Mental Health Supports for Postsecondary Students:

What Students Need and What Institutions Provide

By

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Paper submitted in partial fulfillment of the requirements for the degree of

Master of Counselling in the
Division of Arts and Sciences

City University of Seattle
2024

This paper is accepted as conforming to the required standard.

March 20, 2024

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Acknowledgements

Dr. Nungu and Dr. Walker, I appreciate your feedback and encouraging discourse about my research topic. Your feedback has helped me to learn more about the topic, and to continue to explore how to implement the recommendations.

To my son, Joshua, thank you for understanding how busy and stressed I have been the last few years; you are growing to be a wonderful young man, and I am so proud of you.

To my partner, David, thank you for all the support, lengthy talks, and mental health walks in the last two years. You were my rock through this degree. Thank you.

Abstract

This thematic literature review analysis indicates that postsecondary institutions can align their mental health services more effectively with student needs by gathering post secondary student feedback. For example, student feedback indicates that students need psychoeducation in coping mechanisms and peer-support groups in mental health topics in addition to access to counselling services to enhance mental wellbeing. Post secondary students need more psychoeducation, starting in high school, to prepare themselves for postsecondary mental health challenges. Also, lowering stigma and improving mental health attitudes on campus can lower barriers for seeking help. Students also need more trust in the quality of mental health services along with advertising the services and shortening wait times. Also, a new young adult psychopathology model was found that institutions are not aware of yet showing that students who have had Adverse Childhood Experiences (ACEs) tend to have higher mental health symptomatology and experiences of discrimination leading to increased risk of poor academic success and poor mental health. The findings also indicate that postsecondary studies worsen student mental health, specifically with substance abuse, sleep problems, stress, anxiety, and depression. Students prefer asking for help from within their close circles, thus educators need more preparation, especially in trauma-informed approaches. Minoritized students struggle more, especially when they have experienced adversity, and they can benefit from targeted mental health peer support and services. Furthermore, institutions are not aware that students welcome more social activities, and other than direct mental health counselling to enhance well-being and social connections, such as organized peer groups and activities such exercise and animal-assisted wellness programs. And finally, as grit and self-determination enhance student well-being and academic success, there is a need for skill-development in these areas.

Keywords: *postsecondary students*, *higher education*, *mental health*, *mental health support*, *animal-assisted therapy*, *student well-being*, *trauma-informed practice*

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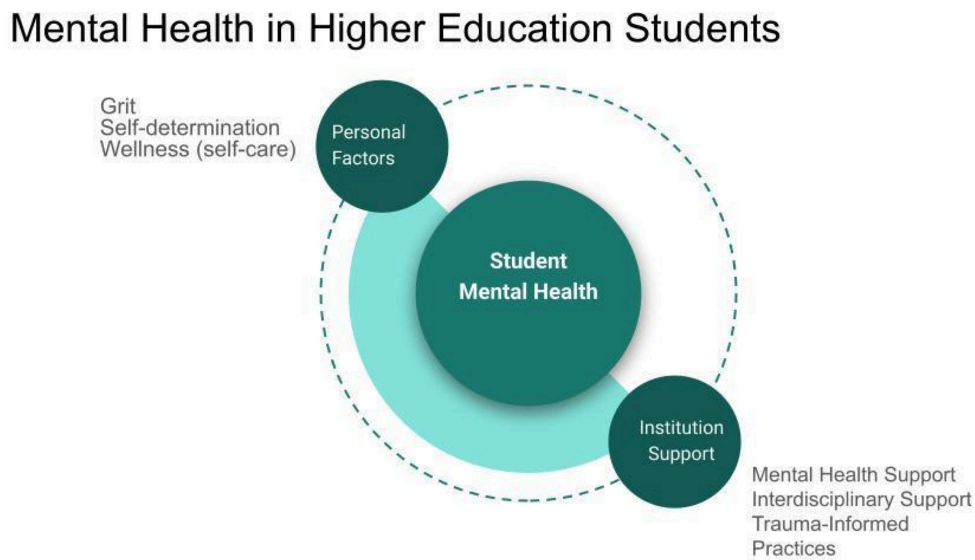
Chapter One: Introduction

Mental health-related problems, stress and symptoms of mental illness have been increasing in Canadian postsecondary students (Ecclestone et al., 2023). There is a research literature gap in understanding what mental health services students need and what institutions provide, and what actions are needed to bridge the need and service gap (Figure 1). Also, it is unclear what interdisciplinary low barrier access campus services, such as animal-assisted therapy, might help in students' well-being, and how those services can be utilized more effectively in addition to campus mental health center services. The purpose of this capstone is to summarize research about how postsecondary institutions can align their mental health services more effectively with student needs.

Figure 1

Mental Health Related Factors in Higher Education Students, and How the Research Paper Is Organized into Appropriate Themes



Another key area of interest of this research capstone project is understanding how psychosocial determinants of mental health such as the effects of adverse childhood experiences (ACEs; childhood abuse, malnutrition, severe childhood stress), experienced trauma, and added distress from discrimination and racism effect postsecondary students. As those experiences lead to higher rates of depression and anxiety and affect postsecondary academic achievement (Watt et al., 2021; 2022), it is important for professors, administrators, and others to understand trauma-informed practices to prevent further harm. Both ACEs and discrimination, rather than only one of the stressors, can synergistically worsen student mental health, and institutions need trauma informed practices to help these vulnerable students (Helminen et al., 2022). Even though higher ACEs and racial/ethnic discrimination can lead to increased depressive symptoms; also, higher social support and experiences of hope correlate with decreased symptomatology which speaks to importance of additional interdisciplinary supports at campuses (Lemon et al., 2022).

Thus, bringing together research literature that summarized the student needs and what institutions currently provide helps to design mental health and well-being services that better align to serve students effectively (Figure 1). Postsecondary students have frequent mental health challenges as clear majority of students (80-95%) experience exhaustion, overwhelm and stress. Students reported significant amounts of sadness, anxiety, and loneliness (Ogrodniczuk et al., 2021); however, they have less behaviours towards seeking treatment than general population resulting in a gap in student needs (Moghimi et al., 2023). In attempts to avoid poor academic performance, and further accumulation of psychosocial problems, we need to address the needs of students. Institutions do not currently have enough information about students' perceptions of mental health and the barriers they experience at campus to get access to appropriate care (Moghimi et al., 2023). Specifically, trauma informed practices, trauma informed teaching and clinical interventions such as therapy are underutilized in Canadian campuses thus we need exploration and research in this area (Moghimi et al., 2023). Also, it is important to explore interdisciplinary therapy services, such as animal-assisted therapy that has a low barrier of participation without waitlist or initial screening wait times. The overall important goal for university administrators is to understand the complexity of student mental health that encompasses the diversity of postsecondary students' mental health challenges, including what the role of interdisciplinary and trauma-informed practices are in supporting mental health in postsecondary student populations.

Background Literature

Factors That Affect Postsecondary Students' Academic Success and Well-Being

Grit and Personal Factors. Psychological variables of an individual postsecondary student correlate with their academic success regardless of other factors such as time allocated to study and work, gender, or other factors related the person (Harpaz et al., 2024). Thus, individual student's approaches to their own self-care, growth as an individual, coping mechanisms, and cultivation of well-being promoting habits lead to better academic abilities (Harpaz et al., 2024). Higher education institutions can facilitate personal well-being by offering options for students to practice regular well-being promoting activities at campus and creating opportunities for connecting with peers and instructors.

Another factor that correlates with academic success is grit, and institutions can support services or approaches in teaching, mental health services or other activities that facilitate grit development. Students' ability to develop grit in academic success can be helped by encouraging receiving and actively seeking help from their instructors and discouraging passive learning (Duckworth et al. 2006; 2014). Also, encouraging and supporting self-coping and self-help by offering resources to students, and their educators, to support well-being of both is helpful. Short daily interventions based on positive psychology have been able to increase instructor well-being, and thus indirectly effecting learners' success when instructors are feeling mentally able to cope at work (Dreer & Gouasé, 2022). Offering short positive psychological interventions to students might support their well-being. Interestingly, grit also has an association to postsecondary students' well-being in addition to academic success. This connection might be because one's ability to set academic goals and find satisfaction in completion of meaningful goals and achievement related life satisfaction (Liao & Chen, 2022).

Effectiveness of Mental Health Supports for Higher Education Students. What is the gap between what students needs and what institutions offer? When about eight thousand Canadian postsecondary students were surveyed to understand their mental health challenges, results were astounding as clear majority of students (80-95%) had experienced exhaustion, overwhelm and stress. Students reported significant amounts of sadness, anxiety, and loneliness (Ogrodniczuk et al., 2021). Sadly, 26.1% were suicidal, and 73% indicated that studies related challenges had been exceedingly difficult to handle leading to sleep problems, anxiety and even depression that caused negative consequence to academic success or abilities (Ogrodniczuk et al., 2021). According to a study conducted in the United States of America in a large university substance use disorder, depression and stress related to life events were the three most common intake reasons when students attended University Counseling Services, University Health Services, The Wellness Resource Center, and Disability Support Services. Interestingly, two other factors were not predictors of students attending these services: anxiety or antisocial behaviours. Thus, there are differences in help-seeking behaviours related to mental health challenge symptomology (Bourdon et al., 2020).

Institutions are hard at work to offer mental health support via free counselling centers, crisis support, suicide prevention programs and sexual assault help centers, however they are underfunded and under resourced, and in need of updating services to meet diverse student needs (Mitchell, 2023). Students also choose not to seek help due to factors such as perceptions of campus social norms, and the level of quality of services (Gannon et al., 2024).

Minority Groups and Needs in Mental Health Support. There is value in investing and improving access to campus counseling centers, and understanding how they can change and evolve. The needs of student populations have changed with increasing numbers of international students, gender, and sex minorities to name a few examples, and support needs have become more diverse (Mitchell, 2023). Unfortunately, graduate students who identified as 2SLGBTQIA+ had worse outcomes in their mental health in comparison to heterosexual graduate students. The 2S LGBTQIA+ population experienced suicidality, lower affect, increased mood disorders, anxiety, and overall lower quality of life in comparison to peers in heterosexual and racial groups (Clement et al., 2024). In this research paper I further summarize the needs of minority groups in mental health supports.

Wellness-Related Services That Support Mental Health. There are many services outside the campus mental health clinics that can help in maintaining wellness and prevent worsening of mental health or social isolation in higher education institutions. Such services are typically low barrier access with no wait time, and include exercise and groups sports (DeJonge et al., 2021), various extracurricular activities, and specialized wellness services such as acupuncture or massage clinics, and animal assisted wellness groups as explored further below.

Animal-Assisted Therapy. Animal-assisted therapy (AAT) and Animal-assisted activity (AAA) have been studied with positive findings in providing support to elderly (Peluso et al., 2018), patients with schizophrenia (Tyssedal et al., 2023) and in different neurological diseases (Rodríguez-Martínez et al., 2021). The conclusion from studies is that AAT can be safely used to complement other therapies and obtain benefits in different populations. Research shows release of relaxation and social bonding related hormones such as oxytocin (Beetz et al., 2012), and facilitation of social interactions that relieve mental distress (Hediger et al., 2019). However, there are few studies published specifically that summarize the benefits of animal-assisted interventions in postsecondary education programs at universities. The benefit of studying and understanding the effectiveness of these program is that the animals are helping many traumatized and equity-deserving students in distinct groups who also might be experiencing oppression, discrimination, social loneliness, and other forms of distress having a compounding effect on their mental health (Helminen et al., 2022). There is a promising potential for further detailed research studies with these programs, and a review meta-analysis of randomized controlled studies confirms that Animal Assisted Interventions could provide short-term beneficial results specifically for students living with anxiety (Parbery-Clark et al., 2021).

Trauma-Informed Practices in Postsecondary Institutions. We need more focus on campus services that help students struggling with trauma-related mental health challenges (Ecclestone et al., 2023). An important area of interest is understanding the psychosocial determinants of mental health such as the effects of adverse childhood experiences (ACEs), experienced trauma, and added distress from discrimination and racism on postsecondary students as those experiences lead to higher rates of depression and anxiety and affect postsecondary academic achievement (Watt et al., 2021; 2022). Training in trauma-informed practices in higher education can help instructors and administrators to better equip themselves to help students whose success is hindered by trauma-related symptoms.

Research Topic

This research has several components to answer the research question: What are the gaps between student needs and what institutions provide for mental health services? Firstly, I will provide understanding of factors affecting students' well-being and common mental health challenges in higher education student populations including needs of minority and equity-seeking student groups. Then, I will summarize what campus mental health and wellness supports students utilize. Also, I provide a summary of what teaching, learning and other campus interactions are helpful for students who live with mental health challenges, and what postsecondary institutions currently provide according to research literature. Then, I will summarize the benefits of interdisciplinary mental health campus services, such animal-assisted wellness, on student well-being as an example of a low barrier accessibility service offered in various campuses in addition to campus counselling clinics. The rationale for this approach is that students need services that match their needs and lower their hesitance to seek mental health related supports, but administrators do not know how to match students' needs in meaningful ways.

Research Problem

Mental Health in Postsecondary Student Population: Gaps Between What Is Being Offered And What Students Need. This research paper will answer the following research question: What are the gaps between student needs and what institutions provide? Recommendations for administrators and other campus staff will help in filling those gaps, and designing services based on student needs.

Student mental health is of importance due to increasing prevalence of psychological distress in young populations (Ecclestone, et al., 2023; Liverpool et al., 2023). COVID-19 pandemic related experiences led to increased levels of mental health distress in adolescents and students (Li et al., 2021; Zhu et al., 2021). Also, the number of students needing trauma-informed support has increased due to experiences of adverse early life events, discrimination, racism, and distress caused by psychosocial challenges (Watt et al., 2021; 2022; Helminen et al., 2022). Thus, there is a need to gather research literature that bridges the gap between students' needs and institutions' understanding of those needs. Also, it is beneficial to explore new interdisciplinary ways of mental health support on campus that address specific student needs and lower the hesitancy to seek help.

The prevalence of clinically significant depression (30.6%) and anxiety symptoms (28.2%) in postsecondary students during the COVID-19 pandemic indicate the relevance of increased needs of campus mental health support (Zhu et al., 2021). A worldwide increase of mental health care demands is expected, and allocating more resources is essential (Racine et al., 2021). For example, research data suggests a need for support in accessing care, teaching personal strategies, psychoeducation and awareness, and institutional support and services in student mental health (Moghimi et al., 2023). Since the *Okanagan Charter: An International Charter for Health Promoting Universities and Colleges* (2015) was published more focus has been on the integration and promotion of student health on campuses.

This capstone project also summarizes research in interdisciplinary evidence-based mental health supports that help students to achieve better academic outcomes and quality of life while on campus. Indigenous perspectives will be included where applicable as per the Truth and Reconciliation report (Government of Canada, 2015) to enhance our understanding perspectives of Indigenous students.

Rationale and Justification

The overall goal is to understand student mental health that encompasses the diversity and complexity of Canadian postsecondary students' mental health challenges including trauma-informed practices. This capstone research paper summarizes the current situation in higher education's student population mental health, addressed their changing needs and what institutions can do to better support students' well-being and prevent worsening of mental health challenges.

Significance of the Research

There is potential that this preliminary research will lead to further studies on how to educate administrators on what students' needs are in mental health supports. A summary of needs for trauma-informed approaches is provided, and further understanding of how we can prevent worsening of traumatized students' distress and improve their quality of life. Also, research results about additional treatments in student mental health, specifically on animal-assisted wellness and trauma-informed practices in postsecondary education can guide institutions in designing additional services for students (Parbery-Clark et al., 2021)..

Framework and Applications

Theoretical Framework. This study uses a constructivist approach to facilitate understanding of participant experiences from their constructed point of view. The constructivist framework allows incorporation of diverse perspectives and research participant experiences (Creswell & Poth, 2017). Researchers can include their own understanding in constructivism framework as they are allowed to be part of the research process. However, it is important to include a reflection in research design that researchers do recognize their own biases (Creswell & Poth, 2017). Animal-assisted therapy and trauma-informed practices both help students in managing and understanding mental health and well-being in a complex social construct, thus these approaches can also be interpreted under sociocultural theory (Vygotsky, 1978). The difference between sociocultural theory and social constructivism is that the sociocultural theory focuses equally on both the social environment and the cultural context in which people create knowledge.

Applications. This research summarizes what the status of student mental health is across Canadian universities, what barriers student experience in seeking help, and what the institutions offer for mental health supports. Also, the feasibility and outcomes of interdisciplinary additional treatments, such as animal-assisted wellness, to help self-regulation and achieving regulated nervous system activity that help during mental health challenges will be summarized (Conway et al., 2021). This research study will provide understanding of student needs in mental health supports, teaching, learning and other campus interactions, including trauma informed approaches.

Key Terms.

Grit. Grit refers to the type of mental stamina, known as perseverance, and ability to sustain passion and interest regardless of barriers or challenges. Grit helps to achieve future goals (Duckworth et al., 2007).

Animal-assisted wellness. Animal Assisted Interventions (AAIs) include a variety of interventions that include positive social interactions between humans and animals such as dogs, cat, and horses. AAIs include Animal-Assisted Therapy (AAT), Animal-Assisted Education (AAE), Animal-Assisted Activity (AAA) and Animal-Assisted Coaching (AAC). Specifically, AAT is evidence-based intervention where trained animals interact with humans and facilitate well-being by adding socio-emotional connection (Parbery-Clark et al., 2021).

Adverse childhood experiences. The Adverse Childhood Experiences (ACEs) are for example being a witness and a victim of abuse/neglect and family violence that led to emotional and psychosocial “toxic stress” in children. ACEs are linked to detrimental long-term consequences such as mental health challenges, substance abuse, psychopathology and pathophysiology related to cardiovascular and immune systems and other problems (Shonkoff et al., 2012).

Equity-seeking groups and minoritized groups. Instead of stating that equity-seeking groups have a minority status, the research has moved to recognizing the intersectionality of individuals and how minoritization is a process via factors such as systemic racism and oppression. Minoritized individuals have a disproportionate lack of social supports, financial resources, access to care and education, and often childhood ACEs (Watt et al., 2021).

Trauma-informed practices (TIPs). An experienced threat to life, or an ongoing significant emotional and physical stress can lead to development of trauma-related symptoms. TIPs training helps those collaborating with traumatized individuals with knowledge about trauma and its impact. Importantly, TIPS are specific strategies to prevent worsening of symptoms, and ways to recognize and address trauma symptoms in for example learners, patients, and co-workers (Aragón et al., 2024).

Reflexivity Statement

As psychologists in Canada, we follow the Code of Ethics (Canadian Psychological Association, 2017) and I recognize the importance of ensuring understanding of my bias and position as a professor and a researcher. I am also a pet owner and enjoy the benefits of spending relaxing quality time with dogs, cats, and horses. I recognize that I am also biased as a postsecondary lifelong learner, finalizing my fourth university degree. However, along with firsthand experiences comes understanding of multiple perspectives, including learner, administrator, and an educator point of views. The goal of this research is to bring together all those perspectives to introduce more holistic understanding of the needs of postsecondary learners in mental health supports. Also, as an academic immigrant, second-language speaker, I hold both privileges and challenges that can skew my interpretations, however I will continue practicing self-reflection as per Code of Ethics (CPA, 2017).

Furthermore, I recognize that not all cultures (Harper, 2006) include pets, specifically dogs as part of everyday life, and can have a negative attitude towards dogs thus those cultures are excluded in this research data transferability.

Chapter Two: Methodology

Methodology

I utilized University of Seattle online library, Google Scholar, and PsychInfo + PsychArticles to search for relevant primary research peer-reviewed research articles with an emphasis on peer-reviewed primary research within the last five years, articles with publications years 2019-2024 were included. Key words in search for relevant literature were *postsecondary students, higher education, mental health, mental health support, animal-assisted therapy, student well-being, trauma-informed practice*. Then, I narrowed down the search to the following: (higher education) AND (mental health) AND (mental health support) AND (students) AND (canada) NOT (china) NOT (covid-19) NOT (secondary education). Exclusion criteria were non-peer reviewed primary articles, research that focused on the direct effects of COVID-19 pandemic on students and excluding Chinese publications as thar was not the focus of the research question to narrow down the number of articles. Including Canada and excluding China narrowed the articles to North-American campuses, and excluding secondary education excluded students younger than 18 years of age. Additionally, research ethics of each article will be evaluated and included in the discussion as per Declaration of Helsinki on research in humans (World Medical Association, 2022). The challenges with this literature search were that especially trauma-informed practices are under studied, and there was a limited number of peer-reviewed articles available. Other areas, such as student success are well studied, thus a challenge was to narrow down to only few known factors that promote postsecondary student success. Also, the landscape of student mental health changed after and during the global pandemic thus the literature before and after COVID-19 related closures might be different, and it is challenging to differentiate the effects.

As critical analysis follows in Chapter three for each of the included articles, a summary here includes the description of general methodology to review the quality and generalizability of the articles. In sample size determination it is recommended to use proportionate sample size, and statistics to approximate the number of participants to reach saturation (Creswell & Creswell, 2018). Most studies used convenience sampling and thus allowed non-predetermined sample sizes, whereas Sandhu et al. (2019) determined the sample size statistically and discontinued the recruitment process when representative sizes were reached (Table 2). All quantitative studies reported statistically significant results, and most used reliability measures (Table 3) such as Cohen's d that confirms clinical validity (Aragon et al, 2024). All quantitative studies had a limitation of including only cross-sectional, survey-based data is which do not show causational effects, and varied in student demographics (Gannon et al., 2024).

Chapter Three: Literature Review

Based on the targeted literature search 19 research articles (Table 1) were deemed to provide comprehensive literature for the following thematic analysis of the status of mental health in postsecondary student population. According to the articles several themes were found to be relevant to answer the research question: What are the gaps between student needs and what institutions provide for mental health services?

Students' personal characteristics that were found to be significant in having stable mental health and academic success were grit, self-care, and wellness practices (Figure 1). Surprisingly, majority of students have some level of mental health challenges, and there are differences in which symptomology leads to service utilization, such as anxiety and social loneliness are less seen in the campus mental health clinics (Moghimi et al., 2023). Institutions provide services such as counselling clinics, and wellness centers, however students hesitancy to seek help are also related to perceived stigma on the campus and quality of services provided. The diverse needs of minority and equity-seeking student populations are important, and institutions need more focus and resources to update and evolve services to match the needs of diverse students (Walls, 2023). Finally, literature suggests that additional, interdisciplinary services can help students' mental health additionally to counselling and wellness centers. Animal assisted interactions and exercise programs can help those students who might not seek consistently counselling services and can be beneficial in increasing social wellness and reducing anxiety and stress.

Research Paradigm and Design

The peer-reviewed research studies mainly used quantitative research design (Table 1) with a postpositivist worldview (Creswell & Creswell, 2018). Also, a deterministic view is seen in the quantitative studies, meaning that quantitative studies use hypothesis and reductionism of human behaviour as outcomes that can be predicted by antecedents, and research questions are predetermined by hypothesis (Creswell & Creswell, 2018). There were also two mixed methods studies that use both deterministic and quantitative methods and complemented the research with qualitative methods to deepen the understanding of the research participants' experiences. Only a few studies used only qualitative methods which included world café and focus groups to deepen the understanding of participant experiences of the phenomenon under study.

Table 1

Summary of Research Articles

Author(s)	Title	Year	Research design and paradigm	Research Topic and connection to current research question
Aragón, K. M., Mullin, A. C., Felix, E. D., Appel, O., & Sharkey, J. D.	Identifying what educators need to support trauma-informed practices in the schools: A community needs assessment.	2024	Mixed methods Postpositivist	Trauma Informed practice-educator needs
Baik, C., Larcombe, W., & Brooker, A.	How universities can enhance student mental well-being: The student perspective.	2019	Qualitative Constructivist	Student perspective on mental health needs and barriers
Bourdon, J. L., Moore, A. A., Long, E. C., Kendler, K. S., & Dick, D. M.	The relationship between on-campus service utilization and common mental health concerns in undergraduate college students.	2020	Quantitative Postpositivist	Service utilization
Clement, D. N., Appleseth, H. S., Armstrong, C. M., Cole, A. B., Wingate, L. R., & Leffingwell, T. R.	Minoritized graduate student identity, well-being, and mental health risks for suicidality.	2024	Quantitative Postpositivist	Minority groups needs in mental health supports
DeJonge, M. L., Jain, S., Faulkner, G. E., & Sabiston, C. M.	On campus physical activity programming for postsecondary student mental health: examining effectiveness and acceptability.	2021	Mixed Method Pragmatism	Interdisciplinary supports

Author(s)	Title	Year	Research design and paradigm	Research Topic and connection to current research question
de Moissac, D., Waddell, C., Smith, N., & Rocque, R.	Students' Perspectives on Mental Health: Using World Cafés to Engage in Dialogue about Health Promotion and Support Services.	2020	Qualitative Constructivist	Student perspective on mental health needs and barriers
Dulai, J. J. S., Salway, T., & Ablona, A.	Strong community belonging moderates poor mental health in lesbian, gay, and bisexual individuals living in Canada: an intersectional analysis of a national population-based survey.	2023	Quantitative Postpositivist	Minority groups needs in mental health supports
Gannon, K. R., Richardson, L. R., & Ritzert, T. R.	The mental health climate and mental health-related academic help seeking on U.S. college campuses.	2024	Quantitative Postpositivist	Student perspective on mental health needs and barriers
Harpaz, G., Vaizman, T., & Yaffe, Y.	University students' academic grit and academic achievements predicted by subjective well-being, coping resources, and self-cultivation characteristics.	2024	Quantitative Postpositivist	Factors related to student well-being
Helminen, E. C., Scheer, J. R., Edwards, K. M., & Felver, J. C.	Adverse childhood experiences exacerbate the association between day-to-day discrimination and mental health symptomatology in undergraduate students.	2022	Quantitative Postpositivist	Trauma Informed practice-student needs
Lemon, E. D., Vu, M., Roche, K. M., Hall, K. S., & Berg, C. J.	Depressive Symptoms in Relation to Adverse Childhood Experiences, Discrimination, Hope, and Social Support in a Diverse Sample of College Students.	2022	Quantitative Postpositivist	Trauma Informed practice-student needs
Liao, Y. H., & Chen, H. C.	Happiness takes effort: Exploring the relationship among academic grit, executive functions, and well-being.	2022	Quantitative Postpositivist	Factors related to student well-being

Author(s)	Title	Year	Research design and paradigm	Research Topic and connection to current research question
Moghimi, E., Stephenson, C., Gutierrez, G., Jagayat, J., Layzell, G., Patel, C., McCart, A., Gibney, C., Langstaff, C., Ayonrinde, O., Khalid-Khan, S., Milev, R., Snelgrove-Clarke, E., Soares, C., Omrani, M., & Alavi, N.	Mental health challenges, treatment experiences, and care needs of postsecondary students: a cross-sectional mixed-methods study.	2023	Cross-sectional Mixed Methods	Student perspective on mental health needs and barriers
Ogrodniczuk, J. S., Kealy, D., & Laverdière, O.	Who is coming through the door? A national survey of self‐reported problems among post‐secondary school students who have attended campus mental health services in Canada.	2021	Quantitative Postpositivist	Service utilization
Parbery-Clark, C., Lubamba, M., Tanner, L., McColl, E.	Animal-Assisted Interventions for the Improvement of Mental Health Outcomes in Higher Education Students: A Systematic Review of Randomised Controlled Trials.	2021	Quantitative Postpositivist	Interdisciplinary supports
Samuel, R. & Kamenetsky, S.	Help-Seeking Preferences and Factors Associated with Attitudes Toward Seeking Mental Health Services Among First-Year Undergraduates.	2022	Quantitative Postpositivist	Service Utilization
Sandhu, H. S., Arora, A., Brasch, J., & Streiner, D. L.	Mental Health Stigma: Explicit and Implicit Attitudes of Canadian Undergraduate Students, Medical School Students, and Psychiatrists.	2019	Quantitative Postpositivist	Student perspective on mental health needs and barriers
Watt, T., Kim, S., Ceballos, N., & Norton, C.	People who need people: the relationship between adverse childhood experiences and mental health among college students.	2022	Quantitative Postpositivist	Trauma Informed practice-student needs
Watt, T. T., Hartfield, K., Kim, S., & Ceballos, N.	Adverse childhood experiences contribute to race/ethnic differences in postsecondary academic performance among college students.	2023	Quantitative Postpositivist	Trauma Informed practice-student needs

Role of the Researcher

Quantitative Studies. In quantitative studies it is important to use control groups and to minimize variables influencing the outcomes. In quantitative studies the researcher maintains an objective view of the quantitative data analysis and inferences (Creswell & Creswell, 2018). Many of the quantitative studies (Table 1) used anonymous surveys methods completed mostly online or through the mail. This contactless approach has a minimal impact on the results and minimizes researcher bias on the outcome of the studies.

Qualitative Studies. In qualitative research the researchers can be part of the process and incorporate their own understanding in the research data. In the qualitative studies included, the researchers conducted the interviewing, and participated in qualitative thematic data analysis. However, it is important to include a reflection in research design that researchers do recognize their own biases (Creswell & Poth, 2017).

Participants and Sampling

Recruitment and Sampling Procedures. Most studies used mostly a convenience sampling approach to invite and recruit postsecondary student participants (Table 2). Convenience sampling is commonly used as it is easier to invite participant in the target population, compared to random sampling. Other methods used were representative sample by using statistics (Sandhu et al., 2019), random selection (Aragón et al., 2024; Gannon et al., 2023) and multi-stage stratified (Dulai et al., 2023) sampling designs (Creswell & Creswell, 2018).

Most studies recruited participants through undergraduate classes or mental health clinics at the university in which also the researcher works as a professor or a collaborator (Table 2). The student participants were offered course credits, or a draw of gift cards in return for their participation.

Table 2

Summary of Sampling Procedures

Study reference (methodology)	Sampling strategy	Recruitment strategy	Participants
Aragón, K. M., Mullin, A. C., Felix, E. D., Appel, O., & Sharkey, J. D.	Random selection	Invitation	Educators (n = 178; 39.5% response rate) completed a survey, and four focus groups were conducted (n = 14).
Baik, C., Larcombe, W., & Brooker, A.	Convenience Sampling	Invitation	Students (n = 2776) in an Australian university Female (57%), Males (43%) and the majority were aged 21 years or less. One in five reported speaking a language other than English at home.
Bourdon, J. L., Moore, A. A., Long, E. C., Kendler, K. S., & Dick, D. M.	Convenience Sampling. Participants who completed 50% or more of a measure were used in analyses of that measure to reduce bias introduced by potentially noncompliant responders.	Chart Review	Undergraduates (n = 3734) at a large urban university (Mean Age = 19.94 years, SD = 0.55 years; female = 66%, males = 44%). Caucasian 50.06%; Black/African American 19.21%; Asian 16.56%; another race/ethnicity 8.07%; Hispanic/Latino 6.09%.
Clement, D. N., Appleseth, H. S., Armstrong, C. M., Cole, A. B., Wingate, L. R., & Leffingwell, T. R.	Convenience Sampling	Invitation	194 graduate students at a large U.S. university. Woman 68.6%, Man 20.8% Nonbinary or two-spirit 7.8%, Transgender 2.4% American Indian or Alaska Native 8.2%, Asian American or Pacific Islander 3.3%, Black 8.8% Hispanic/Latino 6.7%, Multiracial 4.1%, White 67.6% Asexual 5.8%, Bisexual 13.0%, Gay 3.9%, Lesbian 1.9%, Heterosexual 61.4%, Pansexual 4.3%, Questioning 1.9%, Queer 8.7%
DeJonge, M. L., Jain, S., Faulkner, G. E., & Sabiston, C. M.	Convenience Sampling	Students seeking mental health support	n = 68; M Age = 22.96 years, SD = 3.42; 82% female; 18% male.
de Moissac, D., Waddell, C., Smith, N., & Rocque, R.	Convenience Sampling	Invitation	n =73 students in two Canadian Universities.

Study reference (methodology)	Sampling strategy	Recruitment strategy	Participants
Dulai, J. J. S., Salway, T., & Ablona, A.	Multistage stratified sampling design	Canadian Community Health Survey 2015–2016	n =30,509,780 Canadians older than 12. Men: Heterosexual (49.7%), Gay (63.5%), Bisexual (26.9%) Women: Heterosexual (50.3%), Gay (36.5%), Bisexual (73.1%) White heterosexual (73.1%), Gay (77.1%), Bisexual (77.5%) Indigenous: Heterosexual (3.6%), Gay (3.6%), Bisexual (7.6%) Non-Indigenous Person of Colour: Heterosexual (20.8%), Gay (17.7%), Bisexual (12.1%)
Gannon, K. R., Richardson, L. R., & Ritzert, T. R.	Random selection	Healthy Minds Study	Participants (n = 37,026; M age = 23.30; SD age = 6.67) across 87 colleges and universities completed the Healthy Minds Study for the 2020 to 2021 academic year.
Harpaz, G., Vaizman, T., & Yaffe, Y.	Convenience sampling Multicultural approach	Invitation	n = 351 university students between the ages of 18 and 58 from US, Canada, UK, and Israel (48%). Males 26.6%, females 73.4%. 17.1% with a diagnosis of LD or ADHD.
Helminen, E. C., Scheer, J. R., Edwards, K. M., & Felver, J. C.	Convenience Sampling	Invitation	Undergraduate students (n = 251), Age average 19.91 years (range: 18 – 45). Cisgender women 67.7%, Cisgender men 32.3%, Asexual 1.6%, Lesbian 1.6%, Gay 2.0%, Bisexual 15.5%, Heterosexual 75.3%, Questioning, or unsure 3.6%, Something else 0.4%. American Indian or Alaska Native 2.0%, Asian 16.3%, Black, or African American 5.6%, Hispanic/Latinx 10.8%, Native Hawaiian or Other Pacific Islander 1.2%, Multiracial 2.8%, White 61.4%.

Study reference (methodology)	Sampling strategy	Recruitment strategy	Participants
Lemon, E. D., Vu, M., Roche, K. M., Hall, K. S., & Berg, C. J.	Convenience Sampling	Invitation	n = 666 racial/ethnic minority college students (57% Black, 22% Latinx, 21% Asian) attending seven colleges and universities in the state of Georgia. Average 20.56 years old (SD = 1.93), 70% female, 30% male.
Liao, Y. H., & Chen, H. C.	Convenience Sampling	Invitation	n = 214 university students in Taiwanese university (females 56.5%; males 43.5%) average age 20.41 (SD = 1.36).
Moghimi, E., Stephenson, C., Gutierrez, G., Jagayat, J., Layzell, G., Patel, C., McCart, A., Gibney, C., Langstaff, C., Ayonrinde, O., Khalid-Khan, S., Milev, R., Snelgrove-Clarke, E., Soares, C., Omrani, M., & Alavi, N.	Convenience Sampling	Broad-scoping online survey was publicly distributed.	n = 448 students across postsecondary institutions in Ontario, Canada Woman 59.6%, Man 35.7%, Nonbinary 3.3%, Prefer to self-describe 0.4%, Prefer not to answer 0.9%. Female 62.7%, Male 35.7%, Intersex 0.2%, Prefer not to answer 1.3%. Straight/Heterosexual 71.7% White 52.7%, Black 14.1%, South Asian 12.5%, East Asian 11.8%, Middle Eastern 4.5%, Latin American 2.9%, Southeast Asian 2.5%, Indigenous 1.6%, Multi-ethnic 1.6%, Other 1.3% Do not know 0.2%. Prefer not to answer 4.0%
Ogrodniczuk, J. S., Kealy, D., & Laverdière, O.	Convenience Sampling	Invitation	n = 8,248 students attending 41 post‑secondary campuses across Canada. females 77.4%; males 22.6%; The average age of the sample was 23.48 years (SD = 5.88; range = 18–90). Caucasian 70.6%, Asian 9.0%, South Asian 6.2%, and First Nations 5.4%. Heterosexual 72.2%, bisexual 9.5%, asexual 5.6%, and 5.4% gay/lesbian/queer.
Parbery-Clark, C., Lubamba, M., Tanner, L., McColl, E.	A scoping review	Literature search and narrative synthesis	Canadian postsecondary students.

Study reference (methodology)	Sampling strategy	Recruitment strategy	Participants
Samuel, R. & Kamenetsky, S.	Convenience Sampling	Invitation	n =168 undergraduate Canadian students, 17-30 years old. Female 77.8%, Male 22.2% South Asian 26.9%, White 21.0%, Mixed 13.2%, East Asian 11.4%, South-East Asian 7.8%, Black 7.8%
Sandhu, H. S., Arora, A., Brasch, J., & Streiner, D. L.	Using a 95% confidence level and 5% margin of error, we estimated 379, 236, and 104 desired participants for each respective group to achieve a representative sample.	Invitation	Participants from McMaster University, n =538 undergraduate students (n = 382), medical school students (n = 118), and psychiatrists (n = 38).
Watt, T., Kim, S., Ceballos, N., & Norton, C.	Convenience Sampling	Invitation	University students in the U.S.A. Age (range 18–47) Female 73.6%, Male 26.4%
Watt, T. T., Hartfield, K., Kim, S., & Ceballos, N.	Convenience Sampling	Invitation	Students attending a large public university in U.S. (n = 404), age 18 and up. Female 73.6%, Male 26.4% White 43.3%, Hispanic 43.1%, Black 8.8%, Other 5.0%

Sample Size. It is recommended to use proportionate sample size, and statistics to approximate the number of participants to reach saturation (Creswell & Creswell, 2018). Most studies used convenience sampling and thus allowed non-predetermined sample sizes, whereas Sandhu et al. (2019) determined the sample size statistically and discontinued the recruitment process when representative sizes were reached. Sample sizes varied from 68 to 37,026 as the goal of this paper is to summarize and compare both local university-based and national Canadian wide data.

Sample Characteristics. The goal of the studies under review was to gather information about postsecondary students' mental health and needs for campus services therefore, the samples in all studies reflect the target population, except the Canadian wide data study by Dulai et al. (2023) as it is used as control data to draw comparative conclusions. An ideal representation of the target postsecondary student population would include the diversity of characteristics and demographics of the total student population.

Limitations of Participants and Sampling. As majority of the studies used convenience sampling these studies cannot guarantee the probability of the results occurring in the general student population, as there is a bias in data reflecting only students who volunteered to participate (Creswell & Creswell, 2018). This approach limits the definitive ability to answer the research question, which encompasses the general postsecondary student population.

Data Collection

Limitations of Data Collection. A detailed consideration of data collection is needed for each research study to draw thematic conclusions of the results and summarizing overall findings. This review intended to determine if there are gaps between student mental health support needs and what institutions provide to offer recommendations; however, a limitation of including mostly cross-sectional, survey-based quantitative studies is that those studies do not show causational effects.

Data Analysis

The researchers of most quantitative studies completed descriptive statistics along with univariate and bivariate correlations (one-way ANOVA, Pearson's r, t-test), multivariate correlations (MANOVA) and regression models (Chi-square and Path analysis) to study the mental health variable in postsecondary student populations (Table 3). This approach first indicates a linear relationship between the variables, and then bivariate correlations confirm a relationship between variables. Studies also conducted further analyses, such as hierarchical and multiple regressions

Table 3

Summary of Data Collection and Analysis in Studies

Study reference (methodology)	Variable(s) measured	Data collection tools/instruments	Reliability measures	Data analysis strategy
Aragón, K. M., Mullin, A. C., Felix, E. D., Appel, O., & Sharkey, J. D.	Barriers teachers face regarding trauma-informed resources	Focus Group School climate measure Teacher confidence Secondary Traumatic Stress Scale Maslach Burnout Inventory–Educators Survey Teacher Subjective Well-Being Questionnaire	t Test and Chi-square analyses p-values Cohen's κ	Binary logistic regression Univariate logistic regression model Thematic coding
Baik, C., Larcombe, W., & Brooker, A.	Students' levels of psychological distress	The Student Well-being and Course Experience Survey	Chi square analyses	Coded separately and through an iterative process of comparison and classification
Bourdon, J. L., Moore, A. A., Long, E. C., Kendler, K. S., & Dick, D. M.	Mental health symptoms Severe life events Service utilization data	Symptom Checklist-90 (SCL-90) Semi-Structured Assessment for the Genetics of Alcoholism (SSAGA) SLEs questions Utilization of four college health services	Holm's Family-Wise Error Rate (FWER) method p-values	Univariate logistic regressions Multiple logistic regression model
Clement, D. N., Appleseth, H. S., Armstrong, C. M., Cole, A. B., Wingate, L. R., & Leffingwell, T. R.	Demographics Mental health symptoms	Depression, Anxiety, and Stress Scale–21 The Suicide Behaviors Questionnaire–Revised (SBQ-R) Depressive Symptom Inventory Suicidality Subscale (DSISS) Multicultural Quality of Life Index Basic Psychological Need Satisfaction and Frustration Scale	95% CI p-values	Multivariate analysis of variance (MANOVA) Chi-square Path analysis

Study reference (methodology)	Variable(s) measured	Data collection tools/instruments	Reliability measures	Data analysis strategy
DeJonge, M. L., Jain, S., Faulkner, G. E., & Sabiston, C. M.	Physical Activity Mental Health	Demographics questionnaire Physical Activity Questionnaire- Short Form Mental Health Inventory-38 Interview	p-values Cohen's d Correlation coefficients	Paired samples t-tests, linear regressions, inductive and deductive thematic analysis
de Moissac, D., Waddell, C., Smith, N., & Rocque, R.	To better understand mental health on campus through the students' eyes and explore innovative ways to improve supports.	World Cafés small discussion groups. Ideas are noted randomly with no indication of prevalence of opinion within the small group or from all participants.	None	Inductive thematic analysis Frequency analyses
Dulai, J. J. S., Salway, T., & Ablona, A.	Mental Health Social Supports Sexual Orientation	Canadian Community Health Survey 2015–2016	Associations with 95% CI excluding 1	Univariate log-binomial regression and multivariable analyses; stratified multivariable logbinomial regression modes
Gannon, K. R., Richardson, L. R., & Ritzert, T. R.	Student perceptions of campus social norms related to mental health	Demographics Healthy Minds Study	Odds ratios for all hypothesis tests alpha was set at .01. p-values	Multilevel regression models
Harpaz, G., Vaizman, T., & Yaffe, Y.	Psychological variables, academic grit, and academic achievement	Demographics Savouring Art questionnaire New General Self-efficacy Scale HSO questionnaire Personal Growth scale Satisfaction with Life Scale (SWLS) Academic Grit Scale Self-reported grades	P-values Cohen's d Cronbach's α	Linear multiple regression analysis

Study reference (methodology)	Variable(s) measured	Data collection tools/instruments	Reliability measures	Data analysis strategy
Helminen, E. C., Scheer, J. R., Edwards, K. M., & Felver, J. C.	ACEs Discrimination Mental health symptoms	Center for Youth Wellness Adverse Childhood Experiences Questionnaire, Teen Version (ACE-Q) Everyday Discrimination Scale Brief Symptom Inventory	Assessed for normality using skewness and kurtosis thresholds Goodness of fit $\alpha = 0.05$ p-values	Bivariate correlations, binary logistic regressions, and linear regression models MANOVAs
Lemon, E. D., Vu, M., Roche, K. M., Hall, K. S., & Berg, C. J.	Sociodemographics ACEs Racial/ethnic discrimination Mental Health and Social supports	Adverse Childhood Experience Questionnaire (ACE-Q) Racial/ethnic discrimination State Hope Scale Interpersonal support evaluation list The Patient Health Questionnaire-9 (PHQ-9)	Beta coefficient with 95% confidence and p value based on alpha of .05.	One-way analyses of variance (ANOVA) with F-tests Cross-tabulations with chi-square tests of association Bivariate analyses t-test
Liao, Y. H., & Chen, H. C.	Demographics Grit Executive Functions	Chinese Executive Function Index (CEFI) Flourishing Scale (FS) Academic Grit Scale	Cronbach's alpha coefficients Retest-reliability coefficient p-values	Simple linear regression
Moghimi, E., Stephenson, C., Gutierrez, G., Jagayat, J., Layzell, G., Patel, C., McCart, A., Gibney, C., Langstaff, C., Ayonrinde, O., Khalid-Khan, S., Milev, R., Snelgrove-Clarke, E., Soares, C., Omrani, M., & Alavi, N.	Demographics Mental health diagnosis Use, perceptions and needs in mental health services	Post-Secondary Student Mental Health Experience Survey	Inter-coder reliability was assessed via Cohen’s Kappa $\alpha = 0.05$.	Descriptive analyses Independent sample t-tests Content analysis qualitative methods
Ogrodniczuk, J. S., Kealy, D., & Laverdière, O.	Demographics Mental health	National College Health Assessment (NCHA) Canadian Campuses	None	Descriptive Statistics

Study reference (methodology)	Variable(s) measured	Data collection tools/instruments	Reliability measures	Data analysis strategy
Parbery-Clark, C., Lubamba, M., Tanner, L., McColl, E.	11 peer-reviewed articles based on peer-reviewed, registered protocol	State-Trait Anxiety Inventory Hospital Anxiety and Depression Scale HADS-depression subscale and Beck Depression Inventory II Positive and Negative Affect Schedule	Weight of Evidence Risk of Bias PRISMA guidelines	Post-scores minus pre-scores ANCOVA Harvest Plot
Samuel, R. & Kamenetsky, S.	Demographic factors, personality traits, and social support and attitudes toward seeking mental health services.	Demographics subscale of the Canadian Community Health Survey (CCHS) Hollingshead Four Factor Index of Social Status Inventory of Attitudes towards Seeking Mental Health Services (IASMHS) Big Five Inventory (BFI) Affectometer 2 Interpersonal Support Evaluation List – Shortened Version (ISEL-SV)	p-values Cohen's d	Descriptive statistics and inferential statistics: regression analyses, analyses of variance
Sandhu, H. S., Arora, A., Brasch, J., & Streiner, D. L.	Demographics Explicit and implicit stigmatizing attitudes towards mental illness	Opening Minds Scale for Healthcare Providers Implicit Association Test	p-values Cohen's d	Descriptive statistics and bivariate analyses: one-way ANOVA, Pearson's r, t-test
Watt, T., Kim, S., Ceballos, N., & Norton, C.	Demographics ACEs Mental Health Diet Social Support	ACEs by Centers for Disease Control and Kaiser Permanente The Patient Health Questionnaire (PHQ-9) Starting the Conversation (STC) ENRICH Social Support Index (ESSI)	p-values Structural Equation Models (SEM)	Univariate statistics: t-test Structural Equation Models (path analyses)

Study reference (methodology)	Variable(s) measured	Data collection tools/instruments	Reliability measures	Data analysis strategy
Watt, T. T., Hartfield, K., Kim, S., & Ceballos, N.	Demographics ACEs Social Support	ACEs by Centers for Disease Control and Kaiser Permanente ENRICH Social Support Index (ESSI)	p-values Cohen's d	Univariate statistics: t-test Bivariate relationships Regression models

to draw connections between a range of factors in each study. Quantitative studies report statistically significant results as p-values, or correlation coefficients (Table 3). Also, by providing the Cohen d as the effect size measure, the relationships between the predictor or mediating variables and the outcome variable are validated by its impact in relation to the sample size that predict clinical significance (Creswell & Creswell, 2018). Qualitative studies used thematic content coding analysis, inductive thematic analysis and frequency analyses and inter-coder reliability was assessed with Cohen's Kappa (Moghimi et al., 2023).

Although statistically significant results were found, there are similar limitations in all studies. Some studies mention the future need to replicate the results with a larger and more diverse samples, and cross-cultural analysis, including considering variations that COVID-19 restrictions might have caused to the research results. All quantitative studies also recognize that the cross-sectional design dose not prove causality or any indirect effects among the variables in each study. Finally, all studies suggest the need for longitudinal studies (Table 3).

Ethical Considerations

Research studies require institutional ethics approval as per Declaration of Helsinki on research in humans (World Medical Association, 2022). This aligns with the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (Canadian Institute of Health Research, 2018), and all the listed studies (Table 4) received an institutional ethics approval. Additional professional considerations about consent, confidentiality and follow up as per the

Canadian Code of Ethics for Psychologists (Canadian Psychological Association, 2017) are also summarized in Table 4.

Table 4

Summary of Ethical Considerations

Study reference (methodology)	Institutional approval for research	Informed consent	Confidentiality	Other ethical considerations
Aragón, K. M., Mullin, A. C., Felix, E. D., Appel, O., & Sharkey, J. D.	Yes	Yes	Yes	N/A
Baik, C., Larcombe, W., & Brooker, A.	Not specified	Not specified	Not specified	No follow up for students at risk.
Bourdon, J. L., Moore, A. A., Long, E. C., Kendler, K. S., & Dick, D. M.	Yes	Yes	Not specified	$10 and a t-shirt, only sophomores and those who completed more than 50% of measures were included.
Clement, D. N., Appleseth, H. S., Armstrong, C. M., Cole, A. B., Wingate, L. R., & Leffingwell, T. R.	Yes	Yes	Not specified	Students who endorsed suicide risk were sent on-campus and national resources for mental health services and supports.
DeJonge, M. L., Jain, S., Faulkner, G. E., & Sabiston, C. M.	Yes	Yes	No	Students were recruited from the counselling clinic, no mentioning about follow-up.
de Moissac, D., Waddell, C., Smith, N., & Rocque, R.	Yes	Yes	No	N/A
Dulai, J. J. S., Salway, T., & Ablona, A.	Yes	Not Specified	Not specified	Canadians who live on reserves or other Indigenous settlements, serve fulltime in the Canadian Forces, are institutionalized, are aged 12–17 living in foster care, or are residents of the Nunavik and Terres-Cries-de-la-Baie-James health regions are excluded from the survey.

Study reference (methodology)	Institutional approval for research	Informed consent	Confidentiality	Other ethical considerations
Gannon, K. R., Richardson, L. R., & Ritzert, T. R.	Yes	Not Specified	No	Draw for $500
Harpaz, G., Vaizman, T., & Yaffe, Y.	Yes	Yes	Yes	N/A
Helminen, E. C., Scheer, J. R., Edwards, K. M., & Felver, J. C.	Yes	Not Specified	Not Specified	N/A
Lemon, E. D., Vu, M., Roche, K. M., Hall, K. S., & Berg, C. J.	Yes	Yes	Yes	Incentives were not specified.
Liao, Y. H., & Chen, H. C.	Yes	Not Specified	Not Specified	Conducted during the pandemic, and no follow up on students was provided.
Moghimi, E., Stephenson, C., Gutierrez, G., Jagayat, J., Layzell, G., Patel, C., McCart, A., Gibney, C., Langstaff, C., Ayonrinde, O., Khalid-Khan, S., Milev, R., Snelgrove-Clarke, E., Soares, C., Omrani, M., & Alavi, N.	Yes	Yes	Institution email was collected	Draw for $25 gift card.
Ogrodniczuk, J. S., Kealy, D., & Laverdière, O.	Yes	Yes	Yes	Students who accessed their schools' mental health services. The survey solicited self-reported problems among attendees of campus mental health services with no follow up or offer for supports. The overall response rate was 19.2%.
Parbery-Clark, C., Lubamba, M., Tanner, L., McColl, E.	Not needed for literary review	No	No	Original peer-reviewed articles had ethical approvals.

Study reference (methodology)	Institutional approval for research	Informed consent	Confidentiality	Other ethical considerations
Samuel, R. & Kamenetsky, S.	Yes	Yes	No	Given the option to skip questions they did not wish to answer or withdraw from the study without penalty or loss of benefits. Protocols were also established to respond to individuals who appeared to be distraught, including discontinuing the study and escorting the student to the university's health and counselling centre.
Sandhu, H. S., Arora, A., Brasch, J., & Streiner, D. L.	Yes	Not Specified	Anonymous	Draw for $25 gift card
Watt, T., Kim, S., Ceballos, N., & Norton, C.	Yes	Yes	Not Specified	$10 gift card or course credit as an incentive.
Watt, T. T., Hartfield, K., Kim, S., & Ceballos, N.	Yes	Yes	Not Specified	$10 gift card or course credit as an incentive.

Consent. First, obtaining consent to participate in research and providing Informed Consent forms are required by the Tri-Council Policy Statement and the Canadian Code of Ethics for Psychologists (CIHR, 2018; CPA, 2017). As part of informed consent form provided to volunteers who participate in research there is a for example an explanation of the reasons for the research, principal investigator's contact information, information about how to withdraw from the study to help participants to make an informed decision (CIHR, 2018; CPA, 2017). All studies were conducted on undergraduate students (Table 4), who are legally able to provide consent, however in some cases more information would have been needed to ensure participants were deemed cognitively capable of providing informed consent and understand what they are participating in during the research (CPA, 2017).

Confidentiality and Care. Privacy and confidentiality of the identity and shared opinions of participants is a requirement of ethical research (CIHR, 2018; CPA, 2017). Some studies did not specify the level of confidentiality and mentioned that ethics approval included more details about privacy and confidentiality (Table 4). For example, when collecting emails for online survey link distribution, or when conducting focus group interview anonymity is compromised (Table 4). Only two studies provided explanations how vulnerable students were supported with follow-up care, as per Code of Ethics for Responsible Caring (CPA, 2017). Any participants who reported a suicide risk were sent on-campus and national resources for mental health services and supports (Clement et al., 2024). The option to skip questions was also provided, and contacting students in distress, offering discontinuing the participation and escorting the student to the university's counselling centre (Samuel et al., 2022).

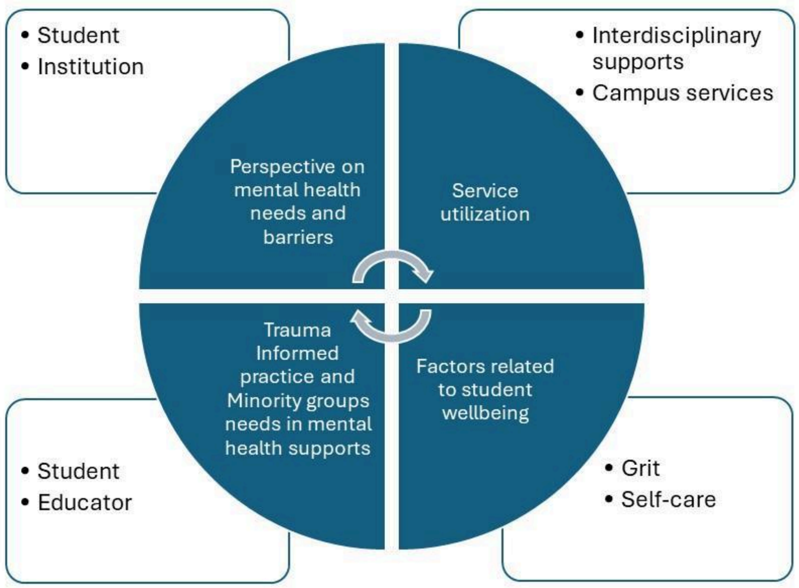
Findings

In summary, the factors affecting students' well-being are grit and personal self-care habits such as engaging in rewarding extracurricular activities. The common mental health challenges in higher education student populations are stress-related symptoms, anxiety, depression, and substance-use disorders. There are complex needs from minority and equity-seeking student groups such as increased risks of mental health problems. Students list barriers in using the campus mental health and wellness supports, such as perceived stigma and beliefs about the effectiveness of services. Also teaching, learning and other campus interactions with staff and faculty are helpful for students who live with mental health challenges, but educator need more training in trauma-informed practices. There are some benefits of interdisciplinary mental health campus services, such animal-assisted wellness and exercise programs on student mental and physical well-being in addition to campus counselling clinics

(Figure 2). All following findings include analysis of a range of factors, including sociodemographic factors that tended not to be predictive factors unless specified in the following literature review. All listed findings are deemed to be statistically significant unless specified otherwise.

Figure 2

Summary of Findings



Factors Related to Student Well-Being.

Grit and Self-Care. According to an empirical study by using self-reported surveys with 214 university students in Taiwan student's personal level of grit had positive statistical association with both executive functions and well-being (Liao et al., 2022). The psychological instruments Academic Grit Scale, Chinese Executive Function Index, and Flourishing Scale (FS) indicated a relationship between these important three skills. Limitations of this study are that the sample size was small, mostly female students in Taiwan, thus a larger and more diverse sample and cross-cultural analysis is needed to draw more definitive conclusions. As there are other literature available supporting the role grit plays in students; well-being and academic success, it would make sense to develop grit-related interventions and skills development supports. This would drive motivation and cognitive control, and general well-being (Liao et al., 2022).

In another study with 351 university students in US, Canada, UK, and Israel results provided further support for the link between student's self-cultivating characteristics, skills in personal growth, well-being, and using coping resources with better academic success during university studies (Harpaz et al., 2024). The three variables, subjective well-being, coping resources, and self-cultivation characteristics were studied in relation to academic grit and academic achievement. Linear multiple regression analysis was used to analyze if academic grit was a predictor or mediator for academic success. According to the measures used (Savouring Art questionnaire, Self-efficacy Scale, Personal Growth scale, Satisfaction with Life Scale, Academic Grit Scale, Self-reported grades) academic grit showed to be correlated with academic success. Grit also mediated the association between subjective well-being, coping resources, and self-cultivation characteristics with academic success (Harpaz et al., 2024). Some limitations were noted in this study, such as need for further studies for any cross-cultural effects, replication of results in post-COVID-19 era, acknowledgement that a cross-sectional design does not prove causality, and finally recommendation of future longitudinal designs.

Nevertheless, these studies (Liao et al., 2022; Harpaz et al., 2024) along with ongoing psychological research (Duckworth et al., 2007; 2014) suggest that promoting self-care, teaching grit skills have educational implications for university programmes.

Utilization of Campus Services. Research data about students who utilize the campus services helps in compiling a complete picture of the current situation in postsecondary student mental health. A survey of 8,248 Canadian post-secondary students summarizes self-reported problems of students who utilized campus mental health services (Ogrodniczuk et al., 2021). The results include levels of various psychological symptoms such as suicidality, self-injury, stress, challenges to academic performance, and mental health help seeking willingness in future. Results are disheartening as almost all respondents have worrying levels of stress; 95% are overwhelmed and exhausted. The most common symptoms (over 80%) reported were sadness, anxiety, and loneliness. Suicidality was reported by 25% of respondents. Challenges to academic success were sleep problems, depression, stress, and anxiety. According to 73% of respondent's academic work has been difficult to handle and even traumatic. Limitations of the study include lack of specificity of students' interpretations of their subjective symptoms, and lack of generalisation from the convenience sample to a general student population. This study regardless (Ogrodniczuk et al., 2021) summarizes the needs of Canadian students who seek help from campus mental health services. Thus, the alignment of student needs and services provided can be tailored more precisely to help with stress of studies, loneliness, and exhaustion in addition to providing access to other mental health related symptoms as usually listed (depression, anxiety).

Another study summarizes the usage data of four on-campus services and draws conclusion on the relationship between mental health symptoms and on-campus service utilization (Bourdon et al., 2020). Data collected from 3,734 undergraduate student in an U.S. based campus was analyzed for symptoms of anxiety, depression, alcohol use disorder and relationship for risk factors for mental health worsening (stressful life events, and antisocial behaviors). Alcohol use disorder was most common predictor for campus service utilization, then depression symptoms and stressful life events, whereas having anxiety symptoms and antisocial behaviours did not predict service utilization. Limitations of this study were that the respondent were sophomores, and sample had disproportionately more racial/ethnic minorities, and researchers did not check if alcohol abuse treatments were based on mandatory disciplinary actions. However, this study provides administrators in urban American colleges insight into programming that likely matches the needs of students, especially those with anxiety and antisociality who might need outreach programs (Bourdon et al., 2020).

Barriers to Help-Seeking. In a large U.S. based survey study (n = 37,0260) of undergraduate students (Gannon et al, 2024) out of the variables related to help-seeking and students 'perceptions of available support, the climate in campus about mental health was the most significant predictor for seeking help. Interestingly, data analysis showed that high scores in campus climate scale clearly predicted students' willingness to seek help and report positive perceptions of mental health support at campus. Limitations of this study include that for a self-report survey students might choose to provide socially desirable answers, and this study also used cross-sectional data which does not mean causality (Gannon et al, 2024). In summary, the results are important considerations for all who work directly with students such as instructors, professors, and student advisors. It is important to promote healthy discourse about psychological distress and how it can affect academic success.

In an online survey with Canadian first year undergraduate students (Samuel & Kamenetsky, 2022) findings show that students prefer seeking help and information about mental health from friends, family, and internet rather than from the campus counselling centre or other sources such as support groups of doctor's office. The barriers for utilizing campus services were lack of flexible hours, questioning effectiveness, wait lines, and the cost. Students who reported negative affect and had supportive social support had more openness to seeking help. And interestingly, having access to people providing guidance in mental health was associated with greater willingness to seek mental health help. Limitations include correlational results, self-reports that can be biased and first-year student specificity cannot be generalized to another student populations and stressors. These findings suggest that adding more informal support at campus such as enhancing student's social connections, peer supports and access to communities can help towards better mental health (Samuel & Kamenetsky, 2022).

Interestingly, another Canadian online survey results with 538 people (Sandhu et al., 2019) show that education about and experience of mental health illness decreases stigma in undergraduate students. Results were obtained from Opening Minds Scale for Healthcare Providers survey measuring explicit and implicit stigma and bias toward physical and mental illness. Interestingly, the internalized stigma for own disclosure and help-seeking was higher than attitudes towards others having mental illness. Limitations were including only health profession students and possible self-reporting bias. Nevertheless, recommendations are to increase stigma reducing education, campus informal support, and efficient access routes campus mental health services (Sandhu et al., 2019).

According to Canadian undergraduate students' focus group recommendations (De Moissac et al., 2020) students have a priority to have feasible access to full-time psychotherapy services on campus. Barriers were identified being the lack of advertising and lack of promotion of student well-being on campus resulting in students having lack of information. Students recommended to have bookings available by text messaging that is experienced as less stigmatizing. Also, students suggest that access to support peer-groups could facilitate low access and low barriers for students to learn about mental health. Furthermore, organizing and advertising other social activities can reduce isolation, and promote a culture of talking about mental health and better student well-being on campus (De Moissac et al., 2020). Limitations of this qualitative study was it was conducted as World café without systematic data collection; thus, some recommendations might have been missed in the thematic analysis.

A research study of 2776 student responses in an Australian university (Baik et al, 2019) answers the core question: “What can be done to improve student well-being?” The seven themes found were: instructors and their practice; student services and support; campus environment, culture, and communication; course design; program administration; assessment; and student society activities. Interestingly, from a student perspective, instructors and faculty do play a significant role in helping with study related stress in learning environment, including instructional skills and attitudes toward students and teaching in general. It is beneficial to ask students for recommendations in the design and implementation of student facing programs and services. Importantly, the results suggest that student empowerment enhances their well-being and then indirectly can enhance awareness and reduce the stigma around mental health.

Finally, a large Canadian university conducted a broad-scoping online survey (Moghini et al., 2023) that assessed students’ mental health. In summary, 38.6% of respondents had a formal diagnosis of mental health disorder such as depression, and generalized anxiety disorder, thus most respondents did not have a diagnosis. Nevertheless, most respondent (60.5%) reported that in their opinion students in general have poor mental health and need more coping mechanisms and resources. When asked about barriers for seeking and accessing help students listed financial barriers, long wait times, insufficient resources, time constraints, stigma, cultural barriers, and past negative experiences with mental health care. Students wished that their institution would increase awareness and accessible mental health resources for students. Students preferred in-person or virtual therapy over self-help resources. In general, students reported hesitancy in trusting the helpfulness and accessibility of the mental health treatments in campus. This mixed method study (Moghini et al., 2023) also included qualitative responses that spoke to needs of helpful individual strategies, more access to psychoeducation and increased awareness, and support and services on campus for students. Students reported a variety of mental health symptom associated with stress of studying and keeping up with work and extracurricular activities. Students reported having trouble with concentration, sleep, anxiety, and depression symptoms, affect changes, panic attacks, and problematic substance use. Limitations of this study were possibility of volunteer bias, small sample size, and writers recommend potential research studies on how self-stigma effects response rates. Also, there might be bias as most respondents did not struggle with a diagnosed mental health disorder, and there were less equity-seeking and equity-deserving groups in the sample. Importantly, considerable number of respondents highlighted the need for training students in personal coping strategies, which could start already in high school as curriculum incorporated mental health education to help in transition postsecondary education. According to the results, again the important association between social human to human connection and mental health was evident as students prefer peer interactions and in-person therapist. Sadly, the results also suggest that mental health worsens throughout postsecondary education (Moghini et al., 2023).

***Needs of Minority Groups*.** Regardless of the frequency of mental health challenges still nearly 40% of students choose not to reach out for help at campus (Gannon et al., 2024). According to a study from a large U.S. based postsecondary survey (n= 37 026) race/ethnicity was a predictor of seeking help. specifically, students of colour were less likely to seek academic help compared to white peers. Also, if social norms and perceptions of mental health on campus were poor, then students were less likely seek mental health and academic help and they perceived degree of support poorer (Gannon et al., 2024). Also, according to De Moissac et al. (2020a) international students are less likely to talk about, seek help or share about their challenges, thus adding diverse culturally inclusive activities and supports would align with the needs of international students.

According to a survey amongst general Canadian populations (Dulai et al., 2023) lesbian, gay, and bisexual (LGB) individuals reported 1.79 times worse mental health than heterosexual Canadians in 2015-2016. Bisexual individuals had 3.3 times worse mental health when compared to heterosexual Canadians. However, data indicates that a belongingness to a strong community belonging reduces these disparities. Limitations of this Canadian population wide study is that it did not ask questions about transgender, non-binary, and other identities, nor did it differentiate biological sex or gender identity.

Then, specifically in the population of university graduate students, a study included a diversity of minoritized racial, ethnic and sexual identities (Clement et al., 2024) including LGBTQIA2S+/LGBTQ (i.e., lesbian, gay, bisexual, transgender and nonbinary, queer and/or questioning, intersex, asexual or agender, and two-spirit). 2SLGBTQIA2S+ individuals experienced worse mental health such as symptoms of distress about needs, stress, anxiety, depression, and lower quality of life compared to heterosexual peers. Students who had the intersectionality of 2SLGBTQIA2S+ and racial/ethnic minoritized identity, sadly, self-reported higher suicide risk than their heterosexual and racial peers. Limitations of this study were that there was a response bias as most identified as women, and the results may vary based on intersectionality and geographical locations. Regardless, these findings suggest that promoting and targeting mental health services to minoritized students can be helpful, and universities can support graduate students by hearing what they need and meet those needs strategically (Clement et al., 2024).

Trauma-Informed Practices. As the research suggested that students are hoping to get support from those closest to them, including their educators, it is critical to review literature about how prepared educators might be in trauma-informed practices (TIPS). A mixed-methods study explored well-being and preparedness of trauma-informed approaches with educators (Aragón et al., 2024). In general, the participant educators reported good well-being and low traumatic stress, but elevated levels of work-related burnout. Educators reported that they found helpful to have opportunities to connect with others, access to wellness activities, and interestingly a needing to learn how to identify students in need of trauma-related support (Aragón et al., 2024).

Thus, what are the needs of traumatized students? In a study with university students in the U.S. (Watt et al., 2022) students who reported four or more ACEs also reported higher depression and anxiety compared to students with lower ACE scores. However, interestingly social support was a mediator between ACEs and mental health outcomes, and lack of it predicted worse depression and anxiety symptoms. This highlights an urgent need to align campus interventions to target socially isolated students. Limitations of the study were that a cross-sectional study cannot suggest causality, neither were they able to confirm which was first, lack of social support or the mental health challenges, likely both factors are contributors however more detailed, longitudinal studies are needed.

Another study by the same group of researchers (Watt et al., 2023) explored ACEs relationship with race and ethnic background, and academic success in university students.

Firstly, those who reported ACEs scores of four or higher had lower grades, and racialized students (People of Colour) who had higher ACEs scores had lower grades compared to white peers. Thus, intersectionality can lead to further impacts of ACEs, and can affect academic success negatively. Limitations of this study are that it did not explain why higher ACE scores are related to academic success for students of color but not other students, and there was a participation bias as relatively more Black women participated, and as always self-reports might be inaccurate. Also, there is known criticism of the psychometric properties ACE questionnaires. More diverse sample with more academic success data in addition to GPA is needed to provide more insights. In summary, a trauma-informed approach to campus life, teaching and mental health supports is important especially for Students of Color with ACEs that also needs to be culturally inclusive. Students would also benefit from psychoeducation about the effects of ACEs and trauma (Watt et al., 2023).

Another U.S. based study with racial and ethnic minority university students (Lemon et al., 2022) also indicated disproportionate mental health challenges. They studied whether social support and experienced hope had a buffering effect on the effects of ACEs and discrimination. Sadly, ACEs and racial discrimination were associated with worse mental health including depressive symptoms. Also, good levels of social support and experienced hope were associated with less depressive symptoms. Specifically, Asian students benefited most from having a perception of hope, which weakened the association between discrimination and depression. Limitations of this survey-based study were that there were less Black men than other groups, and regression models do not show causality, nor can this result be generalized based on one campus data. However, the study indicates the existence of disparities in student mental health. The data provides guidance to campus administrators to align efforts of increasing supports for students with ACEs, systemic racism, and discrimination. Also, further research is needed to understand what the protective factors are for each culture and ethnicity.

Finally, in another study with university students in the U.S. (Helminen et al., 2022) related to ACEs, discrimination, and mental health symptomatology showed that discrimination and ACEs were associated with higher rates of somatic symptomology, anxiety and depression, distress in comparison to peers with less or no such experiences. Limitations are that the study was cross-sectional, thus is not a proof of causality, and there was a bias as there were more women, and a possibility of same-source reporting bias. Further studies are needed to tease out the distinct types of ACEs and experiences of discrimination (sexual or gender-based discrimination vs. race and ethnicity-based discrimination) and their effects on mental health of diverse students. However, this study adds to the research literature suggesting an etiology model related to ACEs and discrimination effects on of young peoples' mental health. The data showed that higher ACEs was related to higher symptomatology and discrimination that was missing in students who had lower discrimination scores or lower ACEs (Helminen et al., 2022).

Interdisciplinary Wellness Approaches. As the final factor included in this capstone thematic research literature analysis, the writer wants to review other than mental health supports for students that might facilitate better mental health outcomes. A mixed-methods study by DeJonge et al., (2021) used a physical activity program in attempts to support student mental health. A 6-week individualized program was provided specifically for students who had accessed mental health support on campus. Measures included self-reports of changes in symptoms of distress, depression, and anxiety. There was a reduction in anxiety and depression symptoms, and distress after the six weeks exercise program. Qualitative data suggested that students experienced the exercise program as acceptable and effective approach for improving their mental health. Further studies are needed for longitudinal and randomized clinical trials (RCTs) for diverse student groups (DeJonge et al., 2021).

Another example of a low barrier for access interdisciplinary supports that can help isolated and struggling students is the animal assisted wellness and intervention (AAI) programs (Parbery-Clark et al., 2021). When several RCTs were analyzed with university student populations using the AAIs the beneficial results were found for relieving anxiety. Also, some limited relieve was found for levels of stress, however the data was currently inconclusive for depression, general well-being, affect and mood.

In summary, the findings indicate that postsecondary students struggle with mental health, and institutions can align services better to meet students' specific needs by gathering feedback from students. In review, this literature thematic analysis indicates that student want access to psychoeducation in coping mechanisms and peer-support groups. Students ask for more psychoeducation, starting in high school to prepare themselves for postsecondary mental health challenges. Also, lowering stigma and improving mental health attitudes on campus by campaigns by the institutions can lower barriers for seeking help along with advertising the services with emphasis on the quality of services. Students prefer asking for help from within their close circles, thus educators need more preparation, especially in trauma-informed approaches. Minoritized students struggle more, especially when they have experienced adversity, and they can benefit from targeted mental health advertisement and services by the institutions. Students welcome more social activities, and other than direct mental health counselling to enhance well-being and social connections, such as organized peer groups and activities such exercise and animal-assisted wellness programs, and training in grit skills.

Chapter Four: Application to Clinical Practice

One of the important recommendations of this capstone is that university administrators and counsellors working with students should be aware of an etiology model related to ACEs and discrimination effects on young peoples' mental health. This research review indicates that higher ACEs was related to higher mental health symptomatology and experiences of discrimination that were missing in students who had lower discrimination scores or lower ACEs (Helminen et al., 2022). When students seek counselling, the therapist can use ACEs scoring and discrimination experiences to assess stress vulnerability. As there is an association between ACEs and discrimination, and lower academic success this seems to be an important finding indicating increased risk of young adulthood symptomatology (Helminen et al., 2022).

Furthermore, as research indicates that positive social interactions and experiences can alleviate ACEs related mental health challenges, it is recommended to add targeted peer supports and activity groups to campuses. Also, trauma-informed approaches should be added to campus services, including teaching, and learning environments. For 2SLGBTQ+ students the review of literature indicates that decreasing need frustration as an intervention target can help to alleviate depression, anxiety and decrease stress, and possible suicide risk (Clement et al., 2024).

Additional clinical relevance of the capstone finding is that students recommend easier, low barrier access to the campus in-person services (Table 5). Institutions have struggled with funding to provide enough resources, and struggle to keep updated with the diverse student needs. For example, Walls et al. (2023) proposed a new model for campus counseling centers with stepped care, flexible care, and access and consultation and triage approaches. As campus counselling centers do have a high demand for services, and low clinical supply with understaffing, instead of creating waitlists with advanced scheduling, adding stepped care and more group psychotherapy could lower access barriers (Walls et al., 2023). As students requested for group psychoeducation, this could be implemented as part of stepped care; if students who participate in groups have significant mental health challenges they could be directed for further supports from the counselling centers. Other students seeking support for coping mechanisms and general mental wellbeing would not have to book appointments if they benefit from group psychoeducation. As students identified having needs in coping mechanisms to battle effectively against stress, loneliness, and exhaustion this stepped care model via psychoeducation groups can alleviate wait lists.

Also, targeted advertisement to minoritized students with high ACEs, or students with antisocial tendencies and anxiety could possibly lead to better mental health outcomes (Bourdon et al., 2020). This could include campus wide outreach to engage specific groups in psychoeducation, such as specific student clubs. Another options could be campus-wide advertisement of counselling services with specific symptomology that describes the challenges someone with anxiety of antisocial loneliness tendencies might experience. This could feel inviting for those student with hesitancy to seek help for their mental health challenges.

As there are students with high ACEs, also trauma informed practice education is important for those who work directly with students. Educators reported that they need to learn how to identify students in need of trauma-related support (Aragón et al., 2024). Thus, trauma informed training can be offered by psychologists directly to educators, and others who work with students. Also, students can benefit from psychoeducation about ACEs (Helminen et al., 2022) and trauma responses in themselves, and thus be encouraged to seek psychotherapy.

As students recognize the importance of social activities, they also welcome other than direct mental health counselling to enhance social well-being, such as organized peer groups and activities such exercise and animal-assisted wellness programs. It is recommended for counsellors to encourage students to actively seek out and participate in campus activities as they can alleviate stress and anxiety.

Mental health professionals can also participate in providing awareness of how grit skills benefit students (Duckworth et al., 2007). Psychoeducation during counselling sessions or campus wide psychoeducation events can be provided by counsellors to teach skills in how to develop grit, and promote the importance of self-care.

Counsellors can also promote a healthy discourse about psychological distress to create a positive campus climate for mental health discussions via psychoeducation groups and campus events, or classroom visits. As campus counselling services utilize counselling practicum interns, those interns could also organize psychoeducation events that specifically promote healthy discourse about the importance of understanding mental health.

Table 5

Clinical Recommendations Based on Findings

Recommendations	Implementation strategies
1. Promoting grit and self-care	● Develop programs for cultivating grit skills among students. ● Incorporate grit-related interventions into university programming to positively impact academic success.
2. Utilization of campus services	● Add mental health services to address specific needs such as stress, loneliness, and exhaustion identified by students. ● Implement outreach programs, especially for minoritized students, students living with anxiety and antisocial behaviors, to improve service utilization.

3. Barriers to help-seeking	● Promote a healthy discourse about psychological distress to create a positive campus climate for mental health discussions. ● Address barriers such as perceived stigma and beliefs about service effectiveness by advertising services and enhancing social connections and peer support.
4. Needs of minority groups	● Increase awareness and support for mental health services tailored to the needs of minoritized student groups.
5. Trauma-informed practices	● Provide training for educators in trauma-informed practices to better identify and support students in need of trauma-related support. ● Incorporate psychoeducation about the effects of Adverse Childhood Experiences (ACEs) and trauma, focusing on socially isolated students.
6. Interdisciplinary wellness approaches	● Conduct further research, including longitudinal and randomized clinical trials, to assess the effectiveness of such programs in diverse student populations.
7. Overall campus support	● Foster a culture of open communication about mental health, reducing stigma, and promoting well-being for all students.

Focusing on future mental health counsellors and therapist, self-care is an ethical expectation according to Canadian Code of Ethics for Psychologists the principles of Responsible Caring and Integrity in Relationships (CPA, 2017), and there should be a focus on it already during the counselling programs. Students struggle with stress; thus, counselling graduate programs do have an ethical obligation to provide education and support for counselling students on self-care as a competency (Maranzan et al., 2018).

Chapter Five: Recommendations and Conclusion

In summary, this capstone research project answered the research question about what the needs of students are in mental health supports and what institutions provide, and whether there are gaps. Indeed, it is clear that postsecondary students struggle with mental health, and in addition to counselling services students ask for psychoeducation in coping mechanisms and peer-support groups. According to students, the support for students' mental health and well-being can be as simple as creating time and space for safe discourses, and further directions to seek counselling or other programming. For 2SLGBTQ+ students this type of social support and professional development can decrease their need frustration to help to alleviate depression, anxiety and decrease stress (Clement et al., 2024).

Students ask for psychoeducation starting in high school as preparation for postsecondary mental health challenges and continuing into postsecondary. Institutions can lower access barriers by encouraging open discourse about mental health, lowering stigma, and improving mental health attitudes on campus along with advertising the services with emphasis on the quality of services. Also, institutions can help educators with more preparation, especially in trauma-informed approaches as students will ask for help from within their close circles.

Minoritized students struggle more, especially when they have experienced adversity, and they can benefit from targeted mental health advertisement and services (Watt et al., 2023). Students welcome more social activities, and other than direct mental health counselling to enhance well-being and social connections, such as organized peer groups and activities such exercise and animal-assisted wellness programs and training in grit skills (Duckworth et al., 2007).

Further research is needed to understand how culture, and being a member of subgroups affect feelings of healthy independence, development of identity, and belongingness to social networks. A sense of belonging contributes to academic performance and students in minoritized groups might not have a keen sense of belongingness (Watt et al., 2023). Cultural belongingness relates to for example if students see other students and faculty who are like them or have similar backgrounds and experiences. Specifically, as ACEs and discrimination were deemed to relate to negative outcomes in minoritized student groups it is important to have further research into cultural relevance (Watt et al., 2023).

There is a need for research to continue with emphasis on longitudinal studies that incorporate multiculturalism with larger and more diverse samples, and cross-cultural analysis, including considering variations that COVID-19 restrictions might have caused in different countries. All quantitative studies also recognize that the cross-sectional design dose not prove causality or any indirect effects among the variables in each study. Finally, all studies suggest the need for longitudinal studies (Table 3).

Finally, there is a recommendation to increase training in grit, self-determination and self-care, and further research about how to incorporate these skills into the curriculum as they also promote well-being and life satisfaction (Duckworth & Gross, 2014). Students who exhibit perseverance or have a passion along with determination towards goals are more likely to succeed even when faced with challenges. Further benefits of grit include more self-control, emotional stability, self-efficacy, and positive emotional affect (Duckworth et al., 2007). Also, self-care, such as de-stressing and taking on pleasurable activities, is known to increase self-compassion, and life satisfaction and even decrease distress thus also could be incorporated in postsecondary education (Colman et al., 2016).

Future research questions include: is there a difference in student populations in effectiveness of grit and self-determination? It is not clear if teaching grit skills benefits students with high ACEs, or minoritized students who experience systemic barriers.

Another important research question is: how institutions can effectively prepare resources for vulnerable students with high ACEs and other challenges? Is there a need to broader discourse and education/training amongst those who work with students to better equip them to support such students with trauma-informed practices? Also, there is a research gap in understanding what those TIPs are in higher education context, it is not clear yet from research how TIPs can be implemented in campus classrooms.

From this capstone project I learned that it is beneficial to summarize the complexity of mental health challenges in postsecondary student population. I learned that students struggle with stress and can benefit from study technique tutoring, and healthy discourse about mental health with their faculty and administrators. I also learned that students benefit from having their opinions heard and this confirms my experiences working with students for almost 20 years; they seek connections and we as faculty and administrators can help them by creating meaningful connections, and by hearing their feedback and incorporating it to the programming.

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