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Best Practices for the Occupation of Education for College Students with Mental Health Issues

By

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A Scholarly Project

Submitted to the Occupational Therapy Department

of the University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Occupational Therapy

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APPROVAL

This scholarly project, submitted by Karen A. Jaspers, MOTS and Brianna J Johnson, MOTS, in partial fulfillment of the requirement for the Degree of Master's of Occupational Therapy from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.

Sarah Nelson PhD, OTR/L
Faculty Advisor

12-17-19
Date

PERMISSION

Title: Best Practices for the Occupation of Education for College Students with Mental Health Issues

Department: Occupational Therapy

Degree: Master's of Occupational Therapy

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Signature Karen Jaspers Date 12-17-19

Signature Brianna Johnson Date 12-17-19

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ABSTRACT

Objective: To examine the available evidence for interventions provided on college campuses that address mental illness in college-aged students.

Method: The scoping review process laid out in Arksey and O'Malley (2005) was utilized to help guide the process. Four databases were used to search for articles. Specific search terms for each database were developed with the aid of a librarian. A total of 82 articles were included in the final scoping review.

Results: Interventions were categorized based on the Public Health Model and intervention type. 30 articles fell within the tier 1, universal category, 52 articles fell within the tier 2, targeted category, and 32 articles fell within the tier 3, intensive category. Regarding intervention types, 33 articles were classified as specialized counseling, therapy, or peer support; 30 articles were classified as stigma reduction; 21 articles were classified as prevention/health promotion; 18 articles were classified as mental health literacy; 14 articles were classified as help-seeking/disclosure; and 5 articles were classified as supported education. The findings have limited generalizability due to less rigorous research designs and small sample sizes.

Conclusion: More rigorous research needs to be completed regarding what is being done to address mental health in college and university students. There is also a need for more research on appropriate accommodations as there is currently little research on this topic. Finally, there needs to be more research on occupational therapy's role in this area of practice

CHAPTER I

INTRODUCTION

Mental illness diagnoses are becoming increasingly prevalent among college students, and the number of untreated mental health problems is also increasing (Alonso et al., 2018; Koch, Mamiseishvili, & Wilkins, 2018). These concerns extend to university mental health providers, as both staff and resources are often inadequate for serving the academic and mental health-related needs of college students (Koch et al., 2018). Aside from inadequate staff training and resources, university systems are often unaware of how to best respond to students who experience mental illness (Brockelman & Scheyett, 2015). In addition, students are hesitant to disclose their diagnoses to staff due to the fear of facing stigmatization (O'Shea & Kaplan, 2018). Additionally, there is a lack of knowledge among students and professors as to what resources are already available on college campuses and the role of Student Disability Services in addressing mental illness (O'Shea & Kaplan, 2018). The transition to college can be stressful for students and has the potential to make symptoms of mental illness worse. Therefore, there is a need to implement programming for students during college years to help diminish the negative impact that transitioning to college can have on students (Alonso et al., 2018). Based on these findings, there is a need to train university faculty and staff on best practices for students with mental illnesses and educate them on resources that are already available on college campuses.

The experience of mental illness often makes it difficult for students to pursue and complete higher education (Corrigan et al., 2016; Kosyluk et al., 2016; Shor, 2017). From an occupational therapy perspective, mental illness has several negative effects on the occupation of education (American Occupational Therapy Association [AOTA], 2014). Specific components of the occupation of education that are challenging may include the following: learning abilities; task management; juggling mental illness while completing assignments; negative social and contextual impacts; applying for financial aid; seeking support services; and disclosing their mental illness (Shor, 2017; Wynaden et al., 2014). Challenges faced by students with mental illnesses may cause limited participation and decreased occupational engagement in educational pursuits (AOTA, 2014).

Purpose

The purpose of this project was to understand the available literature pertaining to what interventions are being provided to serve college and university students with any mental illness. A scoping review methodology outlined by Arksey and O'Malley (2005) was used as a guide in this process.

Based on the amount of available literature, a scoping review was conducted on the following topics: campus-based programs for students with mental health problems; primary needs of students with mental health problems; the effectiveness of programs that have already been implemented; and the role of various health professions, including occupational therapy, in this area.

It is anticipated that we will produce a scoping review article for submission for publication in a peer-reviewed journal. Additionally, other products to assist students,

staff, and faculty may be developed if appropriate. Some of these products could include organizational tables of mental illness interventions on college campuses or short slide decks of information as a resource for faculty and staff who serve students with mental illnesses.

Definitions

The following definitions related to mental illness and education are provided to increase clarity for readers regarding the scope of this project.

Serious mental illness: "a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities" (National Institute of Mental Health [NIMH], 2019).

Any mental illness: "a mental, behavioral, or emotional disorder. AMI can vary in impact, ranging from no impairment to mild, moderate, and even severe impairment" (NIMH, 2019).

Education: "activities needed for learning and participating in the educational environment" (AOTA, 2014).

Formal educational participation: "participating in academic (e.g., math, reading, degree coursework), nonacademic (e.g., recess, lunchroom, hallway), extracurricular (e.g., sports, band, cheerleading, dances), and vocational (prevocational and vocational) educational activities" (AOTA, 2014, p. S20).

The tiers of the public health model were used to categorize interventions used in studies that were reviewed.

Tier 1, or universal, interventions: those that are used to promote mental health and prevent mental illness in general populations and often carried out in natural settings (Atkins & Frazier, 2011).

Tier 2, or targeted, interventions: those that "prioritize care for high-risk groups via indicated outreach, screenings, and services" (Atkins & Frazier, 2011, p. 3). For the purposes of this project, examples of those addressed by targeted interventions would be individuals at risk for stigma toward mental illness or individuals at risk for mental health challenges.

Tier 3, or intensive, interventions: those conducted for individuals with identified mental illnesses that require more individualized intervention (Atkins & Frazier, 2011).

Summary

Chapter I is an introduction to the need for and purpose of this scholarly project. Chapter II provides an initial review of the literature regarding experiences of college and university students with mental illnesses and the experiences and perceptions of faculty and staff who serve them. Chapter III provides a detailed process of our methodology for determining search terms, reviewing abstracts and articles, and categorizing the articles based on various criteria. Chapter IV consists of tables containing an organized summary and layout of the articles reviewed. The tables in Chapter IV will be used to write a scoping review for publication in a peer-reviewed journal, and other potential products are discussed as well. Chapter V contains a summary of the findings and conclusions as well as strengths and limitations of this scholarly project.

CHAPTER II

LITERATURE REVIEW

According to data from the National Institute of Mental Health (NIMH), approximately 18.9%, or 46.6 million, of all U.S. adults had any mental illness (AMI) in 2017 (NIMH, 2019). Of these adults, only 19.8 million, or 42.6%, had received services for their mental illnesses within the last year. Additionally, adults aged 18-25 had the lowest utilization of mental health services compared to those older than 25. Data also concluded that those aged 18-25 had the highest incidence of AMI of all adults (NIMH, 2019). This data is also reflected in the case of serious mental illness (SMI). Adults aged 18-25 had the highest prevalence of SMI but utilized mental health services the least of all adult age groups. Results from the American College Health Association National College Health Assessment indicated that over half of college students report suffering from symptoms of mental health distress (Nobiling & Maykrantz, 2017) though most were not diagnosed with a mental illness in the past year. Kessler, Berglund, Demler, Jin, and Merikangas (2005) found that three quarters of lifetime cases of mental illness appear by age 24. Taken together, this data is significant. Traditionally college-aged students are more likely to experience mental illness compared to older adults, yet they are not receiving mental health services. The reasons behind this are numerous and extremely complicated.

Effects on Education and Occupational Performance

From the literature reviewed, there is a consensus that mental illness among college students can interfere with the pursuit of higher education (Corrigan et al., 2016; Kosyluk et al., 2016; Shor, 2017). From an occupational therapy standpoint, this means the occupation of education is often negatively affected by mental illness (AOTA, 2014). Students with mental illnesses have identified difficulties with general learning skills and the management of academic tasks (Shor, 2017). A major challenge for these students is coping with mental illness while meeting academic requirements (Shor, 2017; Wynaden et al., 2014). However, according to Shor (2017), the challenges faced by students with mental illnesses extend beyond academic settings and include social and contextual factors that are also emphasized in the occupational therapy profession (AOTA, 2014). Shor (2017) suggested that students with mental illnesses may have difficulties with things like applying for financial aid, utilizing educational support services, and disclosing their mental illness. His quantitative study of 80 Israeli students with mental illnesses revealed that additional difficulties may include: (a) completing assignments during exacerbations of mental illness, (b) organizational skills, (c) coping with stressors during academic studies, (d) deciding whether to disclose, and (e) difficulties with social interactions (Shor, 2017). Overall, academic struggles faced by students with mental illnesses may contribute to limitations in their successful participation and engagement in the occupation of education (AOTA, 2014).

Venville et al. (2016) mentioned that students with "invisible" disabilities like mental illnesses or acquired brain injuries (ABI) may receive less support than their peers with more "visible" physical disabilities. Many interventions to support students with

ABI or mental illnesses were originally developed for students with physical or sensory disabilities whose needs were more clearly cut (Venville et al., 2016). Although these interventions have been adapted over the years, there remains the problem that the needs of students with mental illness are individually-based and highly variable.

Other barriers have been identified that can negatively impact the experience of higher education for those with mental illnesses. The negative effects of these educational barriers include withdrawal from courses, dropping out (Kosyluk et al., 2016), limited career and employment pursuits, and potentially decreased wages (Venville et al., 2016). Again, relating to occupational therapy, participation in education may lead to wide-reaching effects on other occupations, such as employment seeking, employment acquisition, and job performance (AOTA, 2014). Wynaden et al. (2014) found that strained social interactions, decreased productivity, high stress levels, difficulty meeting educational goals, and increased absences may also be negative effects related to mental illness, which indicates that performance in the occupation of social participation is another area of concern for students with mental illnesses (AOTA, 2014). According to Venville et al. (2016), disruptions to academic learning can originate from difficulties in thinking, fluctuations in energy, mood, and motivation, medication side effects, decreased academic confidence, and difficulty navigating social relationships. These factors outlined by Venville et al. (2016) are consistent with the client factors of attention, emotion, thought, and energy and drive listed in the Occupational Therapy Practice Framework (AOTA, 2014).

Treatment-Seeking and Self-Management Behaviors

Another complicating factor is the discrepancy between the number of college students who experience mental health problems and the number of those who seek treatment (Nobiling & Maykrantz, 2017). There is often a significant delay, even several years, between the onset of symptoms of mental illness and when college students seek help (Kirsch, Pinder-Amaker, Morse, Ellison, Doerfler, & Riba, 2014; Nobiling & Maykrantz, 2017; Wynaden et al., 2014). This delay could be caused by college students not recognizing that symptoms they are experiencing are linked to a mental health disorder (Condra, Dineen, Gauthier, Gills, Jack-Davies A., & Condra, 2015; Koch et al., 2017).

Whether someone seeks help for a mental illness is a complicated concept and can be influenced by psychological, demographic, and social factors (Nobiling & Maykrantz, 2017). According to Nobiling and Maykrantz (2017). Approximately one-third of those diagnosed with a mental illness ever receive professional treatment; college students are especially unlikely to do so. Another issue discussed in the literature was that only 26% of students on college campuses were aware of the mental health services available on their campuses (Kirsch et al., 2014). Students were also concerned with paying for services and were skeptical of the effectiveness of treatment (Koch et al., 2017).

According to Nobiling and Maykrantz (2017), another factor is the presence of self-medication, because the risk of medication misuse is higher for those with mental illnesses. Nobiling and Maykrantz (2017) explored the use of self-medication among college students as a means of managing mental illness, which has been shown to be increasing. In their study, the authors used both quantitative and qualitative methods to

explore the perceptions of students and healthcare providers on self-medication and ways to support students with mental illness. They suggested formulating a more streamlined system for educating college-aged clients on navigating mental health service systems and for evaluating current systems. The authors found that both providers and students viewed mental health services as generally effective and beneficial and suggested incorporating additional opportunities for students to learn life skills that will help them cope with or prevent mental illness (Nobiling & Maykrantz, 2017).

Stigma & Disclosure

One concept that has been prevalent in the literature is stigma. College students with mental illnesses have identified stigma as a potential barrier to activities like socialization, community involvement, and treatment seeking (Corrigan et al., 2016). Nobiling and Maykrantz (2017) revealed that 80% of college students who had died by suicide in the last year had not contacted their school's mental health counseling services. Wynaden et al. (2014) suggested that stigma is one of the main reasons why students do not seek help for their struggles with mental illness. Stigma can be external or internal to the person, and both types can negatively impact a student's success (Condra et al., 2015). Regarding internal stigma, college students with mental illnesses may be subject to self-stigma, leading to a "why try" attitude and/or decreased self-esteem and wellbeing (Corrigan et al., 2016). These negative effects may be amplified when college students choose to keep their struggles with mental illness a secret (Corrigan et al., 2016).

Some of the external stigma that college students face may come from professors. When surveyed, professors on college campuses stated that they have the most positive attitude towards individuals with physical disabilities, followed by individuals with

learning disabilities, and the least positive attitudes towards individuals with mental illnesses (Condra et al., 2015; Deckoff-Jones & Duell, 2018; Sniatecki, Perry & Snell, 2015). When asked about the students' abilities to succeed in an academic setting, professors indicated that individuals with a physical disability are much more likely to succeed in school compared to students with a mental health disorder (Sniatecki et al., 2015). College students have also indicated that another reason they do not disclose their mental illness to professors is because they do not want to come across as weak (O'Shea & Kaplan, 2018). These two factors combined heavily influence students' decision to disclose their mental illness or not.

Shor (2017) advocated for decreasing stigma by changing overall campus cultures and attitudes toward mental illness. Wong, Arat, Ambrose, Qiuyuan, and Borschel (2019) trialed a 12-week mental health course implemented on the college campus that had goals to increase health literacy and reduce the stigma surrounding mental illness. The results of the pilot study indicated that in general, students showed a positive increase in knowledge, attitude, and behavior towards students with mental illnesses (Wong et al., 2019). However, information regarding stigma reduction was not indicated and further testing is needed at this time. Corrigan et al. (2016) reviewed literature that suggested disclosure was positive, increasing personal empowerment, improving quality of life, and decreasing stigma.

Accommodations

Each institution may have a different process regarding how accommodations for each student are determined. However, according to the Americans with Disabilities Act of 1990, every institution must provide reasonable accommodations for anyone with a

physical or mental disability (Americans with Disabilities Act [ADA], 1991). Colleges and universities have a duty to provide accommodations as long as they do not pose undue hardship to the institution (Condra et al., 2015). An accommodation does not necessarily mean the student will excel in every class; however, the accommodation should correct functional impairments that without the accommodation could deny the student a fair opportunity to access the course or the material (Condra et al., 2015).

Most schools require students to register their disability with Disability Student Services prior to receiving any accommodations (Condra et al., 2015; O'Shea & Kaplan, 2018). The most common types of accommodations for students with mental health disabilities include extended time on tests, extending an assignment deadline, discussing the student's mental health challenges with them, allowing the student to take the test in a quiet location, note takers, and flexible attendance (Brockelman & Scheyett, 2015; Condra et al., 2015; Koch et al., 2017). Students also indicated that supported education services helped to prepare them to discuss their accommodation needs with their professors (Biebel, Mizrahi, & Ringeisen, 2017).

Although accommodations have been noted to improve performance in a college setting, there are some barriers to providing them. Some of the barriers include determining if the self-report of disability by the student is credible, making sure all students who seek accommodations receive the same care, maintaining academic integrity, and the increased workload on administration and faculty to provide the accommodation (Condra et al., 2015). Another barrier to providing appropriate accommodations are faculty and staff often feel underprepared when determining when to provide academic accommodations for students with mental illnesses (Brockelman &

Scheyett, 2015; Condra et al., 2015; Koch et al., 2017; Sniatecki et al., 2015). Faculty and staff on college campuses have requested to obtain more information about mental illnesses and appropriate accommodations to help reduce stigma and provide the best environment for students to thrive (Brockelman & Scheyett, 2015; Condra et al., 2015; Koch et al., 2017; Sniatecki et al., 2015).

Services/Programs on Campus

Although many college students who experience mental illnesses do not seek treatment, there remains an increasing demand for on-campus mental health services that providers are struggling to meet (Kirsch et al., 2014; Roy & Braider, 2014). This increasing demand is due in part to an increase in students who have mental health issues (Roy & Braider, 2016). This demand has led to the exploration of population-based mental health initiatives, including peer support programs (Kirsch et al., 2014). Kirsch et al. (2014) hypothesized that these programs could be cost-effective and available resources for college campuses and suggested that college campuses provide a "rich environment" for innovative programs that target mental health.

Some examples of on-campus protocols that have already been implemented in institutions include peer support programs, Dialectical Behavioral Therapy (DBT) and Cognitive Behavioral Therapy (CBT) psychoeducation groups, *Mental Health First Aid*, *Question, Persuade, and Refer,* and *Campus Connect* (Wynaden et al., 2014; Kirsch et al., 2014). As a support for students with mental illness, Wynaden et al. (2014) advocated for increased mental health literacy on college campuses and suggested this could take place during an institution's orientation programming. Their definition of mental health literacy includes ability to recognize specific disorders, knowledge of causes and risk

factors, self-treatments, available help resources, and attitudes that promote help-seeking (Wynaden et al., 2014).

Another program that was found to be effective was titled "Coming out Proud to Erase the Stigma of Mental Illness" (Corrigan et al. 2016). When evaluated, this program showed significant reductions in stress related to stigma and disclosure and indicated that similar programs may be valuable in addressing mental illness stigma. The three components to the program were: (a) participants consider the pros and cons of disclosure, (b) participants learn strategies for telling one's story, and (c) participants learn to craft their story to produce the most effective message (Corrigan et al., 2016). The authors suggested that modifications to step 1 might include adding components related to academic and social demands. Modifications to step 2 might include students, friends, and teachers. Modifications to step 3 might include information about the stressors related to college life (Corrigan et al., 2016).

Another program that was found to be beneficial for mental health recovery in college students was peer support groups (Koch et al., 2017). Research conducted on peer support programs for mental health conditions suggested that individuals who receive peer counseling demonstrate better social functioning and more problem-focused coping strategies (Kirsch et al. 2014). The peer support groups helped students to develop a sense of belonging, reduced stigma, instilled help-seeking behaviors, and helped students find avenues for advocacy (Koch et al., 2017). Some of these peer support programs included *Active Minds* and *NAMI on Campus* (Koch et al., 2017).

Kirsch et al. (2014) also mentioned peer support, specifically Student Support Network (SSN) training that recruits student leaders from other students' social networks

to train them into supporting and helping their friends. Skill training and development occurs through role-playing scenarios. Goals of the SSN program are: (a) enhancing knowledge of mental health conditions, (b) promoting skill development in core helping skills, (c) reducing stigma associated with help seeking, and (d) enhancing connection with key campus resources (Kirsch et al., 2014). Outcomes of the SSN program have shown to be positive: increases in counseling center consultations, increase in the percentage of students who connect with on-campus mental health services, increases in participation in traditional peer education programs on campus (Kirsch et al., 2014). Additionally, peer support-trained students increased confidence and skills as well as their own mental health functioning. SSN training is listed as a "best practice" intervention by the Suicide Prevention Resources Center, and the model has also been used for training faculty and staff (Kirsch et al., 2014).

Supports & Future Suggestions

Students attending colleges and universities across the United States have identified meaningful supports and suggestions for appropriate strategies to be utilized and available on college campuses. Some students indicated that having access to specialists on campus such as occupational therapists and educational specialists were helpful when managing their mental illness and the demands of school (Biebel et al., 2017). Students also stated programing that emphasized wellness and provided them with organizational skills were the most effective in treating mental illnesses while in college (Biebel et al., 2017).

Roy and Braider (2016) emphasized the importance of thorough communication between universities and hospitals when students are hospitalized for psychiatric

symptoms. They suggested this be done through universities establishing clear protocols and agreements with involved hospitals when students must be hospitalized. An example of this is the Bridge to Campus program, a Boston-based partnership between a hospital and over 200 campuses (Kirsch et al., 2014). Sessions in this program focus on peer support interventions and incorporate aspects of CBT and DBT.

Kosyluk et al. (2016) suggested that much can be learned in the way of stigma reduction from programs targeted toward the LGBTQ+ community. One program that could be tailored to mental health populations is the Safe Space program. The purpose of this program is to provide support to students in the LGBTQ+ population who may face discrimination and stigma. Studies have shown this program to be effective. Specifically, Kosyluk et al. (2016) studied the attitudes of faculty, staff, and students through focus groups on implementing a Safe Space campaign for use with students with mental illness. They found potential benefits and potential concerns; overall, they concluded that the program has the potential to be beneficial for students with mental illness and suggested taking care to maximize potential benefits and minimize potential concerns (Kosyluk et al., 2016).

Conclusion

Overall, the literature indicated a need for more services and education on college campuses to help better provide students with mental illnesses the resources and tools needed to be successful in the academic setting. There is a need for more education for faculty and students to help reduce the stigma surrounding mental illness to help create a more accepting environment for these students. College can be a difficult time for any student, and the increased stigma surrounding students with mental illnesses poses excess

stress for these students. More in-depth research needs to be completed to determine the most appropriate recommendations for addressing and treating mental illness among college students.

CHAPTER III

METHODOLOGY

To help guide the research process, the authors utilized the scoping review process by Arksey and O'Malley (2005). The first step was to identify the research question. The second step was to locate research articles that could answer the research question that was developed in step one. Step three, or study selection, was to narrow the search results to studies that fit within the inclusion and exclusion criteria that were developed a priori by the authors. The fourth step was to utilize an Excel spread sheet to track identified key aspects of each article and categorize them based on a variety of features. Step five was used in the development of tables and charts that were used as the product (Arksey & O'Malley, 2005). No funding sources were used in the creation of this product. Institutional review board approval was not needed as the researchers were not researching human subjects.

Theory

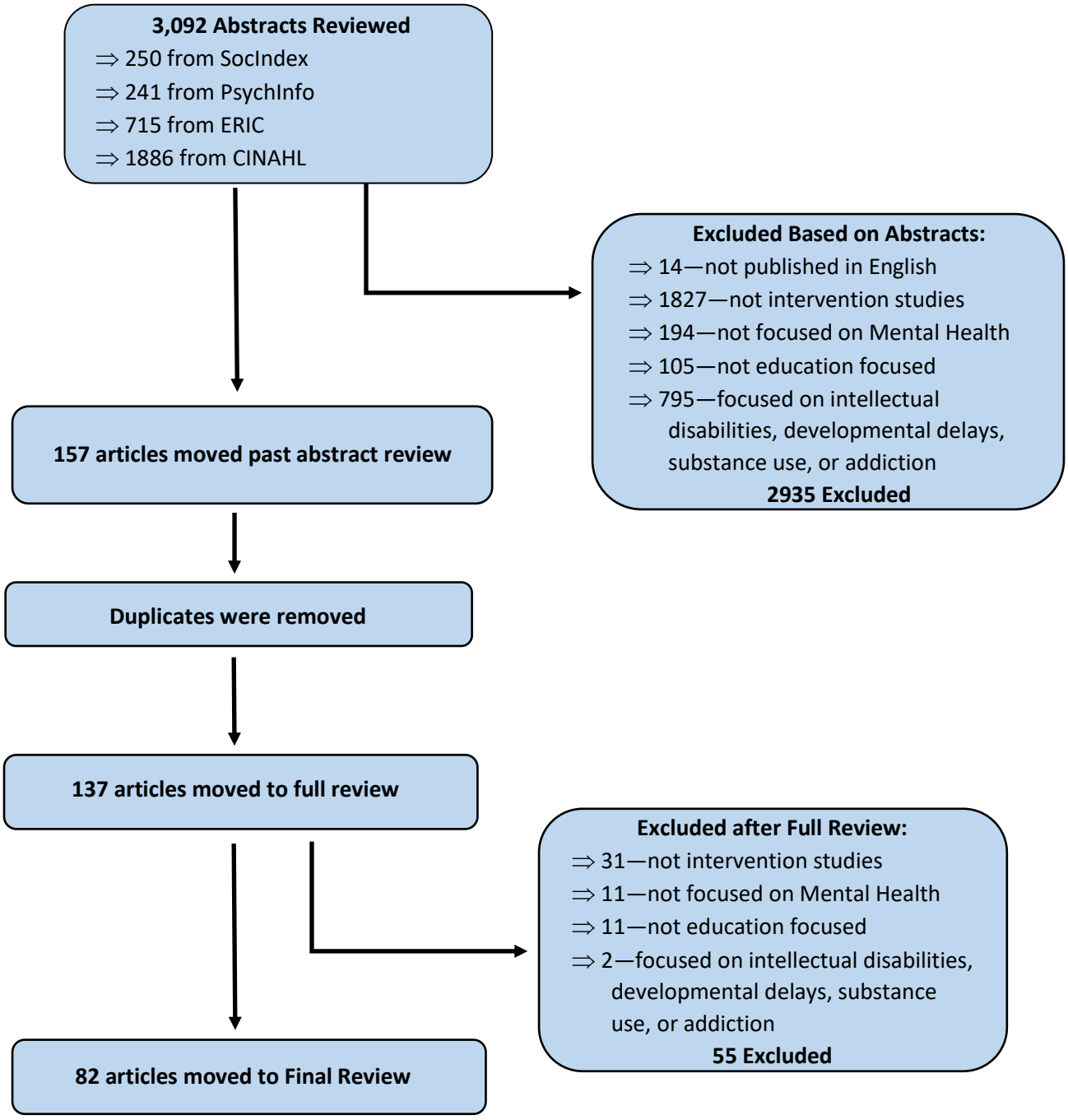
The students and academic advisor collaborated to determine that establishing an occupational therapy theoretical framework would not be appropriate for this project, as the aim of this project is to reach a variety of audiences which would extend beyond occupational therapy. However, the Occupational Therapy Practice Framework: Domain and Process 3rd Edition (OTPF) was used to define and consider the components required for success in the occupation of education (AOTA, 2014). The OTPF helped the students

view the topic area from an occupational therapy perspective and provided a foundation from which to understand the educational experiences of college students with mental illnesses (AOTA, 2014).

The authors collaborated with the academic advisor to develop the following research question: What interventions are being provided to serve students with any mental illness on college campuses? After the scope of the present study was determined, inclusion and exclusion criteria were developed for articles to be included in the initial abstract review. These criteria were developed to narrow the number of research articles and locate those that would best answer the research question and relate most closely with the topic. Exclusion criteria were as follows: (a) not published in English, (b) not an intervention study, (c) published before 1999, (d) interventions are not focused on mental illness related outcomes (faculty preparation to work with individuals with mental illness, student outcomes), (e) interventions not focused on education, (f) articles that focused solely on intellectual disabilities, substance abuse, addiction, or developmental delays.

Inclusion criteria included: (a) articles with levels of evidence I-V due to the limited available research, (b) published in English, (c) published in a peer-reviewed journal, (d) published between 1999 and 2019, (e) articles that contained interventions that focus on college students and mental health (f) articles with participants who were enrolled in a higher education program such as a college, university, or technical school, (g) interventions that were provided at colleges/universities when addressing any mental illnesses in students such as accommodations, counseling, advising, outreach, and disclosure/stigma. Figure 1 below depicts the breakdown of articles including which articles were included in the final review and which articles were excluded.

Figure 1



A staff librarian at the University of North Dakota School of Medicine and Health Sciences assisted the researchers to conduct an in-depth search of electronic resources related to best practices for college and university faculty and staff when serving students

with mental illnesses. The staff librarian also provided advice and expert knowledge for determining appropriate online databases and search terms to select. An academic advisor from the Department of Occupational Therapy also offered expert opinion and guidance on the topic area throughout the review process. Given the scarcity of literature on this specific topic of study, the students together with their supervisor and librarian consultant determined that an overview of the literature would be an appropriate product. Also due to the lack of literature, the topic area was expanded to include sources outside of occupational therapy. However, the occupation of education was maintained as a central theme of the research.

The primary databases used in the literature search were CINAHL, PsychINFO, SocIndex, and ERIC. These databases were used to extend the focus of the project beyond the scope of occupational therapy. It was determined that CINAHL, PsychINFO, SocIndex, and ERIC would be valuable resources for providing information that connected mental health with higher education.

In CINAHL, the following search terms that were initially utilized: ((MH "Mental Disorders+") OR (MH "Mental Disorders, Chronic") OR "mental illness" OR "mental disorder" OR "mentally ill" OR psychiatric OR "psychotic disorder" OR "mood disorder" OR anxiety OR depression OR PTSD OR "post-traumatic stress disorder" OR bipolar OR schizophrenia*) AND ("postsecondary education" OR university OR college OR "higher education" OR "technical college" OR "community college OR "vocational school") AND ((MH "Preventive Health Care") OR "intervention" OR transition OR service OR accommodation OR support OR outreach OR advise OR program OR evaluation OR assessment OR training OR "professional development" OR "mental health literacy" OR

prevention OR awareness OR knowledge OR inclusive OR integrated OR supported OR mainstream OR access OR accommodation). This yielded 15207 results and was deemed too broad. The search terms were refined to the following: ((MH "Mental Disorders+") OR (MH "Mental Disorders, Chronic") AND (MH "Students, College") OR (MH "Students, Undergraduate") AND ((MH "Preventive Health Care") OR "intervention" OR transition OR service OR accommodation OR support OR outreach OR advise OR program OR evaluation OR assessment OR training OR "professional development" OR "mental health literacy" OR prevention OR awareness OR knowledge OR inclusive OR integrated OR supported OR mainstream OR access OR accommodation). This yielded 1,882 results and was deemed appropriate to move onto abstract review.

In PsychINFO, the following search terms were utilized: (DE "Mental Disorders") AND ((DE "Higher Education") OR (DE "Secondary Education") OR "postsecondary education" OR university OR college OR "higher education" OR "technical college" OR "community college OR "vocational school") AND ((DE "Preventive Medicine") OR (DE "Prevention") OR (DE "Health Screening") OR (DE "Intervention") OR transition OR service OR accommodation OR support OR outreach OR advise OR program OR evaluation OR assessment (DE "Psychological Assessment") OR training OR "professional development" OR "mental health literacy" OR awareness OR knowledge OR inclusive OR integrated OR mainstream OR access OR accommodation). This yielded 31,759 results. This was deemed too broad and the search terms were refined to the following: (DE "Mental Disorders") AND DE "College Students" OR DE "Postgraduate Students" OR DE "Vocational School Students" AND ((DE "Preventive Medicine") OR (DE "Prevention") OR (DE "Health Screening") OR (DE "Intervention")

OR transition OR service OR accommodation OR support OR outreach OR advise OR program OR evaluation OR assessment (DE "Psychological Assessment") OR training OR "professional development" OR "mental health literacy" OR awareness OR knowledge OR inclusive OR integrated OR mainstream OR access OR accommodation). This yielded 242 results and was deemed appropriate to move forward to abstract review.

In ERIC, the following search terms were utilized: ((DE "Mental Disorders") OR (DE "Anxiety Disorders") OR (DE "Emotional Disturbances") OR (DE "Neurosis") OR (DE "Pervasive Developmental Disorders") OR (DE "Psychosis") OR "mental illness" OR "mental disorder" OR "mentally ill" OR psychiatric OR "mood disorder" OR depression OR PTSD OR "post-traumatic stress disorder" OR bipolar OR schizophrenia*) AND ((DE "Postsecondary Education") OR (DE "Graduate Study") OR (DE "Undergraduate Study") OR (DE "Colleges") OR (DE "Universities") OR "higher education" OR "technical college" OR "community college OR "vocational school") AND (DE "Prevention") OR (DE "Intervention") OR transition OR service OR accommodation OR support OR (DE "Outreach Programs") OR advise OR program OR (DE "Evaluation") OR assessment OR (DE "Training") OR (DE "Professional Development") OR "mental health literacy" OR (DE "Mental Health Programs") OR prevention OR awareness OR knowledge OR inclusive OR integrated OR mainstream OR access OR accommodation). This yielded 2776 results. This was deemed too broad and the search terms were refined as followed: ((DE "Mental Disorders") OR (DE "Anxiety Disorders") OR (DE "Emotional Disturbances") OR (DE "Neurosis") OR (DE "Pervasive Developmental Disorders") OR (DE "Psychosis" AND ((DE "Postsecondary Education") OR (DE "Graduate Study") OR (DE "Undergraduate Study") OR (DE

"Colleges") OR (DE "Universities") OR "higher education" OR "technical college" OR "community college OR "vocational school") AND (DE "Prevention") OR (DE "Intervention") OR transition OR service OR accommodation OR support OR (DE "Outreach Programs") OR advise OR program OR (DE "Evaluation") OR assessment OR (DE "Training") OR (DE "Professional Development") OR "mental health literacy" OR (DE "Mental Health Programs") OR prevention OR awareness OR knowledge OR inclusive OR integrated OR mainstream OR access OR accommodation). This yielded 715 results and was deemed appropriate to move forward to abstract review.

In SocINDEX, the following search terms were utilized: (DE "MENTAL illness") AND (DE "PSYCHOLOGY of students") AND (DE "Prevention") OR (DE "Intervention") OR transition OR service OR accommodation OR support OR (DE "Outreach Programs") OR advise OR program OR (DE "Evaluation") OR assessment OR (DE "Training") OR (DE "Professional Development") OR "mental health literacy" OR (DE "Mental Health Programs") OR prevention OR awareness OR knowledge OR inclusive OR integrated OR mainstream OR access OR accommodation). This yielded 1 result and was deemed too narrow. The search terms were refined to the following: (DE "MENTAL illness") AND ("postsecondary education" OR university OR college OR "higher education" OR "technical college" OR "community college OR "vocational school") AND (DE "Prevention") OR (DE "Intervention") OR transition OR service OR accommodation OR support OR (DE "Outreach Programs") OR advise OR program OR (DE "Evaluation") OR assessment OR (DE "Training") OR (DE "Professional Development") OR "mental health literacy" OR (DE "Mental Health Programs") OR prevention OR awareness OR knowledge OR inclusive OR integrated OR mainstream

OR access OR accommodation). This yielded 3,592 results and was deemed too broad. The search terms were refined a third time to the following: (DE "MENTAL illness") AND (student AND (college OR university OR undergraduate OR "technical school")) AND (DE "Prevention") OR (DE "Intervention") OR transition OR service OR accommodation OR support OR (DE "Outreach Programs") OR advise OR program OR (DE "Evaluation") OR assessment OR (DE "Training") OR (DE "Professional Development") OR "mental health literacy" OR (DE "Mental Health Programs") OR prevention OR awareness OR knowledge OR inclusive OR integrated OR mainstream OR access OR accommodation). This yielded 250 results and was deemed appropriate to move on to abstract review.

The authors also completed a hand search for articles to include from the reference list in Venville et al.'s (2016) scoping review of interventions for post-secondary students with mental illness or acquired brain injury. Two articles were initially selected from this reference list; however, both were excluded because the interventions were not education-based.

Following the article reviews, a process was developed by which to evaluate the information in articles once they passed the abstract and full reviews. A Microsoft Excel spreadsheet was created to organize information in the articles. One author completed the spreadsheet information for 43 articles, and the second author completed the information for the remaining 41 articles. Within the spreadsheet, the researchers chose categories that included the following information from each article:

- Author, Year of Publication, and Title
- Study Population

- Intervention Type
- Intervention Target
- Aims of Study
- Study Methodology
- Outcome Measures used/What did it measure
- Study Results
- Level of Evidence
- Limitations of Study
- Future Research Suggested
- Tiers: Universal, Targeted, Intensive (Atkins & Frazier, 2011)

Potential Products

Based on the information in the charts, the authors plan to use the information to drive many future projects. One of these projects is to write a scoping review, summarizing the information learned about best practice for addressing mental health in college students. The scoping review will be published in a peer-reviewed journal. Another potential product would be to create other resources for faculty and staff on college campuses to access the information gained from this research. An example of this would be a brief slide deck of relevant information. A final potential product that could be developed form this research would be an educational workshop for faculty and staff on college campuses to assist in better serving students with mental illnesses.

CHAPTER IV

PRODUCT

For this product, the researchers chose to create summary tables of articles reviewed. A systematic review published by Venville, Mealings, Ennals, Oates, Fossey, Douglas, and Bigby (2016) was used to guide the selection of categories to be included in each table. The researchers analyzed all articles included in the full review and categorized them according to intervention. Eventually, five intervention categories were decided upon as follows: stigma reduction, mental health literacy, specialized counseling, therapy, or peer support, prevention/health promotion, supported education, and help-seeking/disclosure. Further definitions of each intervention category can be found in Table 1. Table 2 consists of a summary of each article from the full review. The summary table includes sections for the author(s) and year published, study aims, study methodology, intervention category, and public health model tier (Atkins & Frazier, 2011). Table 3 was adapted from Venville et al. (2016) and includes a categorized list of outcome measures used and in which articles they were included. Table 3 consist of a summary of the outcome measures used in the articles that were reviewed.

Table 1. Intervention categories.

Category	Features/Definition
Stigma reduction	Stigma can make feel people feel ashamed and can cause individuals to not seek out necessary treatment. Some ways to combat stigma are: to talk openly about mental health; educate yourself and other about mental health and mental illnesses; be aware of the language that is used to talk about individuals with mental illnesses; show compassion towards those who have mental illnesses; be honest about the treatment options; let others know when they are being stigmatizing towards others; and don't engage in self-stigma (Greenstein, 2017).
Mental health literacy	Mental health literacy is "public knowledge and recognition of mental disorders, as well as knowing how and where to seek help" (Furnham & Swami, 2018, p. 242).
Specialized counseling, therapy, or peer support	Interventions on college campuses aimed at reducing mental illness symptoms that are provided by either trained professionals or peer support individuals.
Prevention/health promotion	Interventions focused on preventing suicide, preventing the development of mental illnesses, or promoting mental health in well populations.
Supported Education	Specific programs that provide "assistance, preparation, and supports to people with psychiatric disabilities who wish to pursue postsecondary education or training" (Mowbray, Collins, & Bybee, 1999, p. 2).
Help-seeking/disclosure	Revealing to faculty, staff, peers, and disability student services that one has a mental illness and then seeking appropriate treatment and accommodations.

Table 2. Interventions for mental health in college and university students: summary of articles reviewed.

	Author(s) and year published	Study aims	Study method	Intervention category	Public Health Model classification
1	Aggarwal (2013)	Reduce stigma associated with mental illness via implementing the student-led Mental Illness Among Us (MIAU) program	Pretest/posttest survey design Peer-led panel and discussion of student mental illness experience Outcomes measured: self-reported perceptions of mental illness; willingness to interact with individuals with mental illness Targeted medical students (N = 250) who typically have high prevalence of psychological distress	Stigma reduction Mental health literacy	Tier 2 – Targeted
2	Ahuja, Dhillon, Juneja, & Sharma (2017)	Via education and contact, improve positive attitudes toward persons with mental illness among college students	Pretest/posttest design with follow-up Outcomes measured: self-report attitudes toward mental illness Targeted college students (N = 50, ages 18-21) Student-enacted dance-drama addressing myths about mental	Stigma reduction Mental health literacy	Tier 1 – Universal Tier 2 – Targeted

			illness followed by education on mental illness, then contact with person who had successfully managed mental illness		
3	Altindag, Yanik, Ucok, Alptekin, & Ozkan (2006)	Examine effectiveness of an anti-stigma program on medical students' attitudes towards people with schizophrenia	Pretest/posttest design; participants divided into intervention and control groups Education session about schizophrenia, introduction of young adult with schizophrenia, and film depicting individual with schizophrenia Outcomes measured: self-reported attitudes toward schizophrenia Targeted medical students (N = 25, average age 19.5)	Stigma reduction Mental health literacy	Tier 1 – Universal Tier 2 – targeted
4	Barney, Corser, & White (2010)	Decrease negative stigma toward people with mental illness by reporting effects of a service-learning course for college students	Pre- and post-survey, experimental/control group design Students completed various service activities for or with individuals with mental illness Outcome measures: self-reported attitudes toward mental illness	Stigma reduction Mental health literacy	Tier 1 – Universal Tier 2 – Targeted

			Targeted college students (N = 54, average age 22) who may be at risk for stigmatization		
5	Beks, Cairns, Smygwaty, Miranda Osorio, & Hill (2018)	Test the effectiveness of a pilot counsellor-in-residence (CIR) mental health program on resilience and mental health literacy. Program goal is to connect college students with on-campus mental health services	Process evaluation; three sessions of data collection completed CIR program involved gaining a baseline of students' perceptions about counseling and mental health, assessing needs and interests, increasing program awareness, and determining challenges and successes of the program Targeted college students who are at risk for poor mental health (N = 354). Counseling was provided to students with mental illnesses	Prevention/health promotion Mental health literacy	Tier 2 – Targeted Tier 3 – Intensive
6	Bettis et al. (2017)	Compare feasibility and acceptability of a coping skills group and cognitive training program to prevent mental health problems in students who did not have clinically significant mental illness symptoms	Pretest/posttest comparison group design with randomization Coping skills group educated students about stress and facilitate adaptive coping skills. Cognitive training program (Lumosity) was online and focused on aspects of executive function Outcomes measured: self-reported stress mental health symptoms, and executive function skills; coping	Prevention/health promotion	Tier 2 – Targeted

			Targeted college students who are at risk for mental health problems; sample did not have mental illness diagnoses (N = 62, ages 18-22)		
7	Brown & Schiraldi, (2004)	Examine the effectiveness of two college courses on anxiety and depression symptoms in college students with subclinical symptoms	Pretest/posttest design Mental health skills course: learned and practiced relaxation skills and cognitive-behavioral skills Stress management course: included information on stress, time management, goal setting, relaxation theory and practice, exercise, nutrition, and sleep Outcomes measured: self-reported anxiety susceptibility and depression intensity Targeted college students with subclinical symptoms of anxiety and depression (N = 113, ages 18+)	Prevention/health promotion	Tier 2 – Targeted
8	Brown, Evans, Espenschade, & O'Connor, (2010)	Examine the effectiveness of filmed personal contact and simulation of auditory hallucinations on reducing schizophrenia stigmatization	Pretest/posttest design with randomization and control group Conditions were either 1) filmed personal contact, 2) hallucination simulation, or 3) control	Stigma reduction Mental health literacy	Tier 1 – Universal Tier 2 – Targeted

			Outcomes measured: self-reported willingness to interact with individuals with mental illness; self-reported emotional reactions to individuals with mental illness Targeted college students (N = 143 undergraduates, ages 18-24) and integrated interventions into psychology course		
9	Chiu & Graham, (2017)	Examine the impact of a peer-based personal stories intervention on reducing stigma in college students	Quasi-experimental, nonequivalent intervention/control group design with pretest, posttest, and follow-up Outcomes measured: self-reported stigmatizing attitudes, social distance, knowledge and familiarity with schizophrenia Experimental group attended peer panel of students who shared etiology, consequences, and insights of mental illness Targeted college students (N = 46, average age 20.3) but intervention is generalizable to the public	Stigma reduction Mental health literacy	Tier 1 – Universal Tier 2 – Targeted
10	Chung et al. (2011)	Initially evaluate a pilot quality improvement project (chronic care model – CCM combined with	Pilot study, program evaluation Sites used the CCM with CBS-D while collecting data on depressive	Specialized counseling, therapy, or peer support	Tier 3 – Intensive

		College Breakthrough Series-Depression CBS-D) for depression identification and treatment in college health	symptoms of students who used program Outcome measures: self-reported depression Targeted improvement of university counseling services in treating students with mental illness (N = 801)		
11	Conley et al. (2019)	Reduce stigma via a peer-led, group-based intervention called *Honest, Open, Proud-College* (HOP-C) for students living with mental illness	RCT with waitlist control group HOP-C goal was to increase disclosure and decrease self-stigma Outcomes measured: self-reported self-stigmatization and perceived resources to address stigma; self-efficacy about disclosure; self-reported depressive and anxiety symptoms Targeted college students with self-identified mental illness (N = 118, average age 20.8)	Stigma reduction Mental health literacy Help-seeking/disclosure	Tier 3 – Intensive
12	Cutler, Hunter, & Graham (2012)	Reduce second-year medical students' stigmatization of people with chronic mental illness (CMI)	Posttest survey design with between-group (contact group and no-contact control) comparison Contact group visited a patient art studio/display space and were	Stigma reduction Mental health literacy	Tier 1 – Universal Tier 2 – Targeted

			guided by artists who discussed artwork and mental illness experience Outcomes measured: self-reported attitudes and feelings toward people with CMI Targeted medical students (N = 174) who are at risk for stigmatization of people with mental illness		
13	Daltry (2015)	Report preliminary effectiveness of an acceptance and commitment therapy (ACT) stress and anxiety management group with college students receiving mental health counseling services	Pretest/posttest design located in counseling center ACT group taught students to manage anxiety and stress Outcomes measured: self-reported anxiety, avoidance behaviors, and distress tolerance Targeted students who were self-referred or referred from counseling services (N = 4, ages 19-20)	Specialized counseling, therapy, or peer support	Tier 3 – Intensive
14	Damer, Latimer, & Porter (2010)	Report effectiveness of a social anxiety group (*Build Your Social Confidence* – BYSC) in college students with symptoms of social anxiety	Program report and evaluation; pretest/posttest measures routinely taken	Specialized counseling, therapy, or peer support	Tier 2 – Targeted Tier 3 – Intensive

			Aimed to help students understand social anxiety and increase social confidence skills Outcomes measured: self-reported anxiety with interaction, fear of scrutiny, and discomfort Targeted students with social anxiety symptoms (N = 12, ages 20-29)		
15	Danitz & Orsillo (2014)	Initially test the efficacy of an acceptance-based behavioral training (ABBT) intervention on psychological wellness of first-year undergraduates and first-year law students	RCT with follow-up measure ABBT incorporated coping, mindfulness, acceptance, and values Outcomes measured: self-reported anxiety, stress, awareness, and aspects of valued living Targeted college students (N = 98, ages 18-39) who already had or were at risk for mental health issues	Specialized counseling, therapy, or peer support Prevention/health promotion	Tier 2 – Targeted Tier 3 – Intensive
16	Eack, Newhill, & Watson (2012)	Decrease social work students' stigmatization toward individuals with schizophrenia via an educational course on serving individuals with severe mental illness (SMI)	Quasi-experimental design with pretest/posttest measures Course aimed to help students understand experiences of those with SMI	Stigma reduction Mental health literacy	Tier 1 – Universal Tier 2 – Targeted

			Outcomes measured: self-reported attitudes, knowledge, and contact toward individuals with schizophrenia Targeted social work students (N = 60, average age 30.57) through curriculum		
17	El-Gawad & Mousa (2015)	Increase nursing students' empathy toward patients with mental illness via an educational experience	Cross-sectional exploratory design with pre/post-test measures Course in psychiatric nursing and mental health with discussions, role play, and clinical assignments Outcomes measured: self-reported previous experience and empathy toward mental illness Targeted nursing students (N = 204, ages 20-24) through curriculum	Stigma reduction Mental health literacy	Tier 1 – universal Tier 2 – Targeted
18	Faigin & Stein (2008)	Longitudinally compare effects of live (direct contact) and video-taped (indirect contact) theatrical presentations on students' stigma toward individuals with mental illness	Quasi-experimental pretest/posttest design with control group Participants viewed video or live presentation about mental illness stigma Outcomes measured: self-reported attitudes toward mental illness, willingness to have contact with	Stigma reduction Mental health literacy	Tier 1 – Universal Tier 2 – Targeted

			people with mental illness, and emotional response to performance Targeted college students (N = 303, ages 18-40) but could be used for general public		
19	Farrer et al. (2013)	Systematically review RCTs of technology-based interventions used in university settings for mental disorders excluding substance use and eating disorders	Systematic review of RCTs Abstracts were reviewed using key terms and databases. Types of interventions and amount of human contact in interventions were coded. Study quality was assessed. Outcomes measured: self-reported anxiety, depression, level of specific phobias, and stress level 27 studies of technology-based interventions included (mean age of participants was 18-25)	Common categories from studies: Specialized counseling, therapy, or peer support Help-seeking/disclosure	Tier 1 – Universal Tier 2 – Targeted Tier 3 – Intensive
20	Ferrari (2016)	Investigate effectiveness of contact with celebrities' self-disclosures of mental illness on college students' stigma toward mental illness and likelihood of seeking help	Pretest/posttest design with control group Intervention group received instruction using celebrity examples of mental illness experience	Stigma reduction Mental health literacy Help-seeking/disclosure	Tier 2 – Targeted

			Outcomes measured: self-reported stigma toward those with mental illness, self-stigma toward seeking psychological help Targeted college students (N = 55, all female, mean age 20.9) who are at risk for mental illness and stigmatization		
21	Freeman, Barker, & Pistrang (2008)	Evaluate outcomes of an online mutual peer support group on mental health problems of UK university students	Pretest/posttest design with random assignment Information group had general facts website; Support group involved website with support group component Outcomes measured: self-reported wellbeing, symptoms, life functioning, and life satisfaction Targeted university students (N = 283, average age 21) who are at risk for mental illness	Prevention/health promotion Help-seeking/disclosure	Tier 2 – Targeted
22	Funderburk, Shepardson, & Krenek (2015)	Modify behavioral activation (BA) for depression and stimulus control (SC) for insomnia at a university and preliminarily evaluate their effectiveness in reducing	Pretest/posttest design Charts were reviewed for all patients meeting with primary care behavioral health providers (BHPs) over 3 semesters. Chart review included demographics,	Specialized counseling, therapy, or peer support	Tier 3 – Intensive

		symptoms of depression and insomnia	appointment characteristics, outcome measure scores, and suicide severity Outcomes measured: self-reported depression symptoms and insomnia severity Targeted students (N = 11) receiving treatment for depression or insomnia		
23	Gask, Coupe, McElvenny, & Green (2017)	Explore feasibility of skills gatekeeper training (modified STORM training) in a UK university setting for suicide prevention	Exploratory pilot study with pretest/posttest Completed skills training for: 1) understanding self-harm and assessment of suicide risk, and 2) immediate management of suicide risk and safety planning Outcomes measured: self-reported attitudes toward suicide prevention, confidence, satisfaction, and likely impact Targeted university staff serving students with mental illness (N = 20, average age 41.8)	Specialized counseling, therapy, or peer support Help-seeking/disclosure Prevention/health promotion	Tier 3 – Intensive
24	Haas et al. (2008)	Summarize the outcomes of a 3-year novel web-	Descriptive study of program outcomes	Prevention/health promotion	Tier 2 – Targeted

		based outreach program for suicide prevention	981 students were designated as moderate or high risk. Of this, 190 attended an eval with a counselor and 132 entered treatment. Counselor assessments addressed areas of greatest concern for tier 1 and 2 students Outcomes measured: student utilization of services Targeted students with self-reported depressive symptoms at risk for suicide		Tier 3 – Intensive
25	Hamaideh & Mudallal (2009)	Assess effectiveness of education and contact on changing nursing students' attitudes about mental illness	Quasi-experimental, one group pretest/posttest design Psychiatric/mental health course involved education and contact with individuals with mental illness Outcomes measured: self-reported opinions about mental illness Targeted Jordanian nursing students (N = 193, ages 19-32) via curriculum	Stigma reduction Mental health literacy	Tier 1 – Universal Tier 2 – Targeted
26	Hamdan-Mansour, Puskar, &	Evaluate the effectiveness of cognitive-behavioral therapy (CBT) in decreasing depressive	Randomized controlled clinical trial	Specialized counseling, therapy, or peer support	Tier 3 – Intensive

	Bandak (2009)	symptoms in university students with self-identified moderate to severe symptoms	Intervention group received psychoeducation designed to enhance coping strategies Outcomes measured: self-reported depression levels, stress levels, and coping methods Targeted college students (N = 84) with identified depressive symptoms		
27	Hinton & Gaynor (2010)	Examine the effectiveness of cognitive defusion (CD) in reducing distress, dysphoria, and low self-esteem for university students reporting those symptoms	Between-groups RCT with waitlist control CD group emphasized use of vocalizing strategies to avoid ruminating on thoughts Outcomes measured: self-reported self-esteem, distress, depression severity, positive/negative self-statements, and confused thinking Targeted university students (N = 22, average age 20.09) reporting distress, dysphoria, and low self-esteem	Specialized counseling, therapy, or peer support	Tier 3 – Intensive
28	Horgan, McCarthy, & Sweeney (2013)	Develop and pilot test an online peer support forum for students with self-	Pretest/posttest pilot study with qualitative descriptions	Prevention/health promotion	Tier 2 – Targeted

		identified depressive symptoms	Online support forum for participants with info on depression and links to other supports; Student preferences and feedback were sought Outcomes measured: self-reported depressive symptoms Targeted college students (N = 117, ages 18-24) with depressive symptoms		Tier 3 – Intensive
29	Hsieh (2010)	Introduce and evaluate a pilot program designed to help individuals with mental illness continue their education and introduce them to college life	Qualitative, focus-group design Participants were paired with nursing student coaches who assessed progress Program involved evaluating goals, planning and acting on goals, speakers and lectures, and student presentations Outcomes measured: feasibility and satisfaction with program Targeted students with mental illnesses (N = 13) who were showing some recovery	Supported education Specialized counseling, therapy, or peer support	Tier 3 – Intensive
30	Huang, Nigatu,	Investigate intervention effectiveness for common	Systematic review and meta-synthesis of RCTs	Specialized counseling,	Tier 3 – Intensive

	Smail-Crevier, Zhang, & Wang (2018)	mental health problems (CMHPs) in college and university students via a systematic review and RCT	Abstracts were reviewed systematically based on procedures, diagnosis, and intervention type Outcomes measured: self-reported depression, stress, and anxiety Targeted college students with identified mental illness (51 RCTs included, age range 16-50)	therapy, or peer support	
31	Kenardy, McCafferty, & Rosa (2006)	Report follow-up efficacy of an internet-based cognitive behavioral intervention (Online Anxiety Prevention Program) for prevention of anxiety disorders in individuals at risk	Follow-up survey design with randomization to intervention/control groups Psychoeducation about anxiety, relaxation training, interoceptive exposure, cognitive restructuring, and relapse prevention Outcomes measured: program credibility and satisfaction, self-reported anxiety sensitivity, maladaptive thoughts about anxiety, and depressive symptoms Targeted university students (N = 42) at risk for anxiety disorders	Specialized counseling, therapy, or peer support	Tier 2 – Targeted
32	Kim, Cohen, Oh,	Report effects of meridian exercise on anxiety, depression, and self-esteem	Pretest/posttest control group design with randomization	Prevention/health promotion	Tier 2 – Targeted

	& Sok (2004)	of Korean female college students who were not receiving treatment and had no history of psychiatric disease	For experimental group, meridian exercise was completed over 6 weeks by a meridian exercise instructor Outcomes measured: self-reported anxiety, depression, and self-esteem levels Targeted female college students (N = 54, most ages 19-21) who are at risk of developing psychological problems		
33	Kim, Kim, & Park (2011)	Reduce suicidal ideation and depression in female college students via a cognitive-behavioral therapy (CBT) and interpersonal therapy-based intervention	Quasi-experimental, nonequivalent control group pretest/posttest design Intervention program included elements of CBT and interpersonal therapy and was administered by a professional Outcomes measured: self-reported degree of suicidal ideation and depression Targeted female college students (N = 58) who are at risk for depression and suicide	Specialized counseling, therapy, or peer support	Tier 2 – Targeted Tier 3 – Intensive
34	Kim, Yang, &	Examine the effects of Kouk Sun Do (KSD – a	Pretest/posttest control group design with randomization	Prevention/health promotion	Tier 2 – Targeted

	Schroeppel (2012)	Korean mind body exercise) on the mental health of university students with self-reported anxiety symptoms	Instructor explained concepts of KSD and participants used a CD to guide them through KSD Outcomes measured: self-reported depression levels, anxiety levels, and self-efficacy Targeted students at risk of mental illness and with self-reported medium or high levels of anxiety (N = 30, ages 18-46)		Tier 3 – Intensive
35	Kosyluk et al. (2016)	Decrease mental illness stigma and discrimination while increasing treatment seeking and affirming attitudes in college students via a contact- and evidence-based anti-stigma intervention	Pretest/posttest comparison design with random assignment Contact included an individual sharing his/her experiences with mental illness. Education included a PowerPoint on myths and stigma of mental illness Outcomes measured: self-reported stigma, attitudes toward mental illness, attitudes toward treatment seeking, intention to seek treatment Targeted college students (N = 198) who often struggle with mental illness	Stigma reduction Mental health literacy Help-seeking/disclosure	Tier 1 – Universal Tier 2 – Targeted

36	Kyriakopoulos (2011)	Explore effects of an adventure therapy (AT) project combined with individual counseling on college students with self-reported anxiety and depression	Qualitative, interview-based design Information session followed by outdoor hiking experience and reflection Outcomes measured: self-reported experiences of anxiety and depression; insight into mental health issues Targeted students with anxiety and/or depression (N = 6, ages 20-25)	Specialized counseling, therapy, or peer support Prevention/health promotion	Tier 3 – Intensive
37	Laidlaw, Naito, Dwivedi, Enzor, Bricat, & Gruzelier (2003)	Compare effects of self-hypnosis and Johrei (Japanese method used to increase well-being) on mood status in college students	Pretest/posttest comparison design with randomization and control group Participants attended weekly sessions for training and practice according to assigned condition Outcomes measured: self-reports of mood state, anxiety levels, emotional state, hypnotic susceptibility, and stress levels Targeted university students (N = 48, most ages 19-23) who are at risk for increased stress and anxiety	Specialized counseling, therapy, or peer support	Tier 2 – Targeted

38	Levin, Haeger, Pierce, & Twohig (2017)	Test effects of an internet acceptance and commitment therapy (ACT) self-help program on a variety of psychological problems common in college students	Pretest/posttest design with randomization and waitlist control group ACT self-help sessions: 1) costs of experiential avoidance, 2) defusion, 3) mindfulness, 4) acceptance of difficult emotions, 5) clarifying personal values, and 6) committed action and goal setting Outcomes measured: self-reported levels of positive mental health; self-reported psychological flexibility; program usability Targeted college students who are at risk for psychological problems (N = 79, mean age 20.51)	Help-seeking/disclosure Stigma reduction Mental health literacy	Tier 2 – Targeted Tier 3 – Intensive
39	Levin, Hayes, Pistorello, & Seeley (2016)	Test feasibility of an internet ACT prototype prevention program called *ACT on College Life* (ACT-CL)	Pilot comparison group design with randomization and pretest/posttest ACT-CL focused on values, goals, and actions linked to acceptance and values. Mental health education (MHE) included symptoms/causes of depression and anxiety and brief coping strategies Outcomes measured: self-reported depression, anxiety, and stress;	Help-seeking/disclosure Prevention/health promotion	Tier 2 – Targeted

			program feasibility; self-reported knowledge of ACT Targeted undergraduates at risk for mental illness (N = 234, average age 20)		
40	Levin, Pistorello, Seeley, & Hayes (2014)	Outline feasibility of a prototype internet ACT program (ACT-CL) for mental illness prevention in college students	Small-scale RCT including pre- and post-survey results ACT-CL included lessons about values clarification/goal setting and acceptance of difficult thoughts and feelings. Participants encouraged to practice methods for applying these lessons Outcomes measured: program acceptability and usability; self-reported understanding of ACT; self-reported stress, depression, and anxiety Targeted incoming students (N = 76, ages 18-20) at risk for psychological disorders	Help-seeking/disclosure Prevention/health promotion	Tier 2 – Targeted
41	Mailey et al. (2010)	Examine the effects of an online physical activity intervention based on cognitive theory on physical activity, self-efficacy, depression, and	Randomized pilot design with pretest/posttest measures and control group Participants self-monitored progress, set goals, and viewed	Specialized counseling, therapy, or peer support	Tier 3 – Intensive

		anxiety in college students with mental illnesses	modules about benefits of exercise, goal setting, safety, barriers and strategies, and maintenance Outcomes measured: beliefs in ability to exercise; self-reported anxiety levels; self-reported depressive symptoms; program satisfaction Targeted students with mental illnesses (N = 47) who were receiving counseling services		
42	Melnyk, Amaya, Szalacha, Hoying, Taylor, & Bowersox (2015)	Explore feasibility and initial effects of *COPE*, an online cognitive-behavioral skill building intervention on anxiety, depressive symptoms, and academic performance in college freshmen enrolled in a survey course	Randomized controlled pilot study with comparison group Either online CBT-based COPE group or comparison group who received standard intro content about college programs and the university Outcomes measured: beliefs and confidence about managing stress and coping; self-reported depressive symptoms and anxiety levels Targeted college freshmen (N = 121, ages 18+) who are at risk for mental health disorders	Specialized counseling, therapy, or peer support	Tier 2 – Targeted

43	McKinney (2009)	Determine if "Active Minds on Campus" had a positive impact on stigma and increased help-seeking behaviors	Pretest/Posttest design Students were labeled as "participants" or "nonparticipants" based on if they were involved with Active Minds on Campus Outcomes measured: self-report of stigma and help-seeking behaviors Undergraduate college students (N=138) from a variety of majors on a college campus	Stigma reduction Help-seeking/disclosure	Tier 1 – Universal
44	Meyer (2007)	To determine if a website was beneficial for college students who are dealing with depression	Action research design with individual interviews and focus groups utilized Students were asked to give feedback of a self-help depression website Outcomes measured: self-report feedback of the website Targeted undergraduate students (N=13), however the website was	Prevention/health promotion Help-seeking/disclosure	Tier 1 – Universal Tier 2-Targeted

			accessible to the general public as well		
45	Mitchel & Dunn (2007)	To determine the viability and effectiveness of online Cognitive Behavioral Therapy within a higher education counseling center	Pretest/posttest design Students were screened using the Beck Depression inventory, if deemed appropriate, students were asked to participate in the "Beating the Blues" online intervention Outcomes measured: self-report of depression symptoms, self-report of anxiety symptoms, and self-report of expectancy of improvement Targeted undergraduate students at the University of Portsmouth (N=12, average age was 25.58 years)	Specialized counseling, therapy, or peer support	Tier 2 – Targeted
46	Mowbray, Collins, & Bybee (1999)	To determine the effectiveness of the Michigan Supported Education Research Project (MSERP) and to note if the outcomes were different based on the program set up	Mixed Methods design Students were separated into three different groups, (1) classroom, (2) group support, and (3) individualized condition (quasi-control group) Outcomes measured: self-report of self-esteem and self-efficacy, and social support systems	Supported Education	Tier 3 – Intensive

			Targeted individuals with serious mental illnesses who wanted to pursue higher education or employment (N=397)		
47	Mullen, Thompson, Murphy, Malencza,Giacobbe, Karyczak, Holloway, Twamley, Silvrestein, & Gill (2017)	To determine if the Focused Academic Strength Training (FAST) resulted in better academic outcomes for students with a variety of mental illnesses	Randomized Control Trial Students were randomly assigned to the FAST group or the control group that was treatment as usual Outcomes measured: cognitive domains, self-report of self-efficacy, academic difficulties, and cognitive difficulties and strategies used Students enrolled in a New Jersey college (N=37, ages 18-64)	Specialized counseling, therapy, or peer support	Tier 3 – Intensive
48	Murphy, Rashleigh, & Timulak (2012)	To determine if the type of feedback students were given on outcomes would increase the actual outcome being measured in therapy	Randomized Control Trial Students were randomly assigned to the feedback group or the no feedback group and received therapy as usual based on the student's diagnosis Outcomes measured: self-report of client functioning, interpersonal	Specialized counseling, therapy, or peer support	Tier 3 – Intensive

			relations, and performance in social roles Undergraduate students who were already receiving counselling services on the college campus (N=110)		
49	Muto, Hayes, & Jeffcoat (2011)	To improve general mental health and overall functioning in college students	Pretest/posttest design with the use of a randomized wait-list The intervention group participated in Bibliotherapy using the Japanese translation of "Get Out of Your Own Mind and Into Your Life" Outcomes measured: mental health screen, depression, anxiety, and stress subscales of the Depression Anxiety Stress Scales (DASS), general measure of psychological flexibility, and quizzes to measure comprehension of materials Targeted Japanese students on a college campus (N=70)	Prevention/health promotion	Tier 2 – Targeted
50	Opre, Coman, Kallay, Rotaru, &	To determine if Expressive Writing can positively impact physical and	Randomized Control Trial One group was asked to write about their deepest thoughts about	Prevention/health promotion	Tier 1 – Universal

	Manier (2005)	psychological health in college students	college. While the control group was asked to write about whatever came to their mind Outcomes measured: self-report of depression symptoms, self-report of physical and mental health, and self-report measure of positive and negative moods Targeted Romanian college students (N=55)		Tier 2 – Targeted
51	Ojserkis, McKay, Badour, Feldner, Arocho, & Dutton (2014)	To determine if Comprehensive Distancing (CD) interventions were better at decreasing moral disgust, shame, and guilt compared to Challenging Distancing (CC) interventions	Randomized Control Trial Participants were randomly assigned to the CD or the CC group Outcomes measured: self-report of moral disgust, self-report of positive and negative affect, self-report of features associated with shame and guilt, self-report of PTSD symptoms Undergraduate students from Fordham University and University of Arkansas (N=45)	Specialized counseling, therapy, or peer support	Tier 2 – Targeted
52	Panepinto, Uschold,	To determine the effectiveness of on on-	Pretest/Posttest design	Specialized counseling,	Tier 3 – Intensive

	Olandese, & Linn (2015)	campus DBT program for students with a variety of mental illnesses	Students participated in DBT therapy sessions on the college campus Outcomes measured: self-report of symptoms associated with multiple mental illness, and self-report of items that are associated with DBT Undergraduate students (N=64) who have difficulty with coping skills	therapy, or peer support	
53	Peden, Rayens, Hall, & Beebe (2001)	To determine the effectiveness of a CBT group intervention that focused on reducing negative thinking and increasing positive self-talk	Randomized Control Trial Students were randomly assigned to the control group or the experimental group. The experimental group was a 6-week CBT group intervention Outcomes measured: self-report of depression symptoms, self-report of negative thinking, self-report of self-worth/self-acceptance Women from the University of Kentucky (N=92, age 18-24) who were at risk for the development of depression	Specialized counseling, therapy, or peer support Prevention/health promotion	Tier 2 – Targeted

54	Petkari (2017)	To determine if an intervention that uses movies and related discussions would have a positive impact on student's attitudes towards mental illnesses and reduce mental illness stigma	Mixed Methods design Movies related to mental illnesses where shown to students biweekly, a discussion was completed where students were asked to reflect on the movie Outcomes measured: Self-report of attitudes towards individuals with mental illnesses, help-seeking/disclosure, and social distance Psychology students (N=18) from an undergraduate program	Stigma reduction Help-seeking /disclosure	Tier 1 – Universal Tier 2 – Targeted
55	Pittman (2010)	To determine if In Our Own Voice (IOOV) intervention reduced stigma in college students	Pretest/posttest design Students participated in IOOV intervention Outcomes measured: self-report of anti-stigmatization attitudes and social distance Students enrolled in a master's level psychology program (N= 30)	Stigma reduction	Tier 1 – Universal Tier 2 – Targeted
56	Potvin-Boucher,	To determine if the Transitions program	Qualitative design	Stigma reduction	Tier 1 – Universal

	Szumilas, Sheikh, & Kutcher (2010)	increased help-seeking behaviors, increased supports and awareness of resources as well as reduced stigma	Transitions is a program integrated into some Canadian schools, some of the schools participated in this study Outcomes measured: self-report of behaviors targeted from intervention Students and staff from 50 different universities in Canada (N=112)	Help-seeking/ disclosure	Tier 2 – Targeted
57	Reiff, Kumar, Bvunzawabaya, Madabhushi, Speigel, Bolnick, & Magen (2018)	To obtain feedback on the I CARE program. Which is a program that provides participants with skills to engage and intervene appropriately with students who are experiencing distress or crisis	Mixed Methods Design Participants engaged in the I CARE workshop and were given a pre/post workshop assessment and follow-up survey Outcomes measured: satisfaction with workshop, self-report of readiness to intervene, and follow-up survey indicating skills used that were learned in the workshop Faculty, staff, and students at the University of Pennsylvania (N=1,054)	Prevention/health promotion	Tier 1 – Universal
58	Reynolds, MacPherson, Tull,	Report effectiveness of *Brief Behavioral Activation Treatment for Depression*	Small-scale RCT with standard orientation control condition	Specialized counseling,	Tier 2 – targeted

	Baruch, & Lejuez (2011)	(BATD) with typical college orientation for depression and alcohol use outcomes	Intervention group included standard orientation plus BATD strategies such as activity enjoyment monitoring, goal/value identification, and activity planning Outcomes measured: self-reported anxiety and depression Targeted college freshmen (N = 71, mean age 17.91) who are at risk for negative mental health outcomes	therapy, or peer support	
59	Richards & Timulak (2012)	To determine if online CBT or therapist driven self-help groups was more helpful for students with mental illnesses	Qualitative Design Students were randomly assigned to the online CBT group, "Beating the Blues" or the therapist-driven group Outcomes measured: self-report about what aspects of therapy was most beneficial Students from and Irish University (N=80) who have identified mental illnesses	Specialized counseling, therapy, or peer support	Tier 3 – Intensive
60	Richards, Timulak, & Hevery (2013)	To determine if online CBT or therapist driven self-help groups was more helpful for students with mental illnesses	Randomized Parallel Group Trial Students were randomly assigned to the online CBT group, "Beating the Blues" or the therapist-driven group	Specialized counseling, therapy, or peer support	Tier 3 – Intensive

			Outcomes measured: self-report of symptoms of mental illnesses Students from an Irish University (N=80) who had a history of a mental illness		
61	Ritvo, Vora, Irvine, Mongrain, Azargive, Azam, Pirbaglou, Guglietti, Wayne, Perez, & Crbbie (2013)	To determine the effectiveness of a university-based, mindfulness training program	Pretest/Posttest Design Students participated in 60 min mindfulness training sessions Outcomes measured: frequency of negative self-talk, mindfulness, and self-report life satisfaction Students enrolled in a university either part-time or full-time (N=39)	Specialized counseling, therapy, or peer support	Tier 2 – Targeted
62	Rizvi & Steffel (2014)	To determine the feasibility of a DBT skills program for undergraduate students who are emotionally dysregulated	Pretest/posttest design Students were non-randomly assigned to either the Emotional Regulation (ER) group or the Mindfulness + the Emotional Regulation (M + ER) group Outcomes measured: self-report DBT skill use, self-report of symptoms, self-report of regulating emotions, self-report of positive	Specialized counseling, therapy, or peer support	Tier 2 – Targeted

			and negative affect, and self-report of occupational and social functioning Undergraduate students at a public university (N=24) who have reported issues with emotional regulation		
63	Rubio-Valera, Aznar-Lou, Vives-Collet, Fernández, Gil-Girbau, & Serrano-Balnco (2018)	To determine if a social contact and education session was better at reducing stigma compared to a wait-list comparison group	Randomized Control Trial Students were randomly assigned to one of the 8 classes. The intervention group participated in the 1 hour workshop the wait-list group participated in the workshop later in the semester Outcomes measured: self-report of stigma, attitudes towards people with mental illnesses, social desirability, and intended behavior with individuals with mental illnesses First year psychology students (N=166) from the University of Barcelona	Stigma reduction	Tier 1 – Universal
64	Rusch, Kanter,	To determine if the In Our Own Voice intervention or	Randomized Control Trial	Stigma reduction	Tier 1 – Universal

	Angelone, & Ridley (2008)	psychoeducation group would reduce stigma in college students	All students participated in both groups, however they were randomly assigned to one of the intervention groups first and participated in the second one later in the semester Outcomes measured: familiarity with individuals with mental illnesses and social distance Undergraduate abnormal psychology students (N=43) at the University of Wisconsin-Milwaukee		
65	Scheyett & Rooks (2012)	To determine if participating in dialogue with individuals with mental illnesses reduces stigma in college students	Pretest/posttest design Students and individuals with mental illness participated in communication about challenges and build a mutual understanding Outcomes measured: self-report social distance, emotional response to individuals with mental illnesses, and perceived dangerousness of individuals with mental illnesses First and second year Master of Social Work Students and	Stigma reduction Mental health literacy	Tier 1 – Universal Tier 2 – Targeted

			individuals with serious mental illnesses (N=20)		
66	Schindler & Sauerwald (2012)	To determine if the Bridge Program was effective in helping individuals with mental illnesses find employment or educational opportunities	Pretest/posttest design Individuals participated in the Bridge Program from the years 2005-2009 and results from the program were studied Outcomes measured: self-report of participation in higher education and employment Students who participated in the Bridge Program from 20005-2009 (N=48)	Specialized counseling, therapy, or peer support Supported Education	Tier 3 – Intensive
67	Schindler & Kientz (2013)	To determine the supports and barriers to higher education and employment for individuals with mental illnesses	Pretest/Posttest Design Individuals participated in the Bridge Program from the years 2005-2009 and results from the program were studied Outcomes measured: self-report of supports and barriers to participation in higher education or employment and program evaluation	Specialized counseling, therapy, or peer support Supported Education	Tier 3 – Intensive

			Students who participated in the Bridge Program from 20005-2009 (N=48)		
68	Sharp, Hargrove, Johnson, & Deal (2006)	To increase the relationship between help-seeking and mental health literacy	Pretest/posttest design Students were randomly assigned to the classroom group or the control group. The intervention group participated in the psychoeducation session while the control group watched a video on astronomy Outcomes measured: attitudes towards seeking professional help and opinions about mental illness Undergraduate students from a public university (N=123)	Stigma reduction Mental health literacy Help-seeking/disclosure	Tier 1 – Universal
69	Stewart, Dispenza, Parker, Chang, & Cunnien (2014)	To determine if Animal Assisted Therapy in a group context decreases symptoms of anxiety and loneliness in college students	Pretest/posttest design The author and her therapy dog were in a resident's hall for 2 hours while students dropped in to interact with the therapy dog Outcomes measured: self-report of anxious behaviors, loneliness, depression, and therapeutic relationship	Specialized counseling, therapy, or peer support Prevention/health Promotion	Tier 1 – Universal

			Undergraduate students (N=55) at a Southeastern university		
70	Stice, Orjada, & Tristan (2006)	To determine if the eating disorder seminar reduced disordered eating and negative body image in college students	Pretest/posttest design Students volunteered to participate in the study. The seminar met twice a week for 1.5 hours each session for the 15-week semester Outcomes measured: thin-idealization, body satisfaction, self-report of depression inventory, symptoms associated with eating disorders, dieting habits, and BMI Undergraduate students who enrolled in the eating disorder seminar (N=25, all women) and a comparison sample from the University of Texas (N=70, all women)	Prevention/health promotion	Tier 2 – Targeted
71	Strassle (2018)	To determine if the stigma reduction techniques that were implemented into a course were effective	Quasi-experimental design The professors who taught the abnormal psychology course implemented the stigma-reduction techniques to students	Stigma reduction	Tier 1 – Universal Tier 2 – Targeted

			Outcomes measured: self-report on beliefs on mental illness Students enrolled in an abnormal psychology course (N=195)		
72	Theriot (2013)	To determine if the seminar about mental illness would reduce stigma in first-year college students	Pretest/posttest design Students participated in either the "Maniacs Class" that focused on mental illness and stigma, or the control group Outcomes measured: attitudes towards mental illness, familiarity scale, stigma attitudes towards schizophrenia, and interaction with individuals who have mental illnesses First year college students (N=104)	Stigma reduction	Tier 1 – Universal
73	Tippin & Maranzan (2019)	To determine the effectiveness of photovoice on stigma-reduction	Randomized Control Trial Students were randomly assigned to the control group or the photovoice group where individuals with mental illnesses were given disposable cameras and asked to take pictures of their lives	Stigma reduction	Tier 1 – Universal Tier 2 – Targeted

			Outcomes measured: emotions, behaviors, and attitudes towards mental illness, past exposure to mental illness, empathy, and social desirability Undergraduate students at a Canadian university (N=303).		
74	Tsong, Young, Killer, Takemoto, & Compliment (2019)	To determine the effectiveness of a peer-to-peer model of suicide prevention	Nonrandomized pretest/posttest design Students participated in the peer-to-peer suicide prevention program titled: Question, Persuade, and Refer Outcomes measured: suicide prevention and knowledge and attitudes of suicide Undergraduate students (N=479) at a large West Coast public university	Prevention/health promotion	Tier 1 – Universal
75	Twardzicki, (2008)	To challenge the stigma around mental illness and to promote social inclusion of individuals with mental illnesses	Qualitative design Students participated in informal meetings to come up with sketches, music, art, etc. that addresses mental illnesses. The different	Stigma reduction	Tier 1 – Universal

			forms of art were displayed in front of a group of college students, faculty, and staff Outcomes measured: attitudes about mental illness and the participants hopes and concerns about the project 22 clients who were receiving mental health services, 43 students, and 58 audience members (N=123)		
76	Unger, Pardee, & Shafer (2000)	To examine if people who have mental illnesses could complete a course of study, if returning to school increases quality of life and self-esteem, if there are predictors of school completion	Qualitative design Students who participated in the program were interviewed in the fall and spring semesters Outcomes measured: self-esteem and quality of life Students from a variety of institutions were involved in the study (N=105) all students were either in college or transitioning to college	Supported Education	Tier 2 – Targeted Tier 3 – Intensive
77	Venville, Mealings, Ennals,	To determine with interventions were used to support students with	Systematic review	Specialized counseling,	Tier 2 – Targeted

	Oates, Fossey, Douglas, & Bigby (2016)	mental illnesses who are enrolled in postsecondary education	A systematic review of 9 databases using specific search terms Outcomes measured: articles were categorized based on 10 different outcome types: student views of self, course/subject completion, further education, employment, community participation, support use, hospital/therapy use, program satisfaction, academic skills, and self perspectives. Articles that focused on mental illnesses in postsecondary education (N=120)	therapy, or peer support	Tier 3 – Intensive
78	Watkins, Hunt, & Elsenberg (2011)	To examine the changes in the demand and role of mental health services on a college counseling center	Qualitative design Semi-structured interviews were used to elicit response from counseling centers Outcomes measured: codes and themes from transcribed data N=13 colleges with counseling centers on campus participated in the study	Specialized counseling, therapy, or peer support	Tier 2 – Targeted Tier 3 – Intensive

79	Wood & Wahl (2006)	To conduct a more rigorous study of the impact of the In Our Own Voice (IOOV) intervention	Randomized Control Trial Students were randomly assigned to the control group or the IOOV intervention group Outcomes measured: attitudes towards individuals with mental illness and knowledge of mental illness Undergraduate students (N=114) from George Mason University	Stigma reduction	Tier 1 – Universal
80	Yamaguchi, Wu, Biswas, Yate, Aoki, Barley, & Thornicroft (2013)	To determine the effectiveness of different interventions on stigma-reduction	Systematic review 11 databases were searched using specific terms, all studies had to be RCTs, clinical control trials, or controlled before and after studies Outcomes measured: effectiveness of interventions provided N=35 studies included in the final review	Stigma reduction	Tier 1 – Universal
81	Zamirinejad , Hojjat, Golzari, Borjali, &	The purpose of this study was to determine the effectiveness of resilience training on the reduction of	Nonrandomized pretest/posttest design	Specialized counseling, therapy, or peer support	Tier 3 – Intensive

	Akaberi (2013)	depression in female college students	Students were assigned to the resilience group, the cognitive therapy group, or the control group Outcomes measured: self-report of depression symptoms Iranian college students living in the dorms at North Khorasan University of Medical Sciences (N=31)		
82	Zvonkovic & Lucas-Thompson (2015)	To determine the effectiveness of an educational intervention designed to reduce stigma of violence associated with schizophrenia	Randomized Control Trial The intervention group read statements written by APA and articles about violent individuals with schizophrenia to other populations. The control group read trivia facts Outcomes measured: attitudes about schizophrenia and interactions with individuals with schizophrenia Undergraduate students at a small Midwestern Liberal Arts college who were enrolled in an intro to psychology course (N=94). Students were mostly female	Stigma reduction	Tier 1 – Universal

Table 3. Categories of outcome measures.

Category	Measures used and relevant articles
Self-report measures for symptoms of mental health concerns	Connor-Davidson Resilience Scale-25: 5 Perceived Stress Scale (PSS): 6, 19, 26, 37 Response to Stress Questionnaire-Social Stress Version: 6 Patient Health Questionnaire (PHQ-9): 6, 10, 22, 24, 42 Adult ADHD self-report scale: 6 State-Trait Anxiety Inventory (STAI): 7, 19, 34, 37, 41 Beck Depression Inventory-II (BDI-II): 7, 19, 26, 27, 34, 41, 45, 50, 53, 60, 70, 81 Symptom Checklist-90 revised: 8 Quality of Life Inventory: 8 Affective Reactions Scale: 65 Majority Other-focused Anxiety subscale: 9 Majority Self-focused Anxiety subscale: 9 Center for Epidemiologic Studies Short Depression Scale: 11 Generalized Anxiety Disorders Scale: 11, 42 Burns Anxiety Inventory: 13, 69 Acceptance and Action Questionnaire-2: 13, 27, 38, 40, 49 Distress Tolerance Scale: 13 Social Interaction Anxiety Scale (SIAS): 14 Social Phobia Scale (SPS): 14 Depression, Anxiety, and Stress Scales-21 item version: 15 Marlowe-Crown Social Desirability Scale: 18, 63 Beck Anxiety Inventory: 19, 45 Test Anxiety Inventory: 19 Montgomery Mood States Checklist: 19 Adapted Social Distance Scale: 20 Clinical Outcomes in Routine Evaluation - Outcome Measure (CORE-OM): 21, 60

	Adapted Satisfaction with Life Scale (SWLS): 21, 61 Insomnia Severity Index (ISI): 22 Ways of Coping Questionnaire: 26 Rosenberg Self-Esteem Scale: 27, 53, 76 Brief Symptom Inventory (BSI): 27, 52, 60 Self-thought Fluency Assessment: 27 Automatic Thoughts Questionnaire: 27, 61 Automatic Thoughts Questionnaire-Positive: 27 Mini Cognitive Defusion and Slippage Scale: 27 Centre for Epidemiological Studies Depression Scale (CES-D): 28, 31, 33 Anxiety Sensitivity Index: 31 Body Sensations Questionnaire: 31 Catastrophic Conditions Questionnaire-Modified: 31 Agoraphobic Conditions Questionnaire: 31 State Anxiety Inventory (SAI): 32 Depression Status Inventory (DSI): 32 Self-Esteem Inventory (SEI): 32 Scale for Suicidal Ideation (SSI): 33 General Self-Efficacy Scale: 34 Recovery Scale-Short Form: 35 Profile of Mood States: 37, 50 Personalized Emotional Index (PEI): 37 Counseling Center Assessment of Psychological Symptoms: 38 Mental Health Continuum-Short Form: 38, 39 Cognitive Fusion Questionnaire: 38 Avoidance and Fusion Questionnaire for Youth: 39 Five Facet Mindfulness Questionnaire: 39, 62 Depression, Anxiety, and Stress Scale (DASS): 39, 40, 49, 58, 62 Personal Beliefs Scale: 42 School Self-Efficacy and Self-Esteem: 46 Social Adjustment Scale (SAS-SR: 46

	Matrics Consensus Cognitive Battery (MCCB: 47 College Self-Efficacy Inventory: 47 Cognitive Problems and Strategies Assessment: 47 General Health Questionnaire: 49 Self-Reported Health: 50 Moral Disgust Scale (MDS): 51 Three Domain Disgust Scale (TDDS): 51 Positive and Negative Affect Schedule (PANAS): 51, 61, 62 Test of Self-Conscious Affect-3 (TOSCA-3): 51 Life Events Checklist (LEC): 51 PTSD Checklist, Civilian Version (PCL-C): 51 Impact of Event Scale, Revised (IES-R): 51 Posttraumatic Cognitions Inventory (PTCI): 51 Trauma-Related Guilt Inventory (TRGI): 51 Life Problems Inventory (LPI): 52 Crandell Cognitions Inventory (CCI): 53 Dialectical Behavior Therapy Ways of Coping Checklist: 62 Difficulty in Emotional Regulation Scale: 62 Adapted Work and Social Adjustment Scale: 62 Dangerous Scale: 65 University of the Philippines Loneliness Assessment Scale (UPLAS): 69 Ideal-Body Stereotype Scale-Revised: 70 Satisfaction and Dissatisfaction with Body Parts Scale: 70 Dutch Restrained Eating Scale: 70 Disorder Diagnostic Scale: 70 Lehman Quality of Life Inventory: 76
Self-report measures related to stigma and attitudes	*32-item questionnaire to assess attitudes toward schizophrenia: 3, 72 Social Distance Scale (SDS): 1, 8, 9, 35, 55, 64, 65, 79, 82 Mental Illness: Clinician's Attitudes (MICA): 1 Community Attitudes toward Mental Illness scale (CAMI): 2, 4, 18, 63 Affect Scale: 8

	Self-Stigma of Mental Illness Scale-Short Form (SSMIS-SF): 11 Stigma Stress Scale: 11 *Self-assessment to rate attitudes and feelings toward people with chronic mental illness (CMI): 12 Philadelphia Mindfulness Scale: 15, 38 *Questionnaire to measure attitudes toward schizophrenia: 16 *Social distance measure to assess contact with individuals with schizophrenia: 16 Empathy toward the Mentally Ill Scale: 17 Behavioral Intentions Scale for Students (BISS): 18 Adapted Self-Stigma of Seeking Help Scale: 20 Attitudes toward Suicide Prevention Scale: 23 Opinions About Mental Illness Scale: 25, 68 Self-Stigma of Seeking Help Scale: 35 Attribution Questionnaire: 35 Perceived Devaluation-Discrimination Scale: 35 Attitudes Toward Seeking Professional Psychological Help Scale: 35 Empowerment Scale: 35 Beliefs Toward Mental Illness Scale: 41 General Attribution Scale: 43 Opening Minds Stigma Scale for Health-Care Providers (OMS-HC): 54 Mindfulness Attention and Awareness Scale (MAAS): 61 Depression Stigma Scale: 63 *Vignettes to assess personal behavior and stigma: 63 Self-Reported Intended Behavior Scale: 63 Attitudes Toward Seeking Professional Psychological Help Scale - short form: 68 Attribution Questionnaire- Short Form (AQ-SF): 72 Knowledge and Attitudes about Suicide (KAS): 74 Attitude Questionnaire: 75, 79 Implicit Association Tests (IAT): 82

Self-report measures related to self-efficacy, disclosure, and confidence	*Open-ended questions to assess self-efficacy about disclosing: 11 *Visual analog scale to measure confidence in helping a suicidal person: 23 General Help Seeking Questionnaire (GHSQ): 35 Exercise Self-Efficacy Scale: 41 Barriers Self-Efficacy Scale: 41 Help Seeking Scale: 43 Educational Barriers Questionnaire: 47
Self-report measures related to mental health literacy	Mental Health Literacy Scale (MHLS): 5 Knowledge about Schizophrenia Questionnaire: 16 *Measure of previous experience with mental illness: 17 *Level-of-contact report to measure prior level of contact with mental illness: 18 ACT Knowledge Questionnaire: 39, 40 Knowledge of Supports: 57 Level of Familiarity Questionnaire (LOFQ): 64, 72 Knowledge Questionnaire: 79
Objective Measures:	Delis-Kaplan Executive Function Scales (D-KEFS) Color-Word Interference Test: 6 D-KEFS Tower Test: 6 Harvard Group Scale of Hypnotic Susceptibility: 37 A.S.I.S.T for Agencies: 48 Adherence Quizzes: 49 Body Mass Index (BMI): 70
Self-report measures of demographic characteristics, personal characteristics, values	Behavior Rating Inventory of Executive Function-Adult Version: 6 Valued Living Questionnaire: 15 Adapted Sense of Community Index (SCI): 21 Personal Values Questionnaire-Relationship and Education Subscales: 39, 40 Tellegen's Absorption Scale: 37 Personal Values Questionnaire-Relationship and Education Subscales: 39, 40 Fat-Related Diet Habits Questionnaire: 70

Self-report measures of experience and program satisfaction	*service-learning experience survey: 4 *Rating form to assess affective response to performance: 18 Valuing Questionnaire: 38 System Usability Scale: 38, 39, 40 Feedback Survey: 44, 56, 69, 75 Credibility/Expectancy-of-Improvement Scale: 45 Efficacy Inventory: 47 Outcome Rating Scale: 48 Wood's IOOV measure: 55 *Follow-Up Survey: 57 Helpful Aspects of Therapy Form (HAT): 59 Working Alliance Inventory - Short Revised (WAI-SR): 60 Suicide Prevention (QPR): 74 *Follow-up Survey: 66, 67

*Denotes measures that were developed specifically for the article in question.

Additional Products

For the purposes of this project, the attached tables will serve as our main product. However, the researchers together with their academic advisor are in the process of writing a scoping review based on findings from the article review. This scoping review will be published in a peer-reviewed higher education journal. It will serve to outline the current environment of mental health interventions with college and university students on campus, as well as briefly discuss preliminary effectiveness of those interventions. Due to the lack of published research, however, the findings are to be taken with caution. It is hoped that this review will spark future research studies on the effectiveness of specific interventions for mental illnesses in college students. Another potential product that could be developed would be a workshop or brief resource handout that could be presented to college and university faculty and staff who work with students with mental illnesses.

CHAPTER V

SUMMARY

According to the National Institute of Mental Health (NIMH), individuals aged 18-25 have the highest incidence of mental illness but the lowest utilization of mental health services (NIMH, 2019). This age range is the typical age of students who are enrolled in higher education, and results from the American College Health Association National College Health Assessment reported that over half of students enrolled in higher education are experiencing symptoms of mental illnesses (Nobiling & Maykrantz, 2017). However, students enrolled in higher education are not receiving the treatment that they need to help cope with mental illnesses. This often results in students dropping out of courses or completely withdrawing from college (Kosyluk et al., 2016). As a result, there is a need to better understand the resources that are available to college students who are experiencing mental illnesses to determine what can be done to better meet the needs of this population.

There are currently no published scoping reviews studying the effectiveness of interventions provided on college campuses to help students who experience mental illness symptoms. The purpose of this scholarly project was to examine the literature already available that discussed the effectiveness of interventions provided on college and university campuses that addressed mental illness in students. The researchers, along with the assistance of the occupational therapy department librarian and an academic advisor, identified relevant search terms and appropriate databases to search for literature.

The researchers searched in four databases, and 82 articles met all inclusion criteria and were included in the final scoping review and product. Each article was reviewed by the researchers and was categorized using relevant information such as: study population, intervention type, intervention target, aims of study, study methodology, outcomes measured, study results, level of evidence, limitations of study, future research suggested, and intervention category using the public health model tiers (Atkins & Frazier, 2011). The findings from the final 82 articles were put into tables and used to present the information in a more readable manner to serve as a potential resource. The tables were designed based on information and formatting from the article published by Venville et al. (2016).

Conclusions

Each study was reviewed and categorized in several ways. For example, each intervention was reviewed and classified using the Public Health Model (Atkins & Frazier, 2011). An intervention was categorized as a tier 1-universal, tier 2-targeted, or tier 3-intensive (Atikins & Frazier, 2011). Some studies fulfilled criteria to be categorized into multiple tiers. Out of the 82 articles that were included in the final review, 30 were tier 1- universal, 52 were tier 2- targeted, and 32 were tier 3- intensive.

Studies were also categorized by intervention type; these categories were developed and defined by the researchers and were as follows: (a) stigma reduction, (b) mental health literacy, (c) specialized counseling, therapy, or peer support, (d) prevention/health promotion, (e) supported education, and (f) help-seeking/disclosure. Some articles fit into one intervention category, but a majority fit into multiple intervention categories. The final 82 articles were categorized in the following statistics:

30 focused on stigma reduction, 18 focused on mental health literacy, 33 focused on specialized counseling, therapy, or peer support, 21 focused on prevention/health promotion, 5 focused on supported education, and 14 focused on help-seeking/disclosure.

Most of the studies focused on either stigma reduction or specialized counseling, therapy, or peer support. Stigma reduction interventions typically were intended for either universal or targeted populations, while specialized counseling, therapy, or peer support interventions typically were intended for targeted populations or intensive treatment. These conclusions made sense to the researchers as stigma reduction programs often target individuals who do not necessarily have a mental illness; their goal is to help raise support and awareness and provide a deeper understanding of the challenges individuals with mental illnesses face on daily basis. In comparison, specialized counseling, therapy, or peer-support interventions typically are intended for individuals who already have an identified mental illness or those who are at high risk for developing one.

Prior to completing this project, the researchers predicted that they would find intervention studies that focused on accommodations that are currently utilized on college or university campuses for students who have an identified mental illness. However, after completing the article review, zero articles focused on appropriate accommodations. At first, the researchers were surprised by this. Completion of the initial literature review revealed that faculty and staff on college campuses have indicated they do not feel adequately prepared to determine reasonable accommodations for students with an identified mental illness and have requested more training on this topic (Brockelman & Scheyett, 2015; Condra et al., 2015; Koch et al., 2017; Sniatecki et al., 2015). The researchers along with their academic advisor discussed what could be contributing to

this major gap in the literature. Although the authors are uncertain, they speculate that because most of the literature was about stigma reduction, many students may not be seeking out accommodations. Additionally, it would be difficult to measure accommodations given they are individualized. Therefore, interventions for this population first need to focus on reducing the stigma surrounding mental illness before appropriate accommodations can be researched in depth.

Although the information obtained from this review was not what the researchers expected, it is still valuable information. Overall, limited research was found on interventions on college campuses that focused on mental illness in college or university students. However, the interventions that were studied tended to have positive results for students who had an identified mental illness.

Limitations

Although the researchers conducted an in-depth scoping review of the literature, there were still several limitations to the final study. The first was the limited number of databases that were utilized when searching for studies. The researchers along with the help of a librarian decided to use the following databases: CINAHL, PsychINFO, SocIndex, and ERIC. Other databases could have been used that may have located additional articles that met inclusion criteria but that were not included in this study. Another limitation of the current project is the specific search terms that were used to locate articles. Again, the researchers collaborated with a librarian to develop search terms for each database; however, specific terminology may have been missed resulting in some articles that focused on interventions not being included in the abstract review. A final limitation of the current project is that from the 82 articles that were used in the final

review, a majority were either a preliminary study and/or had a small sample size. This makes the conclusions drawn from the studies not as easily generalizable to different colleges or different populations. Even with these limitations, the information gained from this scholarly project can help to build future research and can provide college and universities with valuable information on what is currently being done to address mental illnesses in higher education.

Recommendations

From this study, the researchers along with their academic advisor plan to publish the scoping review in a peer-reviewed journal to ensure this information can be disseminated to colleges and universities around the world. The researchers plan to work with their academic advisor and the Mountain Plains Metal Health Technology Transfer Center to develop slide decks for faculty and staff of colleges or universities on what is currently being done on campuses to address student mental health issues. Finally, it is recommended that more research be conducted on reasonable accommodations for students who have an identified mental illness as this is currently missing from the literature. It is important to continue to research this topic as it can make a substantial difference in the educational outcomes for students who have identified mental illnesses. Occupational therapy has a role to play in program development on college campuses targeting stigma reduction, help-seeking and disclosure, mental health literacy, and prevention/health promotion.

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