

2022

## Assessing Online Faculty Likelihood to Refer Students to University Mental Health Services

Karin Evans  
*Walden University*

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# Walden University

College of Education and Human Sciences

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Karin I. Evans

has been found to be complete and satisfactory in all respects,  
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## Review Committee

Dr. Carol Spaulding, Committee Chairperson, Health Education and Promotion Faculty

Dr. Lori Dewald, Committee Member, Health Education and Promotion Faculty

Dr. Justin Kraft, University Reviewer, Health Education and Promotion Faculty

Chief Academic Officer and Provost

Sue Subocz, Ph.D.

Walden University

2022

Abstract

Assessing Online Faculty Likelihood to Refer Students to

University Mental Health Services

by

Karin I. Evans

MA, Immaculata University, 2000

BS, Villanova University, 1996

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Education and Promotion

Walden University

August 2022

## Abstract

The negative impact of mental health concerns experienced by college students has prompted faculty teaching in-person to become gatekeepers, assisting students in accessing mental health services. COVID-19 has changed the learning environment and presented a need to explore the role online faculty play as gatekeepers. The purpose of this study was to investigate online faculty's willingness to refer students to university mental health services by applying factors shown to influence in-person faculty in context of the health belief model. Using a quantitative, non-experimental, cross-sectional study design, 182 online faculty completed an online survey assessing the likelihood of making a referral to university mental health services. The researcher operationalized constructs from the health belief model into variables using two previously validated instruments and three researcher-developed statements. Pearson's correlation indicated that all but one independent variable, the perceived barriers to referring, were correlated with the dependent variable, likelihood to refer ( $p < .01$ ). A multiple linear regression analysis found perceived threat, perceived benefits, perceived self-efficacy, and cues to action reliably predicted online faculty willingness to refer students to university mental health services ( $F(4, 177) = 27.70, p \leq .05, \text{adj. } R^2 = .37$ ). Perceived self-efficacy had the most significant predictive ability ( $B = 1.23, \text{Beta} = .62$ ). Identifying the predictive factors for online faculty as gatekeepers fosters an understanding of online faculty mental health education needs. Targeting these mental health education needs enhances assistance for students, which promotes positive social change by encouraging referrals to mental health services, enriching student physical and mental health and academic success.

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## Dedication

I dedicate this dissertation to my parents, who gifted me the love of learning and instilled in me the importance of continued growth through education.

I would also like to dedicate this dissertation to my children, Colin and Calle. Know that you are never too old to follow your dreams. You can accomplish anything.

Lastly, this dissertation is dedicated to my husband, Chris. Your continued support, encouragement, and humor in this journey has made the challenge bearable. I'm blessed to have met you and fortunate to have you in my life. I can't imagine sharing this accomplishment with anyone else.

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## Chapter 1: Introduction to the Study

This study explored factors involved in online faculty likelihood to make student mental health referrals. Increasing evidence about the negative impact of mental health concerns (MHC) on student physical, emotional, and academic wellness necessitated investigation into online faculty's role in guiding students to mental health services. Significant research indicates that in-person faculty are relevant in referring students to mental health services (Albright & Schwartz, 2017; Brooker et al., 2019; Di Placito-De Rango, 2018; Giamos et al., 2017; Gulliver et al., 2019; Oswalt et al., 2020; Reiff et al., 2019; St-Onge & Lemyre, 2018). However, there is little research investigating online faculty relevance in making mental health referrals.

Faculty knowledge about student MHC and faculty perceived competence in assisting students with MHC have emerged as crucial concepts in the area of college student mental health (Becker et al., 2002; Hartrey et al., 2017; Kalkbrenner & Carlisle, 2021; Kalkbrenner & Sink, 2018; St-Onge & Lemyre, 2018; Tye, 2015). While a significant amount of data focus on faculty in the in-person learning environment, COVID-19 has presented an opportunity to expand the research area to include online faculty (Son et al., 2020; Wang et al., 2020; Wilks et al., 2020).

The shift to online learning required for COVID-19 has changed the student-faculty dynamic (Joshi et al., 2020). This study offered an opportunity to broaden previous research to include online faculty referrals to student mental health services. This study promoted positive social change by prioritizing online student mental health and examining how online faculty perceptions and knowledge can impact the likelihood

of online faculty referring students to university mental health services. Findings from the study help clarify the faculty mental health education needed to guide online students to mental health services (Barr, 2014; Raley, 2016).

This chapter provides background information about college student mental health and the role of faculty in referring students to seek help. The problem statement includes context and relevant information about the study while securing the research question that I sought to answer in the study. The purpose section of the chapter communicates the study goals while presenting the research question, the theoretical foundation, and the conceptual framework used to ground this study. The nature of the study section provides an overview of the research methodology, which I further expand on in Chapter 3. The definitions section provides explanations about terms and phrases specific to the study. The concluding sections of the chapter offer an overview of the study's assumptions, the scope and delimitations, limitations, and the significance of the study as an instrument for creating positive social change.

### **Background**

Researchers exploring mental health have focused notably on the prevalence of mental health issues among college students (American College Health Association (ACHA), 2019a; ACHA, 2020a; ACHA, 2021a; Auerbach et al., 2018; Locke, 2019; Oswalt et al., 2020), the influence of adverse mental health on student physical and emotional wellness (Bhujade, 2017; Wilks et al., 2020), and the toll negative mental health takes on student academic success (Alonso et al. 2018; Wilks et al., 2020). The data indicate that college student MHC are increasing in prevalence and significantly



impacting learning in higher education (Albright & Schwartz, 2017; Bhujade, 2017).

University administrators have leveraged faculty as gatekeepers to refer students to mental health services (Brooker et al., 2017; Di Placito-De Rango, 2018; Kalkbrenner, 2016).

The in-person learning environment fosters beneficial student and faculty interactions (Cueso, 2009; Kalkbrenner, 2020), with some faculty adopting a gatekeeper role to help students (Baik et al., 2019; Barr, 2014; Di Placito-De Rango, 2018; Gulliver et al., 2019; Hughes et al., 2018; Reiff et al., 2019). However, research indicates that some faculty request more guidance and greater clarification of their responsibility in this gatekeeper role (Albright & Schwartz, 2017; Brooker et al., 2017; Di Placito-De Rango, 2018; Gulliver et al., 2019; Kalkbrenner, 2016; Reiff et al., 2019). Thus, researchers and higher education institutions have developed resources and programs to assist faculty in developing the skills necessary to act as a gatekeeper and facilitate student mental health referrals (Kalkbrenner, 2016; Kalkbrenner & Sink, 2018; Reiff et al., 2019).

The programs and resources designed to assist faculty focus on the in-person learning environment and do not address faculty experiences in the online learning environment. However, with COVID-19 necessitating a shift to predominantly online learning and the potential to continue with online learning, exploring faculty considerations for assisting students in this environment becomes essential. The onset of COVID-19 has highlighted a gap in the research related to the role and responsibilities of online faculty in helping students with MHC in the online environment. Therefore, this study explored the factors that may influence the likelihood of online faculty referring

students to mental health services. This study is crucial to further understand online faculty as gatekeepers for students to access mental health services and the online faculty's specific mental health education needs.

### **Problem Statement**

College student mental health distress is a growing concern (ACHA, 2019b; ACHA, 2020b; ACHA, 2021b; Brooker et al., 2017), and the impact of student MHC within a higher education setting can be significant (Albright & Schwartz, 2017; Bhujade, 2017). The shift to online learning during the COVID-19 pandemic illuminates the need for research regarding online faculty willingness to refer students with MHC to appropriate university services.

COVID-19 has exacerbated student MHC and offered an opportunity to explore online faculty as gatekeepers for students needing mental health services (COVID-19 Impact on College, 2020; Kwan et al., 2021; Murphy, 2020; Son et al., 2020). Data from the ACHA student surveys from Fall 2019, Spring 2020, and Fall 2020 regarding psychological distress, depression, and anxiety demonstrate increasing mental health issues since the beginning of COVID-19 in the Spring 2020 semester. From Fall 2019 to Fall 2020, moderate to severe distress was reported by 8.2% more students (41.1% to 49.3%; ACHA, 2019a; ACHA, 2020a; ACHA, 2021a), approximately 3.4% more students reported depression to be negatively impacting class performance or delaying progress (23.1% to 26.5%; ACHA, 2019b; ACHA, 2020b; ACHA, 2021b), and close to 6% more students reported anxiety negatively impacting class performance or delaying progress (29.7% to 35.5%; ACHA, 2019b; ACHA, 2020b; ACHA, 2021b). The Healthy

Minds Network and ACHA (2020) surveyed 18,764 students from 14 college campuses from March 2020 through May 2020 looking at how COVID-19 impacted student well-being. Results specific to university support indicated that 77.6% of the students found their professors supportive (37.5%) or very supportive (40.1%) of student well-being (The Healthy Minds Network & ACHA, 2020).

Research into student MHC before the onset of COVID-19 highlighted significant concerns (Alonso et al. 2018; Auerbach et al., 2018; Bhujade, 2017; Bruffaerts et al., 2019; Locke, 2019). These concerns are even more prevalent since the onset of COVID-19. While public health mitigation strategies may alleviate pandemic-specific concerns, many higher education institutions are continuing with online learning post-pandemic (Adedoyin & Soykan, 2020). A growing number of online learning environments present an opportunity for health education and promotion researchers to understand how online faculty act as gatekeepers in referring students in the online learning environment to mental health services (McManus et al., 2017; Roddy et al., 2017). The role of a gatekeeper may include directing a student struggling with MHC to mental health services. Since existing research about the faculty gatekeeper role is predominantly within the in-person learning environment, this study attempted to fill the gap by addressing the online faculty role.

### **Purpose of the Study**

This exploratory quantitative study examined the factors that influence the in-person likelihood of referring students to university mental health services when the faculty are teaching in an online learning environment. Specifically, the purpose of this

study is to examine whether online faculty perceived threat of MHC, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge of warning signs for student MHC predict the willingness of online faculty referring students to university mental health services.

An online survey collected the following data: a) online faculty perceptions of the threat of MHC, b) online faculty perceived benefits of referring students to university mental health services, c) online faculty perceived barriers to referring students to university mental health services, d) online faculty perceived competence in guiding students with MHC, e) online faculty knowledge of warning signs for student MHC, and f) online faculty likelihood of referring students to university mental health services. Conclusions from this study offer educators an opportunity to identify the role online faculty play as gatekeepers for students to access mental health services and the specific mental health education needs of online faculty.

### **Research Question & Hypotheses**

*RQ – Quantitative:* Do perceived threat about college student mental health, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge about MHC predict the likelihood that online faculty will refer students to university mental health services?

*Null Hypothesis:* Perceived threat about college student mental health,

perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge about MHC do not predict the likelihood that online faculty will refer students to university mental health services.

*Alternative Hypothesis:* Perceived threat about college student mental health, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge about MHC predict the likelihood that online faculty will refer students to university mental health services.

The independent variables are online faculty perceived threat about college student mental health, perceived benefits and barriers in referring a student to university mental health services, perceived competence in supporting students with MHC, and knowledge about symptoms demonstrating student MHC. The dependent variable is the likelihood that online faculty refer students to university mental health services. The association being researched is whether faculty-specific factors predict the probability of a behavior. The variables were measured using online faculty responses to an online survey.

## **Theoretical and Conceptual Framework for the Study**

### **Theoretical Foundation**

Health education and promotion practitioners employ various theories and models to understand, explain, and predict individual health behaviors (Glanz et al., 2015). This study is grounded in the health belief model (HBM). The HBM describes constructs related to an individual's beliefs about health and health behaviors, specifically perceptions that influence a behavior change to reduce disease threat (Glanz et al., 2015). The model originated to understand individual uptake of health prevention behaviors such as screenings (Glanz et al., 2015; Rosenstock, 1974;). More recently, the HBM has been seen as a valuable framework to understand individual's use of mental health services (Henshaw & Freedman-Doan, 2009). Chapter 2 will provide a deeper look at the specific implementation of the HBM constructs in the context of this study.

While the HBM is typically considered a framework to understand individual behavior change, in this study, I used the HBM constructs to understand an individual's behaviors on behalf of an "other." I used the HBM constructs of perceived threat, perceived benefits, perceived barriers, self-efficacy, and cues to action to determine the extent to which these constructs predict the likelihood of online faculty making student referrals to university mental health services. The HBM aligns with this study, as increased online instruction presents a new context in which faculty perceptions of student MHC and the likelihood that an action will result from those perceptions is relevant. The HBM was used to predict the likelihood of engaging in a specific health-related behavior, referring a student to university mental health services. The HBM

would expect that online faculty who perceive: 1) MHC to be a significant threat to students, 2) benefits to referring students to university mental health services, 3) few barriers to referring students to university mental health services, 4) greater self-efficacy in supporting students with MHC, and 5) more significant knowledge of the cues to action (signs of college student MHC), the more likely they will be to refer students with MHC to university mental health services.

### **Conceptual Framework**

The phenomenon grounding this study is the likelihood that online faculty will recommend a mental health service referral for students based on the perceived threat of MHC, perceived benefits and barriers in referring students to university mental health services, perceived competence in assisting students with MHC, and knowledge of warning signs for student MHC. These factors have been identified as significant influences on in-person faculty guiding students to university mental health services (Becker et al., 2002; Kalkbrenner, 2016; Kalkbrenner & Sink, 2018; St-Onge & Lemyre, 2018). Therefore, I developed a conceptual model that combines constructs identified in the literature with HBM constructs to frame this study. In the model, online faculty perceptions about MHC threat, benefits and barriers to referring students to university mental health services, confidence in assisting students, and knowledge about student MHC influence the likelihood of a university mental health service referral. Chapter 2 provides a more detailed explanation of the conceptual model.

### **Nature of the Study**

This quantitative research was a non-experimental, cross-sectional study using an online survey for primary data collection. This approach aligned with the study problem statement because it was exploratory, building upon factors found in the literature and combining them with constructs from the HBM to understand the actions of the target population further (Babbie, 2017; Creswell & Creswell, 2018). This study involved exploring relationships between five independent variables (perceived threat of student MHC, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge of warning signs for student MHC) and one dependent variable, the likelihood of referring students to university mental health services. Additional descriptions and operationalization of the variables are described in Chapter 3. Data were collected from faculty teaching at a university with multiple campuses, who have experience teaching at least one undergraduate course in an online learning environment. The participants completed an online survey I compiled and I analyzed the results using descriptive statistics and a multiple linear regression.

### **Definitions**

*Gatekeeper:* A faculty member who assists students struggling with mental health issues and directs them to appropriate resources. An individual promoting mental health awareness and suicide prevention by identifying individuals and guiding them to mental health treatment (Reiff et al., 2019, p. 108).



*Likelihood to make a referral:* The degree of faculty self-reported intention to recommend that the student seek university mental health services.

*Mental health concerns (MHC):* Emotional health conditions impacting one's thoughts and behaviors, potentially negatively impacting daily functioning. Mental health issues may include anxiety, depression, or other behavior concerns (American Psychiatric Association (APA), 2021; Auerbach et al., 2016).

*Mental health literacy:* An understanding of mental health issues, including identification and treatment options. "By extension we have coined the term 'mental health literacy' to refer to knowledge and beliefs about mental disorders which aid their recognition, management, or prevention" (Jorm et al., 1997, p. 182).

*Mental health services:* University or college services assisting students in identifying and treating mental health issues. According to Schwitzer et al. (2019), university and college counseling centers provide a unique service within a specialized setting, allowing students the opportunity to navigate specific psychological concerns.

### **Assumptions**

I assumed that the university targeted for the study had mental health services available for their students. Assumptions specific to the target population included that online faculty were aware of university mental health services, knowledgeable in referring a student to these services, used the same factors as in-person faculty to determine if a referral is relevant, and survey responses would match current actions. I assumed that a relationship existed between online faculty perceptions and knowledge about student MHC and the likelihood that online faculty would make a referral to

appropriate services. Methodologically, I assumed the instruments accurately measured the variables of online faculty perceptions of MHC, knowledge about college student MHC, and the likelihood of referring students. These assumptions were necessary as they speak to the likelihood that faculty will refer to university mental health services on behalf of a student.

### **Scope and Delimitations**

In this exploratory study, constructs from the HBM provided the framework for the independent and dependent variables. The study addressed the independent variables of the perceived threat of MHC, perceived benefits of referring a student to university mental health services, perceived barriers to referring students to university mental health services, perception of competence in assisting students with MHC, and knowledge about the warning signs of student MHC. The dependent variable was the likelihood online faculty refer students to university mental health services.

Online faculty were the specific population chosen because of the increase in online learning due to COVID-19. The study used a convenience sample of online faculty who have taught at least one undergraduate course online and provided informed consent to participate in a survey using two published instruments and three researcher-developed items. The HBM provided the theoretical framework for this study. This model has been noted to be helpful in exploring mental health service use (Henshaw & Freedman-Doan, 2009) and provided insight into how individual perceptions influence decisions about health (Glanz et al., 2015).

Another theory that could ground this study was the social support theory (Shumaker & Brownell, 1984). The premise of this theory includes an understanding between two people with the ultimate goal of the recipient being helped by the other (Shumaker & Brownell, 1984). I rejected this theory for the current study because of its broad scope and inability to provide the foundation to explore concepts that literature indicated as pertinent to the subject. Another theory considered for use in the current study was the theory of planned behavior (TPB). One study looked at this theory as a framework to understand the gatekeeper role of university resident assistants (Tye, 2015). While the TPB offered an alternative approach to explore the faculty gatekeeper role, I did not choose it because its focus did not include perceptions and knowledge, factors found in the literature that help to more precisely identify the likelihood a mental health service referral will occur.

### **Limitations**

Limitations to this study include the non-experimental, cross-sectional design using a convenience sample to collect data. The one-time data collection and non-randomization of the sample potentially threatened the study's external validity as it limited the generalization of results. To address limitations related to external validity, I did not generalize the findings to populations, settings, or periods outside of the ones included in the study. This study however, could provide context to support future investigations.

Another limitation was collecting an adequate number of participants using surveys which can be challenging, and thus, limit generalizability. The instrument may

present a limitation as it is a compilation of two published tools with three additional researcher-developed items. The two published instruments have been validated in previous research in similar populations and show significant internal reliability (Kalkbrenner & Carlise, 2021; Kalkbrenner & Sink, 2018;). However, the three researcher-developed items have not been validated. I conducted an informal field-test with the three researcher-developed items to provide content validity.

One other potential limitation was an inaccurate account of participant experience. Participants may teach in both the in-person and online environments and may inadvertently respond incorrectly. To address possible confusion about the teaching environment, the survey deliberately indicated that responses be made based on the online teaching experience.

### **Significance**

Research before COVID-19 revealed that faculty could assist with college student MHC (Brooker et al., 2017; Di Placito-De Rango, 2018). However, faculty expressed a lack of confidence in helping students with MHC in the in-person learning environment (Albright & Schwartz, 2017; St-Onge & Lemyre, 2018). Because COVID-19 has increased online learning and limited in-person contact, there may be an impact on faculty guiding students to mental health services. Therefore, with online learning changing the dynamic of faculty-student interaction, more students could be at risk for unrecognized MHC (Barr, 2014). The current study could broaden existing knowledge about how to predict if online faculty will refer students to university mental health services.

According to the code of ethics established by the National Commission for Health Education Credentialing (NCHEC), health education professionals are responsible to the public to undertake endeavors that promote and protect the health of individuals and communities (NCHEC, 2020). Nobiling and Maykrantz (2017) recommend that certified health education specialists provide faculty education critical in addressing college student MHC. By exploring the research question from the perspective of health education and health promotion, this study deepens the understanding of online faculty's mental health education needs to encourage students to seek university mental health services.

College student MHC before and during COVID-19 have been significant (Albright & Schwartz, 2017; Bhujade, 2017; Wang et al., 2020; Wilks et al., 2020). The impact of MHC on student physical health, mental well-being, and academic success warrants continued investigation into practical mitigation approaches. Exploring online faculty's mechanisms in making university mental health service referrals can enhance campus strategies to address escalating student MHC. This study adds to current literature and champions positive social change by creating opportunities for more comprehensive guidance for online faculty to promote student' physical, emotional, and academic success in an online environment (Kalkbrenner, 2020).

Understanding online faculty perceptions and knowledge about student MHC and assessing the likelihood of faculty referrals to university mental health services demonstrated a strategy to assist struggling students. Data from this study can help modify campus approaches to increase college student mental health advocacy and thus

promote social change. For example, initiating collaborative efforts between online faculty and mental health service professionals through educational training and interventions impacts community social change positively. Recommendations for training and programs for online faculty can enhance student success and champion positive student mental health outcomes.

### **Summary**

This chapter reviewed the problems associated with college student MHC and faculty's role in helping students access university mental health services. The chapter provided a synopsis of the research looking at faculty roles in referring students within an in-person learning environment to mental health services and identified a gap in the research about online faculty roles in directing students in the online environment to university mental health services.

This non-experimental, cross-sectional study used the HBM as the theoretical foundation with constructs identified from pertinent literature providing the framework for the conceptual model. Assumptions about this study are described with an explanation of how I addressed limitations related to the study's external validity. Two previously validated instruments were used for the study to decrease threats to internal validity. The researcher-developed items were informally field-tested to ensure the items accurately represented the phenomenon under investigation. This study can further positive social change in mental health education and promotion by addressing a current gap in the literature, understanding how online faculty assist students in seeking mental health services.

The following chapter details the literature search strategy and the current literature pertaining to the study. The theoretical and conceptual model providing the foundation for this investigation are described.

## Chapter 2: Literature Review

### **Introduction**

College faculty members teaching in-person often act as a gatekeeper for students to access mental health services (Barr, 2014; Kalkbrenner, 2016; Reiff et al., 2019; Tye, 2015). Studies show that some in-person faculty are more likely to make referrals to mental health services based on factors such as confidence in making referrals and knowledge about MHC (Kalkbrenner & Sink, 2019; St-Onge & Lemyre, 2018). However, there is a gap in research investigating online faculty likelihood of referring students to university mental health services. With online learning becoming more prevalent, it is critical to explore online faculty likelihood to be a gatekeeper for students struggling with MHC in the online learning environment. The purpose of this exploratory quantitative study is to consider the factors that influence in-person faculty likelihood of referring students to university mental health services in the context of the online learning environment.

Interest in college student mental health started in the early 1900s when Princeton University introduced the first mental health service on a college campus in the United States (Winger & Olson, 2015). By the early 1950s, most colleges and universities commonly provided mental health services to students, with the ACHA adding an area specific to mental health in 1957 (Winger & Olson, 2015). The earliest data collection for college student mental health was in 1966 by The Cooperative Institutional Research Program (CIRP; Winger & Olson, 2015). As CIRP data demonstrated growing MHC for



college students over the past 60 years, researchers have explored the prevalence of these issues and the role faculty play in assisting students in seeking treatment.

Mental health distress among college students is a growing problem. Evidence suggests that MHC complicate student health and school achievements (ACHA, 2019; ACHA, 2021; Bhujade, 2017; Brooker et al., 2017). From an individual, institutional, and social perspective, investing in student mental health is mutually beneficial in preventing adverse academic outcomes such as dis-enrollment and promoting personal growth and development (Bruffaerts et al., 2018; Conley et al., 2017; Lipson et al., 2019). Higher education institutions are developing and implementing programs to boost mental health awareness and promote the benefits of mental health services in an effort to combat the adverse effects of student MHC (Fernandez et al., 2016; Kwan et al., 2021; Reiff et al., 2019; Tye, 2015; Xiao et al., 2017).

Research has demonstrated decreased stress and an improved sense of well-being when students engage in mental health services (Bettis et al., 2017; Regehr et al., 2013; Vescovelli et al., 2017). To promote mental health service use by students, some universities ask faculty to serve as gatekeepers to help students access these services (Barr, 2014; Reiff et al., 2019; Tye, 2015). Some faculty have readily adopted this gatekeeper role to assist students in accessing mental health services; yet, research indicates some faculty may not feel confident in this role (Albright & Schwartz, 2017; Kalkbrenner & Carlisle, 2021).

In-person faculty mental health literacy influences faculty in encouraging students to seek treatment (Becker et al., 2002; Kalkbrenner, 2016; Kalkbrenner & Sink, 2018; St-

Onge & Lemyre, 2018). However, little research exists about what influences faculty teaching in the online environment to refer students to mental health services (Barr, 2014). Barr (2014) described best practices for online faculty to make student mental health referrals, such as identifying warning signs and knowing about available resources for referrals. However, there is limited research looking specifically at the use of these best practices. With the shift to predominantly online learning platforms due to COVID-19, an opportunity to expand research to include the gatekeeper role of online faculty has surfaced (Kecojevic et al., 2020; Sahu, 2020; Son et al., 2020; Wang et al., 2020).

Chapter 2 describes the literature search strategy used to identify research pertinent to college student mental health and the faculty gatekeeper role in referring students to university mental health services. The HBM provides the study's theoretical foundation with construct descriptions specific to the study. Next, the constructs of the HBM combined with previously researched factors associated with the increased likelihood of faculty making mental health service referrals illustrate the conceptual model for this study. Lastly, this chapter concludes with a review of literature specific to study variables and concepts.

### **Literature Search Strategy**

I identified articles for this review from the following databases: APA PsycINFO, Academic Search Complete (including ERIC and Cinahl Plus), Nursing and Allied Health Database, Taylor Francis Database, SAGE Journals, and the Walden University Library. Search engines used in this research included Google Scholar.

To accurately collect evidence-based data related to the phenomenon of interest, I conducted literature searches using the following Boolean phrase: *(faculty or instructor or professor or college teacher) AND (online or e-learning or distance learning, online or virtual or distance) AND (perceptions or knowledge or support or competence) AND (student mental health, mental health or mental illness or mental disorder or psychiatric illness) AND (college, university, and higher education).*

The scope of the literature review included resources from 2002-2021. The literature sources included peer-reviewed journals and textbooks in higher education, mental health, public health, and online learning. Any literature cited outside this scope provided context for the study and seminal content specific to the theoretical model.

There is not much research exploring the perceptions and knowledge of online faculty towards student MHC (Barr, 2014; Kecojevic et al., 2020; Moawad, 2020; Roddy et al., 2017), and few articles explore the elements that influence online faculty to refer students to university mental health services. Therefore, online faculty perceptions and knowledge concepts were considered using the existing research about faculty teaching in-person.

### **Theoretical Foundation**

The theoretical foundation for this study is the HBM. Godfrey Hochbaum, a social psychologist, sought to know why individuals may or may not choose to get an X-ray to screen for tuberculosis (Hochbaum et al., 1952). The HBM was developed as a model to understand how an individual's real-world perceptions influence health-related decisions such as health screening and vaccinations (Rosenstock, 1974; Sugg Skinner et

al., 2015). Knowing how individuals perceive their world and understand the potential for harm offered researchers insight into individuals' decisions to engage in health-promoting behaviors (Hochbaum et al., 1952; Rosenstock, 1974).

The HBM includes constructs related to an individual's beliefs about health and health behaviors, specifically perceptions about threat reduction in the context of disease (Sugg Skinner et al., 2015). By combining a stimulus-response and a cognitive approach, the HBM offers that behavior is driven by a consequence, reinforcement, or reward (stimulus-response) and how much the individual expects the behavior to influence the outcome (cognitive approach; Rosenstock et al., 1988).

The HBM proposes that three areas influence health behavior: modifying factors, individual beliefs, and action (Champion & Sugg Skinner, 2008). Within each of these areas are more specific factors that describe an individual's subjective evaluation or perception of a condition, the mitigating influences, such as the level of threat the condition poses and the presence of internal or external triggers necessitating action, and the likelihood that the individual will take action to prevent the condition (Hochbaum et al., 1952). Fundamental assumptions about the HBM include that an individual is more likely to engage in a health behavior if there is a sense of susceptibility to the illness, that the illness would harm the individual, that the health behavior would help in preventing illness or reducing the severity of the illness, and that the individual will value the outcome (Champion & Sugg Skinner, 2008; Rosenstock, 1974). The following describes the constructs of the HBM in more detail.

### **Modifying Factors**

- Modifying factors may play a role in an individual's beliefs and perceptions (Champion & Sugg Skinner, 2008). Specific modifying factors can include education, demographic variables, socioeconomic status, age, or personality (Champion & Sugg Skinner, 2008; Hochbaum et al., 1952).

### **Individual Beliefs**

- Perceived susceptibility to an illness is considered the individual's subjective evaluation of whether they are at risk for developing that illness (Rosenstock, 1974; Sugg Skinner et al., 2015).
- Perceived severity of an illness is the individual's subjective evaluation of the illness's impact on health and potentially overall life, including work, family, or relationships (Rosenstock, 1974; Sugg Skinner et al., 2015). Taken together, the perceived susceptibility and perceived severity lead to the perceived threat (Champion & Sugg Skinner, 2008).
- Perceived benefits of taking action are the individual's subjective evaluation of the action decreasing an individual's susceptibility to an illness or decreasing the severity of the illness (Rosenstock, 1974; Sugg Skinner et al., 2015). Perceived benefits may be non-health-related, such as financial gains or social affirmation (Sugg Skinner et al., 2015).
- Perceived barriers to taking action are the individual's subjective evaluation that obstacles exist and that taking action may involve experiencing discomfort (Rosenstock, 1974; Sugg Skinner et al., 2015).

- Perceived self-efficacy describes an individual's confidence level in their ability to complete a task that will lead to an expected outcome (Bandura, 1977). This construct was not part of the original HBM (Champion & Sugg Skinner, 2008). It was introduced later as an additional construct enhancing the understanding of why an individual may decide to engage in a health-related behavior (Rosenstock et al., 1988; Champion & Sugg Skinner, 2008).

### **Action**

- Individual behaviors are those health-related behaviors that are likely to occur based on modifying factors and personal beliefs.
- Cues to action are internal or external trigger events required to elicit a response from the individual. The trigger's intensity depends on the perceived threat and perceived benefits and barriers (Rosenstock, 1974). The cues to action play a role in determining the likelihood that an individual behavior will occur.

The HBM can describe an individual's perceptions of whether to seek mental health help (Castonguay et al., 2016; Henshaw & Freedman-Doan, 2009; Kim & Zane, 2016; Langley et al., 2018). However, in the current study, I explored the HBM constructs through online faculty perspectives to predict whether online faculty would refer students to university mental health services. By investigating online faculty's perceptions and knowledge about college student mental health, researchers can further understand the factors influencing online faculty referrals to mental health services and gain insight into online faculty's necessary mental health education needs. The following

section will first explore how the HBM has been used in describing individual use of mental health services.

### **Individual Use of Mental Health Services in the Context of the HBM**

Research employing the HBM in the context of mental health service use has focused on what factors influence an individual's decision to pursue mental health services. Langley et al. (2018) found that Australian students with anxiety identified services' perceived benefits as the strongest predictor in seeking mental health support. Another study looking at secondary data reports of adult depression stories found that barriers to treatment were identified as the most mentioned construct determining whether or not to seek treatment (Castonguay et al., 2016). Researchers noted a positive relationship between those who had someone encouraging them to seek support, providing guidance and the individual's likeliness to seek help (Castonguay et al., 2016). This observation may confirm that faculty acting in a gatekeeper role may positively influence mental health service use by students struggling with MHC.

### **Provider Referrals to Mental Health Service in the Context of the HBM**

One mixed-methods study included mental health professionals' reports about college students and young adult perspectives regarding mental health and mental health service use (Nobling & Maykrantz, 2017). The focus group included five mental health professionals who responded to research questions framed by the HBM. The mental health professionals' responses included the following: student perception of susceptibility to MHC is influenced by a lack of time management and study skills; cultural views influence student perception of the severity of MHC; student perception of

barriers to accessing care were cost, the stigma associated with MHC, and finding help; student perception of the benefits to accessing care were described as help in managing the MHC; the student perception of the strongest cue to action was a referral by a primary care physician. Navigating the mental health system to find a provider and overall increased mental health education opportunities were offered by the mental health professionals as the most effective way to enhance student mental health. Teachers, family, coaches, and friends were identified as encouraging help-seeking behaviors (Nobling & Maykrantz, 2017).

The rationale for using the HBM in the present study was its previous use as a framework to understand mental health service use decisions. According to Henshaw and Freedman-Doan (2009), the HBM's clarity and ease of application to mental health issues make it an appropriate framework to understand how individuals make decisions about mental health care. The current study was designed to broaden the limited research exploring online faculty likelihood of referring college students to mental health services through the HBM constructs. This study furthers the understanding of the factors influencing online faculty's willingness to engage in behavior on behalf of another individual, the student. This study can expand knowledge of how online faculty perceptions and knowledge influence a mental health services referral (Bednarczyk et al., 2018; Nobling & Maykrantz, 2017).

### **Conceptual Framework**

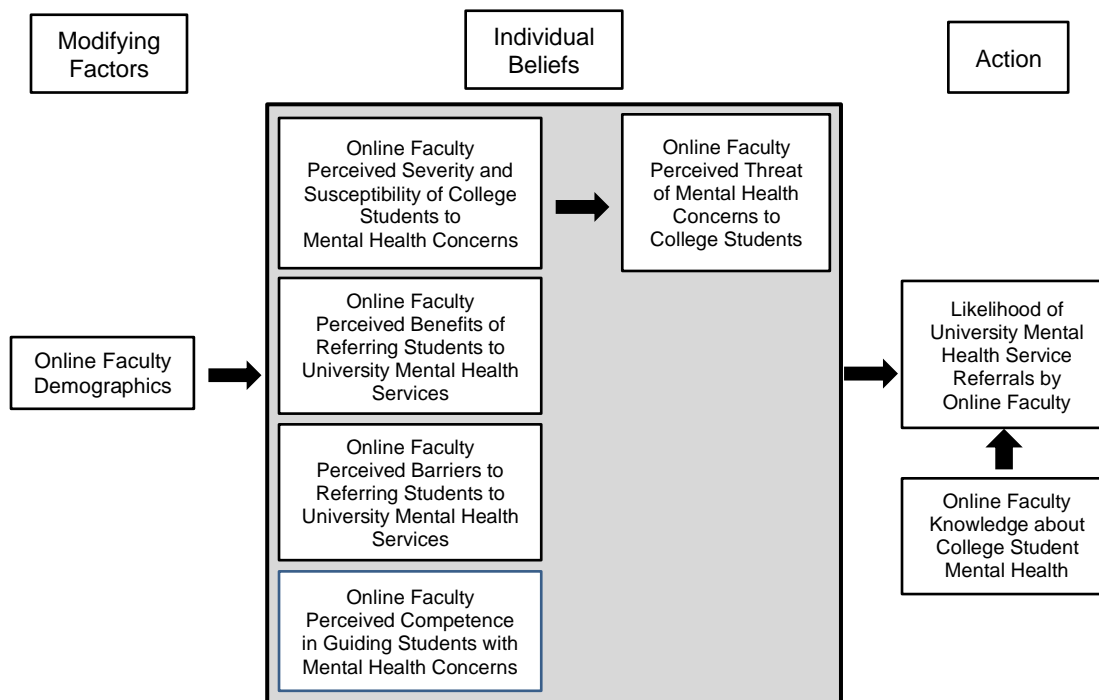
The constructs of the HBM, perceived threat, perceived benefits, perceived barriers, and perceived competence or self-efficacy (Champion & Sugg Skinner, 2008) in



combination with faculty knowledge about signs of college student MHC or cues to action (Gulliver et al., 2019; Kalkbrenner & Sink, 2018; Putri et al., 2019; Tye, 2015), provide insight into the likelihood that online faculty will make a student mental health referral. The following conceptual model (Figure 1) explores the variety of constructs involved in online faculty referring students to university mental health services.

**Figure 1**

*Online Faculty Likelihood to Refer Students to University Mental Health Services*



Adapted from Champion & Sugg Skinner, 2008

The conceptual model combines constructs of the HBM (Champion & Sugg Skinner, 2008) with variables recognized as influencing faculty referrals to university mental health services (Becker et al., 2002; Kalkbrenner, 2016; Kalkbrenner & Sink,

2018). Further, these faculty-related concepts offer a snapshot into specific faculty mental health education needs to promote mental health service referrals.

### **Literature Review Related to Key Variables and/or Concepts**

This section reviews specific research related to the variables explored in this study. I describe each variable and present relevant literature to provide context about the role the variable plays in the likelihood of online faculty making a university mental health service referral. Because of the limited research with online faculty, this section of the literature study will address studies that include in-person faculty members as participants.

### **Individual Beliefs: Faculty Perception of the Threat of Mental Health Concerns to College Students**

The HBM describes the perception of threat as composed of two separate constructs, perception of susceptibility to disease and the disease severity (Champion & Sugg Skinner, 2008). Faculty perception of the threat of MHC offers insight into the willingness to make a mental health referral of students with MHC; the greater the perceived threat, the more likely faculty will be to refer the student. While studies exploring faculty perceptions of the threat of MHC to students are limited, Backels et al. (2001) noted that faculty who perceived mental health issues as negatively impacting academic success requested additional mental health education from the counseling center.

Another study showed introducing new academic curricula promoting mental health awareness correlated with increased faculty requests for services from the

counseling center (Mitchell et al., 2012). This finding suggests that faculty perceive MHC as a significant threat to college students that additional counseling center support is warranted. Margrove et al. (2014) proposed that faculty willing to engage in training about helping students with MHC demonstrate an understanding of the threat potential. Kalkbrenner (2016) agrees with this idea; faculty ability to recognize the signs of student mental health distress speaks to faculty awareness of MHC as a threat to students. Continuing to explore faculty awareness about MHC involves looking at other faculty perceptions, such as faculty's perceived benefits in referring a student to university mental health services.

### **Individual Beliefs: Faculty Perceived Benefits of Referring Students to University Mental Health Services**

While research indicates an overall benefit of mental health services for students (Bettis et al., 2017; Lipson et al., 2019; Regehr et al., 2013; Vescovelli et al., 2017), research investigating faculty perceptions of the benefits of referring students to university mental health services is lacking. One study by Lipson et al. (2019) looked at college leaders and found their perspectives about the benefits of mental health services for students included improved academic success and retention.

While data about faculty perceptions in making student mental health referrals is limited, there is significant data exploring college campus perceptions about the benefit of mental health service awareness. A meta-analysis examining 19 quantitative studies measuring college mental health promotion efforts reported various approaches to promoting mental health awareness and service use (Fernandez et al., 2016). Using a

setting-based model that employed a socio-ecological approach, Fernandez et al. (2016) sought to understand the aspects of the college environment that promoted positive campus mental health. The meta-analysis included studies exploring the impact of campus policies, mandatory college curricula, curricula including aspects of mental health promotion, and different academic grading scales. Results indicated that positive mental health curricula and assessment strategies were most effective in creating an environment supportive of mental health promotion. However, the researchers also noted that several studies lacked external validity with involvement from only one school, with one specific student population. Researchers did note a lack of studies addressing a need for faculty mental health education (Fernandez et al., 2016).

### **Individual Beliefs: Faculty Perceived Barriers to Referring Students to University Mental Health Services**

Research investigating faculty perceived barriers to referring students to university mental health services provides insight into this construct. Stanley and Manthorpe (2001) indicated that a lack of time to engage with students, a knowledge deficit about MHC, skill deficits in handling a student with a MHC, and a lack of communication between campus agencies were barriers for faculty. One mixed-methods study conducted in Indonesia described four specific factors that faculty perceived as barriers to assisting students in seeking mental health services: a) a lack of knowledge about MHC, including identification of symptoms, b) lack of information regarding student mental health services and the referral process, c) vague professional role descriptions regarding involvement in student MHC, and d) limited assistance from the

college in handling student MHC (Putri et al., 2019). Researchers recommended increased training and education for faculty to decrease perceived barriers.

Albright and Schwartz (2017) found that faculty did not have adequate knowledge or skills to identify student MHC (58%), did not feel comfortable approaching students who may be exhibiting concerning mental health behavior (66%), and did not feel prepared to recommend mental health services (49%). These findings are consistent with Putri et al. (2019), which indicated that the faculty had hesitations about approaching students with potential MHC, possibly adversely impacting referrals to mental health services. In a qualitative study conducted by McAllister et al. (2014), participants revealed that barriers involved a student's lack of disclosure to faculty about their struggles and faculty lack of confidence in the student receiving timely and adequate care from campus services.

### **Individual Beliefs: Faculty Perceived Competence in Guiding College Students with Mental Health Concerns**

Faculty front-line interactions with students allow for observations of behaviors that may indicate a mental health issue. Faculty involvement is instrumental to assist struggling students in obtaining the support services they need. However, identifying and referring students for mental health services is contingent on faculty confidence (Albright & Schwartz, 2017; Giamos et al., 2017; Kalkbrenner & Carlisle, 2021; Reiff et al., 2019). Becker et al. (2002) and Tye (2015) found a positive relationship between faculty confidence in engaging with students with MHC and the likelihood of using referral systems. While some faculty feel competent in identifying students struggling with MHC

(Gulliver et al., 2019; Kalkbrenner, 2016), others do not (Hughes et al., 2018; Kalkbrenner, 2016).

**Action: Faculty Knowledge of College Student Mental Health Concerns**

Research describes faculty knowledge about identifying college student MHC varies; some studies show faculty having high levels of mental health knowledge, and some studies have found the opposite. Several researchers uphold the importance of faculty as an initial contact to identify students with MHC but recognize that not all faculty may have the skills or experience to recognize the symptoms (Gulliver et al., 2019; Hughes et al., 2018; Kalkbrenner, 2016; Tye, 2015).

Gulliver et al. (2019) found that those faculty who had more knowledge about mental health issues were more likely to interact with students struggling with MHC. Furthermore, Gulliver et al. (2019) concur with Kalkbrenner (2016) that the most effective faculty advocates have specific mental health literacy experience or education. Building upon the idea that increased college campus mental health awareness benefits students struggling with MHC, Reiff and colleagues (2019) developed the I CARE training program. The I CARE program educated college campus community members about warning signs of MHC and trained participants to identify students exhibiting concerning behaviors. The post-evaluation for this mixed-methods program indicated faculty had increased knowledge regarding mental health symptoms and, as a result, felt more confident in helping students with MHC (Reiff et al., 2019).

**Action: Likelihood of College Student Mental Health Service Referrals by Faculty**

Several of the previously discussed constructs relate to the likelihood of making mental health referrals by faculty. Studies by Becker et al. (2002) and Tye (2015) describe a positive relationship between faculty competence in helping students with MHC and the likelihood to make a mental health service referral. Kalkbrenner and Sink (2018) and St-Onge and Lemyre (2018 ) found similar results; increased interaction and training surrounding student MHC increased faculty confidence in referring students to mental health services. However, a lack of knowledge and experience with student MHC decreased faculty competence in encouraging students to pursue help (St-Onge & Lemyre, 2018).

Previous research describing in-person faculty perceptions and knowledge about student MHC presents strong evidence for developing a framework that explores these factors in an online learning environment. To enrich this conceptual framework, incorporating constructs identified from the HBM broadens the scope to view the multiple factors influencing the likelihood of online faculty making a university mental health service referral. This conceptual model will serve as the framework for the measurement model discussed in Chapter 3.

**Summary**

The faculty role in guiding college students struggling with MHC to mental health services has been studied. Research indicates that faculty's perceptions and knowledge about MHC influence involvement with college student mental health referrals. However,

COVID-19 has presented a different landscape that faculty must navigate to guide students to mental health services.

With decreased in-person interaction, faculty who may have provided gatekeeper services are now potentially at a disadvantage in identifying and connecting with students. There is a lack of research regarding online faculty role in facilitating college student mental health service referrals. Evidence from research with in-person environments has the potential to help us understand the mental health education needs of online faculty so that online faculty can continue the gatekeeper role and encourage students to seek mental health services. This study proposes to fill a gap in the literature by investigating how online faculty perceptions and knowledge influence the decision-making involved in referring students to university mental health services.

Perceptions and knowledge about college student MHC were explored using the HBM as a theoretical foundation. From the theoretical foundation, a conceptual model operationalized the constructs of the HBM into pertinent variables. Chapter 3 describes the methodology for this quantitative study to explore the current gap in the literature.



## Chapter 3: Research Method

### **Introduction**

The purpose of this study is to examine whether online faculty perceived threat of MHC, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge of warning signs for student MHC predict the willingness of online faculty referring students to mental health services.

This chapter is divided into three sections. The first section includes a description of the independent and dependent variables. Additionally, it includes a description of the study's overall design, the rationale behind this design, how the design is appropriate for exploring the research question, and the potential limitations of this design. The second section of this chapter describes the methodology used in identifying, sampling, recruiting, and interacting with participants. This section also explains the data collected, the instruments used, a measurement model describing how I operationalized the study variables, and threats to validity. The third section provides potential ethical concerns and strategies to minimize any impact on participants.

### **Research Design and Rationale**

Previous research indicates that specific factors may be relevant to the likelihood of faculty referring students with MHC to university mental health services. This study included the following independent variables for online faculty: a) perceived threat of MHC to college students, b) perceived benefits of referring students to university mental

health services, c) perceived barriers to referring students to university mental health services, d) perceived competence in helping students with MHC, and e) knowledge of warning signs for college student MHC. The dependent variable was online faculty likelihood of referring students to university mental health services.

The research design chosen for this study was a quantitative, non-experimental, cross-sectional design that explored whether a relationship exists between online faculty perceived threat of MHC, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, competence in assisting students, knowledge regarding student MHC, and the likelihood of referring students to university mental health services. This exploratory design aligns with the research question because the variables were measured in their natural state to investigate whether a relationship existed between the independent and dependent variables (Jann & Hinz, 2017). This design choice minimized time and resource constraints because participants completed the survey online.

The design choice aligned with exploratory research in the social science discipline, furthering the understanding of a particular occurrence at a specific time (Jann & Hinz, 2017). The quantitative, non-experimental design also allowed for exploration into the specific theoretical constructs to further understand them within a particular context (Joye et al., 2016). Through a systematic exploration of responses from one particular sample, I collected data to broaden the understanding of university online faculty perceptions and knowledge concerning student MHC (Joye et al., 2016). According to Jann and Hinz (2017), the cross-sectional nature offers a snapshot of the

participants at one point in time to allow for descriptive observations of that defined population.

## **Methodology**

### **Population**

The target population was individuals who currently teach or have taught a minimum of one undergraduate course in an online environment at a higher education institution. The target population size was 4,561 individuals from one United States university having multiple campuses.

### **Sampling and Sampling Procedure**

The sampling strategy was non-probabilistic, using a convenience sample. According to Jann and Hinz (2017), convenience samples are often used with exploratory research. Given the investigative nature of this study into a relatively unstudied population (online faculty), this method was justified. One strength of this type of sampling method included easy accessibility to participants. However, because the sample was not random, study participants may not be representative of the target population, and thus, the generalizability of the results are limited (Jann & Hinz, 2017).

Upon receiving IRB approval, I accessed potential participants through a publicly available faculty directory at one United States university with multiple campuses. Criteria for inclusion of the institution was that it offered students mental health services. Institutions of higher education without mental health services were excluded. Participant inclusion criteria were those who currently teach or have taught at least one online

undergraduate course. Exclusion criteria included those individuals without experience teaching an online undergraduate course.

The sample size, the power analysis, and the power of the effect all play a role in the probability of an effect being determined (Hedberg, 2018). If a sample size is large enough, the amount of variation within the sample will be less and thus, statistical tests will be more powerful and there will be a more significant chance of finding an effect (Wiedmaier, 2018). Power indicates the degree to which a statistical test results in a correct rejection of a null hypothesis when the alternative is true (Wiedmaier, 2018). Accurate detection of an effect is a measure of a test's power. Choosing a 95% confidence interval allowed for a balance between the power of a statistical test and not committing a Type I error, where the null hypothesis is incorrectly rejected for the alternative hypothesis (Wiedmaier, 2018).

Predicting an adequate sample size was essential in estimating a potential effect among the variables (Hedberg, 2018; Wiedmaier, 2018). After conducting a power analysis using the Raosoft Sample Size Calculator, I initially determined that a sample size of 367, with a 95% confidence interval and 5% margin of error, would adequately measure any potential effect of the variables (Raosoft, 2004). This sample size aligned with previous survey research investigating faculty experiences with college student mental health where researchers used sample sizes between 168 and 373 (Brockelman & Scheyett, 2015; Brooker et al., 2017; Gulliver et al., 2019; Kalkbrenner & Carlisle, 2021; Kalkbrenner & Sink, 2018; St-Onge & Lemyre, 2018). However, since the Raosoft Sample Size Calculator is designed to estimate survey distributions, the G\*Power sample

size and power estimator was used to conduct a post hoc power analysis after the completion of data collection (Faul et al., 2009; Raosoft, 2004). The achieved sample size was also confirmed by Tabchnick et al. (2007), who proposed using a formula of sample size  $N \geq 50 + 8m$  (where  $m$  = number of independent variables). According to this formula, a total sample size of  $\geq 90$  would be appropriate.

### **Procedures for Recruitment, Participation, and Data Collection**

One university with multiple campuses was selected that had a publicly available faculty directory. I ensured student mental health services were available through the university. Faculty email addresses were identified through the public directory, and I emailed an invitation to participate. Individuals interested in participating were directed to read an informed consent explaining the study, and could agree to participate by clicking the link included in the invitation, opening up the online survey.

Participants read the informed consent to participate online before starting the survey. The informed consent document detailed the study purpose, participant rights, and eligibility requirements. Additionally, the informed consent explained the voluntary nature of the study, assurance of participant confidentiality, the measures employed to protect participant identity, and reassurance that participants may withdraw at any time with no adverse consequences. Once the individual read the informed consent and decided to participate, they clicked the link provided, which brought them to the first survey question determining eligibility (Appendix A). Those not meeting the eligibility criteria were directed to exit the survey and thanked for their time.

Eligible individuals were asked to provide demographic information, including age, identified gender, the total number of years teaching in-person at the undergraduate college level, and the total number of years teaching online at the undergraduate college level. The participants then moved on to complete the survey. Once participants completed the survey, they were provided with my contact information for follow-up, were thanked for their time, and exited the survey. No follow-up procedures were required. The survey was available online for 6 weeks.

A field-test was conducted with my family and friends to establish the content validity of the three researcher-developed items about faculty perceived benefits of referring students to university mental health services, faculty perceived barriers to referring students to university mental health services, and faculty likelihood to refer students to university mental health service.

### **Instrumentation and Operationalization of Constructs**

Grounded in the conceptual model (Figure 1), this study used two existing instruments: a) the College Mental Health Perceived Competence Scale (CMHPCS) (Kalkbrenner and Sink, 2018) and b) the REDFLAGS model (Kalkbrenner, 2016). The data were collected through the survey platform and analyzed by me.

#### ***The College Mental Health Perceived Competence Scale (CMHPCS)***

Kalkbrenner and Sink (2018) developed and validated an instrument that included items related to competence in providing help to college students with MHC.

Competence was defined as "...the extent to which university community members are confident in their ability to promote a campus climate that is supportive, accepting, and

facilitative toward mental wellness” (Kalkbrenner & Sink, 2018, p. 175). Kalkbrenner and Sink (2018) were influenced by the self-determination theory, which posits that motivation is enhanced by confidence in one’s ability to engage in a behavior. Specifically, Kalkbrenner and Sink’s study (2018) found two of the three constructs measured by the CMHPCS, engagement and knowledge, were positively correlated with motivation to make a student mental health referral. St-Onge and Lemyre (2018) also found a positive relationship between faculty confidence in identifying and assisting students and a greater likelihood of making a mental health service referral.

The CMHPCS was developed by Kalkbrenner and Sink and published in 2018. The CMHPCS is intended for college counselors to assess college faculty and student self-competence in supporting students with MHC (Kalkbrenner & Sink, 2018). The specific items in the instrument were created based on current mental health topics relating to college faculty and students. For the CMHPCS instrument, the author permitted the instrument’s public use provided the authors are cited properly, there are no changes to the instrument, and no sale of the instrument occurs (Appendix B).

The content of the CMHPCS was assessed and validated by three professionals with expertise in psychology, counseling, and methodology and a pilot study using 22 graduate students. To ensure reliability and validity for a new measure, the researchers conducted a factor analysis process recommended in the literature (Mvududu & Sink, 2013). Researchers performed a principal factor analysis (PFA) with faculty, identifying and removing similar items due to redundancy. Researchers conducted a confirmatory factor analysis (CFA) using the same instrument with college students. Both the PFA and

CFA yielded similar results. A Cronbach's Coefficient Alpha of 0.81 yielded a high level of response reliability (Kalkbrenner & Sink, 2018).

To further validate the CMHPCS, the researchers sought to explore the research question, "To what extent do participants' CMHPCS scores have predictive validity for whether or not they have made a student referral to the counseling center?" (Kalkbrenner & Sink, 2018, p. 178). A hierarchical logistic regression (HLR) analysis was conducted to answer this question. The results of the HLR indicated an adequate predictive validity between the CMHPCS and faculty referrals to student mental health services (Kalkbrenner & Sink, 2018). The composite score assessed the independent variable, online faculty perceived competence in supporting students with MHC.

The three subsections of the CMHPCS can be explored individually or together (Kalkbrenner & Sink, 2018). Reliability was established for each subsection with the following reliability coefficients: engagement ( $\alpha = .84$ ), fear ( $\alpha = .83$ ), and knowledge ( $\alpha = .75$ ). Of note, researchers did address the fear subsection only having two items that may not offer the greatest level of reliability (Kalkbrenner & Sink, 2018). The two subsections, fear and knowledge, will assess the independent variable, online faculty perceived threat of student MHC.

### ***The REDFLAGS Model***

The REDFLAGS instrument was developed by M. Kalkbrenner and published in 2016 (Kalkbrenner, 2016). The instrument provides a simple screening tool for faculty to identify students potentially struggling with MHC (Kalkbrenner, 2016). For the REDFLAGS model, the author permits the public use of the instrument provided the



authors are correctly cited, there are no changes to the instrument, and no sale of the instrument occurs (Appendix C).

Kalkbrenner and Carlisle (2021) established construct validity for the instrument as accurately measuring participant ability to identify signs and symptoms of MHC in students through initial exploratory factor analysis and confirmed with CFA. Constructs contained within the REDFLAGS instrument were identified from criteria used by the Diagnostic and Statistical Manual of Mental Disorders (DSM) of the American Psychiatric Association (Kalkbrenner, 2016). Therefore, because of the widely accepted legitimacy of the DSM, the REDFLAGS instrument has inherent validity. To establish the REDFLAG's reliability, a Cronbach's Coefficient Alpha was used. An internal reliability consistency measure of  $\alpha = 0.90$  demonstrated a significant level of similar results among different samples (Kalkbrenner & Carlisle, 2021).

One specific research question Kalkbrenner and Carlisle (2021) sought to answer was, "To what extent does faculty members' recognition of the items on The REDFLAGS Model as warning signs for mental distress predict whether they had referred another student to the counseling center" (p. 74). Through a logistic regression analysis, the researchers discovered a statistically significant relationship between knowledge of the behaviors described in the REDFLAGS model and whether the faculty made referrals to the counseling center. As faculty responses to the REDFLAGS instrument increased by one unit, there was an increase in the odds of a referral by two units (Kalkbrenner & Carlisle, 2021). This instrument assessed the participants' ability to

recognize symptoms of potential student MHC for this study. The results were operationalized as the independent variable, cues to action.

### **Researcher-Developed Items**

Three researcher-developed Likert-scale items were used to assess the independent variables of online faculty perceived benefits of referring students to university mental health services, the perceived barriers of referring students to university mental health services, and the dependent variable of online faculty likelihood to refer to university mental health services. Currently, there are no instruments that measure these three constructs. These three items were included in a field-test to establish content validity. Data was obtained from researcher family and friends.

### **Operationalization of Variables**

Each item was operationalized into a measurable variable (Table 1). Survey items can be found in Appendix B.

**Table 1***Measurement Model*

	HBM constructs	Conceptual model constructs	Instrument
Modifying factors	Demographics	Online Faculty Demographics	Researcher-developed items
Individual beliefs	Perceived threat	Online Faculty Perceived Threat of Mental Health Concerns to College Students	CMHPCS – Fear & Knowledge Scores (Items #1,2,4,5,6,9,11)
	Perceived benefits	Online Faculty Perceived Benefits of Referring Students to University Mental Health Services	Researcher-developed item
	Perceived barriers	Online Faculty Perceived Barriers to Referring Students to University Mental Health Services	Researcher-developed item
	Self-efficacy	Online Faculty Perceived Competence in Guiding Students with Mental Health Concerns	CMHPCS – Composite Score
Action	Cues to action	Online Faculty Knowledge about College Student Mental Health	REDFLAGS – Composite Score
	Likelihood to take Action	Likelihood of University Mental Health Service Referrals by Online Faculty	Researcher-developed item

### ***Modifying Factors: Online Faculty Demographics***

To further understand the context of the survey data, respondent demographic information was collected (Dobosch, 2018). The demographics were operationally defined as responses to questions about age, preferred gender identity, the number of years teaching in-person, and the number of years teaching online. The responses to these researcher-developed items were coded to ensure accurate entry into the data analysis program.

The following independent variables were scored from 1 – 5 using responses from a Likert Scale with 1=Strongly Disagree, 2=Disagree, 3=Not Sure, 4= Agree, and 5=Strongly Agree.

### ***Individual Beliefs***

#### **Perceived Threat.**

The construct of perceived threat was operationally defined as Online Faculty Perceived Threat of MHC to College Students. The score for this ordinal variable was determined using the CMHPCS fear and knowledge items 1, 2, 4, 5, 6, 9, and 11 (Kalkbrenner & Sink, 2018). The responses for items 4 and 11 were reverse scored and then the score for these items were totaled and divided by seven, with a range of scores of 1-5. The higher the average score, the higher the online faculty's perception of a threat of mental health issues. An example item was "students with mental health issues are dangerous" (Kalkbrenner & Sink, 2018).

#### **Perceived Benefits.**

The construct of perceived benefits was operationally defined as Online Faculty Perceived Benefits of Referring Students to University Mental Health Services. The higher the score for this item, the higher the online faculty's perception of the benefits of making a mental health service referral. The item was, "There are benefits to referring students to our university's mental health services."

**Perceived Barriers.**

The construct of perceived barriers was operationally defined as Online Faculty Perceived Barriers to Referring Students to University Mental Health Services. The higher the score for this item, the higher the online faculty's perception of the barriers to making a mental health service referral. The item was "There are barriers to referring students to our university's mental health services."

**Self-Efficacy.**

The construct of self-efficacy was operationally defined as Online Faculty Perceived Competence in Guiding Students with Mental Health Concerns. The score for this ordinal variable was determined using the composite measurement from the complete CMHPCS and dividing it by 12 (Kalkbrenner & Sink, 2018). An average score of 1-5 was possible. The higher the score for this item, the higher the online faculty's perception of competence in supporting students with MHC. An example item is "I am comfortable talking to students about mental health" (Kalkbrenner & Sink, 2018).

The following independent variable was scored from 1 – 5 using responses from a Likert Scale with 1=I strongly disagree that this is a sign of a mental health issue, 2=I disagree that this is a sign of a mental health issue, 3=I'm not sure if this is a sign of a

mental health issue, 4= I agree this is a sign of a mental health issue, and 5=I strongly agree that this is a sign of a mental health issue (Kalkbrenner, 2016).

### ***Action***

#### **Cues to Action.**

The construct of cues to action was operationally defined as Online Faculty Knowledge about College Student Mental Health. The score for this variable was determined using the composite measurement from the complete REDFLAGS tool and dividing it by eight (Kalkbrenner, 2016). The average score for this item was 1-5. The higher the score for this item, the higher the online faculty's knowledge about college student MHC. An example item is "Late or incomplete assignments turned in abruptly and with increasing frequency" (Kalkbrenner, 2016).

The following dependent variable was scored from 1–5 using responses from a Likert Scale with 1=Strongly Disagree, 2=Disagree, 3=Not Sure, 4=Agree, and 5=Strongly agree.

#### **Likelihood to Take Action.**

The construct of likelihood to take action was operationally defined as Likelihood of University Mental Health Service Referral by Online Faculty. The higher the score for this item, the greater the likelihood of online faculty referring students to university mental health services. The score for this variable was determined using the item "I am likely to refer students to our university's mental health services."

Please refer to Appendix A for a copy of the instrument. It was estimated that eligible faculty would need no more than 10 minutes to give consent, provide demographic information, and complete the survey.

### **Data Analysis Plan**

The data analysis plan was to collect data through an online survey platform, Qualtrics, and transfer to the IBM SPSS Statistics v.27 package. The direct transfer of data decreases incorrect data entry from human error. Once the researcher transferred the data into the SPSS program, the data underwent a pre-analysis process to ensure data accuracy and identify missing data. Based on recommendations from Osborne (2013) to minimize the impact of missing data, the researcher developed an instrument to be completed effortlessly by participants, looked for and found no pattern to the missing data, and reported missing data within the methodology to ensure transparency of results.

The following describes the research question and hypotheses.

*RQ:* Do perceived threat about college student mental health, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge about MHC predict the likelihood that online faculty will refer students to university mental health services?

*Null Hypothesis:* Perceived threat about college student mental health, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge about MHC

do not predict the likelihood that online faculty will refer students to university mental health services.

*Alternative Hypothesis:* Perceived threat about college student mental health, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge about MHC predict the likelihood that online faculty will refer students to university mental health services.

The researcher performed descriptive statistical analysis for the demographic questions to identify the total participant number and further describe the sample. Total scores for each demographic question were calculated separately.

The researcher then conducted Pearson's correlation to assess the existence of correlations between the independent and dependent variables. One independent variable, perceived barriers, was found to have no correlation with the dependent variable and was thus excluded from further statistical analysis.

The researcher chose the ordinal regression as the statistical test to explore the research question. This statistical analysis investigates if the independent variables have a statistically significant effect on the dependent variable (Laerd Statistics, 2018).

Assumptions about this statistical test include 1) that the dependent variable is measured on the ordinal level, 2) that one or more of the independent variables are continuous, ordinal, or categorical, 3) there is no multicollinearity between the independent variables,



and 4) there are proportional odds in which each independent variable affects the dependent variable (Laerd Statistics, 2018).

Assumption one and two were met as the dependent and independent variables were measured on an ordinal scale. The data analysis plan was to determine whether any of the predictive variables were highly correlated to detect multicollinearity. If necessary, one of the highly correlated factors would be removed, however, no multicollinearity was found. The researcher conducted a test of parallel lines to test assumption four, the proportional odds assumption. Assumption four was violated, therefore the researcher chose to use a multiple linear regression analysis to test the hypothesis.

The researcher chose a multiple linear regression to test the study hypothesis to understand the effect of the predictor variables on the outcome variable (Laerd Statistics, 2018). Assumptions about this statistical analysis include 1) the dependent variable is measured on a continuous level, 2) there are at least two independent variables measured on a continuous or categorical level, 3) the observations are independent of each other, 4) there is a linear relationship between all of the independent variables and the dependent variable, 5) there is homoscedasticity among the residuals, or an equal variance in the errors, 6) there is no multicollinearity between the independent variables, 7) there are no significant outliers and, 8) the model demonstrates a normal distribution of the errors (Laerd Statistics, 2018).

The output expected from the linear regression analysis included the model summary, an ANOVA, and a coefficients table. The critical elements considered when interpreting the data included the R value to see the level of association between the

dependent and independent variables and an adjusted  $R^2$  to show an effect size (Rice & Harris, 2005). The ANOVA was run to see if the adjusted  $R^2$  was statistically significant. Lastly the standardized and unstandardized coefficients were observed as individual assessments of each independent variable and their effect in predicting the dependent variable. The data were included in tables from which interpretations follows.

### **Threats to Validity**

The potential threats to external validity included the researcher drawing conclusions about the data and misapplying them to other populations, settings, or periods. To minimize this threat, the researcher did not generalize the findings to populations, settings, or periods outside of the ones included in the study. An additional external threat was using a statistical power that did not support the conclusions from the data. To minimize the threat to external validity, the researcher ensured the power chosen for the study was appropriate for the design. Another threat to external validity included not correctly operationally defining the variables. To minimize the threat to external validity, the researcher concisely defined each variable and its measurement.

To reduce threats to internal validity, two previously validated instruments were used and an informal field-test was conducted to confirm the three researcher-developed items had content validity. Additional threats to internal validity included potential selection errors. Since participants were from a convenience sample and not randomly selected, they may not represent the entire population. Additionally, given the voluntary nature of the survey, participants with interest in the topic may have self-selected to complete it.

## **Ethical Procedures**

This study adhered to the ethical policies and procedures set forth by Walden University. The participants were treated in a manner according to appropriate ethical guidelines.

The contact information for potential subjects was obtained from publicly available email directories at a university in the United States that has multiple campuses, therefore no IRB approval from a site school was required. Institutional Review Board (IRB) approval was obtained from Walden University (approval number 11-22-21-0978791). Once Walden University IRB approval was granted, an email invitation to participate was sent to potential faculty participants found on a publicly available email directory at the university. There were no anticipated ethical concerns of recruiting participants.

Surveys did not collect any personal information that could potentially identify participants. The researcher will maintain all data securely to ensure confidentiality. The data will be stored on a flash drive for five years in a locked drawer within the researcher's office to be destroyed at the end of five years from collection. The researcher will not disseminate data for any other purpose than for the dissertation.

## **Summary**

This study used a quantitative, cross-sectional design to explore faculty-related factors in making mental health service referrals of students. Individuals from the university were emailed an invitation to participate, including a consent form. The individuals who chose to participate were asked to read the informed consent, answer

questions to determine participation eligibility, provide demographic data, and complete the survey. The researcher took all precautions to ensure ethical human subject treatment, confirming participant confidentiality.

This online survey contained items about online faculty likelihood to refer students to university mental health services. The survey included two previously validated instruments measuring online faculty perceived competence in guiding students with MHC and knowledge about student MHC. Three additional researcher-developed items were used to assess online faculty perceived benefits of referring students to university mental health services, online faculty perceived barriers to referring students to university mental health services, and the likelihood online faculty would refer a student to university mental health services. A presentation of descriptive data was provided, Pearson's correlation was conducted looking at associations between the independent and dependent variables, and data analysis included a multiple linear regression analysis to identify if the independent variables could predict the dependent variable. Data was collected and maintained confidentially and securely for analysis. The following chapter discusses study findings.

## Chapter 4: Results

### Introduction

The purpose of this study was to examine online faculty perceptions of the threat of college student MHC, the benefits of referring students to university mental health services, the barriers to referring students to university mental health services, competence in guiding students with MHC, and knowledge of the warning signs for student MHC and how they predict the willingness of online faculty to refer students to university mental health services. This exploratory quantitative study used factors that previous research has indicated as influencing in-person faculty likelihood to refer students to university mental health services.

The study involved the following research question and hypothesis:

*RQ:* Do perceived threat about college student mental health, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge about MHC predict the likelihood that online faculty will refer students to university mental health services?

*Null Hypothesis:* Perceived threat about college student mental health, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge about MHC do not predict the likelihood that online faculty will refer students to university mental health services.

*Alternative Hypothesis:* Perceived threat about college student mental health, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge about MHC predict the likelihood that online faculty will refer students to university mental health services.

Chapter 4 reviews the data collection process, including recruitment and response rates and the sample's baseline demographic and descriptive characteristics. Statistical assumptions pertinent to the statistical analysis are reviewed, followed by further specific findings related to the study, including a report of the results of the data analysis.

### **Data Collection**

I recruited faculty teaching at a public university with multiple campuses by email and invited them to participate in a survey about undergraduate student mental health referrals. The survey opened on December 2, 2021 and closed on January 12, 2022. The study population included a total of 4,561 non-duplicated faculty with current email addresses. I used the Qualtrics online platform version December, 2021 for the survey (Qualtrics, Provo, UT). Once the survey closed, I transferred data from the Qualtrics website directly to SPSS v.27.

I filtered out all missing data. Two hundred and seventy participants started a survey; however, 195 completed responses were submitted. Of the 195 responses, 10 did not meet inclusion criteria, and three did not complete the survey, leaving a sample of

182 participants. Those who did not meet criteria or did not complete the survey were deleted from the sample.

I conducted a post hoc power analysis with the G\*Power program (G\*Power version 3.1.9.6), using a medium effect size (Faul et al., 2009, Hedberg, 2018) and a sample size of 182. The analysis indicated a power of .99 (G\*Power version 3.1.9.6), which is considered significant (Hedberg, 2018). This analysis allowed me to detect a false null hypothesis given my study sample size and a medium effect size.

### Descriptive Statistics

Demographic characteristics of the study sample appear in Table 2. A significant number of participants were aged 54 or younger (64.55), identified as female (59.3%), had over 15 years of experience teaching undergraduate students in-person (49.5%), and had between 1 to 4 years of experience teaching undergraduate students online (64.3%).

**Table 2**

#### *Demographics*

Variable	<i>N</i>	%
Age		
25-34 years	11	6.0
35-44 years	49	26.9
45-54 years	61	33.6
55-64 years	43	23.6
65+ years	18	9.9
Gender		
Female	108	59.3
Male	73	40.1
Other	1	.5
Years teaching undergraduate students in-person		
1-4 years	18	9.9
5-9 years	33	18.1

10-14 years	41	22.5
15+ years	90	49.5
Years teaching undergraduate students online		
1-4 years	117	64.3
5-9 years	34	18.7
10-14 years	21	11.5
15+ years	10	5.5

I used a non-probabilistic, convenience sample for this study. The sample of 182 faculty who teach online in the United States can be assumed to be representative of the population.

Table 3 provides the frequency for each independent variable.

**Table 3**

*Descriptive Statistics for Independent Variables*

Variable	Perceived threat		Perceived benefits		Perceived barriers		Self-efficacy		Cues to action	
	n	%	N	%	n	%	n	%	N	%
(1) Strongly disagree	-	-	4	2.2	22	12.1	-	-	-	-
(2) Disagree	1	.5	-	-	38	20.9	-	-	-	-
(3) Not sure	7	3.8	12	6.6	24	13.2	4	2.2	6	3.3
(4) Agree	64	35.2	64	35.2	71	39.0	89	48.9	119	65.4
(5) Strongly agree	110	60.5	102	56	27	14.8	89	48.9	57	31.3
Total	182	100.0	182	100.0	182	100.0	182	100.0	182	100.0

To identify relationships between the variables in the model, I used a Pearson's correlation analysis (Table 4). As shown in Table 4, I found statistically significant relationships at the .01 level between the likelihood to refer and perceived benefits, self-efficacy, cues to action, and perceived threat. Perceived barriers did not show a



statistically significant association with the dependent variable or with the other variables in the measurement model.

**Table 4**

*Correlation for Dependent and Independent Variables Included in the Measurement*

*Model*

Variable		Likelihood to refer	Perceived benefits	Perceived barriers	Self-efficacy	Cues to action	Perceived threat
Likelihood to refer	Pearson correlation	1.00	.47**	-.14	.49**	.27**	.22**
	sig. (2 tailed)	--	.00	.07	.00	.00	.00
	N	182	182	182	182	182	182
Perceived benefits	Pearson correlation	.47**	1.00	-.12	.46**	.15*	.29**
	sig. (2 tailed)	.00	--	.10	.00	.04	.00
	N	182	182	182	182	182	182
Perceived barriers	Pearson correlation	-.14	-.12	1.00	-.04	.01	.05
	sig. (2 tailed)	.00	.07		.00	.00	.00
	N	182	182	182	182	182	182
Self-efficacy	Pearson correlation	.49**	.46**	-.04	1.00	.31**	.78**
	sig. (2 tailed)	.00	.00	.62	--	.00	.00
	N	182	182	182	182	182	182
Cues to action	Pearson correlation	.27**	.02*	.01	.31**	1.00	.28**
	sig. (2 tailed)	.00	.04	.85	.00	--	.00
	N	182	182	182	182	182	182
Perceived threat	Pearson correlation	.22**	.29**	.05	.78**	.28**	1.00
	sig. (2 tailed)	.00	.00	.48	.00	.00	--
	N	182	182	182	182	182	182

\*\*Correlation is significant at the .01 level (2-tailed)

\*Correlation is significant at the .05 level (2-tailed)

## **Independent Variables**

### ***Individual Beliefs***

**Perceived Threat.** The score for the perceived threat was determined using the CMHPCS fear and knowledge items 1, 2, 4, 5, 6, 9, and 11 (Kalkbrenner & Sink, 2018). Items four and nine required reverse scoring. The participant's average score, between 1-5, indicated the online faculty's perception of students with MHC as a threat.

**Perceived Benefits.** The score for perceived benefits was determined by the response to one researcher-generated statement with a Likert scale of 1-5. A higher score indicated a more significant perceived benefit by online faculty to making a mental health service referral for students struggling with MHC.

**Perceived Barriers.** The score for perceived barriers was determined by the response to one researcher-generated statement with a Likert scale of 1-5. A higher score indicated a more significant perception of barriers by online faculty to making a mental health service referral to university mental health services. According to Pearson's correlation, perceived barriers did not show a statistically significant association with the dependent variable or other variables in the measurement model. Because of this lack of correlation, the predictive variable Perceived Barriers was removed from further analysis.

**Self-Efficacy.** The score for self-efficacy was determined using the average score from the CMHPCS instrument (Kalkbrenner & Sink, 2018). A score of 1-5 was possible. The higher the score for this item, the higher the online faculty's perception of competence in helping students with MHC.

### ***Action***

The score for cues to action was determined using the average score from the REDFLAGS instrument (Kalkbrenner, 2016). A score of 1-5 was possible. The higher the score for this item, the more significant online faculty's recognition of cues to action to help college students with MHC.

### **Dependent Variable**

The likelihood of referring to the university counseling center score was determined by responding to one researcher-generated statement with a Likert scale of 1-5. The higher the score for this item, the more likely it was that online faculty would refer a student with MHC to the university counseling center (Table 5).

**Table 5**

*Likelihood to Refer to the University Counseling Center*

Variable	N	%
Likelihood to refer		
(1) Strongly Disagree	1	.5
(2) Disagree	4	2.2
(3) Not Sure	17	9.3
(4) Agree	71	39.0
(5) Strongly Agree	89	48.9
Total	182	100.0

## **Results**

### **Statistical Assumptions**

I chose the multiple linear regression analysis for this study; this test determines if the dependent variable can be predicted by the independent variables. However, to ensure the fit between the observed values and the predicted values, certain assumptions needed

exploration (Laerd Statistics, 2018). Testing these assumptions allowed me to identify any violations and ensure that the regression model fit the data. A model fit confirms that any variation in the dependent variable can be explained by the independent variables and confirms the accuracy of the prediction for the hypothesis (Laerd Statistics, 2018).

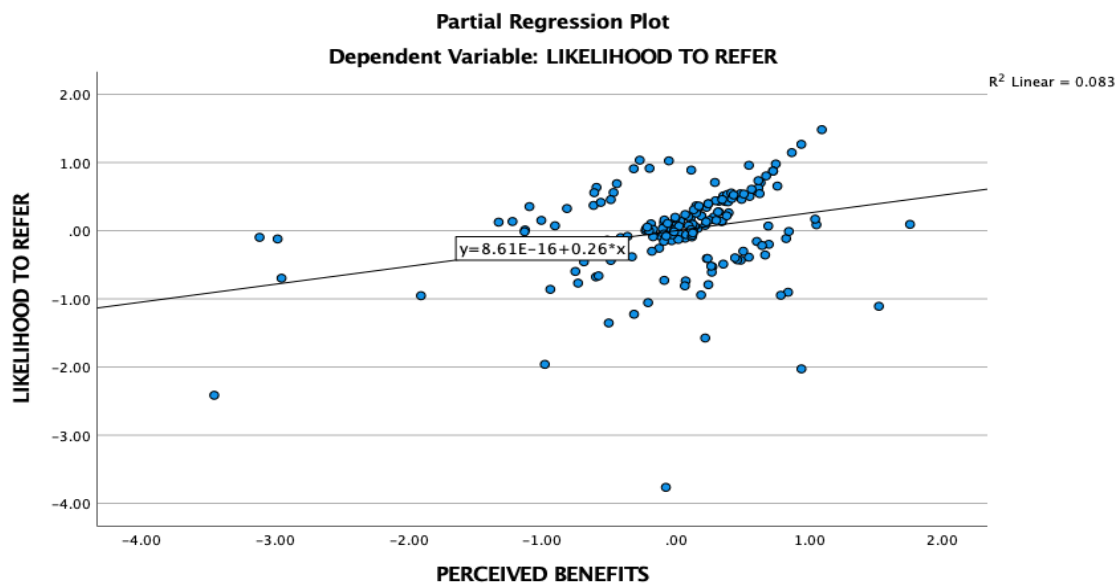
Eight assumptions need consideration for multiple linear regression analysis (Laerd Statistics, 2018). Assumptions one and two were met as both the dependent and independent variables were measured at the continuous level (Laerd Statistics, 2018).

Assumption three, that there are unrelated errors (or residuals) independent from each other, was met using the Durbin-Watson statistic (2.11). Any value between 1.5 and 2.5 indicates an independence of residuals (Laerd Statistics, 2018).

Assumption four, confirming a linear relationship between the dependent variable and independent variables, was approached by looking at scatterplots for each independent variable with the dependent variable. The scatterplot for perceived benefits showed no violation of the assumption for linearity (Figure 2).

**Figure 2**

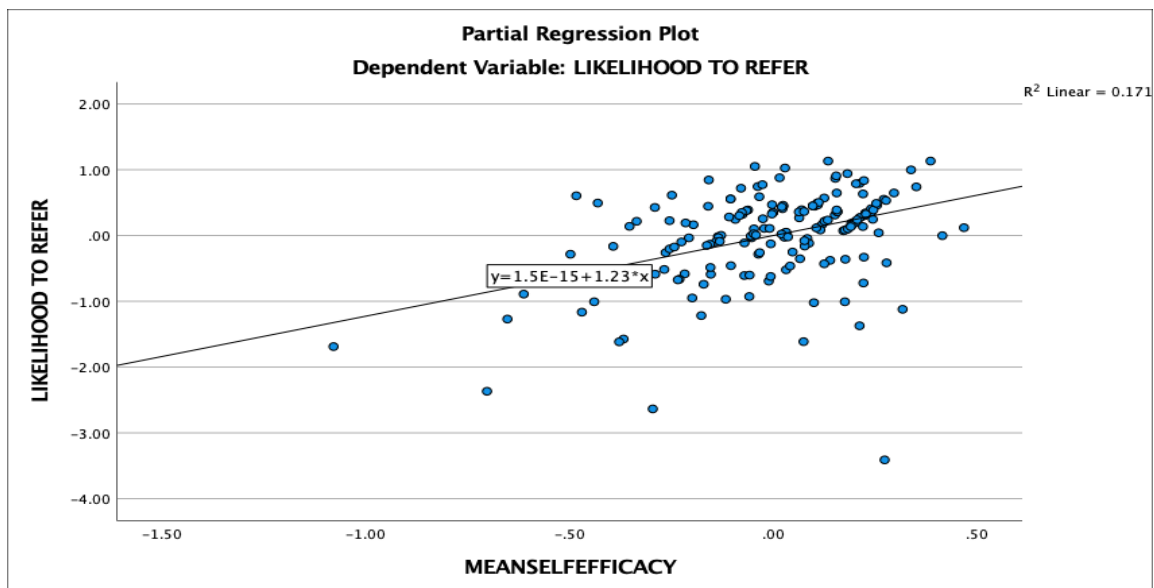
*Scatterplot of the Perceived Benefits and Likelihood to Refer*



The scatterplot for perceived self-efficacy showed no violation of the assumption of linearity (Figure 3).

**Figure 3**

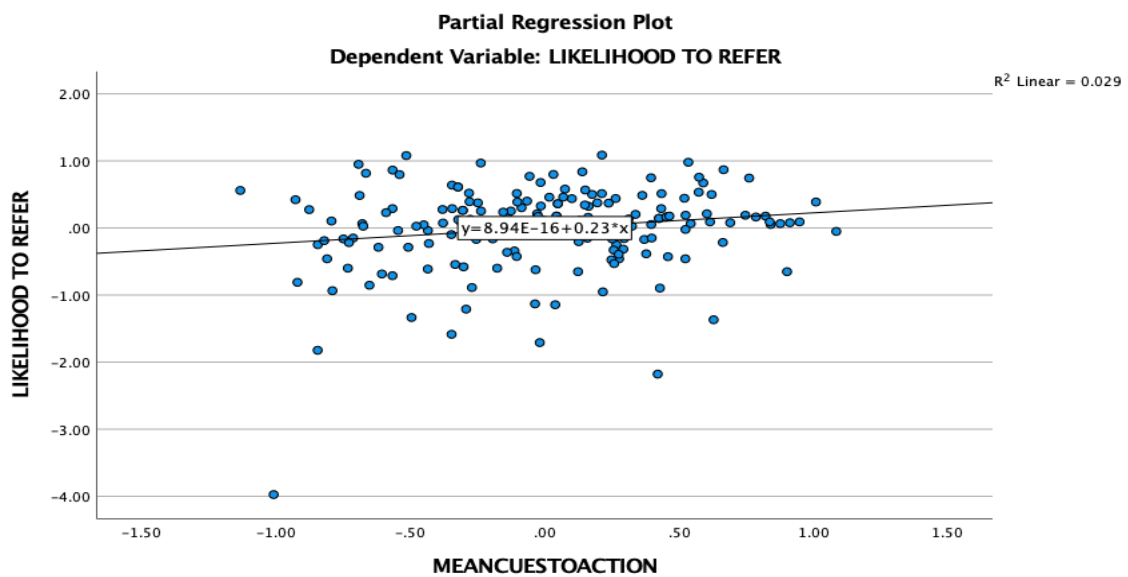
*Scatterplot of Self-Efficacy and Likelihood to Refer*



The scatterplot for cues to action (Figure 4) showed no violation of the assumption of linearity.

**Figure 4**

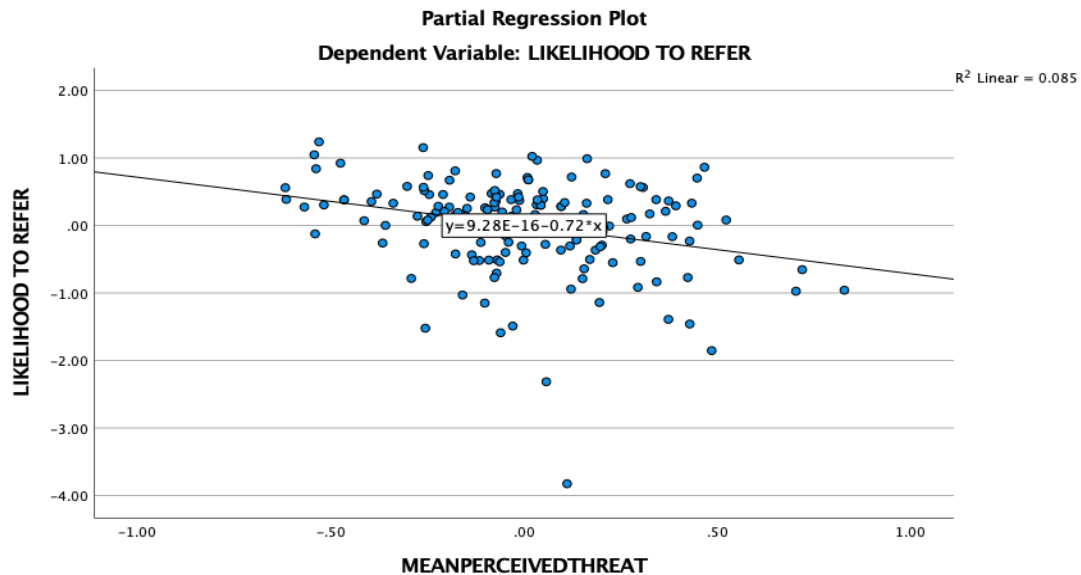
*Scatterplot of Cues to Action and Likelihood to Refer*



A scatterplot for perceived threat showed no violation of a linear relationship (Figure 5).

**Figure 5**

*Scatterplot of the Perceived Threat and Likelihood to Refer*



Assumption five, testing for homoscedasticity, was done to see if the variance of error is equal across the independent variables for all the values of the predicted dependent variable. There was no violation of the assumption of homoscedasticity for the predictor variables by visual inspection of the scatterplots.

Assumption six included identifying if multicollinearity between the independent variables exists. The researcher inspected Pearson's correlation coefficients, and two predictive variables, self-efficacy and perceived threat, had a correlation coefficient  $>.70$  (.779), indicating possible multicollinearity (Laerd Statistics, 2018). However, by inspecting the Variance Inflation Factor (VIF), self-efficacy and perceived threat each had a score less than 5, 3.05 and 2.60 respectively, which are considered moderate collinearity and require no corrective measures (Frost, 2021).

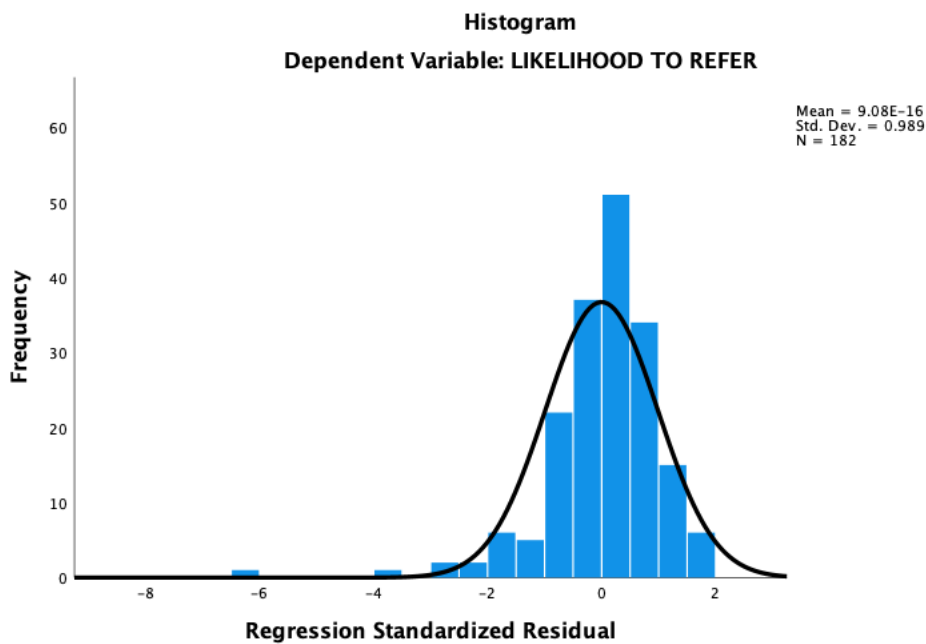


Assumption seven involved checking for unusual outliers. Upon analysis, the researcher found two cases to have a much lower value (1.0, 2.0) than the predicted value (4.8280, 4.2015), outside the standard deviation of  $\pm 3$ . However, the Cook's distance revealed a distance of .42 which is considered acceptable as it is less than one (Parke, 2013).

Assumption eight was explored for normal distribution of the residuals. The researcher looked for a normal distribution between the observed values and predicted values. A histogram (Figure 6) showed a normal distribution of the residuals.

**Figure 6**

*Distribution of Residuals – Histogram*



The results of the assumption testing indicated no violations of the assumptions for the multiple linear regression.

### Statistical Analysis Findings

The researcher used a multiple linear regression to predict the likelihood of online faculty making a mental health referral for students with MHC based on the perceived threat of MHC, the perceived benefits to mental health services, the self-efficacy online faculty perceived in helping students with MHC, and the ability to recognize cues that a student was struggling with MHC. SPSS v. 27 was used to conduct the analysis. The multiple linear regression model statistically significantly predicted the likelihood of referrals to university mental health services  $F(4, 177) = 27.70, p \leq .05, \text{adj. } R^2 = .37$ . The four predictive variables contributed statistically significantly to the prediction,  $p \leq .05$ .

One objective of a multiple linear regression analysis includes determining how much variation in the dependent variable can be explained by the independent variables. By analyzing the multiple linear regression, the researcher could identify which independent variables predicted the dependent variable and to what extent.

An R of .62 showed a moderate association level between the dependent and independent variables. R squared for the overall model was .39 (39%) with an adjusted R squared of .37 (37%), showing a small to medium effect size (Rice & Harris, 2005). The independent variables of perceived threat, perceived benefits, self-efficacy, and cues to action account for 37% of the likelihood that online faculty would refer students to university mental health services (Table 6).

**Table 6***Model Summary*

Model	R	R squared	Adjusted R squared	Std. Error of the Estimate	Durbin Watson
1	.49 <sup>a</sup>	.24	.24	.68	
2	.56 <sup>b</sup>	.31	.31	.65	
3	.61 <sup>c</sup>	.37	.36	.63	
4	.62 <sup>d</sup>	.39	.37	.62	2.11

a. Predictors: (Constant), Self-Efficacy

b. Predictors: (Constant), Self-Efficacy, Perceived Benefits

c. Predictors: (Constant), Self-Efficacy, Perceived Benefits, Perceived Threat

d. Predictors: (Constant), Self-Efficacy, Perceived Benefits, Perceived Threat, Cues to Action

Table 7 presents the ANOVA and indicates the statistical significance of the model,  $p \leq .05$ . Perceived threat, perceived benefits, self-efficacy, and cues to action statistically significantly predicted the likelihood to refer.

**Table 7***Model Statistical Significance*ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	26.63	1	26.63	57.11	.00 <sup>b</sup>
	Residual	83.93	180	.47		
	Total	110.56	181			
2	Regression	34.63	2	17.32	40.82	.00 <sup>c</sup>
	Residual	75.92	179	.42		
	Total	110.56	181			
3	Regression	40.50	3	13.50	34.30	.00 <sup>d</sup>
	Residual	70.06	178	.39		
	Total	110.56	181			
4	Regression	42.56	4	10.64	27.70	.00 <sup>e</sup>
	Residual	68.00	177	.38		

Total	110.56	181
a. Dependent Variable: Likelihood to Refer		
b. Predictors: (Constant), Self-Efficacy		
c. Predictors: (Constant), Self-Efficacy, Perceived Benefits		
d. Predictors: (Constant), Self-Efficacy, Perceived Benefits, Perceived Threat		
e. Predictors: (Constant), Self-Efficacy, Perceived Benefits, Perceived Threat, Cues to Action		

Table 8 shows the degree to which the independent variables predict the outcome variable. The unstandardized coefficients show that for every one-unit increase in the perceived threat of students with MHC, there is a .72 unit decrease in the likelihood of referring to the counseling center services when all other factors are constant. For every one-unit increase in perceived benefits of counseling center services, there is a .26 unit increase in likelihood of referring to the counseling center services when all other factors are constant. For every one-unit increase in self-efficacy in helping students with MHC, there is a 1.23 unit increase in likelihood of referring to the counseling center services when all other factors are constant. For every one-unit increase in cues to action to help students with MHC, there is a .23 unit increase in likelihood of referring to the counseling center services when all other factors are constant. The standardized coefficients remove the unit effect and look at the absolute value of the coefficients. Self-efficacy remains the most significant predictor. For every one-unit change in self-efficacy, there is a .62 unit change in likelihood of referring students to university mental health services when all other factors are constant.

**Table 8**

*Coefficients<sup>a</sup>*

Model	Unstandardized Coefficients	Standardized Coefficients	95% Confidence Interval for B
-------	-----------------------------	---------------------------	-------------------------------

	B	Std. Error	Beta	Sig	Lower Bound	Upper Bound
Constant	-.39	.61		.52	-1.61	.81
Perceived Benefits	.26	.07	.27	.00	.13	.39
Self-Efficacy	1.23	.20	.62	.00	.83	1.63
Cues to Action	.23	.09	.14	.02	.03	.42
Perceived Threat	-.72	.18	-.39	.00	-1.06	-.37

*a. Likelihood to Refer*

Based on the analysis performed, the null hypothesis can be rejected. The four independent variables, perceived threat, perceived benefits, perceived self-efficacy, and cues to action had an effect on the dependent variable.

### Summary

Four of the five chosen independent variables, online faculty perceptions of the threat of student MHC, perceptions of the benefits of mental health services, perceptions of self-efficacy in helping students, and the identification of cues that students struggled with MHC indicated a statistically significant ability to predict the likelihood of online faculty referring students with MHC to university mental health. An online survey was distributed through Qualtrics to faculty recruited from one United States university with multiple campuses, all of who previously taught undergraduate students in an online learning environment. The researcher transferred all data directly to SPSS v27 once the survey closed.

Based on Pearson correlation analysis results, a correlation was found between four of the independent variables and the dependent variable. The variable of perceived barriers was not found to correlate with the dependent variable or any other variables in the model and was thus excluded from the remaining analyses. A multiple linear

regression analysis was indicated with the research goal to explore if the independent variables could predict the dependent variable.

Assumption testing was conducted demonstrating no violation in observed errors being independent from each other. No violation of the assumption of linearity was found for the independent variables. The assumption test for multicollinearity demonstrated moderate collinearity between two of the predictive variables. However, further assessment of the VIF indicated scores for these two independent variables that did not show a need to be corrected. Two points were found to be outliers; however the Cook's distance revealed a difference between the minimum and maximum that was less than one, requiring no correction. The assumption for homoscedasticity was not violated. The histogram indicated a normal distribution of residuals.

The model summary indicated a 37.0% change in the outcome variable associated with the four predictor variables using the adjusted R squared score. The ANOVA showed that the four predictor variables were statistically significant in predicting the outcome variable at a  $p < .05$  level. The coefficient analysis indicated that of the four independent variables, self-efficacy showed the most significant impact on the dependent variable (Unstandardized Beta = 1.23, Standardized Beta = .62).

The research question focused on identifying if online faculty's perceived threat about college student mental health, perceived benefits of referring students to university mental health services, perceived barriers to referring students to university mental health services, perceived competence in guiding students with MHC, and knowledge about MHC could predict the likelihood that online faculty would refer students to university

mental health services. No correlation between perceived barriers and the likelihood to refer to university mental health services was found. Therefore, this independent variable was excluded from the analysis. There was a statistically significant result for the four remaining independent variables in predicting the outcome variable. Therefore, the null hypothesis was rejected because there were statistically significant predictions regarding referrals to university counseling center services based on the remaining independent variables.

The following chapter will offer an interpretation of the study findings and address study limitations. The researcher will communicate recommendations for future research, the study's positive social change implications, and the overall message this research can communicate.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

Previous research indicates that student referrals to university mental health services fall under the faculty gatekeeper role (Baik et al., 2019; Barr, 2014; Di Placito-De Rango, 2018; Gulliver et al., 2019; Hughes et al., 2018; Reiff et al., 2019). The purpose of this study was to explore if online faculty perceptions and knowledge about student MHC predict the likelihood of referring to university mental health services, thus engaging in that gatekeeper role.

This quantitative, non-experimental, cross-sectional study surveyed faculty who taught undergraduate students online about their perceptions regarding the threat of student MHC, the benefits of referring students to university mental health services, the barriers to referring students to university mental health services, the competence in guiding students with MHC, and the knowledge of warning signs for student MHC. This exploratory study was grounded in the HBM, with constructs operationalized into five independent variables. The results from this survey demonstrated that specific factors can be used to predict if online faculty will act as gatekeepers and refer students to mental health services.

The study findings indicated a statistically significant association between online faculty perceptions about the threat of students with MHC, the benefits of university mental health services for students with MHC, the self-efficacy of faculty in helping students with MHC, and identifying factors indicating students struggling with MHC and the likelihood these faculty would make a referral to university student mental health



services. Therefore, I rejected the null hypothesis that these variables did not predict the likelihood that online faculty would make a referral to student mental health services.

### **Interpretation of the Findings**

Noteworthy research has explored the faculty role as gatekeepers in referring students struggling with MHC to university mental health services (Barr, 2014; Di Placito-De Rango, 2018; Reiff et al., 2019). The literature demonstrates that crucial factors such as faculty's perception of competence in helping students, perception of the threat of student MHC, and identifying symptoms that students with MHC may display influence faculty in referring students for mental health services (Kalkbrenner, 2016; Kalkbrenner & Sink, 2018). With COVID-19 and the increase in online learning that followed, attending to college student mental health continues to be crucial (Kwan et al., 2021; Sahu, 2020). This study confirmed that the factors seen as significant in predicting if in-person faculty refer students to university mental health services are also relevant with faculty teaching online. The following sections describe findings from this study as related to the existing research.

#### **Faculty Perception of the Threat of Mental Health Concerns to College Students**

The current study investigated if online faculty perceived threat about college student MHC was greater, would this increase the likelihood of a referral to mental health services. Previous research directly measuring faculty perceptions about the threat of MHC and the likelihood to make mental health service referrals is limited. Backels et al. (2001) found that faculty who believed MHC negatively impacted student success were more likely to request education from counseling center personnel. Seeking additional

education and training from mental health service professionals about student MHC as an indicator of perceived threat may be pertinent (Kalkbrenner, 2016; Margrove et al., 2014;).

Findings from the current study indicated that there was a negative relationship between perceived threat and likelihood to refer to university mental health services. This finding is contrary to previous research. The variable perceived threat of MHC was measured using the fear and knowledge scores from the CMHPCS (Kalkbrenner & Sink, 2018). This finding may be related to the measurement of the perceived threat variable, requiring a different approach to its measurement in future studies.

### **Faculty Perceived Benefits of Referring Students to University Mental Health Services**

Despite research indicating college students benefit from mental health services (Bettis et al., 2017; Lipson et al., 2019; Regehr et al., 2013; Vescovelli et al., 2017), there is no specific research assessing if faculty believe that mental health service referrals are beneficial. Results from the current study demonstrate a positive relationship between online faculty's perception of benefits to mental health service referrals and their likelihood to refer students to mental health services. This finding may support future efforts to educate online faculty about the benefits of mental health services and the importance of promoting referrals.

## **Faculty Perceived Competence in Guiding College Students With Mental Health Concerns**

Several studies have explored faculty competence in helping students with MHC and making mental health referrals (Albright & Schwartz, 2017; Giamos et al., 2017; Kalkbrenner & Carlisle, 2021; Reiff et al., 2019). Based on research, faculty confidence in speaking to students with MHC and identification of MHC positively influenced the willingness to make referrals to mental health services (Becker et al., 2002; Gulliver et al., 2019; Kalkbrenner, 2016; St-Onge & Lemyre, 2018; Tye, 2015). The current study confirmed previous study results with self-efficacy demonstrating the greatest predictive ability as to whether online faculty would be willing to make referrals to mental health services. The element of self-efficacy related to helping students with MHC would be critical to consider in developing mental health education training for online faculty.

## **Faculty Knowledge of College Student Mental Health Concerns**

Previous research indicates mixed findings about faculty ability to identify college student MHC and its influence on referrals to mental health services (Gulliver et al., 2019; Hughes et al., 2018; Kalkbrenner, 2016; Kalkbrenner & Sink, 2018; Tye, 2015). However, programs designed to increase faculty knowledge regarding college student MHC have shown increased confidence in referring (Reiff et al., 2019). The current study demonstrated a positive relationship between online faculty knowledge about MHC and the likelihood to refer, confirming previous findings from in-person faculty studies. Based on the statistical analysis, the chosen study variables related to in-person faculty

likelihood to refer students to mental health services were relevant to those faculty teaching online.

The HBM provided a platform to conceptualize the factors indicated as pertinent by the research literature. While initially developed to explain individual behavior changes (Glanz et al., 2015; Rosenstock, 1974), the HBM was expanded in this study to illustrate how perceptions and cues to action may influence behavior on behalf of another individual. The results of this study further support the HBM as a method to explore constructs such as perceptions and cues to action in influencing behaviors on behalf of an “other.”

### **Limitations of the Study**

A limitation of this study was the study design. This non-experimental, cross-sectional study used a convenience sample and included data collected during one period, without any sample randomization. This convenience sample could threaten the external validity of the study and limit result generalizability. While results from this study cannot necessarily be generalized to other populations, it still has the potential to provide a platform from which future studies can be conducted.

The instrument may also have presented a limitation as it brings together two published, validated tools with three additional researcher-developed items. Two of the instruments had been used previously with similar respondents and demonstrated significant internal reliability (Kalkbrenner & Carlise, 2021; Kalkbrenner & Sink, 2018). However, one potential limitation to validity was brought to my attention by one of the respondents post-survey. The participant indicated disagreement with one of the

statements assessing online faculty identification of students with MHC. This respondent felt the statement “sudden deterioration in the quality of work and content of work becomes negative or dark” (Kalkbrenner, 2016) conflated a decrease in quality of work and negativity. This participant shared that negative and dark work is not necessarily a sign of MHC. This observation highlights a potential challenge to the instrument’s internal validity.

### **Recommendations**

The results of this study indicate that faculty-specific factors predicted in a statistically significant manner the likelihood of a behavior. However, to improve generalizability and validate these findings, it is recommended that further research be conducted using a larger sample size. Additional research would build the internal and external validity of the instrument to assess its appropriateness for online faculty and its reliability with multiple different sample populations. An experimental study design could also be used to determine the difference between a sample of faculty who teach in-person and a sample of faculty who teach online. Results from an experimental study would either further validate or challenge this study’s findings, noting if online faculty’s training and mental health education needs to increase the likelihood of referrals to university mental health services are similar to or different from those teaching in-person.

### **Implications**

This study offers the potential to understand further the factors involved in predicting whether online faculty will make mental health service referrals for students struggling with MHC. Exploring the factors involved in online faculty as gatekeepers in

assisting students with MHC offers potential for further investigation into online faculty's mental health training and education needs. To support this assumption, I received email correspondence from three participants expressing that this was a worthy area of research.

This study can promote positive social change by enhancing potential support for students struggling with MHC. According to these study results, the perceived self-efficacy in assisting students with MHC most significantly predicted the likelihood of online faculty to refer students to university mental health services. Incorporating this specific construct into mental health training and education programs for online faculty may possibly increase referrals to university mental health services.

With online faculty receiving training and education regarding student MHC, specifically focusing on increasing self-efficacy, they may be better equipped to assist online students in seeking university mental health services. This potential increase in skill and awareness can lead to positive social change at the individual level. Online students may have help in seeking support to address the MHC, impacting them physically, emotionally, and academically. More broadly, this study may lead to an increase in positive social change at the social level. The HBM may be used as a framework to conceptualize how perceptions and cues to action impact behavior on behalf of an "other." Based on the results of this study, it is recommended that universities enhance the online faculty gatekeeper role. Specifically, strengthening online faculty self-efficacy in helping students with MHC needs to be incorporated into mental health education and training programs.

## **Conclusion**

Faculty play a critical role in helping students with MHC. The online learning environment has become a new frontier for faculty to continue as gatekeepers for struggling students. This study investigated online faculty perceptions and knowledge surrounding student MHC with the results demonstrating a predictive ability between perceptions and knowledge about student MHC and the likelihood of making a student referral to university mental health services. To enhance online faculty's skills and abilities to assist students in obtaining services that address physical, mental, and academic issues, it is critical to incorporate self-efficacy in helping students with MHC as a prominent strategy in the training and education of online faculty.

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## Appendix A: Survey Instrument

Q1 Have you taught or do you currently teach undergraduate college students in an online learning environment (either synchronous or asynchronous)?

- Yes
- No

Q2 What is your age?

- 25-34 years
  - 35-44 years
  - 45-54 years
  - 55-64 years
  - 65 + years
- 

Q3 With which gender do you most identify?

- Female
  - Male
  - Other
-

Q4 How many years have you taught undergraduate students in-person?

- 1-4 years
  - 5-9 years
  - 10-14 years
  - 15+ years
- 

Q5 How many years have you taught undergraduate students online?

- 1-4 years
  - 5-9 years
  - 10-14 years
  - 15 + years
-

Q6

Please make a selection based on your experiences when teaching online.

**Directions:** The following items are general statements about mental health issues and college students. Please respond to each statement (1).

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
Mental health issues are a serious concern for college students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mental health issues are becoming more complex among college students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable referring college students with mental health issues to the counseling center on campus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students with mental health issues are dangerous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Page Break

Q7 Please make a selection based on your experiences when teaching online.

**Directions:** The following items are general statements about mental health issues and college students. Please respond to each statement (1).

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
Mental health concerns have serious negative impacts on students' academic performances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mental health issues are increasing among college students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable referring college students with mental health issues to the health center on campus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable talking to students about mental health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q8 Please make a selection based on your experiences when teaching online.

**Directions:** The following items are general statements about mental health issues and college students. Please respond to each statement (1).

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
Students with mental health issues pose a threat to the campus community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am aware of the university resources for mental health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mental health concerns have serious negative impacts on students' personal well-being.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable referring college students with mental health issues to counseling services in the community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q9

Please make a selection based on your experiences when teaching online.

**Directions:** Below are examples of behaviors that may or may not be warning signs that a student is struggling with a mental health issue. Please read each statement carefully and select the response that most accurately reflects your view. There are no correct answers (2).

	I strongly disagree that this is a sign of a mental health issue	I disagree that this is a sign of a mental health issues	I'm not sure if this is a sign of a mental health issue	I agree that this is a sign of a mental health issue	I strongly agree that this is a sign of a mental health issue
Recurrent class absences that are sudden or uncharacteristic of the student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extreme and unusual emotional reactions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty concentrating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frequent display of anxiety or worry about class assignments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q10 Please make a selection based on your experiences when teaching online.

**Directions:** Below are examples of behaviors that may or may not be warning signs that a student is struggling with a mental health issue. Please read each statement carefully and select the response that most accurately reflects your view. There are no correct answers (2).

	I strongly disagree that this is a sign of a mental health issue	I disagree that this is a sign of a mental health issues	I'm not sure if this is a sign of a mental health issue	I agree that this is a sign of a mental health issue	I strongly agree that this is a sign of a mental health issue
Late or incomplete assignments turned in abruptly and with increasing frequency.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apathy towards personal appearance or hygiene.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gut feeling that something doesn't seem right.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sudden deterioration in quality of work of content of work becomes negative or dark.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q11 Directions:** Please make a selection based on your experience when teaching online.

	Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
There are <b>benefits</b> to referring students to our university's mental health services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are <b>barriers</b> to referring students to our university's mental health services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am likely to refer students to our university's mental health services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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- (1) Kalkbrenner, M.T., & Sink, C. (2018). Development and validation of the College Mental Health Perceived Competency Scale. *The Professional Counselor*, 175-189. doi:10.15241/mtk.8.2. 175
- (2) Kalkbrenner, M.T., Lopez, A.L., & Gibbs, J.R. (2020). Establishing the initial validity of The REDFLAGS Model: Implications for college counselors. *Journal of College Counseling*, 23, 98-112. <https://doi.org/10.1002/jocc.12152>



We thank you for your time spent taking this survey.  
Your response has been recorded.

## Appendix B: Instrument and Permission to Use (CMHPCS)

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### College Mental Health Perceived Competency Scale (CMHPCS)

**Directions:** The following items are general statements about mental health issues and college students. Please use the following scale to respond to each statement.

1 = Strongly Disagree	2 = Disagree	3 = Not Sure	4 = Agree	5 = Strongly Agree
-----------------------	--------------	--------------	-----------	--------------------

1. \_\_\_\_\_ mental health issues are a serious concern for college students
2. \_\_\_\_\_ mental health issues are becoming more complex among college students
3. \_\_\_\_\_ I am comfortable referring college students with mental health issues to the counseling center on campus
4. \_\_\_\_\_ students with mental health issues are dangerous
5. \_\_\_\_\_ mental health concerns have serious negative impacts on students' academic performances
6. \_\_\_\_\_ mental health issues are increasing among college students
7. \_\_\_\_\_ I am comfortable referring college students with mental health issues to the health center on campus
8. \_\_\_\_\_ I am comfortable talking to students about mental health
9. \_\_\_\_\_ students with mental health issues pose a threat to the campus community
10. \_\_\_\_\_ I am aware of the university resources for mental health
11. \_\_\_\_\_ mental health concerns have serious negative impacts on students' personal well-being
12. \_\_\_\_\_ I am comfortable referring college students with mental health issues to counseling services in the community

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#### College Mental Health Perceived Competency Scale: Scoring Instructions

The College Mental Health Perceived Competency Scale (CMHPCS) contains three subscales (Knowledge, Fear, and Engagement). Scores can be computed for each subscale independently or the measure can be scored holistically. Higher scores indicate a greater perceived competency for supporting college student mental health.

\* Denotes reverse scored item

##### Subscale # 1: Knowledge

Take the sum of the following items: 1, 2, 5, 6, 11 = \_\_\_\_\_

Divide the sum of items by 5 = \_\_\_\_\_

*Knowledge* reflects the extent to which the respondent was familiar with mental health issues on college campuses.

##### Subscale # 2: Fear

Take the sum of the following items: \*4, \*9 = \_\_\_\_\_

Divide the sum of items by 2 = \_\_\_\_\_

*Fear* appraises one's anxiety or concern surrounding mental health issues on college campuses.

##### Subscale # 3: Engagement

Take the sum of the following items: 3, 7, 8, 10, 12 = \_\_\_\_\_

Divide the sum of items by 5 = \_\_\_\_\_

*Engagement* reflects the degree to which a one is involved with interacting, supporting, and working with students who are struggling with mental health distress.

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## Appendix C: Instrument and Permission to Use (REDFLAGS)

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Kalkbrenner, Lopez and Gibbs (2020)

### The REDFLAGS Questionnaire

<p><b>Directions:</b> Below are examples of behaviors that <i>may</i> or <i>may not</i> be warning signs that a student is struggling with a mental health issue. Please read each statement carefully and select the response that most accurately reflects your view.</p> <p>There are no correct answers. If you want to change your answer, put an X through first choice and circle your new choice.</p> <p><b>*Please circle ONE answer for all questions.</b></p>						
1 = I strongly disagree that this is a sign of a mental health issue	2 = I disagree that this is a sign of a mental health issue	3 = I'm not sure if this is a sign of a mental health issue	4 = I agree that this is a sign of a mental health issue	5 = I strongly agree that this health issue		
<b>Possible Warning Signs</b>		<b>Please circle one answer for each question on the following scale</b>				
1. Recurrent class absences that are sudden or uncharacteristic of the student		1	2	3	4	5
2. Extreme and unusual emotional reactions		1	2	3	4	5
3. Difficulty concentrating		1	2	3	4	5
4. Frequent display of anxiety or worry about class assignments		1	2	3	4	5
5. Late or incomplete assignments turned in abruptly and with increasing frequency		1	2	3	4	5
6. Apathy towards personal appearance and hygiene		1	2	3	4	5
7. Gut feeling that something doesn't seem right		1	2	3	4	5
8. Sudden deterioration in quality of work or content of work becomes negative or dark		1	2	3	4	5

### The REDFLAGS Questionnaire: Scoring Instructions

Take the sum of the items: 1. + 2. + 3. + 4. + 5. + 6. + 7. + 8. = \_\_\_\_\_

Divide the sum of items by 8 = \_\_\_\_\_

- Higher scores denote a greater propensity to recognize the items on The REDFLAGS Model as warning signs of mental distress in college students.

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