy. Path analysis confirmed that greater private stigma resulted in less positive attitudes and lower intentions to seek treatment for both face-to-face and online therapy.

On the other hand, findings from a cross-sectional survey study of 538 college students from a Southeastern university reached a different set of conclusions (Bird et al., 2020). Consistent with hypotheses, public stigma predicted self-stigma, and self-stigma predicted more negative attitudes and lower intentions for both treatment modalities. Additionally, students

reported higher intentions to seek face-to-face counseling compared to online counseling. In contrast to findings from other studies (i.e., Bathje et al., 2014; Bird et al., 2019; Joyce, 2012), students endorsed higher levels of help-seeking self-stigma and greater discomfort toward online counseling. A potential explanation for these findings put forth by the authors is the students' lack of familiarity with online treatment modalities, as previous research has found watching a simulated videoconferencing technology session improves attitudes toward videoconferencing technology (Quarto, 2011). Thus, it may be that attitudes toward videoconferencing technology improve as experience and comfort with this technology increases, such as was the case during the COVID-19 pandemic.

Notable limitations of studies comparing differences in attitudes and stigma between face-to-face and online treatment include: most studies collected data prior to the COVID-19 pandemic, few studies had an explicit focus on online psychotherapy, no studies examined treatment acceptability, and the utilization of measures designed to assess attitudes and intentions toward counseling rather than psychotherapy. For example, the Intentions to Seek Counseling Inventory asks subjects if they would seek counseling for "relationship difficulties" and "inferiority feelings" (Bird et al., 2020; Wallin et al., 2018). These items may not capture the emphasis of psychotherapy, which tends to focus on more complex issues and psychopathology (APA, 2020).

Limitations aside, these findings provide evidence that videoconferencing technology may disrupt the internalization of public stigma to self-stigma, potentially improving treatment uptake among individuals with higher endorsed stigma. There is a need for follow-up work with more germane psychometric tools to explicate how stigma influences treatment preference.

Overview and Aims

The impact of the COVID-19 pandemic created a so-called “black swan” moment for the mental health care professions, an unforeseen event that engenders fundamental change (Wind et al, 2020). The rapid and widespread adoption of videoconferencing technology shifted the way patient care is provided and provides a unique opportunity to understand whether videoconferencing technology can improve access to care because it is perceived to be less stigmatizing compared to traditional in-person therapy.

The reviewed literature demonstrates that help-seeking self-stigma is a prominent barrier to mental health treatment in the general population and among college students. Moreover, some evidence points to the fact that help-seeking self-stigma is more strongly associated with face-to-face treatment, while online psychotherapy may represent a less stigmatizing form of treatment. Left unanswered is the question of whether online psychotherapy is preferred as a treatment modality among college students because of the perception that it is less stigmatizing, and whether college students who experience greater help-seeking stigma prefer online psychotherapy over face-to-face treatment.

The present study addressed these critical gaps in the literature by comparing attitudes, intentions, and acceptability of face-to-face and online psychotherapy, as well as clarifying how stigma differentially impacts perceptions of face-to-face and online psychotherapy in a cross-sectional sample of undergraduate students. This study also expanded upon an established finding in the literature indicating that mental health public stigma influences help-seeking self-stigma, which in turn shapes attitudes and decisions about treatment. Additionally, this study examined whether subgroups of students prefer online psychotherapy, either as a function of their group membership or their experience of psychological distress.

The burden of untreated mental illness among college students has reached historical levels, highlighting the importance of understanding key barriers to care. Accordingly, the present study has four broad aims:

Specific Aim 1: *To provide descriptive data on college students' preference for online psychotherapy versus face-to-face psychotherapy and examine differences in treatment acceptability, treatment attitudes, and intentions to pursue face-to-face psychotherapy versus online psychotherapy.*

Research conducted prior to the COVID-19 pandemic found that students prefer face-to-face psychotherapy to online psychotherapy (Bathje et al., 2014; Bird et al., 2020). Given the massive increase in exposure to videoconferencing technology during the COVID-19 pandemic (Hadler et al., 2021), and because in-person mental health treatment may heighten stigmatization concerns, it is predicted that the preponderance of students asked to contemplate an appointment for mental health treatment will express a preference for online psychotherapy over face-to-face psychotherapy.

With regard to attitudes, past research has found that students generally have more negative attitudes towards online treatment compared to face-to-face treatment, reporting less value with online treatments such as videoconferencing (Bathje et al., 2014; Bird et al., 2020). Given the increase in exposure to videoconferencing technology during the COVID-19 pandemic, attitudes may have shifted, as research shows that as familiarity and comfort increase, so do positive treatment attitudes (Fernández-Álvarez & Fernández-Álvarez, 2021; Joyce, 2012). The present study focuses on two specific domains of treatment attitudes: openness to seeking professional psychological help, and value and need in seeking treatment, assessed separately using self-report measures with identical items that reference either face-to-face or online

psychotherapy. Because of the rapid increase in utilization of videoconferencing and the heightened privacy and convenience that it affords, it is hypothesized that both treatment modalities will be judged as comparably acceptable and of equal value, but that online psychotherapy will in fact be associated with more openness in comparison to face-to-face psychotherapy. Relatedly, it is hypothesized that students will report significantly higher intentions to pursue online psychotherapy as compared to face-to-face psychotherapy. Preference and intentions will be assessed using hypothetical vignettes in which participants are presented with a mental health disorder and asked to rate their intentions to seek treatment as well as their preference for treatment.

Specific Aim 2: *To characterize the associations of public stigma and help-seeking self-stigma with preferences, attitudes, and intentions for face-to-face versus online psychotherapy.*

Previous research has established a clear link between public stigma and help-seeking self-stigma (Vogel et al., 2013). However, some researchers have found that while help-seeking self-stigma is associated with more negative attitudes toward face-to-face treatment, help-seeking self-stigma has little to no relation to attitudes towards treatment delivered online (Bathje et al., 2014; Bird et al., 2019). The present study tests the broad hypothesis that public stigma and help-seeking self-stigma will be associated with more negative treatment attitudes and lower intentions to pursue face-to-face psychotherapy but will be unrelated to attitudes and intentions towards online psychotherapy. Specifically, for face-to-face psychotherapy, it is hypothesized that public stigma will be associated with more negative treatment attitudes and subsequently lower treatment intentions, and this relationship will be partially mediated by help-seeking self-stigma. For online psychotherapy, it is hypothesized that public stigma will be positively associated with help-seeking self-stigma and both public stigma and help-seeking self-

stigma will be unrelated to attitudes or intentions toward online psychotherapy. These differential hypotheses build on past findings by Bathje and colleagues (2014) and Bird and colleagues (2019) indicating that online treatment is perceived to be less stigmatizing than face-to-face treatment.

An additional exploratory model tests the novel hypothesis that public stigma and help-seeking self-stigma will predict a preference for online psychotherapy. Specifically, it is hypothesized that higher public stigma will predict a preference for online psychotherapy, and this relationship will be partially mediated by help-seeking self-stigma. Together, confirmation of these predictions would provide evidence that the provision of online psychotherapy may improve treatment uptake for students with high levels of endorsed stigma.

Specific Aim 3: *To identify whether person-specific variables are associated with greater intentions and preference for online psychotherapy over face-to-face psychotherapy.*

The overarching hypothesis for Aim 3 is that subgroups for whom help-seeking self-stigma is experienced as a greater concern will express a preference for online psychotherapy over face-to-face psychotherapy. First, research has found that African American, Asian, and Hispanic students endorse higher levels of help-seeking self-stigma (Bathje et al., 2014; DeFreitas et al., 2018; Masuda & Boone, 2011) and may prefer online psychotherapy over face-to-face (Bathje et al., 2014). Thus, it is hypothesized that students of color will endorse higher levels of help-seeking self-stigma as compared to White students, and help-seeking self-stigma will be associated with preference for online psychotherapy among students of color. Secondly, there is some evidence that sexual minority persons are less likely than cisgender or heterosexual persons to use mental health services (Stojanovski et al., 2021). However, no study has investigated sexual minority students' preference for online or face-to-face psychotherapy, or

how help-seeking self-stigma affects their decisions to initiate treatment. It is hypothesized that sexual minority students will endorse higher levels of help-seeking self-stigma as compared to their cisgender or heterosexual peers and express a preference for online psychotherapy. These findings would suggest that online psychotherapy may be an effective way to expand access to care among marginalized groups.

Specific Aim 4: *To characterize the association of psychological distress to intentions and preference for face-to-face psychotherapy or online psychotherapy.*

Research has identified a link between greater psychological distress and increased treatment utilization (Rodriguez-Seijas et al., 2017). Several studies have investigated how psychological distress affects treatment modality preference, finding a positive association between psychological distress and higher intentions to seek online treatment compared to face-to-face treatment (Ryan et al., 2010; Seward & Harris, 2016; Wallin et al., 2018). Additionally, while some studies have found a positive association between stigma and psychological distress (Masuda & Boone, 2011), no study has explored the relationship between stigma, psychological distress, and attitudes toward online psychotherapy. It is hypothesized that greater psychological distress will be associated with greater intentions and preference for online psychotherapy over face-to-face treatment, and that these relationships will be partially mediated by help-seeking self-stigma.

Methods

Participants and Procedures

Participants were college students recruited from an undergraduate subject pool at a large Northeastern university. The study was posted with the description, “We are seeking college students to ask questions about your mental health, demographics, and attitudes” to the online

experimental management system where participants can view descriptions of available studies and receive required course credit for their participation (SONA Systems, Ltd). Inclusion criteria were age 18-25, living in the United States, and currently enrolled as a residential undergraduate college student. Participants received 1 credit for approximately 60 minutes of their time as part of a research requirement for an introductory Psychology course. Upon enrolling in the study, participants received a unique link to virtually sign an informed consent form before completing the online survey using the research platform Qualtrics.

A total of 425 participants completed the survey. To ensure that participants were not providing random responses, two items were added to the survey with the description, “If you’re reading this question, please choose Strongly Agree (5).” This practice was adapted from methods by Paas & Morren (2018), who found that failing this manipulation check was associated with spending less time completing the survey, biased responses, and being more likely to select the same response for every question on a specific measure (e.g., Strongly Disagree). In the present study, 11% of students failed the manipulation check, which is consistent with failure rates from other studies (Paas & Morren, 2018). As shown in Table 1, the sample consisted of primarily full-time (99%) college students (Mean age = 18.69, SD = 1.12), who lived on campus (89%). Participants were predominantly White (64%) and Female (57%). The majority of the sample identified as straight/heterosexual (85%), while 15% identified as a sexual minority individual (i.e., Gay, Agender, Bisexual, Queer, or ‘Another identity”). Approximately half reported a religious affiliation (49%). With regard to race/ethnicity, 64% of students identified as White, 17% Asian, 7% Black, 5% Native Hawaiian or Other Pacific Islander, and 5% another group identity. The majority of students identified as U.S. citizens

(87%), while 9% identified as Chinese citizens, and 4% identified with another country of citizenship.

Measures

Background Characteristics. Items assessing background characteristics included age, gender, sex, sexual orientation, race, citizenship status, fraternity membership, living arrangement, and religious affiliation. Dummy variables were created for subgroup analyses by race and sexual minority status. For race, students who selected White were coded as 1 while students who selected African American, Asian, Hawaiian or Pacific Islander, American Indian/Alaska, or another identity were coded as 2. For sexual orientation, students who selected Heterosexual were coded as 1 while students who selected Asexual, Bisexual, Gay, or another identity were coded as 2.

Covariates. Previous mental health treatment experience was assessed by asking participants if they are currently enrolled in mental health treatment or sought mental health treatment in the previous 18 months. Follow-up questions for positive answers included what type of treatment (i.e., psychiatric medication management, psychotherapy, counseling, or other) and any previous experience with online psychotherapy. COVID-19 anxiety was assessed via the Coronavirus Anxiety Scale (Lee, 2020). Problem Recognition was measured via two-items adapted from Johnson & Possemato (2021), which asks participants if they need treatment of any kind or believe they currently have a mental health problem. Subjective norms were measured via 10-items constructed by Hammer & Vogel (2013). Items used language consistent with Azjen's Theory of Planned Behavior (2006) and assessed norms related to seeking help. A sample item is "People who mean something to me, if they were dealing with this issue, would seek help from a psychologist in the next 3 months."

Psychological Distress. The Depression Anxiety and Stress Scale-21 (DASS-21: Lovibond & Lovibond, 1995) measures symptoms of anxiety, depression, and stress. The DASS-21 asks participants to rate 21-items on a 4-point scale ranging from 0 (does not apply to me at all) to 3 (applies to me most of the time), with higher scores reflecting greater distress. The DASS-21 contains three subscales for symptoms of depression, anxiety, and stress. Sample items include: "I thought life was meaningless," "Felt I was close to panic," and "I found it difficult to relax." The DASS-21 subscales have demonstrated good internal consistency (α = .76-.91) and adequate construct validity in college samples (Osman et al., 2012). The DASS-21 demonstrated excellent reliability in the present sample (α = .934).

Help-Seeking Self-Stigma. The Self-Stigma of Seeking Help Scale (SSOSH) measures a person's help-seeking self-stigma (Vogel et al., 2013), defined as an individual's self-stigma in the context of seeking psychological help for a mental health disorder. Help-seeking self-stigma is an important predictor of treatment seeking (Clement et al., 2015) and a primary variable of interest for the present study. The SSOSH asks participants to rate 10-items using a 5-point scale ranging from 1 (totally disagree) to 5 (totally agree). A higher score reflects higher levels of help-seeking self-stigma. A sample item is "If I went to a therapist, I would be less satisfied with myself." The SSOSH has demonstrated good internal consistency (α = .86) in college samples (Bathje et al., 2014; Vogel et al., 2013). The SSOSH demonstrated acceptable reliability in the present sample (α = .799).

Perceived Public Stigma. The Perception of Stigmatization by Others for Seeking Help Scale (PSOSH) measures a person's belief about how others would react to knowing you were seeking help (Vogel et al., 2013). The PSOSH asks participants to rate five items on a 5-point Likert-type scale ranging from 1 (not at all) to 5 (a great deal), with higher scores reflecting

greater perceived public stigma. Participants are instructed to rate how others would respond if they learned the participant was seeking mental health services. A sample item is "[they would] see you as seriously disturbed." The PSOSH has demonstrated adequate reliability (α = .78) in college samples (Vogel et al., 2009). For the present study, reliability was good (α = .891).

Acceptability of and Attitudes towards Psychotherapy. Participants were first presented with brief descriptions of online psychotherapy and face-to-face psychotherapy (see Appendix for full description). Face-to-face psychotherapy was described as: *psychotherapy in-person where you would go to the Barnes Counseling Center to meet in-person with your therapist.* Online psychotherapy was described as: *psychotherapy via Zoom, where you would join a secure Zoom meeting from a private location to meet with your therapist for an online session.* The order of these descriptions was randomized to eliminate any order effects.

Treatment Acceptability. Treatment acceptability, or the extent that a person judges a treatment to be suitable and appropriate, was measured using the 10-item Treatment Acceptability and Adherence Scale (TAAS; Milosevic et al., 2015). The TAAS asks participants to rate items using a 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree), with higher scores reflecting a more acceptable treatment modality. Items are summed together to create a treatment acceptability summary score. The TAAS has demonstrated good internal consistency (α = .87–.88) in college samples (Soucy & Hadjistavropoulos, 2017). Sample items include "I would find this treatment exhausting" and "It would be distressing to me to participate in this treatment." Participants completed this measure once for face-to-face psychotherapy and once for online psychotherapy. The TAAS demonstrated good reliability for both face-to-face (α = .862) and online psychotherapy (α = .837) in the present study.

Treatment Attitudes. Attitudes toward face-to-face and online psychotherapy were assessed using parallel versions of The Attitudes Toward Seeking Professional Psychological Help (ATSPPH) questionnaire (Fischer & Farina, 1995). The ATSPPH is a 10-item questionnaire that asks participants to rate statements on a 4-point scale ranging from 0 (disagree) to 3 (agree) with higher scores suggesting more positive attitudes toward seeking professional psychological help. The ATSPPH has two subscales; value/need related to seeking professional help and openness to seeking professional help. The ATSPPH demonstrates good internal consistency ($\alpha = .84$) in college samples (Fischer & Farina, 1995). Sample items include "I would want to get face-to-face psychological help if I were worried or upset for a long period of time" and "I might want to try online psychological counseling in the future." For the present study, parallel versions of the ATSPPH were used with items changed to reflect either face-to-face psychotherapy or online psychotherapy. One item was removed due to poor performance on both versions of the measure. Reliability using the 9-item scale was acceptable for both the face-to-face ($\alpha = .823$) and online versions ($\alpha = .799$).

Help-Seeking Intentions and Treatment Preference. A key interest in the present study is to contrast differences in help-seeking intentions and preference for face-to-face versus online psychotherapy. To characterize these differences, an adapted version of the General Help Seeking Questionnaire (GHSQ) was used to assess treatment intentions and preference (Wilson et al., 2005). The GHSQ presents three vignettes of common mental health problems including depression, stress, and anxiety. A sample vignette for anxiety is "In the past two weeks Jake has found it hard to wind down or relax and his mind has been racing. He's also been feeling pretty overwhelmed, 'twitchy', and irritable. He's been over-reacting to things that are going on."

Following the presentation of each vignette, participants' intention to seek help were assessed with the question, "If you were feeling like [Jake], how likely is it that you would seek help from the following sources?". Participants rated their intentions to seek help for: online psychotherapy (e.g., psychotherapy via Zoom), face-to-face psychotherapy (e.g., face-to-face psychotherapy at the Barnes Center), and informal support from intimate partners, friends, or parents. Items are rated on a 7-point scale from 1 (extremely unlikely) to 7 (extremely likely), with higher scores suggesting higher intentions. For each source of help (i.e., face-to-face or online psychotherapy), the average score based on the three vignettes is taken to reflect a person's overall intentions to seek treatment. One of the benefits of the GHSQ is that it can be modified to include specific sources of help based on the questions of a given research design while retaining its psychometric properties (Wilson & Deane, 2012). The GHSQ has demonstrated good reliability (α = .85 - .92) in studies of face-to-face psychotherapy and online counseling (Bird et al., 2018; McCall et al., 2020; Peynenburg et al., 2020; Wilson et al., 2005). The GHSQ demonstrated good reliability in the present sample for both face-to-face (α = .86) and online counseling (α = .88).

Treatment preference was assessed with one-item, adapted from methods by Wallin and colleagues (2018), following each of the three vignettes: "Imagine you had to choose between a) videoconferencing counseling, that is, counseling via Zoom from a private location, or b) face-to-face counseling, that is, in-person counseling at the Barnes Center." Responses ranged from 1 (Strongly prefer videoconferencing counseling) to 5 (Strongly prefer face-to-face counseling). The average of these three scores was taken to create an overall treatment preference variable, whereby a lower score reflects an overall preference for online psychotherapy. For the present study, treatment preference exhibited good reliability (α = .896).

Data Analysis

Statistical analyses were conducted using SPSS version 23 (SPSS Inc., Chicago, IL) and SPSS AMOS version 24 (SPSS Inc., Chicago, IL).

Power Analysis. *A priori* power analysis was conducted using methods by Fritz and Mackinnon (2007) to determine the sample size required to detect an effect. Effect sizes from previous research investigating variables of interest (e.g., attitudes, intentions, preference, help-seeking self-stigma, and public stigma) were used to guide the current study. To achieve the 0.8 minimum statistical power recommendation for mediation analysis (Fritz & Mackinnon, 2007), a total of 148 participants would be needed to detect a small-medium effect size. Analyses for Aim 3, which used linear regression to explore differences among subgroups, were underpowered due to the smaller sample sizes of sexual minority students (N = 53) and racial/ethnic minority students (N = 121). All other analyses were adequately powered (> .80).

Covariates. Covariates were selected *a priori* based on significance with outcome variables in previous research (Zhang et al., 2014). Per recommendations of other authors (Bursac., et al., 2008; Hosmer et al., 1997), variables associated with outcome variables of interest at p <.25 were retained for the primary analyses. This practice allows for identification of variables that may influence results despite not being statistically significant at traditional p-values of .05 (Hosmer & Lemeshow, 2000). Pearson's correlation coefficient was used for testing two continuous variables while point biserial correlation was used for testing a categorical variable with a continuous variable (e.g., sex and psychological distress). In the final models, sex, subjective norms, and problem recognition were retained as covariates.

Data Preparation. Data was inspected prior to conducting analyses. All variables exhibited kurtosis and skewness values between -1 and +1, thus no transformations were needed.

All variables were plotted to examine distributions, no multimodal distributions were observed. 51 participants were excluded due to failing the manipulation checks (e.g., not selecting “5” when instructed to). An additional 23 participants who failed to complete the survey were excluded, as was one participant who indicated they were aged 18-25 on the pre-screen but wrote in age 29 on the survey, bringing the final N to 350.

Primary Analyses. First, descriptive statistics and bivariate associations were used to characterize the sample and identify covariates.

Aim 1 was analyzed using descriptive statistics and paired-sample *t*-tests to compare differences in attitudes, intentions, preference, and acceptability between treatment modalities.

Aim 2 was analyzed using bootstrapping mediation analyses (PROCESS; Preacher & Hayes, 2008). First, two mediation models tested the effect of public stigma on the mediator (help-seeking self-stigma, a path), the effect of the mediator (help-seeking self-stigma) on the outcomes (face-to-face or online psychotherapy attitudes, b path), the effect of public stigma on the outcomes (face-to-face or online psychotherapy attitudes, c path), and the subsequent effect of attitudes on intentions. Next, an additional mediation model tested the effect of public stigma on the mediator (help-seeking self-stigma, a path), the effect of the mediator (help-seeking self-stigma) on the outcome (treatment preference, b path), and the effects of public stigma on the outcome (treatment preference, c path).

Aim 3 utilized paired samples t-tests and to explore differences between subgroups on variables of interest (Psychological Distress, Help-seeking Self-stigma, Public Stigma). Linear regression analyses were used to identify the relationship between public stigma and help-seeking self-stigma with treatment preference among subgroups. In separate models, treatment

preference was regressed on stigma, subgroup membership, and an interaction term (e.g., stigma x race or stigma x sexual minority status).

Aim 4 was analyzed using regressions and bootstrapping mediation analyses (PROCESS; Preacher & Hayes, 2008). Regressions tested the hypothesized relationships between psychological distress, help-seeking self-stigma, and both treatment intentions and preference. The first mediation model tested the effect of psychological distress on the mediator (help-seeking self-stigma, a path), the effect of the mediator (help-seeking self-stigma) on the outcome (treatment preference, b path), and the effects of psychological distress on the outcome (treatment preference, c path). Two additional mediation models tested the effect of psychological distress on the mediator (help-seeking self-stigma, a path), the effect of the mediator (help-seeking self-stigma) on the outcomes (online or face-to-face treatment intentions, b path), and the effects of psychological distress on the outcomes (online or face-to-face treatment intentions, c path).

Results

Descriptive Findings

Overall, students endorsed moderate levels of public stigma (M = 7.48, SD = 3.54) and help-seeking self-stigma (M = 23.44, SD = 6.62). With regard to mental health treatment, approximately half (51%) of the sample reported ever receiving treatment for a mental health problem, while 17% reported current mental health treatment. Additionally, 29% of the sample reported previous experience with online therapy. As shown in Table 3, the sample reported moderate levels of psychological distress based on DASS-21 scores (M = 15.93, SD = 12.12). With regard to problem recognition, 33% of the sample responded ‘yes’ to needing professional

treatment for a mental health problem, while 41% of the sample responded ‘yes’ to believing they currently have a mental health problem.

Aim 1: Comparing Online and Face-to-Face Psychotherapy

The goal of Aim 1 was to characterize the sample and compare differences in preference, attitudes, intentions, and acceptability between face-to-face and online psychotherapy. Contrary to core study hypotheses, findings indicate that the sample favored face-to-face treatment over online treatment. Face-to-face psychotherapy (M = 41.80, SD = 10.18) was rated more positively than online psychotherapy (M = 37.02, SD = 9.71) on both attitudes subscales of openness; $t(349) = 12.12$, $p < .01$ and value/need; $t(349) = 2.83$, $p < .01$. The same pattern held for treatment acceptability, as subjects rated face-to-face psychotherapy (M = 14.39, SD = 1.10) as more acceptable than online psychotherapy (M = 13.81, SD = 1.13); $t(349) = 9.87$, $p < .01$.

Based on responses to questions assessing treatment intentions (i.e., how likely they are to seek treatment), where higher scores indicate an increased likelihood and ‘4’ is neutral, participants reported greater intentions to seek treatment in-person (M = 4.43, SD = 1.66) rather than online (M = 3.67, SD = 1.68); $t(349) = 9.04$, $p < .01$. Descriptive data also confirmed that participants preferred face-to-face over online psychotherapy based on the General Help Seeking Questionnaire’s 1-5 scale of strongly prefer online counseling to strongly prefer face-to-face counseling (combined mean = 3.80, SD = 1.16). 27% of the sample strongly preferred face-to-face psychotherapy, compared to 5% who strongly preferred online psychotherapy.

Aim 2: Stigma, Attitudes, Intentions, and Preferences

Aim 2 examined whether public stigma relates to attitudes and intentions toward treatment through its impact on help-seeking self-stigma. Tables 4-5 provide comprehensive statistical information for each model and indirect association tested.

To test the relationship of public stigma to attitudes and intentions by way of help-seeking self-stigma, bootstrapping mediation analyses were used. In the first model, public stigma was associated with online attitudes (b = -.388; t = -2.80; $p < .05$) but not online intentions (b = -.01; t = -.09; p = .93). Based on 10,000 bootstrap resamples, there was an indirect association of public stigma on online intentions via help-seeking self-stigma and attitudes (Table 5: b = -.026; SE = .007; bootstrap 95% CI [-.040, -.014]). In the second model, public stigma was associated with face-to-face attitudes (b = -.53; t = -4.05; $p < .01$) but not face-to-face intentions (b = .00; t = -.13; p = .90). Based on 10,000 bootstrap resamples, there was an indirect association of public stigma on face-to-face intentions via help-seeking self-stigma and attitudes (Table 5: b = -.034; SE = .008; bootstrap 95% CI [-.052, -.020]). In the third model, public stigma was unrelated to treatment preference (b = -.02; t = -1.25; p = .21). 10,000 bootstrap resamples failed to detect an indirect association (Table 5: b = -.005; SE = .009; bootstrap 95% CI [-.022, .012]). Taken together, findings confirm that both online and face-to-face treatment intentions, but not treatment preference, are shaped by the relationship between public stigma and help-seeking self-stigma, such that as public stigma and help-seeking self-stigma increase, treatment intentions decrease.

Aim 3: Person-Specific Variables, Intentions, and Preference

The overarching goal of Aim 3 was to explore if students from marginalized groups experience greater stigma and clarify how stigma and group membership relate to treatment preference. A key hypothesis was that students of color (defined as non-White) and sexual minority students (defined as non-heterosexual or cisgender) will endorse greater stigma and prefer online therapy over face-to-face therapy. Tables 6 and 7 provide comprehensive statistical information.

Independent samples t-tests were performed to compare differences between students of color and White students on public stigma and help-seeking self-stigma. For analyses testing differences in public stigma, Levene's Test for Equality of Variances was significant, indicating there were differences in variance on public stigma between groups: $F(1,348) = 4.35$, $p < .05$. As such, Welch's t-test was computed, finding that students of color ($M = 8.15$, $SD = 3.88$) endorsed greater public stigma than White students ($M = 7.11$, $SD = 3.30$); $t(223.88) = 2.54$, $p < .05$. There were no significant differences in help-seeking self-stigma between students of color ($M = 24.20$, $SD = 6.01$) and White students ($M = 23.01$, $SD = 6.91$); $t(348) = 1.61$, $p = .11$.

A second series of independent samples t-tests were performed to compare differences in public stigma and help-seeking self-stigma between sexual minority students and heterosexual students. Contrary to the expectation that sexual minority students would endorse greater stigma, there were no differences in public stigma between sexual minority students ($M = 7.98$, $SD = 4.08$) compared to heterosexual students ($M = 7.39$, $SD = 3.44$); $t(348) = 1.12$, $p = .26$; or help-seeking self-stigma between sexual minority students ($M = 22.13$, $SD = 5.89$) and heterosexual students ($M = 23.68$, $SD = 6.72$); $t(348) = -1.58$, $p = .11$.

The next set of analyses regressed treatment preference on stigma, sexual minority status, and an interaction term (i.e., sexual minority status x stigma). There was a main effect of public stigma on treatment preference ($\beta = -.21$, $p < .05$) and a significant interaction between group membership and public stigma ($\beta = .099$, $p < .05$; $R^2\Delta = .02$; $p < .05$), such that for sexual minority students, greater public stigma was associated with a preference for online treatment. With regard to help-seeking self-stigma, there was no main effect of help-seeking

self-stigma on treatment preference, or any interaction between help-seeking self-stigma and group membership on treatment preference ($\beta = -.01$, $p = .68$).

Next, two models regressed treatment preference on either public or help-seeking self-stigma, race (i.e., non-White or White), and an interaction term (i.e., race x stigma). There were no main effects of either public stigma or help-seeking self-stigma and race on treatment preference. The interactions between public stigma and race on treatment preference, and help-seeking self-stigma and race on treatment preference failed to achieve significance.

The next series of analyses mirrored the previous analyses by regressing both face-to-face and online treatment intentions on public or help-seeking stigma, group membership (i.e., racial or sexual minority status), and an interaction term (i.e., group membership x stigma), in separate models. Contrary to expectations, results failed to detect a significant interaction between sexual minority status or race and public stigma or help-seeking self-stigma on either online or face-to-face treatment intentions. For the model regressing face-to-face intentions on public stigma and sexual minority status, a main effect was found of public stigma on face-to-face intentions ($\beta = -.26$, $p < .05$).

Aim 4: The association of Psychological Distress to Intentions and Preference

Aim 4 tested the hypothesis that greater psychological distress will be associated with greater intentions and a preference for online psychotherapy. Tables 8-9 provide comprehensive statistical information for each model and indirect associations tested.

In the first model, results confirmed that greater psychological distress was associated with a preference for online psychotherapy ($b = -.02$; $t = -2.69$; $p < .01$). Based on 10,000 bootstrap resamples, results failed to confirm an indirect association of psychological distress

on treatment preference via help-seeking self-stigma (Table 9: *b* = -.001; *SE* = .002; bootstrap 95% CI [-.004, .002]).

The next models tested whether psychological distress is associated with treatment intentions by way of help-seeking self-stigma. Contrary to predictions, psychological distress was not directly related to intentions for either online (*b* = -.01; t = -.86; *p* = .39) or face-to-face psychotherapy (*b* = -.01; t = -.88; *p* = .38). Results from 10,000 bootstrap resamples showed indirect associations of psychological distress on online intentions via help-seeking self-stigma (Table 9: *b* = -.009; *SE* = .003; bootstrap 95% CI [-.015, -.004]) and psychological distress on face-to-face intentions via help-seeking self-stigma (*b* = -.012; *SE* = .003; bootstrap 95% CI [-.018, -.006]). Results suggest that as psychological distress increases, so does help-seeking self-stigma, and in turn, intentions to seek both online and face-to-face treatment weaken.

Discussion

The present study sought to characterize college students' impressions of online versus in-person mental health treatment following the 2020 COVID-19 pandemic. With rates of mental health disorders and psychological distress at an all-time high, there is a need to identify strategies to increase mental health uptake, such as through the provision of online psychotherapy. Findings provide important data supporting the value of offering a range of services to college students. Overall, results did not support the prediction that students would prefer online treatment over in-person treatment. Although the advent of the COVID-19 pandemic resulted in the quick expansion of videoconferencing technology, the present study suggests that in-person treatment is still valued. Results also highlight how stigma negatively affects treatment-related attitudes and decisions, particularly among marginalized groups such as sexual minority individuals. Additionally, results suggest that greater psychological distress is

associated with greater help-seeking self-stigma, which reduces treatment intentions. This highlights the importance of wider mental health screening.

Primary Study Findings

Comparing Online and Face-to-face Psychotherapy. The current study is the first to present data collected during the COVID-19 pandemic that compares perceptions of face-to-face and online psychotherapy, as well to examine the role of key barriers to care such as stigma. Given the rapid growth in familiarity and use of online modalities during the pandemic, combined with the fact that a subset of college students report experiencing high levels of help-seeking stigma, it was predicted that students would generally prefer online treatment over in-person treatment and that online treatment would be viewed as less stigmatizing. Directly contrary to expectations, results suggest that for the majority of students, face-to-face therapy is a preferred format for receiving psychotherapy over online, video-based therapy. Undergraduate participants in our sample reported more positive attitudes and greater intentions to pursue face-to-face therapy relative to online therapy. Moreover, when presented with hypothetical scenarios, participants were more likely to select face-to-face therapy over online therapy as the preferred treatment modality.

These findings are not without precedent, as some authors have found students to endorse more positive attitudes toward face-to-face treatment (Bathje et al., 2014; Bird et al., 2020). Although exposure to videoconferencing platforms has increased due to the COVID-19 pandemic, findings suggest that increased exposure to videoconferencing platforms may not have translated into meaningful changes in attitudes and intentions for online therapy. Of note, data were collected from Fall 2022-Spring 2023, a time when most students had returned to in-person classes. Research conducted during the pandemic showed that, while students conferred

specific advantages through online learning, they reported more engagement and connection with in-person learning (Hollister et al., 2022). Treatment attitudes and intentions are multifaceted, and comfort and experience with a particular technology, in a different context, may not be enough to shape perceptions. It could be that personal experience with online psychotherapy is necessary, or simply that most students prefer to be in person for both learning and psychotherapy.

The Impact of Stigma on Treatment Attitudes, Intentions, and Preference. In addition to providing data on student's perceptions of treatment, the present study also explored whether stigma may negatively affect perceptions of face-to-face treatment but not online treatment. These differential findings were not confirmed: for both face-to-face and online treatment, greater public stigma was associated with more negative treatment attitudes and lower treatment intentions by way of indirect associations through help-seeking self-stigma. Stated more simply, a person's concerns that others will view them negatively for seeking either face-to-face or online treatment drives more negative views about oneself, which in turn leads to more negative thoughts about both forms of treatment. This finding is unexpected given that previous studies have found that stigma has a greater impact on attitudes and intentions for face-to-face treatment compared to online treatment (Bathje et al., 2014; Bird et al., 2020). Taken at face value, findings from the present study suggest that stigma remains a prominent barrier for treatment in general, regardless of treatment modality. Nonetheless, these results add to the body of literature linking both public stigma and help-seeking self-stigma to more negative treatment attitudes and intentions.

The present study also tested the hypothesis that public stigma would be associated with a preference for online treatment by way of help-seeking self-stigma. Results failed to confirm a

relationship between public stigma and treatment preference, or an indirect association through help-seeking self-stigma. This finding becomes clearer when considered alongside the finding that for sexual minority students, public stigma was associated with a preference for online treatment. Thus, it may be that public stigma only drives treatment preference under certain conditions, such as group identity. Perhaps stigma is a greater barrier to treatment for marginalized groups, where concerns about other's perceptions are a more constant stressor. Alternatively, the present study measured preference via a Likert-scale, which was only weakly associated with intentions, whereas previous studies have generally found moderate-strong correlations (Bird et al., 2020). Thus, the operationalization of preference in this study lacks convergent validity, which could explain this null finding.

Treatment Intentions and Preference Among Marginalized Groups. The present study also explored how stigma affects thoughts about treatment for students of color and sexual minority students. Results confirmed that sexual minority students and heterosexual students endorsed similar levels of public stigma, and for sexual minority students only, higher public stigma was associated with a preference for online therapy. For analyses of race, results showed that students of color endorsed greater public stigma than White students, but public stigma was unrelated to treatment preference. Contrary to expectations, subgroup analysis did not identify any differences in help-seeking self-stigma between subgroups or any relationship between help-seeking self-stigma and treatment preference.

First, the finding that public stigma, rather than help-seeking self-stigma, predicts treatment preference among sexual minority students is novel. For this population, it may be that concerns about others' perceptions of seeking treatment are more relevant than self-directed beliefs. Thus, systemic interventions that target public stigma may be especially important for

increasing treatment uptake. Second, the finding that greater endorsed public stigma is associated with a preference for online therapy provides clear support for the importance of online therapy to expand access to care among sexual minority persons with greater endorsed stigma. It may be particularly important that telehealth providers have adequate training in cultural competency to meet the needs of this population.

The Impact of Psychological Distress on Treatment Intentions and Preference. A primary focus of this project was to test the hypothesis that psychological distress is associated with treatment intentions and preference by way of an indirect association through help-seeking self-stigma. Contrary to the hypothesis, psychological distress was not directly associated with face-to-face or online treatment intentions. However, there was a significant indirect association of psychological distress on treatment intentions by way of help-seeking self-stigma, such that as distress and help-seeking self-stigma increased, intentions for both treatment modalities decreased. This finding suggests that while psychological distress may not exert a direct impact on treatment intentions, it may increase stigma, which reduces treatment intentions and uptake. Given the cross-sectional nature of this dataset, it is also possible that increased stigma results in increased distress.

With regard to treatment preference, greater distress was associated with a preference for online treatment. However, no indirect association of distress on treatment preference by way of help-seeking self-stigma was identified. Thus, there is support for the hypothesis that individuals with greater psychological distress may favor video treatment while failing to confirm the hypothesis that stigma acts intermediately between these two variables. Distress appears to exert a direct effect on treatment preference without regard to stigma, while influencing treatment intentions indirectly through stigma. Theoretically, intentions represent an individual's

motivation to engage in a specific behavior (Conner & Norman, 1996) while treatment preference reflects a more active, cognitive process that involves directly weighing the risks and benefits (Bowling & Ebrahim, 2001). One possible explanation is that when forced to decide, individuals with greater psychological distress will choose online treatment, but their actual motivation to engage in treatment is low. Alternatively, treatment preference was weakly associated with other study variables that are theoretically similar. Thus, it may be that the measure of treatment preference in this study is not sufficiently capturing the concept of treatment preference, which may have impacted results. Thus, findings that utilize intentions as the primary outcome, such as increased distress leading to increased help-seeking self-stigma, which in turn influences intentions, may be more credible. Future research is needed to tease apart construct differences between treatment intentions and treatment preference.

Implications for Clinical Science

Several important implications for clinical science emerged from this study. Students in this sample generally favored face-to-face treatment over video treatment, and 27% strongly preferred face-to-face treatment, suggesting that it may be important to provide students with a range of options to maximize treatment initiation. As the broader cultural milieu shifts to incorporate working from home and hybrid work arrangements (Smite et al., 2023), there is a need to establish a balance between patient and provider preference. Recent research collected during the COVID-19 pandemic has found that an increasing number of providers prefer telehealth over in-person services, particularly among those with private practices (Reilly et al., 2020; Waite et al., 2022). If this trend persists, there could eventually be a mismatch between patient and provider preference, creating an ethical dilemma for psychologists. Given that students rated both modalities as equally acceptable, it may be possible to both provide adequate

care and satisfy provider preferences by offering both in-person and online services. This could help increase uptake by giving students a choice of treatment approach, at the provider's discretion. On the other hand, some providers may question the value of online therapy or be resistant to adopting new technology (Waite et al., 2022). It will be important to provide support so these providers can offer a full range of services. While this study focused on the dichotomous choice of face-to-face or online treatment, it leaves unexplored many possible blended models. For example, a first session in-person might help to build rapport and give students a reference point for being in the room with the provider as well as the office itself. Students who choose to come in-person for services can also be afforded the opportunity to switch to an online session, should a scheduling conflict or illness arise.

In this sample, public stigma was associated with treatment attitudes and intentions for both treatment modalities, and this relationship was partially mediated by help-seeking self-stigma, such that as stigma increases, attitudes and intentions decrease. This finding highlights the importance of stigma as a barrier to care. Although other researchers have found that stigma may be a more salient barrier for face-to-face treatment, the present study found that stigma was a significant barrier for both treatment modalities. Help-seeking self-stigma appears to be a critical factor that can buffer or potentiate the impact of public stigma on treatment attitudes and intentions. These results add to the body of research which demonstrates that public stigma may influence help-seeking self-stigma, which work in tandem to reduce treatment attitudes and intentions. Additional longitudinal research is needed to explore the timeframe for public stigma to become internalized into greater help-seeking self-stigma, as suggested by other researchers (Corrigan & Miller, 2004; Vogel et al., 2009). This finding also has important implications for

general college mental health, as it demonstrates a public health need for campaigns to reduce stigma related to mental health and treatment seeking.

This study also found clear evidence that for sexual minority students, greater public stigma is associated with a preference for online treatment. This finding is novel and suggests that concerns about others' perceptions directly influence decisions about treatment, and that online treatment may be an effective strategy for increasing treatment uptake in this population. Directly addressing the role of stigma when advertising services or in public health campaigns may be a helpful strategy to address mental health disparities. Further, some researchers have found evidence that tailored treatment approaches can have a positive impact on marginalized groups (Schueller et al., 2019). One incidental finding that emerged from this study is that sexual minority students experienced significantly greater levels of psychological distress than their heterosexual/cisgender peers, highlighting the adversity experienced by this population, and the pressing need to expand access to treatment and provide culturally sensitive care.

Study Limitations & Future Directions

This study has several limitations related to study design, measurement, and sampling. First, the collected data were cross-sectional, which precludes any causal claims. Given the preponderance of cross-sectional analyses and relatively mixed findings in this area of research, there is a need for longitudinal data with attention given to explanatory variables. Future researchers may seek to understand the timeframe by which greater public stigma is internalized into greater help-seeking or mental health self-stigma. Second, in this study, treatment preference was weakly associated with treatment attitudes and intentions. It was expected that intentions and preference would correlate strongly as theoretically they represent distinct, but highly similar constructs, and previous research has generally found moderate-strong

correlations (Bird et al., 2020). Thus, the measure of treatment preference in this study may not be sufficient to capture the nuanced decision-making process. As there are not widely used measures of treatment preference in the extant literature, there is a need to develop a measure with more robust psychometric properties.

This study focused on psychological distress, rather than DSM-5 diagnoses or specific clusters of symptoms. Future research should consider looking at how different symptom presentations or clinical diagnoses impact treatment intentions or preference. Additionally, the majority of this sample identified as White, cisgender, and heterosexual. Research with larger samples of sexual minority students and students of color is needed to draw more firm conclusions. Finally, the present study consisted of mostly 1st and 2nd year college students, from a private university in the Northeast, participating in an undergraduate research pool for course credit. Although 40% of the sample endorsed previous mental health treatment, it is unknown how many students were actively treatment seeking. While this number is consistent with data from studies collected during the COVID-19 pandemic (ACHA, 2022), results may not generalize to students who are naïve to treatment, other universities or colleges, community samples, or geographic regions.

These findings add to the literature linking stigma to mental health treatment perceptions and highlight how stigma guides decisions about treatment. Study strengths include multiple measures of stigma, testing of novel hypotheses, and practical implications for expanding care among marginalized groups. Future research should expand on the cognitive processes underlying treatment decisions, and to what extent stigma is a salient or latent factor. Qualitative work could also elucidate what factors contribute to more favorable perceptions of face-to-face treatment, to further improve the quality of care delivered online.

Tables

Table 1.
Demographic Information

Variable	(n)	(%)	M	SD
Age (years)			18.65	.965
Sex				
Male	152	43.4		
Female	198	56.6		
Sexual Orientation				
Asexual	7	2.0		
Bisexual	35	10		
Gay	7	2.0		
Another identity	5	1.4		
Straight/Heterosexual	296	84.6		
Race				
American Indian/Alaskan	3	0.9		
Hawaiian or Pacific Islander	19	5.4		
African American	26	7.4		
Asian	60	17.1		
White	225	64.3		
Other	17	4.9		
Full-time student status	348	99.4		
Social fraternity or sorority member	45	12.9		
Lives off-campus	38	10.9		
Any religious affiliation	172	49.1		
Class standing (Freshman)	271	77.4		
GPA (A's)	240	68.6		
Current mental health treatment	61	17.4		
Prior mental health treatment	179	51.1		
Experience with online therapy	102	29.1		
COVID-19 Anxiety			5.503	1.885
Problem Recognition (current problem = yes)	144	41.1		
Problem Recognition (need for treatment = yes)	116	33.1		

Table 2.
Summary Statistics & Correlation Coefficients

	M	SD	1	2	3	4	5	6	7	8	9	10
1.DASS-21	15.93	12.12	-									
2.PSOSH	7.48	3.54	.33 [b]	-								
3.SSOSH	23.44	6.62	.14 [a]	.42 [b]	-							
4.Attitudes – V	37.02	9.71	.028	-.29 [b]	-.42 [b]	-						
5.Attitudes – F	41.80	10.18	-.011	-.38 [b]	-.55 [b]	.67 [b]	-					
6.TAAS – V	13.81	1.13	-.14 [a]	-.30 [b]	-.43 [b]	.58 [b]	.37 [b]	-				
7.TAAS – F	14.39	1.10	-.15 [b]	-.43 [b]	-.56 [b]	.42 [b]	.61 [b]	.50 [b]	-			
8.Intentions – V	3.67	1.68	.02	-.21 [b]	-.34 [b]	.60 [b]	.39 [b]	.59 [b]	.29 [b]	-		
9.Intentions – F	4.43	1.66	-.03	-.24 [b]	-.39 [b]	.37 [b]	.57 [b]	.26 [b]	.53 [b]	.55 [b]	-	
10.GHSQ	3.80	1.16	-.16 [b]	-.08	-.16 [b]	-.16 [b]	.19 [a]	-.21 [b]	.35 [b]	-.35 [b]	.30 [b]	-

Note: [a] $p < .05$, [b] $p < .01$. DASS-21 = The Depression, Anxiety and Stress Scale - 21 Items, PSOSH = Perceptions of Stigmatization by Others for Seeking Help Scale, SSOSH = Self-Stigma Of Seeking Psychology Help Scale. TAAS = Treatment Acceptability and Adherence Scale. GHSQ – General Help Seeking Questionnaire.

Table 3.
Paired Sample t-tests: Differences between Face-to-face and Videoconferencing Psychotherapy

	Mean difference	t	Sig (2-tailed)
Acceptability	.586	9.865	**.000**
Openness	4.194	12.120	**.000**
Value/Need	.586	2.828	**.005**
Intentions	.762	9.041	**.000**

TAAS = Treatment Acceptability and Adherence Scale. Openness, Value/Need = The Attitudes Toward Seeking Professional Psychological Help (ATSPPH) – Openness & Value/Need subscales. Intentions = GHSQ 3-item 5-point Likert-scale.

Table 4.

Mediation Path Results for Indirect Associations: Stigma, Attitudes, Intentions

Path	β	*SE*	*T*	*p*
Public Stigma → Help-Seeking Stigma → Attitudes → Intentions				
(a) Public → Help-Seeking	.712	.090	7.922	**.000**
(b) Help-Seeking → Attitudes(V)	-.408	.077	-5.320	**.000**
(c) Public → Attitudes(V)	-.388	.139	-2.795	**.000**
(d) Attitudes(V) → Intentions(V)	.088	.009	10.088	**.000**
(a) Public → Help-Seeking	.712	.090	7.922	**.000**
(b) Help-Seeking → Attitudes(F)	-.603	.073	-8.285	**.000**
(c) Public → Attitudes(F)	-.534	.132	-4.053	**.000**
(d) Attitudes(F) → Intentions(F)	.080	.009	8.504	**.000**
Path	β	*SE*	*T*	*p*
Public Stigma → Help-Seeking Stigma → Preference				
(a) Public → Help-Seeking	.712	.090	7.922	**.000**
(b) Help-Seeking → Preference	-.007	.011	-.673	.502
(c) Public → Preference	-.024	.019	-1.251	.212

Table 5.

Mediation Bootstrap Estimates of the 95% CIs for the Indirect Associations: Stigma, Attitudes, Intentions

Model	β	*SE*	CI (LB)	CI (UB)
Public Stigma → Help-Seeking Stigma → Attitudes → Intentions				
Public → Help-Seeking → Intentions(V)	-.015	.011	**-.036**	.005
Public → Attitudes(V) → Intentions(V)	-.034	.011	**-.056**	**-.013**
Public → Help-Seeking → Attitudes(V) → Intentions(V)	-.026	.007	**-.040**	**-.014**
Public → Help-Seeking → Intentions(F)	-.020	.011	-.043	.002
Public → Attitudes(F) → Intentions(F)	-.042	.012	**-.068**	**-.019**
Public → Help-Seeking → Attitudes(F) → Intentions(F)	-.034	.008	**-.052**	**-.020**
Public Stigma → Help-Seeking Stigma → Preference				
1 Public Stigma → Help-Seeking Stigma → Preference	-.005	.009	-.022	.012

Note: CI (LB) and CI (UB) represent the lower and upper bound of a 95% bootstrapped confidence interval with 10,000 resamples. Bold = 95% CI does not include 0.

Table 6.

Independent Samples T-tests: Subgroup Differences

	Students of Color		White			
	M	SD	M	SD	*t*	Cohen's *d*
DASS-21	17.296	12.361	15.178	11.951	1.569	0.174
PSOSH	8.152	3.875	7.111	3.299	**2.536***	0.290
SSOSH	24.200	6.007	23.013	6.908	1.612	0.190
	Sexual & Gender Minority		Heterosexual			
	M	SD	M	SD	*t*	Cohen's *d*
DASS-21	23.167	14.095	14.615	11.264	**4.923****	0.673
PSOSH	7.982	4.082	7.392	3.439	1.124	0.156
SSOSH	22.130	5.892	23.676	6.721	-1.583	0.248

Note: * = $p < .05$, ** = $p < .001$. DASS-21 = The Depression, Anxiety and Stress Scale - 21 Items, PSOSH = Perceptions of Stigmatization by Others for Seeking Help Scale, SSOSH = Self-Stigma Of Seeking Psychology Help Scale. *Note.* N for White students = 225, N for Students of Color = 125. N for Straight students = 296, N for Sexual Minority students = 54.

Table 7.

Regression Results: Interaction of Stigma and Group Membership on Treatment Preference

Model	*B*	*SE*	*t*	*p*	R2Δ
Model 1a. SSOSH (Help-Seeking Self-Stigma) – Treatment Preference					
SSOSH > Preference	.010	.055	.176	.860	
SGM > Preference	.357	.674	.529	.597	
SSOSH*SGM > Preference	-.012	.292	-4.08	.684	.001
Model 1b. PSOSH (Public Stigma) – Treatment Preference					
PSOSH > Preference	-.206	.080	-2.557	**.011***	
SGM > Preference	-.711	.387	-1.838	.067	
PSOSH*SGM > Preference	.099	.044	2.256	**.025***	**.015***
Model 2a. SSOSH (Help-Seeking Self-Stigma) – Treatment Preference					
SSOSH > Preference	-.054	.037	-1.477	.141	
Race > Preference	-.554	.513	-1.080	.281	
SSOSH*Race > Preference	.025	.021	1.188	.346	.004
Model 2b. PSOSH (Public Stigma) – Treatment Preference					
PSOSH > Preference	-.104	.059	-1.749	.081	
Race > Preference	-.351	.309	-1.136	.257	
PSOSH*Race > Preference	.048	.036	1.323	.187	.005

Note: * = p < .05. PSOSH = Perceptions of Stigmatization by Others for Seeking Help Scale, SSOSH = Self-Stigma Of Seeking Psychology Help Scale. N for White students = 224, N for Students of Color = 125. N for Straight students = 296, N for Sexual Minority students = 53.

Table 8.

Mediation Path Results for Indirect Associations: Distress, Stigma, Intentions & Preference

Path	*b*	*SE*	*t*	*p*
Psychological Distress → Help-Seeking Stigma → Intentions				
(a) DASS → Help-Seeking	.139	.030	4.710	**.000**
(b) Help-Seeking → Intentions(V)	-.062	.013	-4.642	**.000**
(c) DASS → Intentions(V)	-.007	.008	-.857	.392
(a) DASS → Help-Seeking	.139	.030	4.710	**.000**
(b) Help-Seeking → Intentions(F)	-.083	.013	-6.264	**.000**
(c) DASS → Intentions(F)	-.007	.007	-.880	.379
Path	*b*	*SE*	*T*	*p*
Psychological Distress → Help-Seeking Stigma → Preference				
(a) DASS → Help-Seeking	.139	.030	4.710	**.000**
(b) Help-Seeking → Preference	-.006	.010	-.574	.566
(c) DASS → Preference	-.015	.006	-2.693	**.007**

Table 9.

Mediation Bootstrap Estimates of the 95% CIs for the Indirect Associations: Distress, Stigma, Intentions & Preference

Model	β	*SE*	CI (LB)	CI (UB)
Psychological Distress → Help-Seeking Stigma → Intentions				
DASS → Help-Seeking Stigma → Intentions(V)	-.009	.003	**-.015**	**-.004**
DASS → Help-Seeking Stigma → Intentions(F)	-.012	.003	**-.018**	**-.006**
Psychological Distress → Help-Seeking Stigma → Preference				
DASS → Help-Seeking Stigma → Preference	-.001	.002	-.004	.002

Note: CI (LB) and CI (UB) represent the lower and upper bound of a 95% bootstrapped confidence interval with 10,000 resamples. Bold = 95% CI does not include 0.

Appendices

Appendix A. Study Description & Demographics

Thank you for your interest in this study! This study will ask you to complete questionnaires related to demographic information, your mental health, and treatment.

1. What is your age? _____
2. What is your sex assigned at birth?
    a. Male
    b. Female
3. What is your gender identity?
    a. Male
    b. Female
    c. Transgender Woman
    d. Transgender Man
    e. Another identity – please specify
4. What is your sexual orientation?
    a. Asexual
    b. Bisexual
    c. Gay
    d. Straight
    e. Queer
    f. Another identity – please specify
5. Do you have a religious affiliation?
    a. No
    b. Yes
    c. What is your religious affiliation? _____
6. How often do you attend religious services (for example, church, Sunday school, or bible school)?
    a. Never
    b. Rarely
    c. At least once a month
    d. At least once a week
7. What is your country of origin?
8. Are you a U.S citizen?
    a. Yes
    b. No
    c. If no, indicate country of citizenship: _____
9. What is your preferred group identity?
    a. White
    b. African American or Black
    c. Native American or Alaskan Native

   d. Asian or Asian American
   e. Hispanic or Latino/a/x
   f. Native Hawaiian or Pacific Islander
   g. Biracial or Multiracial
   h. Another identity – specify
10. What is your year in school?
   a. 1st year
   b. 2nd year
   c. 3rd year
   d. 4th year
   e. 5th year or greater
11. How would you describe your grades in school?
   a. All A's
   b. Mostly A's
   c. Mostly B's
   d. Mostly C's
   e. Mostly D's
   f. Mostly F's
12. What is your major? _____
13. Are you a full time or part time student?
   a. Full-time
   b. Part-time
14. Do you live on campus or off campus?
   a. On campus
   b. Off campus
15. Where do you currently live?
   a. Residing in a dormitory
   b. Apartment rental
   c. In a home or condo that you own
   d. Living with relatives
16. Which of the following best describes your current living arrangement?
   a. Living alone
   b. Living with one or more roommates
   c. Living with significant other
   d. Living with relatives other than significant other (e.g., parents)
   e. Living with your children
17. What is your current employment status?
   a. Not working
   b. Full-time employment
   c. Part-time employment
18. Are you a member of a social fraternity or sorority?
   a. No
   b. Yes

Appendix B.

The Depression Anxiety and Stress Scale-21

DASS-21. Please read each statement and select a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found it hard to wind down
2	I was aware of dryness of my mouth
3	I couldn't seem to experience any positive feeling at all
4	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)
5	I found it difficult to work up the initiative to do things
6	I tended to over-react to situations
7	I experienced trembling (e.g., in the hands)
8	I felt that I was using a lot of nervous energy
9	I was worried about situations in which I might panic and make a fool of myself
10	I felt that I had nothing to look forward to
11	I found myself getting agitated
12	I found it difficult to relax
13	I felt downhearted and blue
14	I was intolerant of anything that kept me from getting on with what I was doing
15	I felt I was close to panic
16	I was unable to become enthusiastic about anything
17	I felt I wasn't worth much as a person
18	I felt that I was rather touchy
19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)
20	I felt scared without any good reason
21	I felt that life was meaningless

Appendix C.

The Self-Stigma of Seeking Psychological Help (SSOSH)

INSTRUCTIONS: People at times find that they face problems that they consider seeking help for. This can bring up reactions about what seeking help would mean. Please use the 5-point scale to rate the degree to which each item describes how you might react in this situation.

1 = Strongly Disagree 2 = Disagree 3 = Agree & Disagree Equally 4 = Agree 5 = Strongly Agree

1. I would feel inadequate if I went to a therapist for psychological help.
2. My self-confidence would NOT be threatened if I sought professional help.
3. Seeking psychological help would make me feel less intelligent.
4. My self-esteem would increase if I talked to a therapist.
5. My view of myself would not change just because I made the choice to see a therapist.
6. It would make me feel inferior to ask a therapist for help.
7. I would feel okay about myself if I made the choice to seek professional help.
8. If I went to a therapist, I would be less satisfied with myself.
9. My self-confidence would remain the same if I sought professional help for a problem I could not solve.
10. I would feel worse about myself if I could not solve my own problems.
11. *If you're reading this question, please choose Strongly Agree (5).*

Items 2, 4, 5, 7, and 9 are reverse scored.

Appendix D.

Perception of Stigmatization by Others for Seeking Help Scale (PSOSH)

INSTRUCTIONS: Imagine you had an emotional or personal issue that you could not solve on your own. If you sought professional psychological services for this issue, to what degree do you believe that the people you interact with would _____.

1 = Not at all 2 = A little 3 = Some 4 = A lot 5 = A great deal

1. React negatively to you

2. Think bad things of you

3. See you as seriously disturbed

4. Think of you in a less favorable way

5. Think you posed a risk to others

Scoring: add items 1-5.

Appendix E.

Attitudes Toward Seeking Professional Help – Face-to-face

Instructions

Read each statement carefully and indicate your degree of agreement using the scale below. In responding, please be completely candid.

0 = Disagree 1 = Partly disagree 2 = Partly agree 3 = Agree

_____ 1. If I believed I was having a "mental breakdown", my first inclination would be to get professional attention via videoconferencing.

_____ 2. The idea of talking about problems with a counselor or psychologist via videoconferencing strikes me as a poor way to get rid of emotional conflicts.

_____ 3. If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in videoconferencing counseling.

_____ 4. There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears without resorting to professional help via videoconferencing.

_____ 5. I would want to get videoconferencing psychological help if I were worried or upset for a long period of time.

_____ 6. I might want to have videoconferencing psychological counseling in the future.

_____ 7. A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help via videoconferencing.

_____ 8. Considering the time and expense involved in videoconferencing counseling, it would have doubtful value for a person like me.

_____ 9. A person should work out their own problems, getting videoconferencing psychological counseling would be a last resort.

_____ 10. Personal and emotional troubles, like many things, tend to work out by themselves.

Scoring

Reverse score items 2, 4, 8, 9, and 10, then add up the ratings to get a sum. Openness (items 1, 3, 5, 6, 7), Value and Need (items 2, 4, 8, 9, 10).

Appendix F.

Attitudes Toward Seeking Professional Help - Videoconferencing

Instructions

Read each statement carefully and indicate your degree of agreement using the scale below. In responding, please be completely candid.

0 = Disagree 1 = Partly disagree 2 = Partly agree 3 = Agree

_____ 1. If I believed I was having a “mental breakdown”, my first inclination would be to get face-to-face professional attention.

_____ 2. The idea of talking about problems face-to-face with a counselor or psychologist strikes me as a poor way to get rid of emotional conflicts.

_____ 3. If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in face-to-face counseling.

_____ 4. There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears without resorting to face-to-face professional help.

_____ 5. I would want to get face-to-face psychological help if I were worried or upset for a long period of time.

_____ 6. I might want to have face-to-face psychological counseling in the future.

_____ 7. A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with face-to-face professional help.

_____ 8. Considering the time and expense involved in face-to-face counseling, it would have doubtful value for a person like me.

_____ 9. A person should work out their own problems, getting face-to-face psychological counseling would be a last resort.

_____ 10. Personal and emotional troubles, like many things, tend to work out by themselves.

Scoring

Reverse score items 2, 4, 8, 9, and 10, then add up the ratings to get a sum. Openness (items 1, 3, 5, 6, 7), Value and Need (items 2, 4, 8, 9, 10).

Appendix G.

Treatment Acceptability and Adherence Scale – Face-to-Face Counseling

For the following questionnaire, please read the treatment description below.

Face-to-face counseling consists of counseling/therapy *in-person* where you would go to the Barnes Counseling Center to meet *in-person* with your therapist. Counseling provides an opportunity to talk confidentiality with a mental health professional.

Please respond to the treatment that you just read about by indicating your agreement with each of the below statements.

---

1. **If I began face-to-face counseling, I would be able to complete it.**

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

2. **If I participated in face-to-face counseling, I would be able to adhere to its requirements.**

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

3. **I would find face-to-face counseling exhausting.**

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

4. **It would be distressing to me to participate in face-to-face counseling.**

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

5. **Overall, I would find face-to-face counseling intrusive.**

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

6. **Face-to-face counseling would provide effective ways to help me cope with my mental health problems.**

1	2	3	4	5	6	7

Disagree strongly	Neither agree nor disagree	Agree strongly

7. I would prefer to try another type of psychological treatment instead of this one.

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

8. I would prefer to receive medication for my mental health problems instead of face-to-face counseling.

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

9. I would recommend face-to-face counseling to a friend with a similar problem (i.e., a mental health problem).

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

10. If I began face-to-face counseling, I would likely drop out.

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

11. I would have concerns about my privacy if I began face-to-face counseling.

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

Appendix H.

Treatment Acceptability and Adherence Scale – Videoconferencing Counseling

For the following questionnaire, please read the treatment description below.

Videoconferencing counseling consists of counseling/therapy *online via Zoom*, where you would join a *secure Zoom meeting* from a private location to meet with your therapist for an *online session*. Counseling provides an opportunity to talk confidentiality with a mental health professional.

Please respond to the treatment that you just read about by indicating your agreement with each of the below statements.

---

1. **If I began videoconferencing counseling, I would be able to complete it.**

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

2. **If I participated in videoconferencing counseling, I would be able to adhere to its requirements.**

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

3. **I would find videoconferencing counseling exhausting.**

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

4. **It would be distressing to me to participate in videoconferencing counseling.**

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

5. **Overall, I would find videoconferencing counseling intrusive.**

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

6. **Videoconferencing counseling would provide effective ways to help me cope with my mental health problems.**

1	2	3	4	5	6	7

Disagree strongly			Neither agree nor disagree			Agree strongly

7. I would prefer to try another type of psychological treatment instead of this one.

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

8. I would prefer to receive medication for my mental health problems instead of videoconferencing counseling.

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

9. I would recommend videoconferencing counseling to a friend with a similar problem (i.e., a mental health problem).

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

10. If I began videoconferencing counseling, I would likely drop out.

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

11. I would have concerns about my privacy if I began videoconferencing counseling.

1	2	3	4	5	6	7
Disagree strongly			Neither agree nor disagree			Agree strongly

Appendix I.

General Help Seeking Questionnaire – Vignette Version

Question 1 = Stress

1. In the past two weeks Jake has found it hard to wind down or relax and his mind has been racing. He's also been feeling pretty overwhelmed, "twitchy", and irritable. He's been over-reacting to things that are going on and has been avoiding others. He has been having trouble focusing and is starting to feel run down.

Imagine that over the past two weeks, you have found yourself feeling this way, **how likely is it that you would seek help from each of the following sources?**

Please indicate your response by selecting the number that best describes your intention to seek help from each help source that is listed.

1 = Extremely Unlikely 3 = Unlikely 5 = Likely 7 = Extremely Likely

a. Videoconferencing counseling (*online via Zoom*, where you would join a *secure Zoom meeting* from a private location to meet with your therapist for an *online session).*	1	2	3	4	5	6	7
b. Face-to-face counseling (*in-person* where you would go to the Barnes Counseling Center to meet *in-person* with your therapist).	1	2	3	4	5	6	7
c. Parent or other relative	1	2	3	4	5	6	7
d. Friend	1	2	3	4	5	6	7
e. Intimate partner/significant other	1	2	3	4	5	6	7

f. For the situation described above, imagine you had to choose between a) videoconferencing counseling, that is, counseling via Zoom from a private location, or b) face-to-face counseling, that is, in-person counseling at the Barnes Center.

Please indicate whether you would prefer videoconferencing counseling or face-to-face counseling by selecting the appropriate number below.

1. Strongly prefer Videoconferencing counseling from a private location (e.g., counseling with a Barnes Center therapist conducted via Zoom)
2. Slightly prefer Videoconferencing counseling from a private location (e.g., counseling with a Barnes Center therapist conducted via Zoom)
3. Prefer both equally

4. Slightly prefer Face-to-face counseling (e.g., face-to-face counseling with a therapist at the Barnes Center)
5. Strongly prefer Face-to-face counseling (e.g., face-to-face counseling with a therapist at the Barnes Center)

Question 2 = Anxiety

2. Over the past two weeks Jane has felt worried or scared without any particular reason, and her hands have trembled a lot even though she doesn't drink coffee. On a few occasions she has felt close to panic. At times, she has noticed that her heart was pounding and her mouth was very dry
Imagine that over the past two weeks, you have found yourself feeling this way, how likely is it that you would seek help from each of the following sources? Please indicate your response by selecting the number that best describes your intention to seek help from each help source that is listed. **1 = Extremely Unlikely 3 = Unlikely 5 = Likely 7 = Extremely Likely**

a. Videoconferencing counseling (*online via Zoom*, where you would join a *secure Zoom meeting* from a private location to meet with your therapist for an *online session).*	1	2	3	4	5	6	7
b. Face-to-face counseling (*in-person* where you would go to the Barnes Counseling Center to meet *in-person* with your therapist).	1	2	3	4	5	6	7
c. Parent or other relative	1	2	3	4	5	6	7
d. Friend	1	2	3	4	5	6	7
e. Intimate partner/significant other	1	2	3	4	5	6	7

f. For the situation described above, imagine you had to choose between a) videoconferencing counseling, that is, counseling via Zoom from a private location, or b) face-to-face counseling, that is, in-person counseling at the Barnes Center.

Please indicate whether you would prefer videoconferencing counseling or face-to-face counseling by selecting the appropriate number below.

1. Strongly prefer Videoconferencing counseling from a private location (e.g., counseling with a Barnes Center therapist conducted via Zoom)
2. Slightly prefer Videoconferencing counseling from a private location (e.g., counseling with a Barnes Center therapist conducted via Zoom)
3. Prefer both equally

4. Slightly prefer Face-to-face counseling (e.g., face-to-face counseling with a therapist at the Barnes Center)
5. Strongly prefer Face-to-face counseling (e.g., face-to-face counseling with a therapist at the Barnes Center)

Question 3 = Depression

3. John has been feeling unusually sad and gloomy for most of the day for nearly two weeks. He feels tired all the time and doesn't feel like eating. He is having difficulty concentrating on his schoolwork and his grades have dropped. He has put off making decisions and feels that even day-to-day tasks are too much for him. To him, life feels meaningless, and he doesn't feel he is worth much as a person.
Imagine that over the past two weeks, you have found yourself feeling this way, how likely is it that you would seek help from each of the following sources? Please indicate your response by selecting the number that best describes your intention to seek help from each help source that is listed. **1 = Extremely Unlikely 3 = Unlikely 5 = Likely 7 = Extremely Likely**

a. Videoconferencing counseling (*online via Zoom*, where you would join a *secure Zoom meeting* from a private location to meet with your therapist for an *online session).*	1	2	3	4	5	6	7
b. Face-to-face counseling (*in-person* where you would go to the Barnes Counseling Center to meet *in-person* with your therapist).	1	2	3	4	5	6	7
c. Parent or other relative	1	2	3	4	5	6	7
d. Friend	1	2	3	4	5	6	7
e. Intimate partner/significant other	1	2	3	4	5	6	7

f. For the situation described above, imagine you had to choose between a) videoconferencing counseling, that is, counseling via Zoom from a private location, or b) face-to-face counseling, that is, in-person counseling at the Barnes Center.

Please indicate whether you would prefer videoconferencing counseling or face-to-face counseling by selecting the appropriate number below.

1. Strongly prefer Videoconferencing counseling from a private location (e.g., counseling with a Barnes Center therapist conducted via Zoom)
2. Slightly prefer Videoconferencing counseling from a private location (e.g., counseling with a Barnes Center therapist conducted via Zoom)

3. Prefer both equally
4. Slightly prefer Face-to-face counseling (e.g., face-to-face counseling with a therapist at the Barnes Center)
5. Strongly prefer Face-to-face counseling (e.g., face-to-face counseling with a therapist at the Barnes Center)

Appendix J.

Help-Seeking Decision Item

Would you like to be directed to the University Student Counseling Service website, where you can learn more about seeking help from a mental health counselor?

Appendix K.

Coronavirus Anxiety Scale (CAS)

CAS

How often have you experienced the following activities over the last 2 weeks?		*Not at all*	*Rare, less than a day or two*	*Several days*	*More than 7 days*	*Nearly every day over the last 2 weeks*
1.	I felt dizzy, lightheaded, or faint, when I read or listened to news about the coronavirus.	0	1	2	3	4
2.	I had trouble falling or staying asleep because I was thinking about the coronavirus.	0	1	2	3	4
3.	I felt paralyzed or frozen when I thought about or was exposed to information about the coronavirus.	0	1	2	3	4
4.	I lost interest in eating when I thought about or was exposed to information about the coronavirus.	0	1	2	3	4
5.	I felt nauseous or had stomach problems when I thought about or was exposed to information about the coronavirus.	0	1	2	3	4
	Column Totals	_____ +	_____ +	_____ +	_____ +	_____ +

Total Score _____

Appendix L.
Subjective Norms Scale

For the following questions, imagine if you were experiencing a mental health problem, such as anxiety, stress, or depression, in the next few months. Please rate the extent to which you agree or disagree with the following statements. Each statement refers to your perception of what your family and friends believe about mental health and mental health treatment.

	Strongly disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
Most people who are important to me would think that *I should* seek help from a therapist in the next 3 months.							
Most people who are important to me would expect me to seek help from a therapist in the next 3 months.							
The people in my life whose opinions I value would *approve* of my seeking help from a therapist in the next 3 months.							
I would feel under social pressure to seek help from a therapist in the next 3 months.							
People who mean something to me would think I should seek help from a therapist in the next 3 months.							
People who are important to me would wish for me to seek help from a therapist in the next 3 months.							
Most people who are important to me, if *they* were dealing with this issue, would seek help from a therapist in the next 3 months.							

The people in my life whose opinions I value, if *they* were dealing with this issue, would *seek help* from a therapist in the next 3 months.							
People who mean something to me, if *they* were dealing with this issue, would seek help from a therapist in the next 3 months.							
People who are important to me, if *they* were dealing with this issue, would seek help from a therapist in the next 3 months.							
If you're reading this question, please choose Strongly Agree.							

Appendix M.
Mental Health

1. Have you **ever** received help from a professional counselor or doctor in response to stress or other mental health difficulties?
    a. If yes, what type of treatment (check all that apply)?
        i. Psychiatric medication management
        ii. Psychotherapy/Counseling
        iii. Other (please specify): _____
    b. No
2. Are you **currently** receiving help from a professional counselor or doctor in response to stress or other mental health difficulties?
    a. If yes, what type of treatment (check all that apply)?
        i. Psychiatric medication management
        ii. Psychotherapy/Counseling
        iii. Other (please specify): _____
    b. No
3. Have you **ever** participated in a psychotherapy or counseling session that was conducted via videoconferencing (i.e., Zoom, Webex, Doxy.me, etc.)?
    a. Yes
    b. No

Mental health treatment (adapted from ACHA, 2018)

1. Have you received treatment for any mental health concern by a healthcare or mental health professional within the last 12 months? Check all that apply:

	No	Yes
ADD/ADHD – Attention Deficit/Hyperactivity Disorder	○	○
Anxiety Disorder (e.g., Social Anxiety Disorder, Generalized Anxiety Disorder)	○	○
Bipolar and Related Conditions (e.g., Bipolar I, II)	○	○
Depressive Disorder (e.g., Major Depressive Disorder, Persistent Depressive Disorder)	○	○
Personality Disorder (e.g., Borderline Personality Disorder)	○	○

Obsessive-Compulsive and related conditions (e.g., OCD, Body Dysmorphia)	○	○
PTSD (Posttraumatic Stress Disorder)	○	○
Schizophrenia, Schizoaffective disorder, or other thought disorder.	○	○
Traumatic brain Injury (TBI)	○	○
Other mental health disorder	○	○

Mental Health Problem Recognition

(1) Do you believe that you need treatment of any kind (including professional help, self-help, and alternative treatments) for: feeling depressed, anxious, or "stressed out," personal problems (like when a loved one dies or when there are problems at work), family problems, needing help with drug or alcohol use, or for mental or emotional illness?
   a. Yes
   b. No
   c. Unsure

(2) In your opinion, are any of the above concerns a problem for you?
   a. Yes
   b. No
   c. Unsure

The Alcohol Use Disorders Identification Test (AUDIT)

Now I am going to ask you some questions about your use of alcoholic beverages during this past year.
A drink is defined as follows: a small (8oz; ½ pint) glass of beer, a single shot or measure of liquor or spirits, or a single glass of wine
Read questions as written and record the answers.

1 How often do you have a drink containing alcohol?
If "Never", Skips to Question 9

○	[0] - Never
○	[1] - Monthly or less
○	[2] - 2 to 4 times a month
○	[3] - 2 to 3 times a week

○	[4] - 4 or more times a week
○	Don't know
○	Refuse to answer

2 How many drinks containing alcohol do you have on a typical day when you are drinking?

○	[0] - 1 or 2	○	[1] - 3 or 4	○	[2] - 5 or 6	○	[3] - 7, 8, or 9	○	[4] - 10 or more
○	Don't know	○	Refuse to answer						

3 How often do you have six or more drinks on one occasion?
Skip to Questions 9 and 10 if Total Score for Questions 2 and 3 = [0](i.e., the participant answered "1-2' drinks to q2 and 'Never' to q3)

○	[0] - Never	○	[1] - Less than monthly	○	[2] - Monthly	○	[3] - Weekly	○	[4] - Daily or almost daily
○	Don't know	○	Refuse to answer						

	Never - [0]	Less than monthly - [1]	Monthly - [2]	Weekly - [3]	Daily or almost daily - [4]	Don't know	Refuse to answer
4 How often during the last year have you found that you were not able to stop drinking once you had started?	○	○	○	○	○	○	○
5 How often during the last year have you failed to do what was normally expected from you because of drinking?	○	○	○	○	○	○	○
6 How often during the last year have you needed a first drink in the morning to get	○	○	○	○	○	○	○

yourself going after a heavy drinking session?							
7 How often during the last year have you had a feeling of guilt or remorse after drinking?	○	○	○	○	○	○	○
8 How often during the last year have you been unable to remember what happened the night before because you had been drinking?	○	○	○	○	○	○	○

	No - [0]	Yes, but not in the last year - [2]	Yes, during the last year - [4]	Don't know	Refuse to answer
9 Have you or someone else been injured as a result of your drinking?	○	○	○	○	○
10 Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?	○	○	○	○	○

Alcohol Consumption:

Men ONLY:
11a. How many times during the past month did you have 5 or more drinks on one occasion?
_____ times (Range 0-30)

Women ONLY:
11b. How many times during the past month did you have 4 or more drinks on one occasion?
_____ times (Range 0-30)

12. Over the past month, how many alcoholic drinks have you drunk <u>on the average day</u>? (one drink = 12 oz. Beer, or 4 oz. of wine, or 1 oz. hard liquor).

Average number of drinks # _____

13. On average, how many days during a typical week do you have 1 or more drinks of alcohol? (Please circle a number)

0 1 2 3 4 5 6 7

Appendix N.
Additional Questionnaires

Impulsivity: Barratt Impulsiveness Scale – Short form (BIS-15)

DIRECTIONS: People differ in the ways they act and think in different situations. This is a test to measure some of the ways in which you act and think. Read each statement and select the appropriate circle on the right side of this page. Do not spend too much time on any statement. Answer quickly and honestly.				
	Rarely/Never	Occasionally	Often	Almost Always/Always
I say things without thinking	○	○	○	○
I do things without thinking	○	○	○	○
I act “on impulse”	○	○	○	○
I act on the spur of the moment	○	○	○	○
I buy things on impulse	○	○	○	○
I plan for future	○	○	○	○
I plan for job security	○	○	○	○
I am a careful thinker	○	○	○	○
I plan tasks carefully	○	○	○	○
I save money on a regular basis	○	○	○	○
I concentrate easily	○	○	○	○
I squirm at plays or lectures	○	○	○	○
I am restless at lectures or talks	○	○	○	○
I do not pay attention	○	○	○	○
I get easily bored when solving thought problems	○	○	○	○

Single-shot discounting (Reimers et al., 2009)

a. Hypothetically, which would you rather have?
   1. $45 in three days from now 2. $70 in three months from now

Purpose?

General Health Behaviors

In general, how would you describe your health during the past month? (please select)

1 2 3 4 5

Poor Fair Good Very Good Excellent

1. Not counting minor traffic violations, have you ever been arrested and booked for breaking the law?
   a. Yes
   b. No

2. How would you describe your weight?
   A. Very underweight
   B. Slightly underweight
   C. About the right weight
   D. Slightly overweight
   E. Very overweight

3. Thinking of a typical week, do you engage in any of the following exercises (check all that apply)?
   a. Light intensity activity (e.g., calisthenics, walking)
   b. Moderate intensity activity (e.g., jogging, light weights)
   c. Heavy intensity activity (e.g., Weight lifting, running)

4. In a typical week, how many days per week do you exercise? _____

From 2019 National Health Interview Survey (NHIS) Questionnaire

5. About how long has it been since you last had a dental examination or cleaning?
   a. Never
   b. Within the past year
   c. Within the past 2 years (1-2 years ago)
   d. Within the past 5 years (2-5 years ago
   e. Within the past 10 years (5-10 years ago)
   f. 10 or more years

6. About how long has it been since you last saw a doctor or other health care professional about your health?
   a. Never
   b. Within the past year
   c. Within the past 2 years (1-2 years ago)
   d. Within the past 5 years (2-5 years ago
   e. Within the past 10 years (5-10 years ago)
   f. 10 or more years

7. On average, how often do you eat three meals during a day? (Please check one box.)

   ☐ never ☐ often
   ☐ rarely ☐ always

8. What is your height? _____ inches

9. What is your weight? _____ pounds

14. Over the past month, how many cigarettes have you smoked per day on the average?

Average number of cigarettes per day_____

15. How many days during the last week did you eat **breakfast**? (Please circle one number)

0 1 2 3 4 5 6 7

16. How many days during the last week did you **three meals per day**? (Please circle one number)

0 1 2 3 4 5 6 7

17. Over the past month, how much sleep did you get in an average night? _____ hours

Risky Driving – adapted from (Hayley et al., 2019)

The following questions ask about driving a vehicle. Please answer whether the statement applies to you.

Purpose?

	Yes	No
Done things that could have easily hurt you or someone else - like speeding or driving or using heavy machinery while drunk or high?		
Had driver's license or learner's permit suspended or revoked for moving violations?		
Sent a text message or accessed social media while driving?		

Internet Use (adapted from Pawlikowski et al., 2013).

The following questions ask about your internet use

	Never	Rarely	Sometimes	Often	Always
How often do you find that you stay on-line longer than you intended?					
How often do you find yourself saying “just a few more minutes” when on-line?					

How often do you choose to spend more time on-line over going out with others?					
How often do you try to hide how long you have been on-line?					

1. Thinking back to your responses on the entire questionnaire, how honest were you with your answers? This does not impact your credits.

Not at all Honest										Completely Honest
0	1	2	3	4	5	6	7	8	9	10

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