# Mental Health and Wellbeing Challenges of University Music Students Compared to University Non-Music Students

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Thesis submitted to the University of Ottawa
in partial fulfillment of the requirements for the
Master of Arts Music Pedagogy:

School of Music
Faculty of Arts
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## Abstract

**Background:** University can be a difficult time for anyone, but it appears that studying music brings with it more challenges than other programs do. The literature on this subject is mostly consistent, but varies by geography, and there are few, if any, since the onset of Covid-19. **Objective:** The objective of this thesis is to examine the severity mental health and wellbeing challenges of music students, how they compare to their peers in other faculties. **Methodology:** The participant groups in this study consist of university music students ($n$=130), and university non-music students ($n$ = 124) acting as a control group. Participants completed self-reported questionnaires online. Recruitment took place between the summer and fall of 2022. Several self-reported questionnaires assessed mental health, mental wellbeing, and health behaviours. **Results:** Compared to the controls, university music students had higher anxiety (36% reporting extremely severe anxiety), lower mental wellbeing, lower social health, higher financial stress, greater pain interference in their life activities, but may have healthier help-seeking behaviour than in previous studies. Music student women had particularly high anxiety scores (45% extremely severe). **Conclusions:** University music students, especially women, had more severe mental health challenges than university non-music students. Lower mental wellbeing, financial stress, as well as musculoskeletal pain interference, may be inhibitors to decreasing psychological distress. Covid-19 potentially had an outsize impact on this group of students. Further studies should see if this is a temporary phenomenon, and if it is not, music school administrators should implement policy recommendations laid out in this thesis.



Keywords: Mental Health, Mental Wellbeing, Anxiety, Music, University Students, Gender, Psychology

**Acknowledgments**

To my partner, Jo. Thank you for your love and support! You've seen me work countless hours and struggles to finish this project. You've always been there for me to lean on.

To my family: Sally, Jeff, and Maple. You've all known me the longest and have seen me change so much throughout the years. You've since seen me through my master's degree which began in the first year of Covid and have supported me ever since. I appreciate that our family highly values academic pursuits and has helped me throughout this process. And to the rest of the Sloans, Judens, and my de facto Glebe, SOFA neighbourhood family — I love you too!

To my aunt Lynda, in loving memory. I'm grateful I got to spend time on earth with you. I hold dearly your long years of fighting for social justice. My value for fairness and equity comes from your influence on me.

Two of my family's dogs also passed away during my master's studies. I would be remiss if I did not mention them here. They brought me years of joy and were integral parts of my family. They're truly missed.

To my friends. The list would be long, so here's to you. I appreciate each relationship for its uniqueness and what we've had together. Friendship is something I cherish and hold as a high priority in life. If you're reading this, you mean a lot to me.

To my therapist, Sarah. The last stretch of my master's degree came with it some unpredictably emotionally difficult circumstances. You've helped me navigate it, challenge my thinking when necessary, and have been incredibly instrumental in helping me attune to my needs.

To professor Comeau, thank you for taking me under your wing and guiding me through the research process. I will always appreciate your mentorship and methods that have made me a better academic.

To Nicole, Mikael, and Lu, of the Piano Lab. I will always cherish the sense of community I felt in the shared space. Thesis work can be an isolating and endeavor, so having the company and space to go when I needed it, was an incredible gift.

To my community at the Ottawa Rowing Club. Since my return in Fall 2021, to gain back a sense of community that I was missing in the worst Covid times, the space became an important "third space" for me feel happy and find my people. And to those people, thanks for being a part of it.

To the people of another lovely third space, Beandigen. Thank you for keeping me company and happily caffeinated! I spent an incredible number of hours at one of your tables. You provided a welcoming space I could go to when I needed to get out of my lonely apartment.

And to all the participants who took time out of their day to complete my survey, thank you!

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## Introduction

In today's academic environments, mental health challenges among university students represent a complex and pressing issue. This is particularly true for music students, as they have mental health challenges distinct from their non-music peers, given their unique academic and performance environment. While it is true that there are mental health concerns across the general population, with one in five Canadians experiencing a mental illness annually (Smetanin et al., 2011), those in university music programs exhibit notably higher rates of mental health challenges (e.g., Alessandri et al., 2020). This discrepancy raises an important research query: what makes studying music at the university level so challenging for one's mental health? Several studies and research projects examine this question, but the results are unclear or mixed. Additionally, there is no research we found that looks at the prevalence of mental health challenges of Canadian university music students.

Based on the literature review and findings of this thesis, it appears that there are significant differences between the mental health challenges of music students compared to students in other faculties. However, before delving into these differences, we should ask whether being a student in any faculty (music or non-music) yields different outcomes than non-students. The existing research on this comparison lacks definitive conclusions. Wiens and colleagues (Wiens et al., 2019) used longitudinal mental health outcome data of the years 2011-2017 from the Canadian Community Health Survey (CCHS) comparing postsecondary students to non-postsecondary students, ages 18-25. It found that students were less likely to have negative mental health outcomes. Within the postsecondary group, however, a significant disparity was found. When comparing the postsecondary students by sex, female students had increased rates of perceived low mental health, mood disorders, anxiety disorder, and past-year

mental health consultations than the male students. This finding (worse mental health outcomes for non-students) is not consistent across all studies. For instance, McCloud and colleagues (McCloud et al., 2023) found that university students in the UK had higher rates of mental illness symptoms than non-students.

The high prevalence of mental health challenges among university students is concerning, especially given that 75% of mental health conditions develop before the age of 24 (Kessler et al., 2005), aligning with the typical age range of university students. This early onset of mental health difficulties is just one contributor to students' high rates of mental distress. The disruptions caused by Covid-19 are also a likely factor. Dadaczynski and colleagues (2021) found that the Covid-19 pandemic has significantly impacted the wellbeing of university students, increasing stress, anxiety, and future worries. At the time of the study, 38% of the students studied reported having low and very low wellbeing.

As we study and discuss the mental health of university music students in this thesis, it is important to point out a challenge that commonly presents itself in the field of mental health research. Terms used to describe characteristics of mental health, such as anxiety and depression, are often used colloquially. This presents a research problem because it is possible for these terms to lose their specific meaning. For example, a person may use "anxiety" and "stress" interchangeably to describe the same feeling. For this reason, we will now discuss definitions and characteristics of several psychological conditions or terms, including mental health, anxiety, depression, stress, and mental wellbeing. Most definitions will be drawn from two major health institutions: (1) Health Canada, because its definitions are often written to be understood by the general population and because it is a Canadian health institution, thus their descriptions are more focused for the Canadian population and are more relevant to this thesis. (2) the American

Psychiatric Association because it is a well-established health institution and their descriptions of psychological conditions are often used for clinical purposes, which is therefore relevant.

According to Health Canada (2020), the term “mental health” is “the state of your psychological and emotional well-being” (What is Mental Health section, para. 1). They note that mental health is different than mental illness, but poor mental health can lead to either a mental or physical illness, and strong mental health is necessary for healthy living and overall health. For this thesis, “mental health” and “psychological health” are used interchangeable, defined accordingly with Health Canada’s (2020) description: “the state of your psychological and emotional well-being” (What is Mental Health section, para. 1).

Anxiety disorders are the most common of all mental health issues, affecting roughly 1 in 10 Canadians (Health Canada, 2009a). Additionally, Health Canada states that, while people may experience anxiety, fear, and wariness during real life events, those with an anxiety disorder produce “fear or distress that is out of proportion to the situation” (The Issue section, para. 1). The American Psychiatric Association (2013) articulates that anxiety disorders, compared to normative fear and anxiety, differ by being “excessive or persisting beyond developmentally appropriate periods”, and persist for usually 6 months or more to be characterized as a disorder. For the purposes of this thesis, anxiety will be defined using Health Canada’s (2009a) description of anxiety as “fear or distress that is out of proportion to the situation” (The Issue section, para. 1).

Depression is also prevalent in the Canadian population. A report by Dobson and colleagues (2020) reveals that annually, 5.4% of Canadians experience a major depressive episode. Furthermore, Health Canada (2009a) highlights a difference in  prevalence by gender, with 11% of men and 16% of women experiencing such episodes. The health agency points out

the consequences of depression, such as reduced quality of life, an elevated suicide risk, and adverse effects on personal relationships work performance, and educational success. Additionally, Health Canada notes that major depression "is a clinical term used by psychiatrists to define a time period that lasts more than two months in which a person feels worthless and hopeless" (Background section, para. 2).

Understanding the nuances of depressive disorders is crucial. The American Psychiatric Association (APA, 2013) identifies a range of depressive disorders, each with unique characteristics. Though, it's noted that they all share commonalities, which are the presence of "sad, empty, or irritable mood accompanied by somatic and cognitive changes that significantly affect the individual's capacity to function" (Depressive Disorders section, para. 1). Separating these disorders are timing, duration, and etiology (Depressive Disorders section, para. 1). The APA marks Major Depressive Disorder as the classic condition of depressive disorders. Its most notable characteristic is discrete depressive episodes that last for at least two weeks and involve a significant change to either a depressed mood or a loss of interest or pleasure from a previous mental state. Moreover, for the purposes of this thesis, depression will be defined using the APA's (2013) description as "sad, empty, or irritable mood, accompanied by somatic and cognitive changes that significantly affect the individual's capacity to function" (Depressive Disorders section, para. 1).

Stress is described by Health Canada (2008) as a consequence of both good and bad events, which becomes a problem when stress negatively your health. Similarly, the Canadian Mental Health Association (2016) describes stress as "the body's response to a real or perceived threat" (para. 2). They also state that stress is a reaction to a situation. Too much stress can have significant negative health consequences, such as a negative effect to the immune system, and

increased risks of heart conditions, disease and mental illness (Health Canada, 2008). For the purposes of this thesis, stress will be defined using a combination of the descriptions from Health Canada (2008) and the Canadian Mental Health Association (2016) as a situational reaction that can, when excessive, result in negative health outcomes.

While there is not a set consensus for how to define mental wellbeing, researchers have for a long while been creating separate from that of mental health. Numerous experts agree that, at the very least, high wellbeing includes positive emotions, the absence of negative feelings and emotions, satisfaction with life, and being able to function positively (Andrews & Withey, 1976; Frey, 2002; Ryff & Keyes, 1995). The terms “mental health” and “mental wellbeing” are often used interchangeably. However, experts say that doing so can have a harmful effect. Barkham and colleagues (2019) argues that indistinct use of these terms is potentially harmful because mental wellbeing programs are not adequate treatments for more severe mental health challenges. Other authors note that we should separately research mental health and mental wellness, in order to adjust health services accordingly (Hewitt, 2019). Moreover, an in-depth review of mental wellbeing concepts was presented in a World Health Organization (World Health Organization, 2005) report on mental health promotion. It defines mental wellbeing as an individual's ability to develop their potential, work productively and creatively, build strong and positive relationships with others, and contribute to their community. In this thesis, we will use this definition for describing mental wellbeing.

# 1. Literature Review

We are now going to examine the literature on university music student mental health and health behaviours. This review will cover the incidence of mental health challenges among music students. Several of the studies presented will compare samples of music students to non-music students, which will be of particular importance in relating to the survey portion of this thesis. Following the section on mental health, we will present the literature on health behaviour studies of music students. It will come second because understanding music students' health behaviours might better explain the state of their mental health challenges.

## 1.1. Mental Health

The following studies examine research on the mental health of university students. The literature on music students and depression, anxiety, and stress will be presented first. These three characteristics of mental health are grouped together due to their well-established interconnectedness (e.g., Raven, 2020; Tafet & Nemeroff, 2016). Secondly, we present research on the mental wellbeing of music students. Mental wellbeing, defined in this thesis as a broader definition of mental health, allows for the psychological health and overall functioning of music students to be examined in psychological frameworks or characteristics that are less rigid than concepts defined in an institution like Health Canada or the American Psychiatric Association.

### *1.1.1. Depression, Anxiety, and Stress*

We will now discuss the literature on depression, anxiety, and stress in music students. Dews and Williams (1989) set about understanding the stressors that music students face, and of them, which are the most debilitating. The participants were recruited from three music schools of diverse geographical regions of the United States and were made up of 201 university music students. The study's authors created their own questionnaire by doing a "review of the literature

on the subject and a review of similar instruments" (p. 37). The questionnaire listed 22 stressors, and the participants were instructed to rate them by severity. General item labels, such as "stress" and "burnout", were rated as major stressors. In addition, more specific stressors, such as music progress impatience, performance nervousness, job insecurity, and music versus personal life conflicts, all rated as major stressors. The study also collected information on the participants' help seeking behaviours. They found that 96% of the participants sought help for their music related stress, but the vast majority sought this help informally, from friends, and very few went to see professional counselling. Most participants, however, were open to seeking professional counseling, so long as the counselors were aware of common struggles that musicians face in their field. The study's authors concluded their study with a list of open questions, mainly, pondering the extent of which music institutions are aware, sympathetic, and are dealing with the stresses of attending music school; and what they are doing, if anything, to combat these issues.

Butler (1995) investigated factors associated with physical illness, psychological stress, and lack of achievement for undergraduate music students, and explored the effects of familial relationships, the effects of self-esteem and personality, counseling, and the interconnectedness of these variables. The participants recruited were 89 incoming, 18-year-old undergraduate music students from the Guildhall School of music, in London, England. The participants were studied for a three-year period, between the years 1989 to 1992, annually, with an analysis of their academic and music examinations, and included psychological and physical tests. The psychological tests included the Dusynski's Family Attitude questionnaire, the Eysenck-Wilson personality tests, the Achievement, Sensation and Self-Esteem test, and the Butler Musical Obsession questionnaire. The study found that students who perform lower academically suffered from both external and internal stress, whereas the students that performed better

academically experienced none or only one type of stress. Additionally, the study reported that the "failing" students, as the authors describe them, seemed to share similar experiences: a death in the family, non-musical parents, public or "special music school" education, low self-esteem, saw their siblings as rivals, suffer ill health, consider their mother controlling or anxious and their father as distant or critical, and they rarely sought help. On the other hand, "successful students" as the authors describe them, had difference shared experiences: private school education, no deaths in the family, musical parents, high levels of self-esteem, satisfactory relationships with friends and family, and sought counseling if necessary. It should be noted that this article was published in 1995. Since then, labeling students as "failing" versus "successful" would be considered outdated, insensitive, and contrary to progressive teaching pedagogy. It should also be noted that the study concludes with the suggestion that incoming students should be screened for potential health issues, and receive counselling, if necessary.

Spahn and colleagues (2004) explored the prevalence of psychological and physical health issues, subject-related issues, and health attitudes. The participants were made up of four groups: music, psychology, medical, and sports students, all of whom were in the first year of their undergraduate program. There were a total of 247 participants, all attending the University of Freiburg. Mental health was evaluated with the Hospital Anxiety and Depression Scale that score participants as either having conspicuous or non-conspicuous anxiety or depression symptoms. Depression in all participant groups ranged from 8.4% to 8.6%, and with 1.5% in sports students. The anxiety scale identified 35.5% of music students with conspicuous anxiety symptoms. This was higher than that of the medical (24.8%), psychology (24.3%), and sports students (14.5%). The author's note that the markedly high anxiety rates in the music students set

them apart from their peers. In contrast to the nearly even depression prevalence, this presents the unique mental health challenges that music students have in comparison to other students.

Similarly, Demirbatir and colleagues (2012) compared the psychological health and mental wellbeing of undergraduate music education students and medical students . The study's participants were made up of students from a large Turkish public university, within the music education faculty (n = 160) and from the medical faculty (n = 928). Participants completed the DASS-42 questionnaire for assessing their mental health state. DASS-42 scores were higher in the music student group in each of its subscales (depression, anxiety, stress), with a statistically significant difference. When comparing the DASS-42 scores between music student men and music student women, there was not a statistically significant difference. This is another notable study within this literature review, as it compares music students to those in other faculties. Notably, here, they found higher rates of mental distress in music students than medical students (who have been shown in studies to have concerningly high mental health challenges; e.g., Dyrbye et al., 2006).

Wristen (2013) investigated the prevalence of depression and anxiety among 287 music students at a large state university in the Midwestern United States. Participants completed questionnaires designed by the study's authors, based on the Diagnostic and Statistical Manual of Mental Disorders' fourth edition (American Psychiatric Association, 1994). Among the participants, 252 reported experiencing anxiety symptoms, with 52.8% having mild symptoms and 14.7% with moderate to severe symptoms. Of the whole participant group, 16.49% met the clinical criteria for anxiety, yet 9% had not received any treatment. Regarding depression, 57.8% of the 249 participants who had never been treated reported mild depressive symptoms, while 7.4% reported moderate to severe symptoms. Regarding the prevalence of depression, 11.98% of

the participants met the criteria for clinical depression, with 9% of the total participant group had not received any treatment. The study highlighted a significant concern over the high number of music students with untreated depression or anxiety.

Koops and Kuebel (2019) studied the status of mental health amongst US music majors. The study's participants comprised of 226 university music students. Online, the participants completed the DASS-21 (Depression Anxiety Stress Scale), as well as three open ended questions pertaining to their experience with mental health as music students. The findings show that the participants reported above average levels of stress, anxiety, and depression, with only 23% of the participants reportedly receiving mental health treatment, which as the authors note, is lower than the number of participants reporting above average levels of psychological distress. For example, 23.2% of second-year students were identified as having extremely severe depression levels, not including those categorized with moderate and severe levels. Additionally, the reported psychological distress showed little variation by year of study, indicating a "sustained period of above-average depression, stress, and/or anxiety" (p. 11). Answers to Koops and Kuebel's open-ended questions disturbed the authors by the number of responses labeled as "code red". Meaning, that they "used emotionally charged, extreme, or desperate language, going beyond those that communicated in the code 'the hard life'" (p. 10). The study's authors concluded that music students' heavy workload, emotional connection to music making, and critique, are factors that contribute to the above average levels of psychological distress experienced by the participants.

Alessandri and colleagues (2020) compared the mental and physical health of music students to different groups of non-music students. The study's participants were made up of 273 university students (135 music, 67 sports, and 71 of other faculties). The students were from

different countries, but mainly the UK, Switzerland, and Germany. A variety of standardized questionnaires were given to and completed by the participants. Questionnaires used to study the mental health of the participants involved the Kessler Measure of Psychological Distress (K10), and the Physical and Mental Health Summary Scale - Short Form (SF12). In an analysis that combined all student groups (as there were no differences in mental health scores between them), the K10 assessment revealed the following mental health levels among students: 15% likely had a severe mental disorder, 15% likely had a moderate mental disorder, 19% showed signs of moderate depression, 8% showed moderate to severe depression, and 7% showed severe depression. Results from the mental health scale of the SF12 found that the students had significantly lower scores for positive mental health characteristics, compared to the general population. Despite not finding statistically significant differences in mental health scores to students in other faculties, this study clearly notes the striking differences to that of general population data.

#### *1.1.2. Mental Wellbeing*

This section discusses the literature on music student mental wellbeing. Spahn and colleagues (2004), in addition to studying the mental health of music students (as discussed in the previous section), also explored the mental wellbeing differences between music students and non-music university students. This included 247 incoming music, medical, psychology, and sports students at the university of Freiburg, Germany. The Questionnaire on Study-Related Patterns of Behavior and Experience (AVEM) was used to explore how participants feel about their chosen field of study and their subjective experiences related to it. Specifically, the participants completed the "commitment to work" section of the AVEM. The study found that music students had the highest rates of professional ambition, striving for perfection indicators,

and subjective significance of subject. Music students had the lowest ability to detach one-self from work. On the AVEM overall commitment to work score, music students placed highest. The study's authors, noting the positive implications of high commitment to work, discuss that there can be negative outcomes from this. High commitment to work can reduce one's recognition of limitations or increase the risk of a psychological crisis in response to struggles with one's musicianship development. This finding may contribute to explaining the high incidence of anxiety among music participants in this study, as previously noted in the mental health findings of this study. However, a high commitment to work shouldn't be seen only as a negative. It is difficult to argue that high professional ambition, a strive for perfectionism, and a high value placed on the subjective significance of their studies are solely negative outcomes. A high commitment to work indicators are likely also related to the positive indicators of wellbeing (satisfaction with life, meaning in life, elevating experience, etc.). It may be that this study's music students' lower ability to detach from their work that is the more significant source of their high rates of anxiety.

Conway and colleagues (2010) researched the experiences of music students within the instrumental music education community. The study's participants consisted of 34 university music education students. The participants completed the following two open-ended questions: 'what do you feel are the positive aspects of the music education student community here at the University?'; and 'What do you feel are the challenges associated with being a part of the music education community here?'. Of the 34 participants, 12 participated in 60-minute interviews. Additionally, six students participated in a focus group interview. The data revealed the following perceptions: music education students felt that they were "different", compared to the other music students; music education, itself, was perceived as "different", compared to other

sections of the music school; many of the students' identities, over time, switched from being musician focused, to aligning more so as an educator. While this study is not specifically focusing on psychological health, social perceptions could be linked to categories of social health or health behaviours, which is why this study's findings are relevant. Namely, that music education students generally perceived themselves and their course as "different", possibly because of social ostracization. This also suggests that students within different music program streams might have different mental wellbeing challenges and needs.

Demirbatir and colleagues (2012), in addition to studying mental health, compared the mental wellbeing of music education students and medical students from a large public university in Turkey. The music education students (n = 160) and medical students (n = 928) were assessed for mental wellbeing with the Shirom-Melamed Burnout and Shirom-Melamed Vigor questionnaires. There were no statistically significant differences in burnout levels between the groups; however, music students scored higher on measures of vigor and cognitive liveliness compared to medical students. This is an interesting result in contrast to the higher rates of psychological distress that music students have over the medical students, as was noted earlier in the literature review. These are also similar findings to that of Spahn and colleagues' (2004) data of music students versus students in other faculties.

Later, Demirbatir (2015) investigated the psychological health, happiness, and educational satisfaction, amongst university music students in Turkey. The participants were made up of 147 students from the department of music education of Uludag in Bursa, Turkey. The participants completed multiple questionnaires: the Depression Anxiety Stress Scale (DASS-21), the Oxford Happiness Questionnaire, and a questionnaire assessing educational satisfaction (created by the study's author). The results found that educational satisfaction was higher in the female students,

students with lower DASS depression or stress scores, and students earlier in their degrees (first and second year). Oxford Happiness Questionnaire scores were higher in students with lower depression, anxiety, stress, and higher grade-point averages. What's unique about this study is its examination of and an establishment of a relationship between education satisfaction and higher grade-point averages, with positive mental health outcomes such as lower depression and anxiety. Of course, it's not clear how this correlation is sequenced — whether positive educational experiences lead to better mental health outcomes or the reverse. Moreover, this study's findings do provide critical evidence that there is an association of the both the characteristics of mental health and mental wellbeing in music students.

Perkins and colleagues (2017) inspected the health and wellbeing experiences of music students, and the enablers and barriers to optimal health in three areas: lifestyle, support services, and conservatoire environment. The study's participants were made up of 20 current and recently graduated music students from six conservatories in the UK. They participated in semi-structured interviews, focusing on the three previously mentioned research objectives. In the lifestyle area, enablers included importance of health and wellbeing, healthy lifestyle habits (e.g., diet and exercise), playing development (practise strategies, variety of activities, support from instrumental teachers), and strategies and coping mechanisms that support psychological wellbeing; barriers include lifestyle challenges (poor diet and exercise habits, and irregular schedules), playing-related physical problems, and hinderance to learning (isolation, and problems with instrumental teachers).In the area of support services, enablers included resources such as body mapping and services from professionals (e.g., instrumental teachers, medical professionals, conservatoire welfare staff); barriers included lacking support (for health or wellbeing, or simply the perception of a lack thereof), and low levels of health awareness. In the

area of environment, enablers included enjoyable and successful performance, and strong and supportive communities and networks; barriers included comparisons to the competition, stress, feelings of pressure, psychological distress, mental illness, negative feedback, loss of confidence, and feeling overworked. Moreover, the study's authors concluded that, in addition to an increase of general personal health promotion amongst the music students, that the conservatoire environment, too, should be optimized to focus on student health and wellbeing. This study stands out, as it is one of few to examine the effect of the institution on a music student's mental health and wellbeing.

Ascenso and colleagues (2018) studied the mental wellbeing of classical musicians through a PERMA (Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment) lens. PERMA is a psychological framework created by Seligman (2011). The study's participants were made up of 601 professional musicians (orchestral, solo, chamber, choral, chamber, composition, and conductors) from 41 countries, but primarily in the US and the UK. The participants completed the PERMA-Profiler questionnaire and were compared to general population data. The study found that the musicians had high scores in every dimension, particularly in meaning. Compared to the general population sample, the musicians had significantly higher positive emotion, relationships, meaning, overall wellbeing, and lower negative affect. The study's authors noted that an analysis from the PERMA lens more focused on positive functioning, it portrays musicians in a better light than more classic assessments of mental wellbeing. Though this study was on professional musicians (rather than music students), it is still a helpful piece of literature when understanding potential mental wellbeing challenges, or possibly strengths, of musicians studying at the university level.

Philippe and colleagues (2019) compared the health and wellbeing of university music students and amateur musicians in the French speaking area of Switzerland. The study's participants were made up of 46 university music students and 80 amateur musicians. Participants completed the abbreviated World Health Organization Quality of Life Questionnaire. Both groups scored highly in the areas of overall quality of life, and general health. Music students scored lower than amateur musicians in physical health, psychological health, and environmental satisfaction, but had higher social health scores. Interestingly, the study also grouped and compared participants that engaged or didn't engage in judged performances. The judged musicians had higher psychological health scores on each metric than the non-judged musicians. Likely, the authors noted, through learned coping strategies that come with performance experience. Despite university music students having lower mental health scores than amateur musicians, both groups had higher mental wellbeing scores than the general population. This study highlights that differences in the mental health and wellbeing of musicians may have to do with their involvement in a formal music institution, and whether they are judged by their music performance.

In addition to studying the prevalence of psychological distress in music students, Alessandri and colleagues (2020) studied the mental wellbeing of music students. The study's participants comprised of 273 university music students, primarily from the UK, Switzerland, and Germany. The participants were made up of music students, sports students, and students in other disciplines. Questionnaires included the World Health Organization Wellbeing Index (WHO-5), Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), and the Psychological Wellbeing Scale (PWS). Individual trait questionnaires were also used, such as the Perceived Competence Scale (PCS), Life Orientation Test (LOT-R), and the Ten Item Personal Inventory

(TIPI). There was a near absence of statistically significant differences between the groups, apart from openness to experience scores in music students being moderately higher than the sports students ($d$ = .46). However, the study's authors point out that the wellbeing scores of each participant group were below general population norms.

Furthermore, when inspecting the data, Alessandri and Colleagues (2020) discovered differences within the music student group. Students in the music performance stream had higher environmental mastery and self-acceptance scores that their composition, theory/research, and pedagogy peers. Performance students also had significantly higher wellbeing scores from the WEMWBS questionnaire than composition students, with only marginally higher scores than the theory/research and pedagogy students. Additionally, when comparing the student soloist and ensemble participants, the soloists had much higher rates of openness to experience. Clearly, an interesting profile amongst music students emerged from this study. It appears that mental wellbeing and psychological traits are related to and are affected by the types of musical experiences music students are exposed to.

### *1.1.3. Summary*

Several studies explored in this section reveal that mental health challenges are a serious concern for music students, with anxiety being particularly severe. Music students have higher mental distress in studies that compare music students to students in other faculties (Spahn et al., 2004; Demirbatir et al., 2012). They have higher mental distress than the general population (Wristen, 2013; Alessandri et al., 2020). They also exhibit a high incidence of mental health conditions for which they are not receiving help (Wristen, 2013; Koops & Kuebel, 2019). In short, music students appear to be struggling more with mental health challenges than others and

there appears to be some difficulty with accessing mental health treatment or recognizing the need for it.

The literature on music student mental wellbeing, however, is more complicated. In studies where music students exhibited poorer mental health outcomes than other students, they often reported higher scores on mental wellbeing metrics (Spahn et al., 2004; Demirbatir et al., 2012; Alessandri et al., 2020. Music student wellbeing has also been high than the general population, in some studies (Ascenso et al., 2018; Philippe et al., 2019). In other cases, it was music students who participate in judged performances that had higher wellbeing rates than their non-judged music peers (Philippe et al., 2019). So, too, was the case that music students in performance streams, who've had higher mental wellbeing scores than their non-performance music peers (Alessandri et al., 2020). Though, some studies have also found music student mental wellbeing scores lower than that of the general population (Alessandri et al., 2020), and when compared to amateur musicians (Philippe et al., 2019). Moreover, the studies on music students' mental wellbeing aren't as consistent as the literature on their mental health state, however, it appears the majority of studies indicate higher mental wellbeing in music students compared to many other population groups.

### 1.2. Health Behaviours

Short and Mollborn (2015) explain that health behaviors are "actions taken by individuals that affect health or mortality" (p. 2), noting that these actions can be both intentional and unintentional. They then enumerate examples of health behaviors, including "smoking, substance use, diet, physical activity, sleep, risky sexual activities, health care seeking behaviors, and adherence to prescribed medical treatments" (p. 2). Thus, the literature presented in this section, focusing on preventative health, lifestyle, and health promotion, is categorized appropriately.

Additionally, the section on playing-related pain is categorized under Health Behaviors because playing-related pain is the outcome of a behaviour, which could stem from various causes such as poor form, health neglect, and musculoskeletal or motor disorders, among others.

### *1.2.1. Preventive Health Behaviour*

We will now be discussing the literature on preventative health in music students. Spahn and colleagues (2002) examined music students and their attitudes towards health, use of body-oriented training for injury prevention purposes, playing-related symptoms and consequences, and their consultations with professionals on said playing-related symptoms. A total of 197 music students from the Freiburg Conservatory were recruited for the study. These participants completed questionnaires, including the Epidemiological Questionnaire for Musicians and the Questionnaire to Measure Illness and Health Locus of Control. The participants were clustered into four groups: students with somatic (physical pain) and psychological problems (n = 67), only psychological problems (n = 24), only somatic problems (n = 43), or no problems (n = 63). The results reported that one third of the participants regularly incorporate body-oriented training (Alexander Technique, Feldenkrais, yoga, etc.) into their training. This group of students was made up of more females and was significantly more likely to be in a somatic and/or psychological cluster group. Only 6% of the participant cluster with no problems (n =63) engaged in body-oriented training. One conclusion from these results is that many of the students participating in body-oriented training were not doing so for preventative reasons, but as a type of intervention. Moreover, this study presents an interesting case between what is considered preventative health-promoting behaviour, and what the study's authors may consider masking behaviour to cope with more serious health challenges. This raises a future research topic to seek

whether music students truly engage in preventive health behaviours or are only drawn to them after they incur health challenges.

Spahn and colleagues (2005), following similar themes of Spahn and colleagues (2002), studied the health locus of control (an individual's beliefs of how their health can be influenced), preventive behaviour, and previous playing-related health problems of music students. The study included 326 music students from two universities (one in Germany and the other in Switzerland), completed the Epidemiological Questionnaire for Musicians, and the Locus of Control Inventory for Illness and Health. Participants were categorized based on their engagement in preventive measures, defined as involvement in body-oriented or psychological training for health-supporting purposes. The preventive measures group (n = 127) was significantly more likely to have a previous playing-related health problem. Additionally, they also had higher certainty that the state of their health is in their control than the non-preventive measures students. This was based on the high Locus of Control (LOC) scores. With this information, the study's authors concluded it's likely that music students with a history of playing-related problems are more drawn to preventative measures. This behaviour on its own, or in addition to other health measures, gives them experience with addressing and improving their health and thus increases their LOC. Similarly to Spahn and colleagues (2002), this study provides information on music students' behavioural responses to health challenges they experience.

Zander and colleagues (2010) conducted a longitudinal study on the longitudinal effects of a preventive health curriculum for music students. Participants consisted of first-year music students from the University of Freiburg. Of these, 144 students were assigned to the intervention group, and 103 students were assigned to the control group. The students were either

categorized as certified music teacher students (preparing for teaching careers) , artistic training students (advance performance students), or school music students (studying broad, more generalized music courses). They were given standardized questionnaires at three points in time: the beginning of their studies, the end of their first year of studies, and one-year post-intervention, at the end of their second year of studies. The standardized questionnaires given were the Kiel Modification-Sensitive Symptom List, the Giessen Symptom Questionnaire, and the Epidemiological Questionnaire for Musicians. The intervention group participated in a curriculum titled 'Musician-Specific Health Prevention I and II'. This curriculum spanned two semesters, included 43 classes lasting 45 minutes each, and was taught by two physicians. Topics included physiological fundamentals of making music, Feldenkrais lessons (practising individual instrument biomechanics), and other demands that musicians face, such as instrument-specific practise, performance preparation, and health promotion for music students. The analysis was conducted on two fronts: one, looking at all music students; second, comparing the effect of the health curriculum on the intervention group and the control group.

When looking at the analysis of overall music students from Zander and colleagues' (2010) study, psychological challenges increased between the beginning and end of their first year of study, then reduced by the end of their second year of study. Potentially, due to initially feeling overwhelmed by the demands of a music program, the study's authors point out. In the control group, two of its three subgroups had significant increases in psychological distress over the testing period. However, none of the subgroups that received the health curriculum had increases in psychological distress. From this, it was concluded by the study's authors that preventive health education appears to have a significantly positive impact on psychological health for music students.

### *1.2.2. Lifestyle and Health Promotion*

We will now examine the literature on lifestyle and health promotion in music students. Chesky and Hipple (1997) compared the rates of performance anxiety, alcohol problems, and social/emotional concerns between music and non-music university students. The study's participants were composed of 362 students from the University of North Texas, including students enrolled in first year music theory (n=143) or first year introduction to psychology (n=219). Participants completed a demographic questionnaire, the Performance Anxiety Inventory, the Problem Check List, and the Young Adult Alcohol Screening Test. The study found no differences in performance anxiety between these two groups. Alcohol problems were fewer in music students over their lifetime, in the past year, and were overall less severe. Additionally, the music students had lower rates of social/emotional problems. While the music majors had fewer alcohol related and social/emotional problems, the authors concluded that these findings shouldn't excuse music students from being given specialized health resources or education, as there are other mental and physical challenges specific to music students.

Thompson and Williamon (2006) studied the mental and physical health literacy of music students, as well as their help-seeking behaviour. The participants consisted of 63 first year students from the Royal Conservatory of Music in London, England. A questionnaire was given to the participants before taking a music and health literacy course, in their first year of study. The study's authors created the questionnaire, which assessed the following: awareness of musician health problems, performance-related psychological distress, perceived notions of the causes of medical issues for musicians, and their awareness/knowledge of where to seek help for playing-related issues. The results show that performance anxiety and musculoskeletal pain complaints were common issues. Most significantly, though, were the help-seeking behavioural

patterns of the students. Music students were most likely to first take their mental and physical concerns to their primary instrument teacher, before seeing a medical practitioner or consulting an educational institution. The authors point out that their teachers' experience with issues linked to the physical aspect to their instruments can be valuable. However, there are also several reasons a student should not go to their teacher for health advice, first. Mainly, because they would likely not be able to offer accurate diagnoses or treatment, and there is good evidence of this because of the findings of professional musicians having high rates of injury and susceptibility to health problems. Moreover, this study provides an interesting insight into the state of music students' behaviours surrounding health promotion and the seeking of treatment for their mental and physical concerns.

Araújo and colleagues (2017) investigated the lifestyle and health-related attitudes and behaviours of university music students. The study's participants were made up of music students from nine conservatories in the UK, and one conservatory in Switzerland. The students completed the Physical Activity Readiness-Questionnaire, a 40-minute survey on health promoting behaviour (which included perceptions and attitudes towards health and wellbeing), as well as a physiological examination. The study showed that the participants higher mental wellbeing scores that the general population of people between 16-34 years of age. However, the study found a gender difference among the music students. Music student women had wellbeing scores equal to the general population of women, whereas music student men had higher wellbeing scores than the general population of men. However, both music student men and women had low rates of health promoting behaviour, such as seeking professional help, or looking after their general health, with the exception that music student women had higher healthy eating and social behaviour scores than the music student men. While other studies on

music students have found gender-based differences in mental wellbeing, this study is among the first to specifically examine the differences in health-promoting behaviour.

### *1.2.3. Playing-Related Pain*

Moving from lifestyle and health promotion literature, we will now examine the research on music student mental health and playing-related pain. Spahn and colleagues (2014) conducted a longitudinal analysis of the psychological and physical health, preventive behaviour, and playing-related problems of university music students across their entire degree. The study's participants consisted of 70 music students from the university of Freiburg, Germany. They were examined at four points in their degree: the beginning of their first year ($t_1$); at the end of their first year ($t_2$); at the end of their second year ($t_3$); and at the end of their program ($t_4$). Standardized questionnaires were given to the participants, which included the Kiel Modification-Sensitive Symptom List, the Hospital Anxiety and Depression Scale, the Giessen Symptom Questionnaire, the Inventory on Coping with Work as a Musician, and the Epidemiological Questionnaire for Musicians. Additionally, the participants were clustered into three groups: rare experience with music-related health problems (first cluster); experience with music related health problems (second cluster); and acute health problems that need or involve medical treatment (third cluster). Participants in the second and third clusters were shown to have significantly more generalized psychological distress symptoms, as well as higher levels of anxiety and depression. The third cluster, with the highest rate of physical health challenges, had the highest rates of mental distress. With the additional observation that the majority of students remained in their cluster throughout the duration of their program, the study's authors recommend that schools invest in health promotion programs for their students.

Kenny and Ackermann (2015) examined the relationship between performance related musculoskeletal pain disorders (PRMDs), trigger point pain and depression, social phobia, and music performance anxiety amongst professional orchestra musicians. The study's participants were made up of 377 professional musicians from eight different state and opera orchestras in Australia. Physical examinations provided the trigger point data and were conducted in person by a trained physiotherapist. Multiple standardized self-reported questionnaires were also used, including the Kenny Music Performance Anxiety Inventory, the Trait questionnaire of the State-Trait Anxiety Inventory, the Social Phobia Inventory, the PRIME-MD Patient Health Questionnaire, and the Core Self Evaluation Scale. Of the participants, 84% had experienced performance related pain, with 50% reporting such pain at the time of the study. Additionally, pain severity was significantly associated with music performance anxiety, and female participants had a higher incidence of performance-impairing pain than males. Given the significant associations between pain severity, depression, and music performance anxiety, the authors suggest that addressing depression and music performance anxiety should be integral components of treatment plans for individuals suffering from playing-related pain. What is of particular importance in this study's research, were the pain differences between male and female musicians. While this study was studying professional musicians, there are significant similarities to the environmental conditions that music students experience in schools and conservatories.

Ioannou and colleagues (2018) investigated the factors that surround and contribute to playing-related pain. The study examined the clinical data of 186 music students who visited the Institute of Music Physiology and Musicians' Medicine outpatient clinic in Hanover, Germany, between 2009-2014. Of those students, 122 had playing-related pain (PRP) and 61.5% of this

PRP sample were the final participant group of this study (a total of 75 participants). Trait anxiety in the PRP group was studied with the Competitive Trait Anxiety Inventory (CTAI) and the State-Trait Anxiety Scale (STAI). Compared to 11% of the general population having high or extremely high levels of competitive-trait anxiety, those levels were present in 40% of the PRP group. Similarly, 36% of the PRP group had high or extremely high state-trait anxiety, which was significantly higher than the general population. Additionally, female music students with PRP had a higher incidence of high or extremely high state-trait anxiety than the male music students with PRP. The study's authors concluded that one explanation of these results is that music students are more so emotionally affected by musculoskeletal pain, and that a cycle is created since stress can also increase muscular tension, which may lead to PRP. Moreover, this study's findings indicate a high level of mental distress in music students that experience PRP and that there is a higher prevalence amongst female music students.

Steemers and colleagues (2020) studied music students' mental and physical health of music students, comparing those with playing-related musculoskeletal disorders (PRMDs) to those without PRMDs. In total, 46 music students from Codarts Rotterdam, University of the Arts were studied, 8 of whom had PRMDs. The participants completed multiple questionnaires, including the Musculoskeletal Pain Intensity and Interference Questionnaire for Musicians, the Mental Health Inventory-5, and the first question (on general health) of the Short Form Health Survey. The study found that the PRMD students had poorer general health compared to the non-PRMD students. Though, there were no significant mental health differences between the groups. The study's authors note that there should be concern for both groups, as half of both the PRMD and non-PRMD groups had reported poor mental health in the past 12-months. One way of observing this study's results is not necessarily to conclude that music students with PRMDs

aren't worse off than non-PRMD students. The small sample size makes it difficult to draw broad conclusions. Future research could more decisively conclude whether students with PRMDs employ coping mechanisms or treatments that effectively mitigate their mental health challenges, aligning them with their non-PRMD peers.

### *1.2.4. Summary*

Preventive health behaviour, including body-oriented training such as Feldenkrais or Alexander Technique, was found by Spahn and colleagues (2002) to be utilized by a significant portion of students with mental and/or physical challenges. However, it was rarely adopted by students without such challenges. This contrast suggests that such practices might be employed more as coping strategies than as genuine preventive health measures. In a follow-up study, Spahn and colleagues (2005) found that students with previous playing-related challenges (mental and physical) were also much more likely to incorporate preventive measures, whether it was physical or psychological, but they also had a high degree of certainty that they had autonomy over the state of their own health than students who didn't engage in preventive measures. Additionally, students that were given a preventive health curriculum had a lower rate of mental health challenges compared to students that did not participate in a preventive health curriculum (Zander et al., 2010).

Early studies on health promoting behaviour of music students were promising, with music students having fewer and less sever alcohol and emotional problems than students in psychology (Chesky & Hipple, 1997). However, it was also found that music students often bring their physical and psychological problems to their primary instrument teacher first, instead of a medical professional (Thompson & Williamon, 2006). More complicated impacts of gender on health promoting behaviour were found in Araújo and colleagues' (2017) research. In it, men

had higher than average wellbeing, and women had average wellbeing scores in comparison to the general population. However, they both had concerning behaviour for seeking professional medical help and looking after their overall health, with the exception that women had higher rates of healthy eating and social habits than the men.

Students with playing-related pain had significantly higher mental distress than students without playing-related pain, and rarely improved their physical condition over their degree, resulting in sustained higher psychological distress (Spahn et al., 2014). Additionally, gender appears to be related to psychological distress and playing-related pain. Music student women with playing-related pain had higher trait anxiety than music student men with playing-related pain, with both men and women having extremely higher trait anxiety than the general population (Ioannou et al., 2018). For music school graduates, this gender difference has also been found professional orchestras (Kenny & Ackermann, 2015). In studies that didn't factor for gender, in some cases, no psychological distress differences are found between PRMD and non-PRMD students, which suggests that some music students with PRMDs can manage with the help of interventions or coping strategies (Steemers et al., 2020).

### 1.3. Research Questions

The mental health challenges of music students studying in several different countries around the world have been examined. Yet, there is little, if any, research that examines the mental health state of Canadian university music students. As such, it is unreasonable to presume uniformity in the prevalence of mental health challenges between different countries. Studies comparing conservatory students from various European nations have already identified notable differences in their mental health (Zabuska et al., 2018). Thus, a study examining Canadian

university music students would provide a more accurate profile of this population's mental health status.

The existing literature examining the mental health of university music students presents a complex and, at times, seemingly contradictory picture. Research indicates that university music students exhibit higher rates of anxiety compared to their counterparts in other disciplines (e.g., Demirbatir et al., 2012; Spahn et al., 2004, 2014), along with concerning levels of untreated mental illnesses (Wristen, 2013). Regarding mental wellbeing, though, the picture is less clear. Some studies have found that music students have lower mental wellbeing than the general population (Alessandri et al., 2020). However, despite some findings of lower mental wellbeing, a more substantial body of evidence suggests that mental wellbeing is a distinct strength of music students. Notably, music students have demonstrated a higher commitment to work than students in other faculties (Spahn et al., 2004). Philippe and colleagues (2019) found that music students score higher on social health metrics than amateur musicians, and those who participate in judged music performances have higher mental wellbeing than those who do not. Other studies, such as that of Alessandri and colleagues (2020), found no wellbeing differences between music students and students in other faculties, though they did find music performance majors and soloists to have higher mental wellbeing and openness to experience, respectively, than students in other music streams (such as composition, theory, pedagogy, etc.). Moreover, this suggests a need for further research into the mental health and wellbeing of music students, as well as examinations of health behaviours to better assess the current psychological state within this population.

The research questions for this study are:

1. What is the prevalence of mental health challenges amongst university music students?
2. What is the prevalence of mental wellbeing challenges amongst university music students?
3. What are the differences in mental health and mental wellbeing challenges between music and non-music university students?

# 2. Methodology

This section details the methodology of this thesis, presenting the makeup of our participants, data collection strategies, the selection and administration of questionnaires in both English and French (to broaden participant engagement), and data screening and analysis. Importantly, the questionnaire selection rationale is provided. They provide a means of answering the research questions outlined in this thesis.

## 2.1. Participants

Two participant groups were studied: university music students (n = 130) and non-music university students (n = 124). Participants were required to be between 17-26 years of age. To meet eligibility criteria as a music student participant, the individual must have been enrolled full-time in a music program at a post-secondary institution, such as a university or music conservatory; requiring regularly scheduled private or individual music lessons for the preparation of a recital, music jury, or similar performance. Non-music university students will function as the control group for this thesis. They were required to be enrolled in full-time studies in a Canadian non-music program. Additionally, they were disqualified if taking a course that involve regularly scheduled private or individual music lessons that prepare for a recital, music jury, or other testing. See Table 1 for general demographic information, including age, gender, race, and degree type. See Table 2 for further details on participants program stream, institution, and music student-specific demographics.

**Table 1**

*Broad Demograhpic Data*

| | Music students ($N$ = 130) | Non-music students ($N$ = 124) |
|---|---|---|
| Age, Mean ($SD$) | 20.95 (2.54) | 21.60 (2.05) |
| Gender ($n$) | | |
| Women | 72 | 90 |
| Men | 39 | 28 |
| Non-binary | 12 | 5 |
| Prefer not to answer | 6 | 1 |
| Two-Spirit | 1 | 0 |
| Language ($n$) | | |
| English | 125 | 118 |
| French | 5 | 6 |
| Race ($n$) | | |
| White | 84 | 86 |
| Mixed race | 12 | 5 |
| Black | 4 | 4 |
| Indigenous people of Canada | 3 | 2 |
| West Asian | 0 | 1 |
| Southeast Asian | 1 | 0 |
| South Asian | 1 | 5 |
| Latin, Central, or South American | 5 | 2 |
| Japanese | 1 | 1 |
| Korean | 1 | 0 |
| Chinese | 13 | 7 |
| Arab | 3 | 4 |
| Not listed | 1 | 2 |
| Blank | 0 | 1 |
| Filipino | 1 | 3 |
| Degree type ($n$) | | |
| Undergrad | 105 | 87 |
| Masters | 18 | 20 |
| Doctoral | 5 | 14 |
| Diploma | 2 | 0 |
| Other | 0 | 3 |

**Table 2**

*Additional Demograhpic Data*

| Music student program stream (*n*=130) | (%) |
|---|---|
| Performance | 57 |
| Education | 18 |
| General music studies | 9 |
| Other | 5 |
| Composition | 5 |
| Bachelor of arts in music | 4 |
| Theory | 2 |

| Non-music student program stream (*n*=124) | (%) |
|---|---|
| Psychology | 29 |
| Natural sciences | 19 |
| Social sciences | 18 |
| Engineering | 14 |
| Business | 10 |
| Economics | 3 |
| Computer sciences | 2 |
| Arts (non-specific) | 2 |
| Teaching | 2 |
| Math | 1 |
| Art (visual) | 1 |

| Instrument (music students, *n=130*) | (%) |
|---|---|
| Voice | 25 |
| Strings | 20 |
| Woodwind | 19 |
| Piano | 14 |
| Brass | 10 |
| Percussion | 9 |
| Other | 2 |
| Guitar | 1 |
| Choral conducting | 1 |

| Years of lessons before university, Mean (*SD*) |
|---|
| 6.86 (5.09) |

| Institution (all participants, *N*=254) | (%) |
|---|---|
| University of Ottawa | 48.4 |
| University of Western Ontario | 14.6 |
| University of British Columbia | 12.2 |
| Dalhousie University | 6.5 |
| Carleton University | 3.7 |
| University of Mount Alison | 2.4 |
| UBC Capilano | 2.4 |
| Memorial University of Newfoundland | 2.0 |
| McMaster University | 1.2 |
| University of Saskatchewan | 1.2 |
| University of Toronto | 1.2 |
| Concordia University | 0.8 |
| Conservatoire de Musique de Montréal | 0.8 |
| University of Montreal | 0.8 |
| University of Alberta | 0.8 |
| Acadia University | 0.4 |
| École de Technologie Supérieure | 0.4 |
| University of McGill | 0.4 |
| St. Francis Xavier University | 0.4 |
| University of Guelph | 0.4 |
| University of Victoria | 0.4 |
| University of Waterloo | 0.4 |
| University of Calgary | 0.4 |

## 2.2. Data Collection

Participants for this thesis were recruited through in-person and online means. In-person recruitment included short presentations to undergraduate classes (with the professor's permission), as well as wall-mounted posters displayed in public spaces. Online recruitment included digital posters and recruitment details posted in private, non-public facing Facebook groups with a uOttawa Ethics approved invitation message. The first page of the questionnaire acted as this thesis' consent form, detailing that continuing with the questionnaires was considered as providing consent. This consent page was adapted from this thesis' University of Ottawa Ethics approved letter of information and consent, which can be found in Appendix A. This questionnaire was hosted on the SurveyMonkey platform, the online survey tool that uOttawa has licensed because of its secure and ethical data management practices (uOttawa, n.d.).

## 2.3. Questionnaires

### *2.3.1. Mental Health Scales*

The primary objective of this thesis was to assess psychological distress in university music students, focusing on three key negative emotions: depression, anxiety, and stress. The Depression Anxiety Stress Scale (DASS) developed by Lovibond and Lovibond (1995a) is well-suited for this purpose. Of its two versions, the DASS-21 was selected in this thesis for its streamlined nature, as noted by Koops and Kuebel (2019, p. 5), instead of the DASS-42. This 21-item version (which will, from now on, be simply referred to as the DASS) , has been widely used in studies previously mentioned in this thesis' literature review (e.g., Demirbatir, 2012, 2015; Demirbatir et al., 2012; Koops & Kuebel, 2019), and uses a 4-point Likert scale rating. Each of the three subscales (depression, anxiety, and stress) consists of 7-items covering the full

range of core symptoms (Lovibond & Lovibond, 1995b, p. 336). This scale, its authors have noted, isn't used for making clinical diagnosis on mental health disorders.

The DASS has proven to have high reliability and validity in both English and French language scales. The statistical metrics of the French DASS were studied in a doctoral thesis (Nahaboo, 2015), with the translation being performed by Donald Martin, a professor of psychology at uOttawa. Internal reliability was strong with Cronbach alphas of .79, .72, and .78, for depression, anxiety, and stress, respectively. Different measures of validity were established, including concurrent and divergent validity, as well as factor analyses. In the English version, the DASS has been validated against the Beck Depression and Anxiety Inventories (Lovibond & Lovibond, 1995b). Moreover, given these qualities, alongside its focus on depression, stress, and anxiety, the DASS-21 is an apt choice for measuring mental health issues among university music students. See Table 3 for full English DASS-21 reliability and validity information.

**Table 3**

*Reliabiltiy and Validity Metrics of the English DASS (Lovibond & Lovibond, 1995b)*

| Test | Statistic | Depression | Anxiety | Stress |
|---|---|---|---|---|
| English DASS | Reliability<br>(Cronbach's alpha) | .91 | .81 | .89 |
| | Validity<br>(correlation coefficient) | .74 | .81 | .60 (Beck Depression)<br>.64 (Beck Anxiety) |

Lovibond and Lovibond's (1995a) manual describes a method of categorizing severity levels for each subscale. Scores for the DASS-21 must be first multiplied by two before assigned to a category, as the categorization method is designed to be compatible in comparing to studies that use the original 42-item scale. See Table 4 for DASS cut-off markers.

**Table 4**

*DASS Severity Cut-Off Markers (Lovibond & Lovibond, 1995a)*

| | Depression | Anxiety | Stress |
|---|---|---|---|
| Normal | 0-9 | 0-7 | 0-14 |
| Mild | 10-13 | 8-9 | 15-18 |
| Moderate | 14-20 | 10-14 | 19-25 |
| Severe | 21-27 | 15-19 | 26-33 |
| Extremely severe | 28+ | 20+ | 34+ |

History of treatment for mental illness was assessed by creating our own one-item question that asked about the participants' history with mental illness challenges, asking "Have you been treated, or are currently being treated for a mental illness?" with three answer choices ("yes", "no", or "prefer not to say"). A similar question was posed in Koops and Kuebel's (2019) study which used two questions to assess current and past experience with treatment for a mental illness. For this thesis, however, it appeared sufficient to only ask one question to acquire a clearer sense of the prevalence of mental illness in our participants, focusing on the cases that required treatment. Moreover, gathering information on mental illness history is crucial for this thesis as it provides essential context for interpreting the prevalence and impact of mental health issues among our participants.

### *2.3.2. Financial Wellbeing Scales*

The financial stress scale from the Canadian Campus Wellbeing Survey (CCWS) is a one-item, four-point Likert scale. Participants rated their financial stress from "no financial stress at all" (0) to "a great deal of financial stress" (4) in response to a question concerning tuition and living expenses. Reliability metrics studied by Weatherson and colleagues (2019) show good statistical agreement (k = 0.86-1.00, $p$ <.0005). Upon researching the validity statistics of this question, we did not find a study that has independently validated this scale against another

financial stress scale. Financial stress can be a contributor to negative health outcomes. Music students have been shown to classify financial stress as one of the most frequent non-academic stressors (Walker, 2012, p. 21). Financial instability in general post-secondary students is associated with higher levels of depression and anxiety (Jones et al., 2018), as does working significant hours, which many students do to afford tuition (Peltz et al., 2021). Therefore, given the link between financial stress and adverse mental health outcomes, including this scale helps in understanding the contributing factors of mental health challenges for music students.

The six-item CCWS food security scale, used in this thesis, is an abbreviation of the 18-item Household Food Security Survey Module (HFSSM) used in Canadian Community Household Survey (CCHS) since 2005. The CCWS's scale measures food availability, access (economic and physical), utilization, and stability (frequency of food instability; Weatherson et al., 2019). The full, 18-item CCHS scale measures information that is irrelevant to what the CCWS attempts to study. For example, this includes eight-items specific to measuring child food security. Moreover, the CCWS's abbreviated scale, detailed from Weatherson and colleagues (2019) ranged in statistical agreement from moderated to good ($k = 0.47\text{-}0.62$, $p < .0005$). A study that has validated the CCWS's food security scale does not appear to currently exist. Given that food insecurity in post-secondary students has been linked to negative academic and health outcomes (Lee et al., 2018), its inclusion in this thesis provides crucial insights into the issues of nutrition, financial stress, and mental health.

#### *2.3.3. Mental Wellbeing Scales*

The Social Provisions Scale (SPS-5), developed by Orpana and colleagues (2019), is a concise five-item, four-point Likert questionnaire designed to assess social health. This scale is utilized in the Canadian Community Health Survey (CCHS) and is a shortened version of

Caron’s (2013) SPS-10, which itself was adapted from Cutrona and Russell’s (1983) original SPS-24. The SPS-5 evaluates five of the six social provisions in Weiss' (1974) Social Provisions Theory: guidance, reliable alliance, reassurance of worth, attachment, and social integration. The scale demonstrates high internal consistency (Cronbach's alpha = 0.88) and a strong correlation ($r = 0.97$) with the SPS-10 (Orpana et al., 2019). Research has shown that social health is linked to reduced psychological distress (e.g., Caron, 2012) and that quality social support benefits mental wellbeing and development. For these reasons, this thesis includes a measure of social health.

The Positive Affect Scale (PAS) created by Diener and Emmons (1984) is a four-item, 7-point Likert scale. Positive affect is often studied when measuring mental wellbeing and is one of the three pillars of Diener’s (1984) Subjective Well-Being theory. Diener and Emmons (1984) consider positive and negative affect as separate dimensions, not just opposites of each other. They build off the work of burn and associates (e.g., Bradburn & Caplovitz, 1965), noting that they have “offered evidence that happiness or subjective well-being is not a unitary construct, but is composed of two separate feelings: positive and negative affect” (Diener & Emmons, 1984, p. 1105). Diener and Emmons’s (1984) add another layer to this concept, with data showing positive and negative affect becoming more independently related from each other over longer periods of time.

In Diener and Emmons’ (1984) Positive Affect Scale, participants scored the four-items (Happy”, “Joyful”, “Pleased”, and “Enjoyment/fun”) with the prompt “during the past year, how often did you feel”. Scores range from “rarely” (1) to “almost always” (7). The PAS demonstrated high internal consistency, with the scale having an alpha coefficient of .89 (Diener & Emmons, 1984). Watson and colleagues (1988), in their factor analysis of several positive

affect scales, also showed high factorial validity in Diener and Emmons' (1984) scale with correlation coefficients of .89 (extent format) and .87 (frequency format). The importance of positive affect to mental wellbeing, as illustrated by Diener's (1984) Subjective Well-Being Theory, it was included in this thesis.

Meaning experience was assessed with Huta and Ryan's (2010) Meaning Experience Scale. Meaning, in this scale, is considered by Huta and Ryan not as a way of life, but as an outcome, and describe it as "being left with a sense that one's pursuits have been meaningful" (p. 742). The questionnaire is originally a 12-item, seven-point Likert scale with scores ranging from "not at all" (1) to "very much" (7). With a recommendation of one of the scale's authors, we shortened the scale into 4-items to make the questionnaire more streamlined. Participants scored the four-items ("Meaningful", "Valuable", "Precious", and "Full of Significance") in response to the prompt "during the past year, to what degree did you feel that your activities and experiences were". Our analysis of reliability of the brief four-item version we used revealed a high internal consistency, with a Cronbach's Alpha of .95. Huta and Ryan's 12-item scale had a significant correlation ($r = .64$, $p < .01$) with Steger and colleagues' (2006) Meaning in Life questionnaire. This established construct validation for Huta and Ryan's (2010) meaning experience scale . The inclusion of Huta and Ryan's meaning scale, with meaning treated as an outcome, aligns with this thesis' goal of measuring the mental wellbeing state of our participants.

Elevating experience was measured using the Huta and Ryan's (2010, study 3) Elevating Experience scale. Huta and Ryan described characteristics of elevating experiences as inspiration, awe, and transcendence or sense of connection with a greater whole. Together, these characteristics were meant to describe "feeling connected with and elevated to a broader level of functioning, and which represent the much neglected ''higher'' range of well-being experiences"

(p. 739). Huta and Ryan's Elevating Experience Scale is a five-item, seven-point Likert questionnaire in which participants scored the five-items ("Inspired", "In awe", "Morally elevated", "Deeply appreciating", and "Part of something greater than myself") in response to the question "during the last year, to what degree did you feel each of the following states?". Scoring ranged from "not at all" (1) to "extremely" (7). Our reliability analysis of the five-item Elevating Experience scale we used revealed high internal consistency (Cronbach's Alpha = 0.85). Since elevating experience is represented as elevated functioning or higher range wellbeing and has been shown to be associated with eudaimonia (Huta & Ryan, 2010, p. 744), it is useful in measuring the eudemonic wellbeing of this thesis' participants.

In recent research, Huta and Waterman (2014) categorize mental well-being into two main classes: hedonia and eudaimonia. They describe hedonic experiences as involving pleasure, enjoyment, and fun (positive affect) and avoiding pain or discomfort (negative affect). In contrast, eudaimonic experiences are associated with qualities like authenticity, autonomy, excellence, growth, and self-actualization, along with a sense of meaning and contribution. Huta (2020) considers meaning and elevating experiences as indicators of eudaimonic well-being. Omitting these elements would result in an incomplete assessment of mental well-being, as research has shown that eudaimonic experiences can be especially beneficial, particularly for music students. Compared to students in other fields, music students report a higher subjective significance in their studies, a drive for perfection, and a strong commitment to their work (Spahn et al., 2004), as well as enhanced cognitive liveliness and vigor (Demirbatir et al., 2012).

Satisfaction with life was measured using Diener and colleagues' (1985) Satisfaction with Life Scale (SWLS), a five-item, seven-point Likert scale with scores ranging from "strongly disagree" (1) to "strongly agree" (7) in response to five prompts concerning life satisfaction. This

has been described as an “assessment of a person’s quality of life according to his chosen criteria” (Shin & Johnson, 1978, p. 478). It is also noted, by Diener and colleagues’ (1985), that “Judgments of satisfaction are dependent upon a comparison of one’s circumstances with what is thought to be an appropriate standard” (p. 71). In their study, the scale had high reliability with a coefficient alpha of .87, and a two-month test-rested correlation coefficient of .82. Pavot and colleagues (1991) established that the SWLS had high convergent validity, using factor analysis with several different questionnaires, including Diener and colleagues’ (1985) SWLS, the Fordyce Scale (measures percent of time you’re happy, sad, or neutral), daily affect reports, at least seven affect and life satisfaction reports from parents or friends, and the Frequency Affect Dominance Scale (proportion of positive affect or negative affect was prominent in their experience). There were acceptable correlation coefficients (range of $r = .54$ to .57, $p < .001$) on particularly key questionnaires, such as peer reports and family reports of life satisfaction, self-reported and peer-reported life satisfaction, and self- and family-reported life satisfaction. For the French version of this thesis’ survey, we used the French validated SWLS, created by Blais and colleagues (1989). They used standard questionnaire translation procedures, confirmatory and exploratory factor analyses, comparing to several other scales with each item of the French SWLS having appropriately strong correlation coefficients (range of .59 to .69; Blais et al., 1989, Study 5). As life satisfaction is another pillar in Subjective Wellbeing Theory (Diener & Emmons, 1984) and is arguably the one of the more frequently used measures of mental wellbeing, it appeared paramount to include this measure to investigate this thesis’ goal of studying mental wellbeing.

### *2.3.4. Musculoskeletal Pain Scales*

Musculoskeletal pain was measured using the Sherbourne's (1992) Medical Outcomes Study (MOS) Pain Measures scale, which is a twelve-item questionnaire that measures pain severity and its effect on mood and behaviour over a four-week period (McDowell, 2006, p. 496). We used the "effects of pain" (also described as the "pain effects" score) section and scoring method of the scale. The pain effects score is meant to be totalled by averaging six-items (items 4a-f), giving a score from one to five, then transforming it into a zero-to-100 scale. Its internal consistency had a Cronbach's alpha of 0.91. Sherbourne provides validation evidence through construct validity (correlation coefficients ranging from 0.63 to 0.68 between pain and physical symptoms), content validity (incorporating the impact of pain on several life factors, such as on mood, sleep, day-to-day life, along with markers of intensity, frequency, and duration) structural validity (correlations ranging from 0.68 to 0.95 across different pain characteristics, such as effects of pain, pain severity, days of pain interference, and overall pain). Eight of the MOS pain measure's initial 12-item battery of pain items were adapted from the Wisconsin Brief Pain Questionnaire (Daut et al., 1983) for rating the effects of pain subscale, and for numerically rating the intensity of average pain and pain at its worst. The remaining three-items were adapted from the Health Information Study Questionnaire (Kaplan & Greenfield, personal communication, as cited in Sherbourne, 1992, p. 224). Moreover, the association between bodily pain and mental distress in music students has been well established (e.g., Ioannou et al., 2018). So, to further study this association, this pain measure was included in this thesis.

### *2.3.5. Help-Seeking Behaviour Questionnaires*

Help seeking behaviour was measured using the Help-Seeking Behaviour questionnaire from the CCWS but originates as a subscale of the Healthy Minds Study (HMS). Participants

were prompted to select from a list the types of people (or persons) they would talk to if they were experiencing serious emotional distress, such as professional clinician, support group, friend, roommate, etc. Participants could check all that applied. The CCWS version omits the item “none of the above” and instead uses “I don’t have anyone to talk to about this” and “I prefer not to talk to anyone about this”. The HMS was created and approved in 2012 by the University of Michigan Health Sciences and Behavioral Health Sciences Institutional Review Board (University of Michigan, n.d.). The CCWS’ version reported moderate reliability (ICC= 0.69; 95% CI: 0.54-0.80; Weatherson et al., 2019). The HMS is reported to be fully validated and reliable (Healthy Minds Network, n.d.), however, we were not able to find a separate study that has yet independently tested the statistical validity of the HMS help-seeking behaviour scale against another scale measuring the same behaviours. This scale was included in this thesis as there is a documented association between mental distress and reluctance to seek help in certain populations (e.g., Staiger et al., 2020). So, for this reason, we are using this scale to study help-seeking behaviour in music students.

**2.4. Translation of Questionnaires**

All questionnaires were presented to the participants with the option of completing in either English or French version. Nearly all questionnaires have been validated in French or were from the French copy of the CCWS (Weatherson et al., 2019). For the MOS Pain Scale, a back-translation was conducted with the thesis committee. The back-translation involved translating the initial English questionnaire into French, then was independently translated back into English.

However, in the case of three of the French wellbeing questionnaires (Positive Affect Scale, Meaning Experience Scale, and the Elevating Experience Scale) a data entry error was

made in the creation of survey. When the back-translation was meant to be entered into SurveyMonkey, the original translation was mistakenly given to the participants. For this reason, the results of these three surveys for the French participants were not included in the analysis. However, it should be noted that the results of the other questionnaires and demographic information for these French participants remains valid.

**2.5. Data Screening and Analysis**

Data collected from SurveyMonkey were imported into an Excel spreadsheet for ease of coding and scoring. Each questionnaire was scored according to its specific criteria. After, data was entered into SPSS version 29 for further analysis. Outliers were identified as data points more than 1.5 box lengths away from the nearest edge of the box, in accordance with standard statistical practices. Analyses were conducted with and without outliers to assess their impact. If the inclusion or exclusion of outliers did not alter the results from statistically significant to non-significant (or vice-versa), outliers were kept in the analysis.

In a few cases, the removal of outliers (for the purposes of testing) altered the outcomes of the tests from non-significant to significant. To address this, the dataset was Winsorized. Data points outside of plus or minus a z-score of 2.58 units within each group (music student or non-music student) were Winsorized. Through the Winsorization process, outlier values were substituted with the adjacent highest (or lowest) non-outlier values. This method improved the normality of the assessment by reducing skewness and improving the analytical robustness of the tests.

Independent samples t-tests were used to compare mean scores between groups. Skewness and kurtosis values were maintained within a ± 1.5-unit range in cases where outliers were present, not present, or Winsorized, aligning with accepted standards for normal

distribution. Each test met the assumption of equal variances in every scenario, whether outliers were present, not present, or were Winsorized, using Levene's test for equality of variances ($p$ >.05). Additionally, one-sample t-tests were conducted to compare this thesis' data to published studies. For these tests, the same process for conducting independent samples t-tests were applied (parameters for skewness, kurtosis, equality of variances, etc.).

The Chi-Square test for association, as well as the Chi-Square test of independence, was implemented when analyzing the association between categorical variables of a questionnaire. Expected cell frequencies were greater than five, with the exception of one item in the help-seeking behaviour scale (which is pointed out in the results section). When examining adjusted residuals, a value of plus or minus 1.96 is considered statistically significant, as suggested in Agresti (2007).

Occasionally, participant responses were left blank. In response to this, we employed a statistical imputation method when the data were considered Missing Completely at Random (MCAR). With the guidance of Papageorgiou and colleagues (Papageorgiou et al., 2018), mean imputation was appropriate for our analysis. This method involves calculating the mean of the existing responses within a variables' dataset, then replacing missing responses with the re-calculated mean (Papageorgiou et al., 2018, Table 1, p. 154).

The reporting of inferential statistics in thesis included effect size or strength of assocaition values, when appropriate. Independant samples t-tests or one sample t-tests followed effect size reporting guidelines of Cohen's *d*, as reported by Cohen (1988). Chi-square tests of association and independence followed measures of strength association reporting guidelines of Cramer's V, also using Cohen's practises. See Table 5 for further details.

**Table 5**

*Cohen's d and Cramer's V, as reported in Cohen (1998)*

| Strength | Effect Size Value |
|---|---|
| Small | .2 |
| Medium (Moderate) | .5 |
| Large | .8 |
| Magnitude of effect size | Value of Cramer's V |
| Small | .1 |
| Medium (Moderate) | .3 |
| Large | .5 |

# 3. Results

The results section is organized in the same fashion as the questionnaire sub-section of the methodology section. It is presented in the following order: mental health challenges, financial wellbeing, mental wellbeing, musculoskeletal pain, and help-seeking behaviour.

## 3.1. Mental Health Challenges

Measures highlighting crucial characteristics of mental health, such as depression, anxiety, and stress, will be presented first to illustrate their importance in this thesis. Due to gender-based differences in results, three sets of DASS scores were analyzed: (1) Music student men vs. non-music student men; (2) music student women vs. non-music student women; (3) a combined group of all music students vs. all non-music students, which included participants who did not identify strictly as men or women, such as non-binary individuals. All DASS tests involving mean comparison were calculated with an independent samples t-tests.

DASS depression scores were higher in music students, though none of the tests were statistically significant. DASS anxiety scores were higher in music students and were statistically significant with a small effect size ($p$ = .033, $d$ = .28), with particularly higher anxiety scores when comparing music student and non-music student women ($p$ = .017, $d$ = .39). None of the DASS stress tests had statistically significant differences, although the scores were still high for music students. See Table 6 for full statistical results.

**Table 6**

*Results of Independent Samples T-Tests, DASS Questionnaire*

| | | Music students | Non-music students | | | |
|---|---|---|---|---|---|---|
| Outcome | Group | Mean (*SD*) | Mean (*SD*) | *t* | *p* | *d* |
| DASS Depression | Men | 15.24 (10.86) | 11.10 (11.50) | 1.44 | .155 | .37 |
| | Women | 13.91 (10.37) | 13.54 (9.61) | 0.23 | .818 | .03 |
| | All | 15.16 (10.82) | 13.15 (10.03) | 1.50 | .136 | .19 |
| DASS Anxiety | Men | 12.42 (10.93) | 9.52 (9.07) | 1.10 | .277 | .28 |
| | Women | 16.23 (9.77) | 12.62 (8.73) | 2.42 | .017 | .39 |
| | All | 14.72 (10.22) | 12.07 (8.79) | 3.90 | .033 | .28 |
| DASS Stress | Men | 17.97 (9.93) | 14.56 (12.25) | 1.21 | .233 | .31 |
| | Women | 19.61 (9.37) | 18.47 (8.49) | 0.79 | .432 | .13 |
| | All | 19.32 (9.52) | 18.02 (9.62) | 1.05 | .293 | .14 |

A Chi-Square test of independence was performed between program type and DASS severity. In each test performed between music student and non-music student men, there was a least one cell frequency that did not meet the assumption of an expected cell frequency of five. Therefore, we cannot trust that these specific results are statistically valid. For this reason, we have removed the adjusted residuals scores. However, what will remain is the percent-within program type data to be reflective of the descriptive statistics that we do have. We will also allow the overall Chi-Square results between the music and non-music student men groups to remain, though none of the overall Chi-Square results were statistically significant, perhaps due to the small number of men in this thesis' sample size, the magnitude of effect size for the Crammer's V value of the DASS Depression score between the groups of men were moderate (Crammer's V = 0.38), nearly statistically significant ($p$ = .070), and could be of value for future research in this field of study. See Table 7 for full statistical results.

Each other test had an expected cell frequency of at least five and will be counted as valid. None of the Chi-Square tests showed an overall statistically significant association

between program type and DASS severity. The adjusted residuals reveal notable subgroup patterns in anxiety severity among women. Music student women were significantly overrepresented in the Extremely Severe anxiety category (adjusted residual = 2.3), with 45% of them falling into this range. Conversely, they were underrepresented in the Mild anxiety category (adjusted residual = -2.2), with only 2% classified at this level. See Table 7 for full statistical results.

**Table 7**

*Results of Severity Distribution, DASS Questionnaire*

| Gender | Program | | Severity: Normal | Mild | Moderate | Severe | Extremely Severe |
|---|---|---|---|---|---|---|---|
| | | | **DASS Depression Distribution** | | | | |
| Men | Music | *n* (%) | 11 (31%) | 7 (19%) | 9 (25%) | 2 (6%) | 7 (19%) |
| | | AR | ** | ** | ** | ** | ** |
| | Non-Music | *n* (%) | 15 (60) % | 0 (0%) | 5 (20%) | 2 (8) % | 3 (12%) |
| | | AR | ** | ** | ** | ** | ** |
| Women | Music | *n* (%) | 18 (42%) | 9 (13%) | 13 (19%) | 9 (13%) | 8 (12%) |
| | | AR | +0.6 | +0.3 | -1.2 | +0.8 | -0.4 |
| | Non-Music | *n* (%) | 32 (37%) | 10 (12%) | 24 (28%) | 8 (9%) | 12 (14%) |
| | | AR | +0.6 | -0.3 | +1.2 | -0.8 | +0.4 |
| All | Music | *n* (%) | 42 (35%) | 19 (16%) | 26 (22%) | 14 (12%) | 20 (17%) |
| | | AR | -1.0 | +1.5 | -1.1 | +0.8 | +0.6 |
| | Non-Music | *n* (%) | 48 (41%) | 11 (9%) | 32 (27%) | 10 (9%) | 16 (14%) |
| | | AR | +1.0 | -1.5 | +1.1 | -0.8 | -0.6 |
| | | | **DASS Anxiety Distribution** | | | | |
| Men | Music | *n* (%) | 11 (31%) | 6 (17%) | 8 (22%) | 3 (8%) | 8 (22%) |
| | | AR | ** | ** | ** | ** | ** |
| | Non-Music | *n* (%) | 12 (48%) | 3 (48%) | 5 (48%) | 2 (48%) | 3 (48%) |
| | | AR | ** | ** | ** | ** | ** |
| Women | Music | *n* (%) | 16 (24%) | 1 (2%) | 11 (16%) | 9 (13%) | 30 (45%) |
| | | AR | -0.6 | -2.2* | -0.5 | -0.3 | +2.3* |
| | Non-Music | *n* (%) | 24 (28%) | 9 (11%) | 17 (20%) | 13 (15%) | 23 (27%) |
| | | AR | +0.6 | +2.2* | +0.5 | +0.3 | -2.3* |
| All | Music | *n* (%) | 33 (27%) | 8 (7%) | 24 (20%) | 13 (11%) | 43 (36%) |
| | | AR | -0.6 | -1.4 | 0.0 | -0.5 | +1.8 |
| | Non-Music | *n* (%) | 36 (31%) | 14 (12%) | 23 (20%) | 15 (13%) | 29 (25%) |
| | | AR | +0.6 | +1.4 | 0.0 | +0.5 | -1.8 |
| | | | **DASS Stress Distribution** | | | | |
| Men | Music | *n* (%) | 14 (39%) | 5 (14%) | 9 (25%) | 5 (14%) | 3 (8%) |
| | | AR | ** | ** | ** | ** | ** |
| | Non-music | *n* (%) | 13 (52%) | 3 (12%) | 2 (8%) | 4 (16%) | 3 (12%) |
| | | AR | ** | ** | ** | ** | ** |
| Women | Music | *n* (%) | 20 (30%) | 8 (12%) | 21 (31%) | 13 (19%) | 5 (8%) |
| | | AR | -1.0 | -0.8 | +1.3 | -0.2 | +1.1 |
| | Non-Music | *n* (%) | 32 (37%) | 14 (16%) | 19 (22%) | 18 (21%) | 3 (4%) |
| | | AR | +1.0 | +0.8 | -1.3 | +0.2 | -1.1 |
| All | Music | *n* (%) | 39 (32%) | 17 (14%) | 32 (26%) | 23(19%) | 10 (8%) |
| | | AR | -1.1 | -0.1 | +1.4 | -0.5 | +0.7 |
| | Non-Music | *n* (%) | 46 (39%) | 17 (15%) | 22 (19%) | 25 (21%) | 7 (6%) |
| | | AR | +1.1 | +0.1 | -1.4 | +0.5 | -0.7 |

| **Chi-Square Results** | | | | | |
|---|---|---|---|---|---|
| Outcome | Gender Group | Pearson Chi-Square Value | *p* | Cramer's V | *p* |
| Depression | Men | ** | ** | ** | ** |
| | Women | 2.122 | .713 | .118 | .713 |
| | All | 4.199 | .380 | .133 | .380 |
| Anxiety | Men | ** | ** | ** | ** |
| | Women | 8.712 | .069 | .239 | .069 |
| | All | 4.587 | .332 | .139 | .332 |
| Stress | Men | ** | ** | ** | ** |
| | Women | 3.507 | .477 | .151 | .477 |
| | All | 2.975 | .562 | .112 | .562 |

*Note*. In the distribution reporting section, percent-within program type appears in parentheses to the right of the observed frequencies. Adjusted residuals appear in the line below.

AR = Adjusted Residuals.

*AR statistically significant beyond ±1.96.

** Assumption of expected count of 5 not met.

To determine whether mental health challenges are significantly worse for current music students, we compared our results with those from previous studies. Specifically, we conducted one-sample t-tests using the mean scores from Demirbatir's (2012) study of 160 music education students' DASS scores. The mean age of participants in this study ($M$ = 20.95, $SD$ = 2.52) was similar to that in Demirbatir's study ($M$ = 20.30, $SD$ = 1.81). Differences in DASS scores were statistically significant in the tests between all genders and those between women. Scores between music student and non-music student men were not statistically significant. In the all genders DASS tests, effect size showed small differences ($d$ = .26 - .28). between music student and non-music student women, the effect size was small to moderate ($d$ = .24 - .50). see Table 8 for full statistical results.

**Table 8**

*Results of One-Sample T-Tests, Thesis DASS Scores versus Demirbatir (2012) DASS Scores*

| | | Thesis data | Demirbatir (2012) | | | |
|---|---|---|---|---|---|---|
| Outcome | Group | Mean (*SD*) | Mean (*SD*) | *t* | *p* | *d* |
| DASS Depression | Men | 15.24 (10.86) | 14.53 (10.55) | .400 | .692 | .07 |
| | Women | 13.91 (10.37) | 11.38 (8.88) | 1.997 | .050 | .24 |
| | All | 15.16 (10.82) | 12.24 (9.52) | 2.986 | .003 | .27 |
| DASS Anxiety | Men | 12.42 (10.93) | 13.06 (9.79) | .353 | .726 | .06 |
| | Women | 16.23 (9.77) | 11.30 (8.21) | 4.137 | <.001 | .50 |
| | All | 14.72 (10.22) | 11.67 (8.74) | 3.286 | .001 | .30 |
| DASS Stress | Men | 17.97 (9.93) | 18.08 (10.54) | .069 | .945 | .01 |
| | Women | 19.61 (9.37) | 16.50 (8.82) | 2.719 | .008 | .33 |
| | All | 19.32 (9.52) | 16.86 (9.38) | 2.851 | .005 | .26 |

History of treatment for mental illness was studied with a chi-square test for association, examining program type and self-report mental illness history, in response to the prompt "Have you been treated, or are currently being treated for a mental illness?". Self-reported treatment for a mental illness was high in both the music students (49%) and non-music students. However, the association was not statistically significant. See full statistical results in Table 9.

**Table 9**

*Results of Chi-Square Test of Association, History of Treatment for Mental Illness Questionnaire*

| | | Response | | | | |
|---|---|---|---|---|---|---|
| | | Yes | No | | | |
| Item | Group | *n* (%) | *n* (%) | $\chi^2$ (1) | *p* | φ |
| History of treatment for mental illness | Non-music students | 49 (40%) | 74 (60%) | 2.02 | .155 | .09 |
| | Music students | 61 (49%) | 64 (51%) | | | |

### 3.2. Financial Wellbeing

Financial stress differences between the groups were studied using an independent samples t-test. Music students had higher financial stress scores than non-music students, based on the results of the CCWS' financial stress scale . The association was statistically significant with a small effect size ($p$ = .030, $d$ = .27). See full statistical results in Table 10.

**Table 10**

*Results of Independent Samples T-Test, Financial Stress Questionnaire*

| | Music students | Non-music students | | | |
|---|---|---|---|---|---|
| | Mean (*SD*) | Mean (*SD*) | *t* | *p* | *d* |
| Financial Stress | 2.23 (1.12) | 1.93 (1.10) | 2.18 | .030 | .27 |

Food security differences between groups were studied with a chi-square test of independence. There was not a statistically significant overall association between program type and food security score ($\chi^2(9) = 5.011$, p = .082, Cramer's V = .149.) However, an examination of adjusted residuals shows subgroup differences. Music students were overrepresented in the food secure category (adjusted residual = +2.2), whereas non-music students were underrepresented (adjusted residual = -2.2). See Table 11 for statistical results, Figure 1 for visual representation.

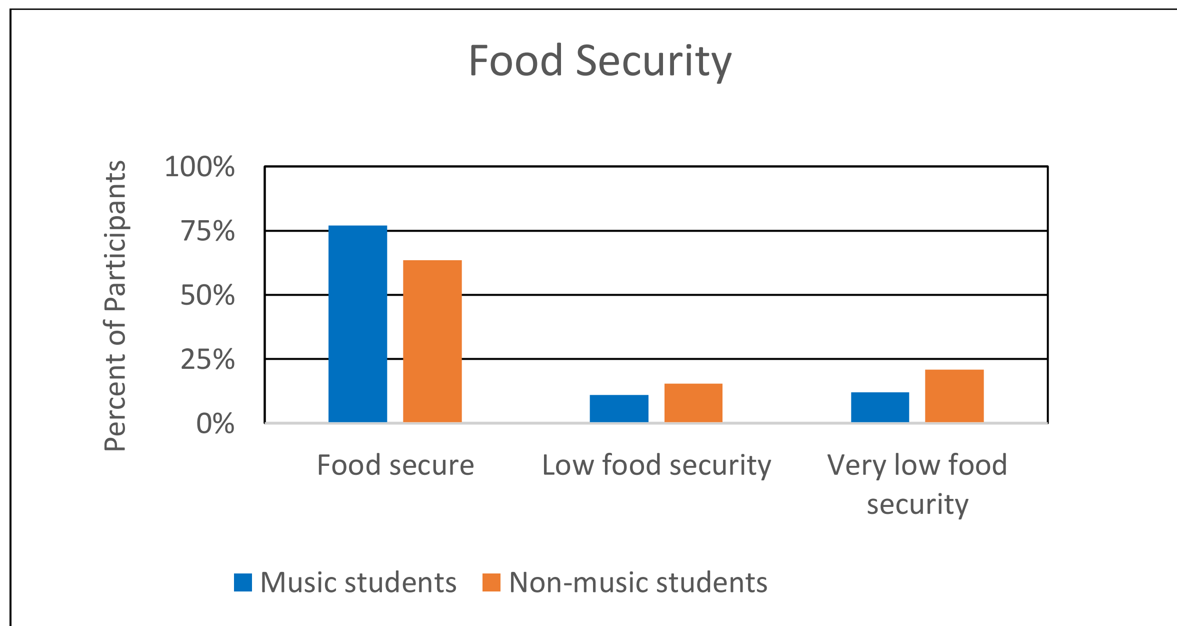
**Table 11**

*Results of Chi-Square Test of Independence, Food Security Questionnaire*

| | Food secure | Low food security | Very low food security |
|---|---|---|---|
| | *n* (%) | *n* (%) | *n* (%) |
| **Distribution** | | | |
| Music students | 90 (76.9) | 13 (11.1) | 14 (12.0) |
| Non-music students | 70 (63.6) | 17 (15.5) | 23 (20.9) |
| **Adjusted Residuals** | | | |
| Music students | +2.2 | -1.0 | -1.8 |
| Non-music students | -2.2 | +1.0 | +1.8 |
| **Chi-Square Results** | | | |
| Pearson Chi-Square Value | *p* | Cramer's V | *p* |
| 5.011 | .082 | .149 | .082 |

**Figure 1**

*Visual Representation of Food Security Scores*



Four mental wellbeing questionnaires came out as statistically significant: the Social Provisions Scale (SPS-5), that measures social health; the Positive Affect Scale (PAS); the Meaning Experience (ME) scale; and the Satisfaction with Life (SWL) scale. Social health scores from the SPS-5 were higher in non-music students, and statistically significant ($p = .003$) with a modest effect size ($d = .34$). Positive affect scores from the PAS were higher in non-music students, were statistically significant ($p = .009$) and had a modest effect size ($d = .35$). Similarly, meaning experience was higher in non-music students. It was a statistically significance difference ($p = .034$) with a modest effect size ($d = .29$). Satisfaction with life scores were, again, higher for non-music students. the difference was statistically significant ($p = >.001$) with the largest effect size of the mental wellbeing questionnaires ($d = .52$). See Figure 4 for visual representations and Table 12 for statistical results.

**Table 12**

*Results of Independent Samples T-Test, Mental Wellbeing Questionnaires*

| | Music students | Non-music students | | | |
|---|---|---|---|---|---|
| Outcome | Mean (*SD*) | Mean (*SD*) | *t* | *p* | *d* |
| Social Health | 11.63 (2.75) | 12.52 (2.36) | 2.76 | .003 | .34 |
| Positive Affect | 17.00 (4.73) | 18.65 (4.00) | 2.85 | .005 | .37 |
| Meaning Experience | 17.47 (6.11) | 19.18 (5.84) | 2.13 | .034 | .29 |
| Elevating Experience | 20.00 (6.17) | 20.48 (6.42) | .564 | .573 | .08 |
| Satisfaction with Life | 19.18 (7.08) | 22.72 (6.50) | 3.95 | <.001 | .52 |

### 3.3. Musculoskeletal Pain

All musculoskeletal pain questions from the MOS Pain Scale are posed in the reference of a four-week time frame. All scores were examined with an independent t-test. The first three musculoskeletal pain questions assessed the following aspects of pain:

- Question 1. Severity of Pain: "How much bodily pain have you generally had during the past 4 weeks?"
- Question 2. Frequency of Pain: “during the past 4 weeks, how often have you had pain or discomfort?”
- Question 3. Duration of Pain: “when you had pain during the past 4 weeks, how long did it usually last?”

The only statistically significant musculoskeletal pain measure was observed in the MOS pain effects measure, which measures the impact of pain on various aspects of day-to-day life, including activities and work. This measure was assessed with six sub-questions, all responding to the overarching prompt: “during the past 4 weeks, how much did pain interfere with the following things?”. The pain effects score revealed higher musculoskeletal pain in music students, with a small effect size ($p$ = .040, $d$ = .28). See Table 13 for full statistical results.

**Table 13**

*Results of Independent Samples T-Test, MOS Pain Measures Scale*

| | | Music students | Non-music students | | | |
|---|---|---|---|---|---|---|
| Outcome | Description | Mean (*SD*) | Mean (*SD*) | *t* | *p* | *d* |
| MOSQ1 | Pain severity | 2.04 (1.15) | 1.89 (1.03) | 1.00 | .319 | .14 |
| MOSQ2 | Pain frequency | 1.59 (1.20) | 1.31 (1.13) | 1.70 | .089 | .23 |
| MOSQ3 | Pain duration | 1.57 (1.30) | 1.63 (1.28) | 0.34 | .737 | .05 |
| MOS “Pain Effects” Measure | Effect on day-to-day activities | 25.40 (17.93) | 20.58 (16.22) | 2.07 | .040 | .28 |

### 3.4. Help-Seeking Behaviour

Participants were asked to select to whom they would seek help from if they were in distress. Specifically, the prompt is worded: "If you were experiencing serious emotional distress, whom would you talk to about this? Select all that apply”. Only one help-seeking behaviour item had a statistically significant difference between the two participant groups. A greater proportion of non-music students would seek help from a roommate, than would music students (33% vs. 20%). There was a statistically significant association between this help-seeking behaviour item and program type ($p$ = .027, phi = .146). See Table 14 for full statistics, Figure 2 for visual representation.

Although these items didn’t show a statistically significant association between help-seeking preferences and program type, the data offers valuable insights. Data are presented as percentages for music students vs. non-music students unless otherwise specified. Notably, only a small percentage of participants chose to seek help from professors/instructors (14% vs. 7%) or indicated a preference to not seek support at all when experiencing distress (16% vs. 15%). A moderate proportion of students preferred consulting a professional clinician (52% vs. 49%). The most popular choice for both groups was seeking support from friends who weren’t roommates (65.% vs. 71.%). See Table 14 for statistical results, Figure 2 for visual representation.

**Figure 2**

*Visual Representation of Hep-Seeking Behaviour Questionnaire Results*

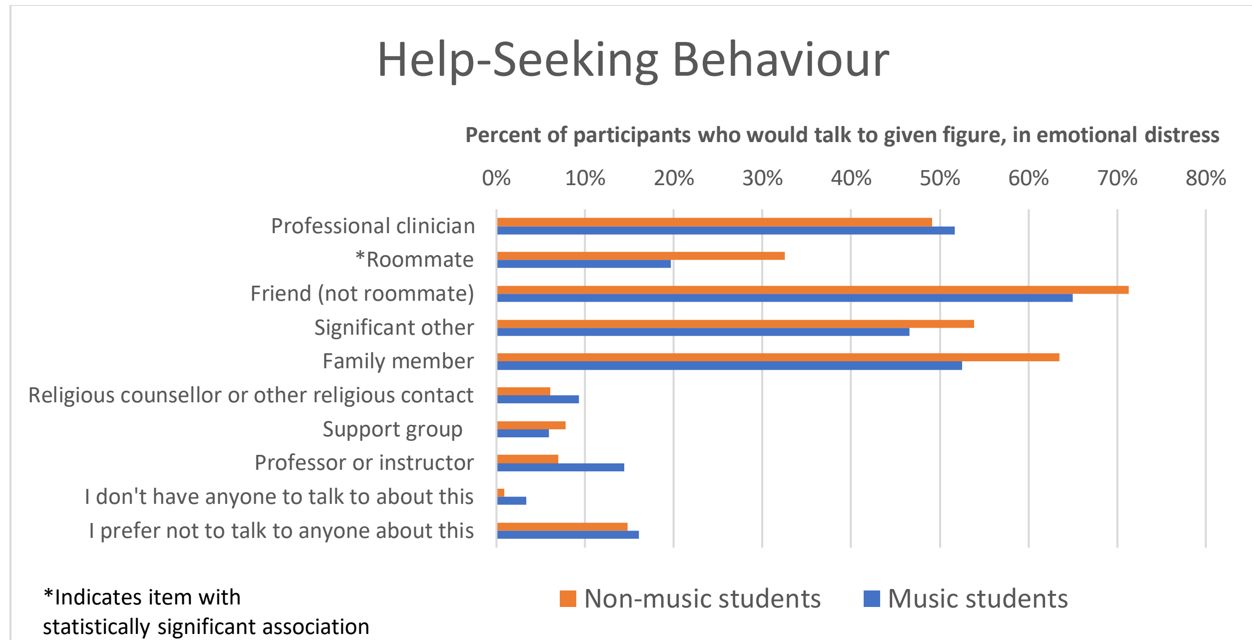



**Table 14**

*Results of Chi-Square Test for Association, Help-Seeking Behaviour Questionnaire*

| Item | Music students checking yes | Non-music students checking yes | | | |
|---|---|---|---|---|---|
| | *n* (%) | *n* (%) | $\chi^2$ (1) | *p* | φ |
| Professional clinician | 61 (52%) | 56 (49%) | .153 | .695 | .02 |
| Roommate | 23 (20%) | 37 (33%) | 4.919 | .027 | .15 |
| Friend (not roommate) | 76 (65%) | 82 (71%) | 1.076 | .300 | .07 |
| Significant other | 55 (47%) | 62 (54%) | 1.242 | .265 | .07 |
| Family member | 62 (52%) | 73 (63%) | 2.858 | .091 | .11 |
| Religious counsellor or other religious contact | 11 (9%) | 7 (6%) | .855 | .355 | .06 |
| Support group | 7 (6%) | 9 (8%) | .327 | .568 | .04 |
| Professor or instructor | 17 (14%) | 8 (7%) | 3.375 | .066 | .12 |
| I don't have anyone to talk to about this[1] | 4 (3%) | 1 (1%) | 1.762 | .184 | .09 |
| I prefer not to talk to anyone about this | 19 (16%) | 17 (15%) | .078 | .781 | .02 |

[1]Item did not have an expected count greater than five.

# 4. Discussion

As discussed previously, the literature on this subject varied and it was for this reason that we did not make any hypotheses. After all, this thesis' literature review did not find any mental health data on Canadian music students. So, instead, we decided to use the following research questions to guide the selection of questionnaires and data analysis methodology:

1. What is the prevalence of mental health challenges amongst university music students?
2. What is the prevalence of mental wellbeing challenges amongst university music students?
3. What are the differences in mental health challenges between music and non-music university students?

The discussion section is structured to answer this thesis' research questions, as well as add themes that emerged during data analysis. This section will be dived into three main discussion points: (1) severity differences of mental health challenges (2) barriers to health promotion, and (3) novel findings. Research questions one and three will be answered in subsection 4.1 (severity and differences of mental health challenges. Research question two will broadly be answered in section 4.2.3. (novel findings) and will be lightly referred to in section 4.3.3. (low mental wellbeing). Moreover, nearly all of this thesis' results are referenced in the discussion section. Selection criteria prioritized findings that answered this thesis' research questions, were of statistical significance, were found to be of significant importance, and were contradictory or novel compared to previous literature.

## 4.1. Severity Differences of Mental Health Challenges

### *4.1.1. Depression*

Various studies on depression help us understand the prior prevalence of depression outcomes in music students. Demirbatir and colleagues' (2012) study showed that the DASS depression results (Mean ± SD) were higher in music students (12.24 ± 9.52) than medical students (9.03 ± 7.46). Spahn and colleagues (2004), however, did not find differences in conspicuous depression symptoms between their studies' music student group (8.4%), versus medical students (8.7%), psychology students (8.6%), but not sports students (1.5%) who were lower than all other groups.

In our study, DASS were higher in music students (12.24 ± 9.52) than among non-music students (9.03 ± 7.46), but there was not a statistically significant (Table 6; $p = .136$, $d = .19$). Though, a one-sample t-test showed the music students in this thesis having higher depression scores than those in Demirbatir's (2012) study (Table 7; $p = .003$, $d = .27$).

### *4.1.2. Anxiety*

Anxiety scores from past studies have been consistently high in music students. Demirbatir and colleagues' (2012) DASS anxiety scores in music students (11.67 ± 8.74) were higher than those of medical students (7.86 ± 5.83) with a statistically significant difference. In Spahn and colleagues' (2004) study, rates of conspicuous anxiety symptoms where highest in music students (35.5%), compared to medical (24.8%), psychology (24.3%), and sports students (14.5%). Wristen (2013) reported the prevalence of mild and moderate/severe anxiety symptoms in, respectively, 52.8% and 14.7% of its music student participants. Koops and Kuebel (2019), who studied DASS anxiety by year, reported extremely severe anxiety in 16.9% to 27.5% of its music students.

In our study, DASS anxiety scores were higher in music students (14.72 ± 10.22) versus non-music students (12.07 ± 8.79), with a statistically significant difference (Table 6; $p = .033$, $d = .28$). In studying the severity distribution (see Table 7), a near statistical overrepresentation of extremely severe anxiety was found in music students with extremely severe anxiety (36%; adjusted residual = 1.8) compared to non-music students (25%; adjusted residual = -1.8), but the adjusted residual did not meet our criteria of statistical significance (adjusted residual = 1.96). This between-groups difference in our data is in keeping with the literature, as mentioned previously. However, one-sample t-test results showed that anxiety scores of music students in this study were higher than was previously assessed in Demirbatir's (2012) group of music students (Table 8; $p = .001$, $d = .30$). Moreover, a more nuanced hypothesis attempting to explain these anxiety findings will be addressed in the conclusion section. These anxiety scores are most likely best explained when considering a combination of factors and other findings that are presented in the following subsections of this thesis' discussion chapter.

#### ***4.1.3. Stress***

The DASS Stress scale is the final subscale of the DASS. Demirbatir and colleagues (2012) found that DASS stress scores were higher in music students (16.86 ± 9.38) than medical students (13.15 ± 7.37). In our study, there were marginally higher DASS stress mean scores in music students (19.32 ± 9.52) than non-music students (18.02 ± 9.62), but there was not a statistically significant difference (Table 6; $p = .293$, d = .14). However, a one-sample t-test showed higher DASS stress in this thesis' music students than those in Demirbatir's (2012) music students (Table 8; $p = .005$, $d = .26$).

## 4.2. Barriers to Health Promotion

### *4.2.1. Low Mental Wellbeing as a Barrier*

Compared to this thesis' non-music students, music students had lower mental wellbeing scores in nearly each scale (see Table 12). Despite the separateness that experts make between mental health and mental wellbeing, there is a strong case to be made that low mental wellbeing makes improvements to mental health more difficult.

Because positive affect (a marker of hedonic wellbeing; Ryan et al., 2008) and negative affect have been found to be negatively correlated in time periods of less than a few weeks (Diener & Emmons 1984), there is a simple conclusion that could be made: high negative affect could be in part explained by low positive affect, and any increase to positive affect could decrease negative affect. Since positive affect and satisfaction with life (also a marker of hedonic wellbeing; Ryan et al., 2008) scores were well below that of non-music students (see Table 12), one could conclude that the lower scores for this aspect of mental wellbeing are partially preventing the scores for depression, anxiety, and stress, from being less elevated. However, hedonic wellbeing is only one part of mental wellbeing, and we should also pay attention to the results of the eudaimonic wellbeing scores, too.

Meaning experience and elevating experience were also assessed in this thesis and have been labeled as markers of eudaimonic wellbeing (Huta & Waterman, 2014). Music studies, being a "performance-oriented" vocation-based subject, involves building expertise and the pursuit of excellence, which can be achieved over long periods of time involving countless hours of deliberate practise and, as one becomes more skilled, likely slows in its skill-progress rate. Thus, music studies, being a challenging and demanding experience, align quite well with the characteristics of the Self-Determination Theory psychological framework, which is based off a

eudaimonic wellbeing perspective (Ryan et al., 2008). It has been found that mental health interventions that use Self-Determination Theory as a framework have been shown to reduce stress (Shannon et al., 2019), potentially as a result of increased eudaimonic wellbeing. Therefore, is it possible that the lower scores in this thesis' music students could also be preventing a decrease of higher negative affect scores. Moreover, given that this thesis' music students had lower mental wellbeing scores, this may be a significant barrier to the promotion of their mental health.

#### *4.2.2. Financial Stress*

Based on this thesis' literature review, though there might be research on financial stress in musician's more broadly, there seems to be little study on the financial stress of music students, specifically. Of the studies we reviewed, Dews and Williams (1989) referenced job insecurity as a major stressor. However, their study does not delve significantly into this topic, as it was more exploratory in establishing what the stressors of music students are. It is surprising that this topic has not been further researched, since media reporting often highlights financial struggles of the classical music industry. This may present itself as musicians making difficult decisions to sell their equipment during Covid-19 lockdowns (Jacobs, 2021), musicians retraining and entering different professions by the influence of Covid-19 related factors (Lach-Aidelbaum, 2022), or orchestra administrations suddenly terminating their programing season (CBC, 2023).

It would be unrealistic to assume that music students would not be mentally impacted by these headlines in some way. This could explain the results of our study, finding music students with higher financial stress than non-music students, (Table 10; $p$ = .030, $d$ = .27). Financial

stress, which is unsurprisingly linked to increase psychological distress (e.g., Ryu & Fan, 2023), could be a hurdle for promoting positive mental health.

#### *4.2.3. Musculoskeletal Pain*

In contrast to the food security literature, musculoskeletal pain in music students has been well studied. When clustering music student by pain, higher pain severity groups had higher mental distress (Spahn et al., 2014). The same has been found in professional musicians, where higher levels of depression and performance anxiety were associated with higher PRMD severity (Kenney & Ackermann, 2015). Students with playing related pain exhibited much higher rates of general and competitive trait anxiety than the general population (Ioannou et al., 2018). The one exception to these otherwise consistent findings was a small study ($n$ = 46) by Steemers and colleagues (2020), where there were no statistical differences in mental distress between PRMD and non-PRMD students, citing the possible use of effective coping strategies as a factor.

The first three questions of our musculoskeletal pain scale, which assessed pain severity, frequency, and duration, did not yield any differences between our two groups. However, on the "pain effects" measure, which assesses the effect of pain on day-to-day activities, this thesis' music students did have higher scores than non-music students (Table 13; $p$ = .040, $d$ = .28). This presents a unique and somewhat confusing finding. Pain intensity and severity have been noted as two of the most important and most studied dimensions of pain (McDowell & Newell, 1987), which would make our non-differential finding quite novel, given that the literature points towards music students having high incidences of musculoskeletal pain. Though, McDowell (2006) highlighted that the impact of pain on various activities is a relatively recent focus in pain research, and that the effect of pain on a person's functioning can vary significantly (p. 221). It is possible that the pain characteristics measured in our pain scale's first three questions (pain

severity, frequency, and duration), completely isolated from life, do not differ greatly between the groups. But when applied to academic demands, pain in music students is more of an interference. Music training often requires significant movement repetition, so if pain is present, it could be a continuous hinderance. Perhaps most non-music students, even if in pain, do not feel that it interferes with their studies, since most non-music programs exercise predominantly verbal or non-verbal thinking tasks that require little, if any, movement or motor function.

## 4.3. Novel Findings

### *4.3.1. Gender Differences*

There exists prior literature on both the differences between music student and non-music student mental health differences (e.g., Spahn et al., 2004; Demirbatir et al., 2012, Alessandri et al., 2020), as well as studies that compare within-group mental health differences of music student men and music student women (e.g., Demirbatir, 2012, 2015; Araújo et al., 2017). However, we could not find any study that compared mental health challenges of university music students to university non-music students that was both between-groups and within-genders (e.g., music student men vs. non-music student men). The examination of between-group differences, but not across gender, is likely the most significant novel element of this thesis.

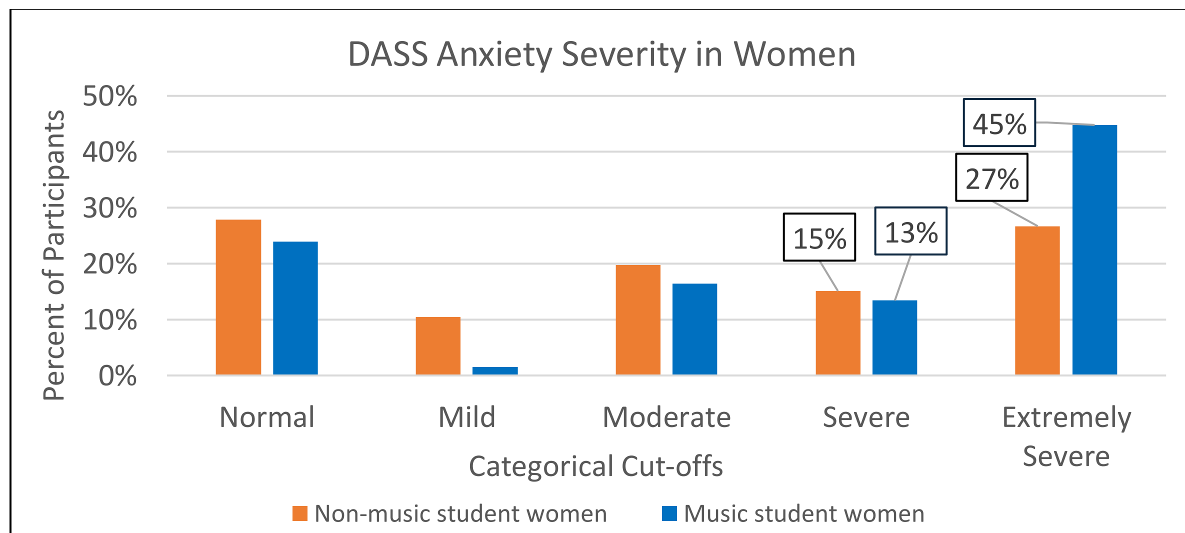
We ran tests isolating for gender in thesis' data and that of others. For the men in our study, though there weren't statistically significant differences, music student men in this thesis had higher DASS depression than non-music student men (Table 6; $p = .155$, $d = .37$), but nearly identical DASS depression results compared to the music students in Demirbatir's (2012) study (Table 8; $p = .692$, $d = .07$). It is difficult to make any claim of differences in other groups and

that of the music student men in thesis perhaps due to their low response rate ($n$ = 39 music students). This, however, is not the same case for the music student women in this thesis.

In this thesis, music student women had significantly higher DASS anxiety scores than non-music student women (Table 6; $p$ = .017, $d$ = .39). In a severity distribution analysis (see Table 7 and Figure 3, an overrepresentation of extremely severe anxiety was higher in music student women (descriptives = 45%, adjusted residual = +2.3) than non-music student women (descriptives = 27%, adjusted residual = -2.3). The DASS anxiety scores of this thesis' music student women were also higher than in previous studies' music student women, such as those in Demirbatir's (2012) results (Table 8; $p$ = <.001, $d$ = .50).

**Figure 3**

*DASS Anxiety Severity Distribution of Music Student Women Versus Non-Music Student Women*



In should be noted, however, that it is not being claimed that gender-based anxiety differences are a generally novel phenomenon. In the general population, women have been found to be affected by an anxiety disorder at nearly twice the frequency as men (Remes et al., 2016). The distinction in our study is that we are not comparing women to men, but music student women to non-music student women. It is also not novel that music students have higher anxiety than other population groups, as is shown in the literature (e.g., Spahn et al., 2004; Demirbatir et al., 2012), and that there have been some studies showing music student women with playing-related pain experience more severe psychological distress than music student men with playing-related pain (e.g., Ioannou et al., 2018). When, however, we are measuring anxiety broadly, with a scale such as the DASS that isn't looking at the involvement of pain, the differences in anxiety severity for music students compared to non-music students appears to be amplified for women.

#### *4.3.2. Help-Seeking Behaviours*

There appears to be a large shift in how music students either respond to mental distress or seek help for mental health challenges. In this subsection, we will discuss the changes of literature to the findings of this thesis for both (1) relational help-seeking behaviour, and (2) prevalence changes for treatment of mental illness.

Prior literature had shown some potentially troubling habits of music students in regard to how, or to whom, they sought help from. This was illustrative in Thompson and Williamon's (2006) work, which found that music students would take their mental and physical health concerns, first, to their primary instrument teachers, before potentially following up with medical professional or consult an educational institution. Thompson and Williamon noted two primary shortcomings of this behaviour: first, music teachers are not qualified to provide appropriate

treatment recommendations or diagnoses; second, musicians, since studies have shown them to have high rates of both mental and physical health challenges, are themselves a population that are potentially using outdated health information or are misinformed.

In this thesis, we asked participants to who they would seek help from if they were in emotional distress (they could select any answer that applied). The only statistically significant difference between participants groups was a greater proportion of non-music students were comfortable seeking help from a roommate (Table 14; $p = .027$, $\varphi = .15$), though this was a small difference, and the practical implications are arguably minute. Moreover, what does appear to be of practical significance was that 52% of music students, if in emotional distress, would seek help from a professional clinician, whereas 14% would do so from a professor/instructor (Table 14). While Thompson and Williamon's research objectives were different (help-seeking prioritization), this could indicate a significant change in how music students respond to distress and how they seek help.

Behaviours surrounding treatment for mental illnesses in this thesis' data also appear different than that of the literature. Wristen (2013) reported the rates of music students who have received treatment for either depression or anxiety as, respectively, 12.98% and 9.8%. In this thesis, there were no differences in association between participant group and experiencing treatment for mental illness (Table 9; $p = .155$, $\varphi = .09$). Of this thesis' music students, 49% have had or were currently having a treatment for mental illness. Because this thesis did not explicitly ask about specific treatments for depression or anxiety, as Wristen (2013) did, it did not seem appropriate to make an inferential statistical comparison.

In either case, looking at either the relational help-seeking behaviours or mental illness treatment prevalence, the music students in this thesis show new help-seeking behaviours. There

are two potential conclusions to these novel findings: (1) music students have substantially larger challenges with mental health, serious enough that they require medical attention and treatment; (2) music students now have much healthier behaviours when responding to mental health challenges, perhaps due to mental illness being less stigmatized, or public health campaigns being effective at promoting people to talk to medical professionals about their mental health.

#### *4.3.3. Low Mental Wellbeing*

A large body of research has highlighted that music students often exhibit higher mental wellbeing than other populations. Spahn and colleagues (2004) discovered music students had greater commitment to work, subjective significance of discipline, professional ambition, and perfectionism in music students than in students from other faculties. Demirbatir and colleagues (2012) documented heightened vigor and cognitive liveliness in music students compared to their counterparts in medical programs. Philippe et al. (2019) highlighted that music students had above average scores for overall quality of life, general mental wellbeing, general health, and social health, compared to the general population. Alessandri colleagues' (2020) results revealed that music students demonstrate higher openness to experience than students in other faculties.

The findings of this thesis, however, did not align with the positive mental wellbeing trends reported in the previous literature. Music students consistently reported lower scores on nearly all mental wellbeing measures compared to non-music students (see Table 12). Several factors may explain this decline in mental wellbeing, many of which are directly or indirectly associated with the effects of the Covid-19 pandemic. High rates of mental health challenges, particularly anxiety (see Table 6), were prevalent among music students. The disruptions caused by the pandemic made music training uniquely challenging compared to other university disciplines, compounded by slow returns to in-person instruction, which prolonged the

pandemic's harmful effects. Additionally, post-pandemic socio-environmental changes, economic struggles (in some cases, felt particularly acutely by musicians, given some potential uncertainties of the classical music industry's future) could all contributed to this decline in mental wellbeing.

## 5. Conclusion

This research project was initiated to study the mental health challenges and behaviours of music students. We found that their mental health state, especially anxiety, is of significant. Furthermore, the differences between the music students and non-music, when gender was factored, increased these differences. For women, in particular, anxiety was much higher in the music student group. Amongst the struggles of dealing with mental health challenges, there are significant barriers to improvement. These barriers take the form of low mental wellbeing, higher financial stress, and higher musculoskeletal pain.

Historically, these findings are not incredibly surprising. Several studies have documented at least some of these behavioural patterns. Higher than average anxiety being a common result in other studies. But what is strikingly new, however, is the music students' lower mental wellbeing scores. In prior literature, higher than average mental wellbeing is usually a redeeming quality in music students that is perhaps the result of building mastery in a skill, even if those students have simultaneously higher than average psychological distress. In our study, mental wellbeing scores in music students were well below their non-music student peers, when looking measures for social health, positive affect, meaning experience, and life satisfaction — this is perceivably the largest departure from prior studies.

Within this thesis' findings, there are a number of limitations that we should highlight. A larger sample size would have allowed for more definite conclusions. The data collected were entirely quantitative, which does not allow for the nuance that other studies have achieved when they include qualitative research tools. The absence of qualitative data makes it more difficult to explain the reasoning for differences in our study's results. It's possible that our participant sample could have a self-selecting bias, with persons who have higher than average challenges

with mental health drawn to our study because of this thesis' topic, though, the reverse may also be true. Students with more severe mental health challenges might have abstained from participating in this study due to its topic.

There is a significant likelihood that our findings could be largely explained by the psychosocial impacts of the Covid-19 pandemic, but it is difficult to make a meaningful attribution to it because our study did not collect any specific data to substantiate that. However, if it were the case, perhaps music students were simply more affected by Covid-19 social and physical distancing measures than other students. More so than in other programs, you could argue that, compared to those in other faculties, music students create stronger personal connections within their program from smaller class sizes, masterclasses, or ensemble and chamber music participation. It would also be naïve to not acknowledge that it is much harder to develop musicianship skills virtually rather than in-person. Frustrations with this skill development could explain the low sense of life satisfaction and sense of meaning that we reported in our results. To more accurately conclude whether the mental health and wellbeing trends are transitory or more permanent, follow up studies are required, since this thesis data was collected in the summer and fall of 2022. Though, it's also possible that the psychological harm as the result of the pandemic may last for years to come.

Since we have argued that there is a credible concern for the mental health of music students, what should we do with this information? There are a significant number of considerations that university music departments could take. For one, there is evidence that preventive health courses incorporated into curricula have been shown to have a positive impact on mental health outcomes (Zander et al., 2010). Certain universities have interdepartmental relations and outpatient clinics that offer health services with professionals who are aware of the

unique needs of music students, such as the Institute of Music Physiology and Musician's Medicine in Hannover, Germany. We could also look at examples of the mental health screening systems and within-department mental health services that some medical schools have adopted (e.g., Karp & Levine, 2018; Moutier et al., 2012). However, while there may be a belief that the result of any mental health service or intervention— no matter the type — would be positive, not appear to be absolutely true. For example, Foulkes and Andrews (2023) presented findings surrounding their reporting of the Prevalence Inflation hypothesis. In it, they use this hypothesis to explain how some large-scale mental health awareness programs might be causing people to conflate mild distress with a mental health problem, leading to a negative behavioural change that causes a genuine increase in mental health challenges. Therefore, school administrators should be conscious of both positive and negative outcomes of mental health interventions.

As mentioned previously, there is a possibility that the higher mental health challenges of this thesis' music students could be a temporary result of unequal consequences of the Covid-19 pandemic. If it is indeed the case, this could be considered a positive conclusion. What would be more troubling is if this trend is more permanent and long lasting. Universities could continue the work of this thesis with follow-up studies to better confirm this possibility. There is a strong argument to be made that the mental health of music students should be monitored by music institutions and their administrators. If the troubling severity of mental health challenges in music students appears more permanent, they should adjust policy and services in a thoughtful, well-informed, and considerate manner which could include the suggestions outlined in this conclusion section.

Do music students have some responsibility to make the best effort to take care of their mental health? Yes, of course. That is fair to ask. However, it is not unreasonable to assign some

responsibility to university music administrators. Because music students may be a unique and arguably more vulnerable group of humans. And, importantly, because this thesis provides evidence for that claim, it is incumbent upon the figures in charge of music schools they recognize their students' specific needs and challenges, and to appropriately support them throughout the duration of their studies. Music students enroll in their given programs to improve their musicianship skills, amongst many other reasons. But the price of musical and academic success should not have to be at the expense of their health.

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## Appendix A: Recruitment Materials

**Posters**

# CALL FOR PATICIPANTS

## Study on University Student Mental Health

The objective of this study is to estimate the prevalence of mental health and wellbeing problems amongst university music and non-music students. Participation in the project will involve the completion of an anonymous, short (10-15 minute) survey made up of self-reported questionnaires. The survey would be completed on the platform SurveyMonkey which is secure, encrypted, and stores data ethically on Canadian servers. No personal data is linked to you.

Participation is completely voluntary, and you are encouraged to stop participation at any point if you are beyond your level of comfort.

Participants must:
-Be between the ages of 17-26
-Be a full-time student at either a Canadian University or a Post-Secondary Music Conservatory

Tap this hyperlink or scan the QR code, to access the survey.

This is a study conducted by principal investigator and associates. For more details, please email the following address:

uOttawa

**Poster (French)**

# APPEL AUX PARTICIPANTS

## Étude sur la santé mentale des étudiants universitaires

Le Laboratoire de pédagogie du piano de l'Université d'Ottawa mène une étude sur la santé mentale des étudiants universitaires en musique par rapport aux étudiants en autres matières. La participation au projet impliquera la réalisation d'un court sondage anonyme (de 10 à 15 minutes) composé de questionnaires auto déclarés. Le sondage sera réalisé sur la plateforme SurveyMonkey, qui est sécurisée, cryptée et qui stocke les données de manière éthique sur des serveurs canadiens. Aucune donnée personnelle n'est liée à vous.

La participation est entièrement volontaire, et vous êtes encouragé à arrêter la participation à tout moment si vous êtes au-delà de votre niveau de confort.

Les participants doivent :
-Êtres âgés de 17 à 26 ans
-Être inscrits à temps plein dans une université canadienne ou un conservatoire de musique postsecondaire

Appuyez sur ce lien hypertexte ou scannez le code QR, pour accéder à l'enquête.

Il s'agit d'une étude menée par le chercheur principal, le et associés. Pour plus de détails, veuillez envoyer un courriel à l'adresse suivante :

uOttawa

**Approved social media post transcript**

Hello! The University of Ottawa Piano Pedagogy Lab is conducting a study on university music student mental health compared to non-music students, and we are looking for participants. If you are interested in participating, please see the attached poster for more details, or you may visit this hyperlink which will further explain the details of our study. Note, please do not tag people in the comment section of this post.

## Letter of Information and Consent (English)

LETTER OF INFORMATION AND CONSENT FORM

| | |
|---|---|
| Title of the Study: | University Music Student Mental Health, Compared to Non-Music Students |
| Principal Investigator: | |
| Invitation to participate: | You are invited to participate in the above-mentioned research study conducted by . We are conducting research on university student mental health compared to non-music students. We are recruiting individuals to participate in an anonymous internet survey. |
| Purpose of the study: | The objective of this study is to examine university music student mental health compared to non-music students. |
| Participation: | Participants must:<br>- Be of age 17-26<br>- Be enrolled full-time at a Canadian university, or at a post-secondary music conservatoire.<br><br>Participants will be asked to complete an anonymous survey through the platform SurveyMonkey, which keeps data secure, encrypted, and is stored ethically on servers that are in Canada. This will include self-reported questionnaires and an open-ended question. |
| Benefits: | Gathering data regarding mental health in young people is extremely valuable. If it is established that there are mental health issues amongst a significant proportion the targeted populations, it is possible that resources could be allocated to address these issues. |
| Risks: | There is minimal risk for participants in the research. It is possible that it may upset participants when the topic of mental health is brought up. Some of the questions deal with the subject of depression. If a participant is feeling psychological distress beyond their comfort level at any point during their participation, they are encouraged to discontinue any activity they believe may be attributed to this discomfort. |

It should be noted that the survey is made up of well-established questionnaires that have been used for clinical and public health purposes and are widely used by health experts.

Confidentiality and anonymity:

All participant information and data collected in this study will remain strictly anonymous and confidential and are used for research purposes only. Only , and authorized research members at their respective Laboratories will have access to this data.

Conservation of data:

The study's data will be destroyed five years after the study's completion. Data will be stored on the University of Ottawa Piano Pedagogy Research Laboratory RDC (Research Data Centre) network drive hosted on a secure uOttawa server.

Voluntary participation:

Participation in this study is strictly voluntary and participants *have the right to refuse to answer any questions.* Participants can choose to withdraw from the study at any time, but data cannot be withdrawn once it has been submitted, as it will be submitted anonymously.

By completing the survey, you are consenting to participate in this research study. We recommend that you save/print a copy of the consent form for you records.

If you need support, you can reach out to Crisis Services Canada (http://www.crisisservicescanada.ca) and connect with someone Toll-Free, 24 hours a day, 7 days a week at 1-833-456-4566.

If you have any questions or require more information about the study itself, you may contact the primary investigator.

If you have any questions regarding the ethical conduct of this study, you may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON K1N 6N5, by phone at 613-562-5387 or by email at ethics@uottawa.ca.

## Letter of Information and Consent (French)

FORMULAIRE DE LETTRE DE RENSEIGNEMENTS ET DE CONSENTEMENT

| | |
|---|---|
| Titre de l'étude : | Santé mentale des étudiants universitaires en musique, comparativement aux étudiants en autres matières |
| Chercheur principal : | |
| Invitation à participer : | Vous êtes invités à participer à l'étude de recherche susmentionnée menée par le . Nous menons des recherches sur la santé mentale des étudiants universitaires par rapport aux étudiants en autres matières. Nous recrutons des personnes pour participer à un sondage anonyme sur Internet. |
| Objet de l'étude : | L'objectif de cette étude est d'examiner la santé mentale des étudiants universitaires en musique par rapport aux étudiants en autres matières. |
| Participation : | Les participants doivent :<br>- Êtres âgés de 17 à 26 ans<br>- Être inscrits à temps plein dans une université canadienne ou dans un conservatoire de musique postsecondaire.<br><br>Les participants seront invités à répondre à un sondage anonyme par l'entremise de la plateforme SurveyMonkey, qui assure la sécurité des données, les crypte et qui est stockée de façon éthique sur des serveurs qui se trouvent au Canada. Cela comprendra des questionnaires autodéclarés et une question ouverte. |
| Avantages : | La collecte de données sur la santé mentale chez les jeunes est extrêmement précieuse. S'il est établi qu'il y a des problèmes de santé mentale parmi une proportion importante des populations ciblées, il est possible que des ressources soient allouées pour résoudre ces problèmes. |
| Risques : | Le risque est minime pour les participants à la recherche. Il est possible que cela dérange les participants lorsque le sujet de la santé mentale est abordé. Certaines des questions portent sur la dépression et le suicide. Si un participant ressent de la détresse psychologique au-delà |

de son niveau de confort à tout moment au cours de sa participation, il est encouragé à cesser toute activité qu'il croit être attribuée à cet inconfort.

Il convient de noter que l'enquête est composée de questionnaires bien établis qui ont été utilisés à des fins cliniques et de santé publique et qui sont largement utilisés par les experts de la santé.

| | |
|---|---|
| Confidentialité et anonymat : | Tous les renseignements sur les participants et les données recueillis dans le cadre de cette étude demeureront strictement anonymes et confidentiels et ne seront utilisés qu'à des fins de recherche. Seuls le Dr et les membres de recherche autorisés de leurs laboratoires respectifs auront accès à ces données. |
| Conservation des données : | Les données de l'étude seront détruites cinq ans après la fin de l'étude. Les données seront stockées sur le lecteur réseau rdc (Centre de données de recherche) du Laboratoire de recherche en pédagogie du piano de l'Université d'Ottawa hébergé sur un serveur sécurisé de l'Université d'Ottawa. |
| Participation volontaire : | La participation à cette étude est strictement volontaire et *les participants ont le droit de refuser de répondre à toute question.* Les participants peuvent choisir de se retirer de l'étude à tout moment, mais les données ne peuvent pas être retirées une fois qu'elles ont été soumises, car elles sont soumises de manière anonyme. |

En répondant au sondage, vous consentez à participer à cette étude de recherche. Nous vous recommandons d'enregistrer ou d'imprimer une copie du formulaire de consentement pour vos dossiers.

Si vous avez besoin de soutien, vous pouvez communiquer avec Les Services de crise du Canada (http://www.crisisservicescanada.ca) et communiquer avec quelqu'un sans frais, 24 heures sur 24, 7 jours sur 7, au 1-833-456-4566.

Si vous avez des questions ou si vous avez besoin de plus amples renseignements sur l'étude elle-même, vous pouvez communiquer avec le chercheur principal.

Si vous avez des questions concernant la conduite éthique de cette étude, vous pouvez communiquer avec l'agent du protocole en éthique de la recherche, Université d'Ottawa, Pavillon Tabaret, 550, rue Cumberland, pièce 154, Ottawa (Ontario) K1N 6N5, par téléphone au 613-562-5387 ou par courriel à ethics@uottawa.ca.

## Email Transcript with Official uOttawa Letterhead

uOttawa

Université d'Ottawa
Faculté des arts
École de musique

University of Ottawa
Faculty of Arts
School of Music

Dear potential participant,

My name is , and I am contacting you on behalf of the Piano Pedagogy Research Laboratory at the University of Ottawa.

The Piano Pedagogy Lab is conducting a study examining university music student mental health compared to non-music students. Participation in the project would involve the completion of an *anonymous,* short (10-15 minute) survey made up of self-reported questionnaires. The survey would be completed on the platform SurveyMonkey which is secure, encrypted, and stores data ethically on Canadian servers. No personal data is linked to you.

We are looking for participants who are between 17 and 26 years old, who are enrolled full-time at a Canadian university or post-secondary music conservatory. Participation is *completely* voluntary, and you are encouraged to stop participation at any point if you are beyond you level of comfort. Please see the attached letter of information and poster to get more details about this project. If you wish to participate, the survey can be access through this hyperlink. The survey is offered both in French and English.

Please see the attached letter of information and consent, and poster to get more details about this project. For more information and to find out how you can participate, please feel free to contact me at or the study's principal investigator, at

613-562-5733
613-562-5140

50 Université / University (103)
Ottawa ON K1N 6N5 Canada
www.uOttawa.ca

## Email Transcript with Official uOttawa Letterhead (French)

uOttawa

Université d'Ottawa
Faculté des arts
École de musique

University of Ottawa
Faculty of Arts
School of Music

Cher participant potentiel,

Je m'appelle et je communique avec vous au nom du Laboratoire de recherche en pédagogie du piano de l'Université d'Ottawa.

Le Laboratoire de pédagogie du piano mène une étude sur la santé mentale des étudiants universitaires en musique par rapport aux étudiants non musicaux. La participation au projet impliquerait la réalisation d'un court sondage anonyme (de 10 à 15 minutes) composé de questionnaires autodéclarés. Le sondage sera réalisé sur la plateforme SurveyMonkey, qui est sécurisée, cryptée et qui stocke les données de manière éthique sur des serveurs canadiens. Aucune donnée personnelle n'est liée à vous.

Nous recherchons des participants âgés de 17 à 26 ans qui sont inscrits à temps plein dans une université canadienne ou un conservatoire de musique postsecondaire. La participation est *entièrement* volontaire, et vous êtes encouragé à arrêter la participation à tout moment si vous êtes au-delà de votre niveau de confort. Veuillez consulter la lettre d'information et l'affiche ci-jointes pour obtenir plus de détails sur ce projet. Si vous souhaitez participer, le sondage peut être accédé via cet hyperlien. Le sondage est offert en français et en anglais.

Veuillez consulter la lettre d'information et de consentement ci-jointe, ainsi que l'affiche pour obtenir plus de détails sur ce projet. Pour plus d'informations et pour savoir comment vous pouvez participer, n'hésitez pas à me contacter à
ou le chercheur principal de l'étude, le
a

613-562-5733
613-562-5140

50 Université / University (103)
Ottawa ON K1N 6N5 Canada
www.uOttawa.ca

## Appendix B: Questionnaires

DASS-21 Questionnaires

(S. H. Lovibond & Lovibond, 1995)

# DASS21

*Name:* *Date:*

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

*The rating scale is as follows:*

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

| | | | | | |
|---|---|---|---|---|---|
| 1 | I found it hard to wind down | 0 | 1 | 2 | 3 |
| 2 | I was aware of dryness of my mouth | 0 | 1 | 2 | 3 |
| 3 | I couldn't seem to experience any positive feeling at all | 0 | 1 | 2 | 3 |
| 4 | I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion) | 0 | 1 | 2 | 3 |
| 5 | I found it difficult to work up the initiative to do things | 0 | 1 | 2 | 3 |
| 6 | I tended to over-react to situations | 0 | 1 | 2 | 3 |
| 7 | I experienced trembling (eg, in the hands) | 0 | 1 | 2 | 3 |
| 8 | I felt that I was using a lot of nervous energy | 0 | 1 | 2 | 3 |
| 9 | I was worried about situations in which I might panic and make a fool of myself | 0 | 1 | 2 | 3 |
| 10 | I felt that I had nothing to look forward to | 0 | 1 | 2 | 3 |
| 11 | I found myself getting agitated | 0 | 1 | 2 | 3 |
| 12 | I found it difficult to relax | 0 | 1 | 2 | 3 |
| 13 | I felt down-hearted and blue | 0 | 1 | 2 | 3 |
| 14 | I was intolerant of anything that kept me from getting on with what I was doing | 0 | 1 | 2 | 3 |
| 15 | I felt I was close to panic | 0 | 1 | 2 | 3 |
| 16 | I was unable to become enthusiastic about anything | 0 | 1 | 2 | 3 |
| 17 | I felt I wasn't worth much as a person | 0 | 1 | 2 | 3 |
| 18 | I felt that I was rather touchy | 0 | 1 | 2 | 3 |
| 19 | I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat) | 0 | 1 | 2 | 3 |
| 20 | I felt scared without any good reason | 0 | 1 | 2 | 3 |
| 21 | I felt that life was meaningless | 0 | 1 | 2 | 3 |

DASS-21 (French Translation)

(Nahaboo, 2015)
Translation by Donald Martin (uOttawa)

# EDAS21

*Nom:* *Date:*

Veuillez lire chaque énoncé et indiquez lequel correspond le mieux à votre expérience au cours de *la dernière semaine*. Indiquez votre choix en encerclant le chiffre qui y correspond (soit 0,1,2 ou 3). Il n'y a pas de bonne ou de mauvaise réponse. Ne vous attardez pas trop longuement aux énoncés.

*L'échelle de notation est la suivante :*

0 ne s'applique pas du tout à moi
1 s'applique un peu à moi, ou une partie du temps
2 s'applique beaucoup à moi, ou une bonne partie du temps
3 s'applique entièrement à moi, ou la grande majorité du temps

| | | | | | |
|---|---|---|---|---|---|
| 1 | J'ai trouvé difficile de décompresser. | | | | |
| 2 | J'ai été conscient(e) d'avoir la bouche sèche. | 0 | 1 | 2 | 3 |
| 3 | J'ai eu l'impression de ne pas pouvoir ressentir d'émotion positive. | 0 | 1 | 2 | 3 |
| 4 | J'ai eu de la difficulté à respirer (par exemple, respirations excessivement rapides, essoufflement sans effort physique). | 0 | 1 | 2 | 3 |
| 5 | J'ai eu de la difficulté à initier de nouvelles activités. | 0 | 1 | 2 | 3 |
| 6 | J'ai eu tendance à réagir de façon exagérée. | 0 | 1 | 2 | 3 |
| 7 | J'ai eu des tremblements (par exemple, des mains). | 0 | 1 | 2 | 3 |
| 8 | J'ai eu l'impression de dépenser beaucoup d'énergie nerveuse. | 0 | 1 | 2 | 3 |
| 9 | Je me suis inquiété(e) en pensant à des situations où je pourrais paniquer et faire de moi un(e) idiot(e). | 0 | 1 | 2 | 3 |
| 10 | J'ai eu le sentiment de ne rien envisager avec plaisir. | 0 | 1 | 2 | 3 |
| 11 | Je me suis aperçu(e) que je devenais agité(e). | 0 | 1 | 2 | 3 |
| 12 | J'ai eu de la difficulté à me détendre. | 0 | 1 | 2 | 3 |
| 13 | Je me suis senti(e) abattu(e) et triste. | 0 | 1 | 2 | 3 |
| 14 | J'ai été intolérant(e) à tout ce qui m'empêchait de faire ce que j'avais à faire. | 0 | 1 | 2 | 3 |
| 15 | J'ai eu le sentiment d'être presque pris(e) de panique. | 0 | 1 | 2 | 3 |
| 16 | J'ai été incapable de me sentir enthousiaste au sujet de quoi que ce soit. | 0 | 1 | 2 | 3 |
| 17 | J'ai eu le sentiment de ne pas valoir grand chose comme personne. | 0 | 1 | 2 | 3 |
| 18 | J'ai eu l'impression d'être assez susceptible. | 0 | 1 | 2 | 3 |
| 19 | J'ai été conscient(e) des palpitations de mon coeur en l'absence d'effort physique (sensation d'augmentation de mon rythme cardiaque ou l'impression que mon cœur venait de sauter). | 0 | 1 | 2 | 3 |
| 20 | J'ai eu peur sans bonne raison. | 0 | 1 | 2 | 3 |
| 21 | J'ai eu l'impression que la vie n'avait pas de sens. | 0 | 1 | 2 | 3 |

**Canadian Campus Wellbeing Survey**

(Weatherson et al., 2019)

CCWS 2021-2022 English:

https://uottawa-
my.sharepoint.com/personal/ssloa087_uottawa_ca/_layouts/15/guestaccess.aspx?share=EU_Pf1s
WDfxOsii0mvmH4GMBvOVF15OCRuwkxxR3GoKcDA&e=u1qihA

CCWS 2021-2022 French

https://uottawa-
my.sharepoint.com/personal/ssloa087_uottawa_ca/_layouts/15/guestaccess.aspx?share=EXG2W
DWlQINLryDFRzKg_WoB7kyLLsSti5dLT1W9dIqreg&e=YfblMR

**Mental wellbeing Scales**

Satisfaction With Life Scale

| Contents | Below are five statements with which you may agree or disagree. Using the 1-7 scale below, pick the number which corresponds with the answer that is most true of you. Please be open and honest in your responding.<br>1 = strongly disagree, 7 = strongly agree<br><br>In most ways, my life is close to my ideal.<br>The conditions of my life are excellent.<br>I am satisfied with my life.<br>So far I have gotten the important things I want in life.<br>If I could live my life over, I would change almost nothing. |
|---|---|
| Source | (Diener et al., 1985) |

Satisfaction With Life Scale / Échelle de Satisfaction de Vie (French)

| Contents | Nous présentons ci-dessous cinq énoncés avec lesquels vous pouvez être en accord ou en désaccord. À l'aide de l'échelle de 1 à 7 ci-dessous, indiquez votre degré d'accord ou de désaccord avec chacun des énoncés en encerclant le chiffre approprié à la droite de énoncés. Nous vous prions d'être ouvert et honnête dans vos réponses. L'échelle de sept points s'interprète comme suit :<br><br>1. En général, ma vie correspond de près à mes idéaux.<br>2. Mes conditions de vie sont excellentes.<br>3. Je suis satisfait(e) de ma vie.<br>4. Jusqu'à maintenant, j'ai obtenu les choses importantes que je voulais de la vie.<br>5. Si je pouvais recommencer ma vie, je n'y changerais presque rien. |
|---|---|
| Ratings | 1 – Fortement en désaccord<br>2 – En désaccord<br>3 – Légèrement en désaccord<br>4 – Ni en désaccord ni en accord<br>5 – Légèrement en accord<br>6 – En accord<br>7 – Fortement en accord |
| Source | (Blais et al., 1989) |

Positive Affect Scale

| Contents | During the past YEAR, how often did you feel:<br>1=rarely, 7=almost always<br><br>Happy<br>Joyful<br>Pleased<br>Enjoyment/fun |
|---|---|
| Source | (Diener & Emmons, 1984) |

Meaning Experience (Brief version)

| Contents | During the past YEAR, to what degree did you feel that YOUR ACTIVITIES AND EXPERIENCES were:<br>1 = not at all, 7 = very much<br><br>Meaningful<br>Valuable<br>Precious<br>Full of significance |
|---|---|
| Source | (Huta & Ryan, 2010) |

Elevating Experience (Brief Version)

| Contents | During the past YEAR, please indicate how much you felt each of the following states.<br>1 = not at all, 7 = extremely<br><br>Inspired<br>In awe<br>Morally elevated<br>Deeply appreciating<br>Part of something greater than myself |
|---|---|
| Source | (Huta & Ryan, 2010) |

## Musculoskeletal Pain Questionnaire

(Sherbourne, 1992)

Exhibit 9.6 The Medical Outcomes Study Pain Measures

The following questions are about the pain or pains you experienced in the *past 4 weeks*. If you had more than one pain, answer the questions by describing your feelings of pain in general.

1. How much *bodily* pain have you generally had during the *past 4 weeks?* (Circle One)
   - None . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .1
   - Very mild . . . . . . . . . . . . . . . . . . . . . . . . . . . .2
   - Mild . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .3
   - Moderate . . . . . . . . . . . . . . . . . . . . . . . . . . . .4
   - Severe . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .5
   - Very severe . . . . . . . . . . . . . . . . . . . . . . . . . .6
2. During the *past 4 weeks,* how often have you had pain or discomfort? (Circle One)
   - Once or twice . . . . . . . . . . . . . . . . . . . . . . . . .1
   - A few times . . . . . . . . . . . . . . . . . . . . . . . . . .2
   - Fairly often . . . . . . . . . . . . . . . . . . . . . . . . . .3
   - Very often . . . . . . . . . . . . . . . . . . . . . . . . . . .4
   - Every day or almost every day . . . . . . . . . . . .5
3. When you had pain during the *past 4 weeks,* how long did it usually last? (Circle One)
   - A few minutes . . . . . . . . . . . . . . . . . . . . . . . .1
   - Several minutes to an hour . . . . . . . . . . . . . . .2
   - Several hours . . . . . . . . . . . . . . . . . . . . . . . . .3
   - A day or two . . . . . . . . . . . . . . . . . . . . . . . . .4
   - More than two days . . . . . . . . . . . . . . . . . . .5
4. During the *past 4 weeks,* how much did pain interfere with the following things?

(Circle One Number on Each Line)

| | *Not At All* | *A Little Bit* | *Moderately* | *Quite A Bit* | *Extremely* |
|---|---|---|---|---|---|
| a. Your mood . . . . . . . . . . . . . . . . . . . . . . . . | 1 | 2 | 3 | 4 | 5 |
| b. Your ability to walk or move about . . . . . . . . . . . . . . . . . . . . | 1 | 2 | 3 | 4 | 5 |
| c. Your sleep . . . . . . . . . . . . . . . . . . . . . . . . | 1 | 2 | 3 | 4 | 5 |
| d. Your normal work (including both work outside the home and housework) . . . . . . . . . . . . . . . . . . . . | 1 | 2 | 3 | 4 | 5 |
| e. Your recreational activities . . . . . . . . . . . . . . . . . . . . . . . . . . | 1 | 2 | 3 | 4 | 5 |
| f. Your enjoyment of life . . . . . . . . . . . . . . . | 1 | 2 | 3 | 4 | 5 |

5. During the *past 4 weeks,* how many days did pain interfere with the things you usually do? Your answer may range from 0 to 28 days.) WRITE IN # OF DAYS: ___________
6. Please circle the one number that best describes your pain on the *average* over the *past 4 weeks*.

No Pain — Pain As Bad As You Can Imagine

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

7. Please circle the one number that best describes your pain *at its worst* over the *past 4 weeks*.

No Pain — Pain As Bad As You Can Imagine

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

From Stewart AL, Ware JE Jr. Measuring functioning and well-being: the Medical Outcomes Study approach. Durham, North Carolina: Duke University Press, 1992:374,378–379. With permission.

**French Translation of Musculoskeletal Pain Questionnaire**

By Gilles Comeau

1. Combien de douleur corporelle avez-vous généralement eu au cours des 4 dernières semaines?

Aucune
Très peu
Peu
Modérée
Sévère
Très sévère

2. Au cours des 4 dernières semaines, à quelle fréquence avez-vous eu de la douleur ou de l'inconfort?

Une ou deux fois
À quelques reprises
Assez souvent
Très souvent
Tous les jours ou presque tous les jours

3. Lorsque vous avez eu de la douleur au cours des 4 dernières semaines, combien de temps cela a-t-il généralement duré?

Quelques minutes
Plusieurs minutes à une heure
Plusieurs heures
Un jour ou deux
Plus de deux jours

4. Au cours des 4 dernières semaines, dans quelle mesure la douleur a-t-elle interféré avec les choses suivantes?

1 = pas du tout
2 = un peu
3 = modérément
4 = pas mal
5 = extrêmement

a) Votre humeur
b) Votre capacité à marcher ou à vous déplacer
c) Votre sommeil
d) Votre travail normal (y compris le travail à l'extérieur de la maison et les travaux ménagers)
e) Vos activités récréatives
f) Votre qualité de vie

## Demographic Questions

English demographic questions

Demographic questions:

- Are you currently enrolled as a full-time student at a Canadian university/postsecondary institution?
  - Yes
    - What institution?
      - University of Ottawa
      - Other (Insert institution name_______)
  - No (if not, sadly, you don't meet the eligibility criteria of this study)
- What is your age?
  - Insert here _______
- Have you been treated, or are currently being treated for a mental illness?
  - Yes
  - No
- What type of program are you in?
  - Undergraduate
  - Masters
  - Doctoral
  - Diploma
  - Other (insert type here _______)
- What program are you in?
  - Music
    - If in music….
      - What instrument groups does your primary instrument belong to?
        - Insert here ______
      - How many years had you been taking private (one-on-one) lessons ***before*** attending a post-secondary institution?
      - Type of music program are you in?
        - Education
        - Performance
        - Composition
        - Theory
        - Other (insert name here_____)
      - Open-ended question: ""would you like to share anything else with the researchers regarding mental health as a music major?"
  - Other (insert name here)
    - Open-ended question: "would you like to share anything else with the researchers regarding mental health as a university student?"
-

French demographic questions

Questions démographiques :

- Êtes-vous actuellement inscrit à temps plein dans une université ou un établissement d'enseignement postsecondaire canadien?
  - Oui
    - À quelle institution?
      - Université d'Ottawa
      - Autre (insérer le nom de l'institution _______)
  - Non (sinon, malheureusement, vous ne répondez pas aux critères d'admissibilité de cette étude)
- Quel est votre âge?
  - Insérer ici _____-
- Avez-vous été traité ou êtes-vous actuellement traité pour une maladie mentale?
  - Oui
  - Non
- À quel type de programme participez-vous?
  - Premier cycle
  - Maîtrise
  - Doctorat
  - Diplôme
  - Autre (insérer le type ici _______)
- Dans quel programme participez-vous?
  - Musique
    - Si dans la musique....
      - À quels groupes d'instruments appartient votre instrument principal?
        - Insérer ici ______
      - Depuis combien d'années avez-vous suivi des leçons privées (en tête-à-tête) *avant* de fréquenter un établissement d'enseignement postsecondaire?
      - Dans quel type de programme de musique vous trouvez-vous?
        - Éducation
        - Performance
        - Composition de l'œuvre
        - Théorie
        - Autre (insérer le nom ici _____)
      - Question ouverte : « Aimeriez-vous partager autre chose avec les chercheurs au sujet de la santé mentale en tant qu'étudiant en musique? »
  - Autre (insérer le nom ici)
    - Question ouverte : « Aimeriez-vous partager autre chose avec les chercheurs au sujet de la santé mentale en tant qu'étudiant universitaire? »