# EXPLORING CANADIAN UNDERGRADUATE STUDENTS' MENTAL HEALTH LITERACY AND ITS INFLUENCE ON PSYCHOLOGICAL DISTRESS AND HELP-SEEKING BEHAVIOUR

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## ABSTRACT

Despite having mental health literacy (MHL), the prevalence of psychological distress (PD) among university students continues to remain an area of concern. Understanding the relationship between MHL attributes and PD and Help-Seeking Behaviour (HSB) can offer further insight into what knowledge is important for undergraduate students to possess to have a positive impact on their mental health. While many studies have reported a relationship between MHL and help-seeking behaviour, there were mixed findings between MHL and PD. Thus, the current study aimed to explore the extent to which Canadian undergraduate students demonstrate MHL, and its influence on their levels of PD and HSB. A total of 335 participants completed an online survey. Over half of the students demonstrated heightened symptoms of anxiety, depression, and stress. The results indicated that Canadian undergraduate students demonstrate a relatively high level of MHL. Moreover, the findings suggested that some attributes of MHL have a significant relationship with PD and HSB, while others do not. Further research is warranted to better understand the influence of MHL on PD and HSB.

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| | |
|---|---|
| MHL | Mental Health Literacy |
| MHLS | Mental Health Literacy Scale |
| PD | Psychological Distress |
| DASS | Depression Anxiety Stress Scale |
| HSB | Help-Seeking Behaviour |

## Chapter 1: Introduction

Mental health problems among young adults enrolled in post-secondary education is a serious but most often understudied issue (Eskin et al., 2016). Mental health problems, specifically, psychological distress (PD), refers to "non-specific symptoms of stress, anxiety, and depression" (Viertiö et al., 2021, p. 2). Furthermore, PD may have many different and often idiosyncratic manifestations. For instance, individuals may experience feelings including but not limited to sadness, anxiousness, fatigue, fear, nervousness, and moodiness. In addition, it can negatively impact one's ability to function, and create unpleasant feelings, thoughts, emotions, and behaviours that make it more difficult to cope. University students worldwide are susceptible to PD (Eskin et al., 2016; Logan & Burns, 2021). The numerous stressors university students encounter may influence their levels of mental distress. The determinants of stress, include performance and academic pressures, imbalances among school and other areas of life, employment and financial issues, interpersonal stressors and worries about future prospects (Deasy et al., 2014; Logan & Burns, 2021). High levels of PD among university students have been reported in Ireland, China, Norway, Australia, United Kingdom, United States and Africa (Deasy et al., 2014; Eskin et al., 2016; Knapstad et al., 2021; Tang et al., 2018). Thus, it is evident that mental distress is a global issue among the undergraduate population.

While PD is prevalent worldwide, it is also reported that undergraduate students in Canada experience significant mental health problems. In one study, undergraduate students reported having higher rates of PD compared to the general public population (Adlaf et al., 2001). More recent research reported that 46% of Canadian post-secondary students felt so depressed at least once in the last year that they found it difficult to function, 65% experienced overwhelming anxiety, and 30% experienced more than average stress (American College Health

Association, 2016). Given that over 2.1 million Canadian students were enrolled in post-secondary education in the 2017/18 school year (Government of Canada, 2021), a multitude of people could potentially be at risk of developing some form of mental health issue.

Mental health literacy (MHL) is referred to as one's knowledge of mental health, recognizing mental disorders and the available treatments as well as demonstrating help-seeking behaviour (HSB) (Kutcher et al., 2016). Mental health literacy has been found to have an influence on one's level of PD in some studies (Lam, 2014; Moss, 2022; Pehlivan et al., 2021; Zhang et al., 2023) but not in others (Argao et al., 2021; Gorczynski et al., 2017; O'Connor & Casey, 2015). Thus, more research is warranted to further explore the influence of MHL on PD. While there is a lack of clarity among MHL and mental distress, it is, however, commonly reported that those who have higher levels of MHL are more likely to demonstrate HSB (Gorcyznski et al., 2017; Kim et al., 2020; Moss, 2022).

While some studies in Australia, China and Turkey have found that students' MHL and PD may have some degree of a relationship, there has been little research conducted from a Canadian perspective. Furthermore, there has been a scarcity of research conducted regarding the influence of MHL and actual HSB. One Canadian study that specifically looked at undergraduate students reported that they demonstrated relatively high MHL and help-seeking (Gallagher & Watt, 2019). However, this study compared first year psychology students and the public population. Thus, their results may not be applicable to all undergraduate students, as those enrolled in psychology courses may have more knowledge about mental health. Moreover, they measured students' perceived help-seeking, which was relatively high, however, their actual help-seeking was not measured. While the findings from this study are important to consider, additional research is needed to better understand the degrees of MHL of Canadian

undergraduate students and if their MHL influences their levels of PD and HSB. Thus, the current study examined the following research questions: (1) To what degree do Canadian undergraduate students demonstrate mental health literacy? (2) Do students who are identified as having high levels of mental health literacy demonstrate lower levels of psychological distress? and (3) Are students who are identified as having high levels of mental health literacy more likely to seek professional support?

## Chapter 2: Literature Review

To gain a better understanding of the relationship between mental health literacy, psychological distress, and help-seeking behaviours, a review of the relevant literature was conducted. The review is grounded in theories of development and career.

### Erikson's Psychosocial Theory of Development

The most crucial developmental period for individuals to experience symptoms of mental health issues occurs during adolescence and emerging adulthood; a time when individuals often enroll in undergraduate studies (Burris et al., 2009; Granieri et al., 2021). During these developmental periods, individuals are facing the demands of tasks such as discovering oneself and their future, alongside forming intimate and meaningful relationships. Erikson's Psychosocial Theory of Development provides a useful framework to help better understand the stages of development that university students encounter that may influence their mental health. Erikson introduced eight stages of development that individuals encounter during their lifetime. The eight stages include basic trust versus basic mistrust; autonomy versus shame and doubt; initiative versus guilt; industry versus inferiority; identity versus role confusion; intimacy versus isolation; generativity versus stagnation; and ego integrity versus despair (Erikson, 1963). Within each stage, Erikson identifies potential crises that individuals may confront as they proceed through life that are essential to their psychological and social development (Erikson, 1963). Considering that the present paper proposes to examine Canadian undergraduate students, who are typically adolescents and adults facing identity crises and isolation, stages five, identity versus role confusion, and six, intimacy versus isolation, were explored in further detail.

#### Identity versus Role Confusion

This stage of Erikson's psychosocial development theory is considered the adolescence period. During this time, adolescents are searching for a sense of identity and discovering who they are as a person, which Erikson referred to as 'ego identity' (Erikson, 1963). Furthermore, Erikson claims that adolescents are commonly known for comparing themselves with others and therefore, they are primarily concerned with how others view them as well as how they feel about themselves (Erikson, 1963). If individuals are struggling with their personal identity, otherwise known as role confusion, they will typically experience the inability to decide upon an occupational identity, thus, disrupting their life in some manner (Erikson, 1963). This concept is commonly seen among university students, as they are often concerned and overwhelmed about choosing a career path to pursue for the remainder of their lives. Porfeli et al., (2011) and Aleni Sestito et al., (2015) discussed how vocational and overall identity entail life plans and includes commitments to pursue and achieve them. Therefore, they are among the most central aspect of the developmental tasks of late adolescent and adults. Moreover, vocational identity is perceived as a domain-specific aspect of one's overall identity which provide individuals with a framework to regulate both their academic and career objectives (Aleni Sestito et al., 2015; Hirschi, 2012). Individuals who struggle with PD have reported experiencing an identity crisis which is one of the stressors that Vitasari et al., (2010) claimed was a source of anxiety among university students. Furthermore, Erikson (1963) posits that individuals in this stage are also searching for social values that direct their identity and may encounter the problems of ideology versus aristocracy. This ultimately leads individuals to believe that those holding higher titles and those who are in higher societal classes are seen as more successful in many domains of life. It is, therefore, imperative that adolescents understand that success is not measured or determined by the title or status individuals carry (Erikson, 1963). Taken together, it is possible that individuals

who are experiencing role confusion may also experience some form of PD. Moreover, university students specifically are more likely to experience role confusion given that they may not have yet successfully navigated the developmental tasks associated with identity.

**Intimacy versus Isolation**

The following stage in Erikson's stages of development is the 'intimacy versus isolation' stage, which occurs during adulthood (Erikson, 1963). According to Erikson, this is the stage where individuals are emerging from their search for and the insistence on identity (Erikson, 1963). If an individual is willing to fuse their identity within mutual intimacy, such as sharing it with those who are shown to be complementary in work, sexuality, and friendship, then a sense of intimacy will form (Erikson, 1963, 1982). On the opposing end, however, isolation can result which is considered a danger of this stage (Erikson, 1963, 1982). Isolation is referred to as "a fear of remaining separate and unrecognized" (Erikson, 1982, p. 74). While isolation can be seen as necessary in developing intimacy, specifically in moving towards generativity (Erikson's seventh stage), it can also act as a potential core pathology of early adulthood (Erikson, 1982). Furthermore, individuals may experience regression and hostility of reliving the identity of conflict (Erikson, 1982). Thus, experiencing excessive isolation can do more harm than good.

This stage is also recognized among university students as many are entering adulthood. Granieri et al. (2021) investigated PD among university students and discussed how emerging adulthood is a developmental period where many transitions and challenging tasks arise. For instance, making choices regarding career, forming intimate relationships, and preparing for later adulthood may all potentially result in increased mental health issues (Granieri et al., 2021), thus, increasing the need for help-seeking. Considering that emerging adulthood typically coincides with years of higher education, additional tasks may be required of young adults such as

performance demands, changes in living conditions, and dealing with new social and educational context (Granieri et al., 2021). Furthermore, the onset of PD can disrupt the completion of normal development and educational tasks that several emerging adults encounter (Burris et al., 2009). As a result, this developmental period along with higher education, can result in heightened levels of PD for this population.

While Erikson's Psychosocial Theory of Development provides a useful framework in better understanding the developmental experiences of undergraduate university students, it is also important to note that it might be possible for students to experience an identity crisis outside of stage five. For instance, Erikson states that stage five is for adolescents experiencing identity crises, however, other researchers argue that individuals can experience crises during any of the eight developmental stages (Kroger, 2018; Maree, 2021). Given this critique, it might be important to consider that regardless of university students' age, they could potentially still experience an identity crisis later in life during older adulthood, and similarly, they could potentially experience some form of isolation earlier in their life during adolescence. Taken together, Erikson's theory provides a great foundation for understanding the developmental milestones and crises that can either positively or negatively influence the experiences of university students.

## Social Learning Theory

The current research is also grounded in a second theory, known as the Social Learning Theory (SLT) proposed by Albert Bandura. This theory suggests that novel patterns of behaviour may be acquired from direct experiences that individuals encounter (Bandura, 1971). Moreover, SLT assumes that modeling also produces learning through informative functions, and that

observers typically acquire symbolic representations of the modeled activities as opposed to specific stimulus-response associations (Bandura, 1971).

**Learning by Direct Experience**

The process of learning through direct experience is guided by both positive and negative consequences. Individuals are continuously encountering different situations throughout their life in which they must respond to in one way or another (Bandura, 1971). In some moments, these responses are rewarding and successful whereas in other moments, the responses are unsuccessful and unappealing (Bandura, 1971). When individuals encounter rewarding responses, they are more likely to be positively reinforced to perform similar behaviour in the future, and thus they are more internally motivated. In contrast, any response that led to an undesirable outcome will be negatively reinforced, and individuals will be less likely to repeat that action (Bandura, 1971). This is what Bandura would refer to as the process of differential reinforcement where successful behaviour continues to be selected and ineffective behaviour is typically abandoned (Bandura, 1971). Thus, learning by direct experience, has a major influence on the behaviours that individuals choose to elicit in the future.

**Learning Through Modeling**

Learning through direct experience, however, is not the only way for individuals to acquire new behaviours. Instead of directly experiencing positive and negative consequences as a result of one's own actions, individuals might observe such consequences from others who perform the behaviour (Bandura, 1971). For instance, if an individual observes that another's behaviour resulted in a positive and desirable outcome, then they might be more motivated by that success to perform similar behaviours. Thus, individuals do not necessarily need to directly experience certain behaviours to acquire them.

Bandura's theory might help in explaining why some university students demonstrate HSB and while others do not. For instance, some students might have had a previous negative experience when they sought help, and thus, they may become less likely to perform that behaviour again. In contrast, those who have had a positive experience when reaching out for help, might be more likely to seek help again in the future. Similarly, students who have witnessed others' reaching out for help, might base their decision on the experiences and outcomes of others.

## Social Learning Approach to Career Decision Making: Krumboltz's Theory

The social learning approach to career decision making was proposed by career theorist, John Krumboltz. Using Bandura's original social learning theory as a basis, he aimed to address why individuals pursue specific educational programs or occupations, why they might change their educational programs or occupations at different stages in their lives, and why they might convey different preferences for different occupational activities throughout their lives (Mitchell & Krumboltz, 1984). Krumboltz's theory explores different factors such as genetic predisposition, environmental conditions and events, learnings experiences, and cognitive, emotional and performance responses and skills, that influence individuals' career decision-making processes (Mitchell & Krumboltz, 1984). Furthermore, he suggests that each of the aforementioned factors play a role in career decisions, however, the altering combinations of interactions of these factors generate a variety of career choices that different individuals decide upon (Mitchell & Krumboltz, 1984).

### Genetic Predisposition

Each individual has their own unique genetic endowment that can influence the choices they make in life. According to Mitchell & Krumboltz (1984), some of the inherited qualities

that individuals possess can influence their educational and occupational preferences and skills. For instance, this may include an individual's race, sex, physical appearance, and characteristics (Mitchell & Krumboltz, 1984).

**Environmental Conditions and Events**

Similar to how everyone carries their own genetic predispositions, each individual experiences different environmental conditions and events that ultimately can influence their career decision making process. Some examples of environmental conditions and events include social, cultural, political, and economic forces, in addition to natural forces (e.g., natural disasters and location of natural resources) (Mitchell & Krumboltz, 1984). Such factors are typically beyond the control of an individual, and their influence could be planned or unplanned. For instance, some environmental conditions that an individual's career decision making process may depend on include the number and nature of job opportunities, training opportunities, social policies and procedures for selecting trainees and workers, rate of return for various occupations, labor laws and union rules, physical events, availability of and demand for natural resources, technological developments, changes in social organization, family training experience and resources, educational system, and neighborhood and community influences (Mitchell & Krumboltz, 1984). Thus, environmental conditions and events can greatly influence the opportunities made available to individuals.

**Learning Experiences**

Individuals' past learning experiences may also play a role in the selection of their careers. Krumboltz defines two different categories of learning to demonstrate the influences that individuals' learning experiences may have on their career decision making process (Mitchell & Krumboltz, 1984).

### *Instrumental Learning Experience*

In instrumental learning, the individual acts on their environment to generate a specific consequence (Mitchell & Krumboltz, 1984). The experiences are made of antecedents, behavioural responses, and consequences (Mitchell & Krumbotz, 1984). Antecedents to instrumental learning experiences include genetic endowments, special abilities, and environmental conditions and events, as well as the characteristics of the specific task or problem (Mitchell & Krumboltz, 1984). The behavioural response includes cognitive and emotional responses, in addition to the observable behaviours (Mitchell & Krumboltz, 1984). Lastly, the consequences entail the immediate and delayed effects that are generated by the behaviour.

### *Associative Learning Experience*

In this type of learning, individuals identify a connection with stimuli in the environment (Mitchell & Krumboltz, 1984). In addition, learning by observation or through modelling would also be considered an example of associative learning (Mitchell & Krumboltz, 1984). Through observation, reading, and hearing about occupational members, individuals might form occupational stereotypes which could potentially last a lifetime and have a notable effect on career decision making (Mitchell & Krumboltz, 1984). Thus, some stimuli in the environment might be seen as having positive or negative emotional associations (Mitchell & Krumboltz, 1984).

## Cognitive, Emotional, and Performance Responses and Skills

The interactions among learning experiences, genetic characteristics, special abilities, and environmental influences will result in task approach skills (Mitchell & Krumboltz, 1984). These are skills that individuals develop and modify as a result of their learning experiences. Examples

of such skills include performance standards and values, work habits, perceptual and cognitive processes, mental sets, and emotional responses (Mitchell & Krumboltz, 1984).

In addition to the four aforementioned factors that influence career decision making, Krumboltz also suggested that educational and occupational preferences are representative of self-observation generalizations about interests, values, and task approach skills that arise based on individuals' learning experiences (Mitchell & Krumboltz, 1984). Moreover, Krumboltz posited that educational and occupational preferences develop when an individual (a) is positively reinforced for engaging in activities associated with specific occupations or activities relevant to training for certain careers, (b) observes a valued model being reinforced for these activities, and (c) is positively reinforced by an individual whom they value who advocates engaging in such activities (Mitchell & Krumboltz, 1984). In contrast, when individuals encounter negative consequences related to occupational activities, they will learn to dislike and avoid such activities (Mitchell & Krumboltz, 1984). Thus, the generalizations and skills that develop from one's own learning experiences will lead to career-relevant behaviours or actions such as applying for jobs or training, accepting job offers and promotions, and changing jobs (Mitchell & Krumboltz, 1984). In addition to self-observation generalizations, there are worldview generalizations which can also result from one's own learning experience. The difference, however, is that instead of altering the way one may view themselves and their skills, it can alter the way they view different environments in their lives. Overall, the social learning approach to career decision making accentuates that one's learning experiences will be reflected in the actions they take in that if they demonstrate a preference towards a specific course or occupation, they are more likely to pursue that action.

Krumboltz's theory helps to explain why university students may gravitate towards certain career choices, and what influenced their decision in choosing their major/program. For instance, some students may have been influenced by their peers, the location of the school, programs that were readily available to them, pressure from their parents and so forth. Better understanding what influenced university students' career choices may assist in identifying their purpose of pursuing their chosen field and help to explore what meaning it brings them.

## Career Decision Making Theory

Another theory that situated the current research is the career decision making theory proposed by David Tiedeman, Tara O'Hara and Anna Miller-Tiedeman (Tiedeman & Miller-Tiedeman, 1984). Tiedeman and O'Hara first recognized the absence of individual purpose in previous career theories and claimed that a model with an emphasis on individual purpose was needed to better link the person to career through concepts of personality and individual responsibility (Tiedeman & Miller-Tiedeman, 1984). They argued that decision-making is a continuous process which consists of two phases: anticipation or preoccupation and implementation or adjustment (Tiedeman & Miller-Tiedeman, 1984).

### Anticipatory Phase

The anticipatory/preoccupation phase can be further divided into four steps: (1) exploration (awareness), (2) crystallization, (3) choice, and (4) clarification (Tiedeman & Miller-Tiedeman, 1984). During the exploration stage, individuals may take the time to explore the different aspects of career (e.g., researching different careers, talking with others, visit potential workplaces) (Tiedeman & Miller-Tiedeman, 1984). As individuals begin to form alternatives and consequences of their potential choices, they then move into crystallization. From here, choices (stage 3) become clearer for the individual and they better understand the consequences of their

choice (stage 4) enough so that they can carry out a decision (Tiedeman & Miller-Tiedeman, 1984).

**Implementation Phase**

The second phase, implementation, includes three steps: (1) induction, (2) reformation, and (3) reintegration. During the induction phase, the individual would implement their decision (i.e., begin to work in their selected career for the first time), then engage with the work itself, have feelings of being proficient at the job and thereby advocate for their choice (reformation). Finally, the individual will gain a perspective of who they are in relation to their group members at work and accept the fact that others do not need to follow what they are doing, but rather they work collaboratively as a team (Tiedeman & Miller-Tiedeman, 1984). Each of the seven steps described above, are steps that represents a change in an individual's psychological functioning as they go through the process of choosing a career (Tiedeman & Miller-Tiedeman, 1984). It is important to note, however, that individuals are not required to take the steps in sequential order as some steps may occur simultaneously (Tiedeman & Miller-Tiedeman, 1984). There may be instances when individuals do not even realize themselves that they are experiencing a change in their psychological state, because the step is so small (Tiedeman & Miller-Tiedeman, 1984). The overall purpose of Tiedeman and O'Hara's seven-step model is to help understand the organization of self and the environment (Tiedeman & Miller-Tiedeman, 1984).

**Defining Realities**

Miller-Tiedeman and Tiedeman discussed the importance of how one's awareness of their career decision making is related to the advancement of career (Tiedeman & Miller-Tiedeman, 1984). They explained how the advances in one's career can be related to language, implying that the language people use can mirror their self as both a reactor and an actor,

disclosing personal assumptions about career (Tiedeman & Miller-Tiedeman, 1984). In considering language in career, Miller-Tiedeman and Tiedeman claimed that they must define realities, because oftentimes the phrase "that's not realistic" is used (Tiedeman & Miller-Tiedeman, 1984). When any individual suggests "that is not realistic", they are imposing their own views and values onto another individual (Tiedeman & Miller-Tiedeman, 1984). However, Miller-Tiedeman and Tiedeman emphasize that no one knows their own minds and experiences better than themselves (Tiedeman & Miller-Tiedeman, 1984). Therefore, no one can deem another's ideas or plans as inaccurate with a high degree of certainty. Thus, they defined two kinds of realities known as personal and common (social) reality to help better understand the process of career decision making (Tiedeman & Miller-Tiedeman, 1984).

***Personal Reality***

According to Tiedeman & Miller-Tiedeman, personal reality is defined as "an act, thought, behaviour, or direction that the individual feels is right for her or him, even though someone else may advise that it will never work" (Tiedeman & Miller-Tiedeman, 1984, p.295). Essentially, an individual is choosing to pursue an action, behaviour or thought, because it is meaningful to them. Miller-Tiedeman and Tiedeman further proceed to discuss the importance of if something feels right for an individual, they should honour that feeling, and that it will in fact be right for them (Tiedeman & Miller-Tiedeman, 1984).

***Social Reality***

In contrast to personal reality, social reality is the notion of doing "what "they" say you should do" (Tiedeman & Miller-Tiedeman, 1984, p.295). This concept occurs when individuals perform actions, behaviours, and thoughts, simply because others say it is the right thing to do. For example, many will claim that you cannot get a good job if you do not receive good

education (Tiedeman & Miller-Tiedeman, 1984). However, education does not necessarily assure one of getting a good job, and Miller-Tiedeman and Tiedeman clarify that using "they" in the world "clings" to a myth (Tiedeman & Miller-Tiedeman, 1984). Thus, those who are living in a world of social reality, typically consider the thoughts and opinions of others when making a decision.

**Self-Construction**

Building off the two different realities, Tiedeman further outlined the self-construction concept emphasizing the ability of individuals to exercise control over the development of their own careers and the decision-making process (Hansen, 1977). Tiedeman explains that this concept refers to making life what you want it to be (Tiedeman & Miller-Tiedeman, 1984). In other words, viewing oneself as the constructor of their own life. The self-construction concept was used in emphasizing the two forms of realities. If one is living according to their personal reality, then they are demonstrating the "I" empowerment and being self-constructionists, thus taking the lead of their life. Whereas those who may not be able to make their own choices and experience pressures from those around them, are stuck in a world of social reality, where they are unable to fulfill their own meaning and goals in life.

Tiedeman and Miller-Tiedeman's theory helps in exploring university students' reasons for pursuing their program and careers. This assists in better understanding if students are living a life according to their own personal reality, or if they experience external pressures, forcing them to live a life according to social reality. Furthermore, understanding students' reasonings can also help to make sense of where their PD might be stemming from. For instance, if a student is pursuing a program that they felt pressured to do, even if it is not something that they want to

do themselves, then they could be experiencing PD as they are not living a meaningful and purposeful life.

## Chaos Theory of Careers

The Chaos Theory of Careers highlights the diverse influences on careers and aimed to account for the complexities of such influences (Pryor & Bright, 2011). Pryor & Bright (2011) argue that while we have many different influences in our life that have impacted our careers, it is nearly impossible to figure out the interactions among all those influences. Furthermore, given that such influences are constantly changing, it is much more difficult to be able to predict and control what will happen in the future.

While stable factors such as interest categories and personality traits are still important to consider, Pryor & Bright (2011) argue that chance and change are just as important. The theorists claim that a greater emphasis on the following concepts is necessary to better prepare individuals for the uncertainty and change that they will encounter in their futures: (1) incorporating the range of potential influences on individuals' lives, (2) moving beyond a narrow sense of matching individuals to careers, (3) considering how individuals construct experiences and perceptions into meaningful and unique interpretive structures for understanding themselves, their life experience, and their world, and (4) conceptualizing unplanned and unpredictable events and experiences (Pryor & Bright, 2011). Even though humans do not necessarily view uncertainty in a favourable manner, Pryor & Bright (2011) suggest that if we encourage individuals to be adaptable and resilient to change, then we are encouraging them to live on "the edge of chaos" which they described as having a balance of interaction between stability and instability, being and becoming, and what can be known and controlled, and what cannot be. This theory is very much applicable to undergraduate students given that university often

coincides with times of uncertainty and life changes as students learn to navigate their studies and decide upon a career path. Additionally, this theory can assist in better understanding the meaning that uncertainty has for university students and the weight it carries on their mental health.

## Psychological Distress

Psychological Distress (PD) refers to "non-specific symptoms of stress, anxiety, and depression" (Viertiö et al., 2021, p. 2). High levels of PD may result in impairments in one's mental health (Viertiö et al., 2021), echoing mild to severe mental disorders (McLachlan & Gale, 2018). Mental health issues can ultimately affect any age group, including adolescents and young adults which is the age group most often representing university students (Adlaf et al., 2001; Eskin et al., 2016; Knapstad et al., 2021; Matheson et al., 2016; Meckamalil et al., 2020; Tang et al., 2018). Individuals may experience mental health problems for a variety of reasons, ranging from school and work life balance to financial issues and employment (Logan & Burns, 2021). If PD is left unattended, it can have detrimental effects on one's mental health and overall well-being (Deasy et al., 2014). Given that university students tend to report significant mental health issues specifically, depression, anxiety, and stress (Hakami, 2018), the current study placed emphasis on these three constructs.

### Anxiety

Anxiety disorders are characterized by excessive fear, anxiety, and related behavioural disturbances (American Psychiatric Association, 2013). Fear is referred to as "the emotional response to real or perceived imminent threat" whereas anxiety is referred to as "anticipation of future threat" (American Psychiatric Association, 2013, p. 189). While fear and anxiety are present in the everyday life (Craske & Stein, 2016), too much of it can negatively impact one's

overall life. Anxiety may stem from unhealthy relationships, bullying, health conditions, violence, family dynamics, genetic predispositions, grief, guilt, homelessness, trauma, pain, poor body image, shyness or be influenced by one's own culture (Wilner & Shaal, 2020). Researchers have found that symptoms of anxiety are the most prevalent mental health issue among the university population (Mistler et al., 2012). Anxiety can emanate from post-secondary experiences including the level of study, the subject of study, new roommates, identity crises, and cultural shock (Vitasari et al., 2010). University students experience many new changes that may result in heightened anxiety. For instance, they are adjusting to a higher level of education which requires more time and commitment to studies. Some students may begin to experience anxiety as they struggle to find a way to effectively balance their time. Moreover, they may become anxious about getting good grades or passing courses so that they can maintain a good GPA and achieve their desired careers (AlKandri, 2019). Others may experience financial pressures as the cost of post-secondary and living comes at a high cost in comparison to public school years. As a result, some students might have to work to make ends meet, creating further anxiety for time management (AlKandri, 2019). Other students may be parents and have a family to care for, which creates additional responsibilities (AlKandri, 2019). Trying to care for family members and prepare for academic assignments and exams, can result in anxiety as these students must find the appropriate balance to succeed in both their family and school life. Amongst this all, students are trying to discover who they are as a person, and what their future careers and life will entail. When they are struggling to self-identify, this could create some confusion and worry about who they should be and where they are going in life.

**Depression**

Depression is the second most prevalent mental health issue among the university population (Mistler et al., 2012). While there are many forms of depressive disorders, the Diagnostic Statistical Manual (DSM-V) states that the common features of depression include the presence of sadness, emptiness, or irritable mood, which is accompanied by somatic and cognitive changes, substantially impacting one's capacity to function (American Psychiatric Association, 2013). Moreover, it is characterized by a loss of pleasure or interest, feelings of excessive guilt or low self-worth, hopelessness regarding the future, disturbed sleep patterns, changes in weight or appetite, feelings of tiredness, and poor concentration (World Health Organization, 2021). It is imperative to note, however, that individuals can experience symptoms of depression without meeting the diagnostic criteria for a depressive disorder. Depression can affect individuals of all ages ranging from childhood to the elder population, with many cases reported among the university population (Adlaf et al., 2001; Eskin et al., 2016; Knapstad et al., 2021; Matheson et al., 2016; Meckamalil et al., 2020; Tang et al., 2018). University students are susceptible to depression as many exchange their sleep for late nights of studying, which results in poor sleep habits. Some students struggle to balance their personal life and school life, which means that getting enough time for exercise and self-care remains a difficult task. Moreover, many students move away from their families to pursue university, and they may struggle to develop meaningful relationships which can result in feelings of isolation and sadness.

**Stress**

There are altering definitions of stress that exist in the literature. Selye defined it as "the nonspecific response of the body to any demand" (Selye, 1976, p. 137), whereas Lazarus & Folkman (1984, p.19) defined it as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and

endangering his or her well-being". According to Pearlin et al., (1989), stress is a result of two broad circumstances which include the occurrence of discrete events and the presence of continuous problems. Situations or events that one views as a threat to their well-being and surpasses available coping strategies are experienced as stressful (Deasy et al., 2014). Ultimately, individuals of all ages can experience stress. Children and adolescents who have encountered early traumatic experiences (e.g., abuse, neglect, assault, etc.) are likely to experience early life stress which could potentially result in adult psychiatric disorders (Carr et al., 2013). Stress may also impact adults who have financial worries, meeting work deadlines, or battling a form of illness for example (Selye, 1976). It has also been showed to have negative effects on students' learning (Vaez & Laflamme, 2008). While it is mostly thought of as a negative experience, it is important to note, however, that stress is not associated with all negative connotations. Stress can in fact be a healthy response to many life events. For instance, it can be beneficial for learning, as individuals learn to maximize their learning under conditions of stress (Rudland et al., 2020). While stress is typically a normal response of university students, it could lead to PD when students are unable to develop healthy and effective coping skills. For instance, some may struggle to find the right balance between school and their personal life, and when this occurs, they may continuously feel stressed. Some are learning to live on their own for the first time and navigating this process can result in prolonged stress. In addition, as previously mentioned, university comes at a high cost, and thus, financial pressures can create additional stress for students, making it more difficult to function. Furthermore, students may experience extensive stress about their futures, as they attempt to decide on a career path that they want to pursue for the remainder of their life. In doing so, students might be experiencing additional pressure from their parents or family members, creating a significant amount of stress.

When stress is not presented in a positive and helpful manner, it can initiate and sustain further problems. It may generate harmful behaviours as students adopt ineffective coping strategies (Sun et al., 2011). Furthermore, it can potentially deteriorate one's health and intensify mental health symptoms (MacGeorge et al., 2005).

With all things considered, anxiety, depression, and stress can create moments of hardship for university students, and it can negatively impact their mental health and university experience. As we continue to explore the literature and the findings of the current study, any symptoms of depression, anxiety, and stress will be referred to as PD and used interchangeably with mental health issues, or mental distress.

## University Students

Students attend university for both internal and external reasons (Reed et al., 2015). Internal reasons may include going for higher educations' intrinsic value, to discover life options, the enjoyment of learning, to make better life decisions, experience courses, and for challenging oneself (Reed et al., 2015). External reasons may include going to university to please family members, earn the respect of others, prove to others that they can do it, experiencing the pressure of expectations others have on them, to secure a well-paying career, to play varsity sports, and delay responsibility (Reed et al., 2015). Through the attainment of a degree, students have greater potential of pursuing a career path that aligns with their own values, morals, and lifestyle. Regardless of one's reason for pursuing post-secondary, university is not an effortless journey. In fact, it comes with many demands and life changes as students encounter many stressors and obstacles while attaining their education.

### Student Stressors

Individuals across the world experience a multitude of stressors when they enroll in university (Eskin et al., 2016). Being a university student results in setting high expectations, thus, increasing demands and stress (Hamaideh, 2011). Furthermore, stressors include academic pressures with the commitment to succeed, and the unknowns of the future (Sreeramareddy et al., 2007). Other stressors encompass difficulty balancing one's own responsibilities, challenges with interpersonal relationships, financial issues, employment, and leaving and living away from home (Eskin et al., 2016; Logan & Burns, 2021). Additional determinants of stress include assignments, practicum placements, lecturers and sharing accommodation/commuting to college (Deasy et al., 2014). Such stressors can have a tremendous negative impact on students' overall well-being, including their mental health.

**Reported Psychological Distress**

It is no doubt, that given the amount of stressors university students encounter, they may experience PD. Elevated mental distress among university students has been and continues to be reported worldwide, among locations such as the United States, Australia, Africa, United Kingdom, Austria, China, Iran, Italy, Japan, Jordan, Palestine, Saudi Arabia, Tunisia, and Turkey (Eskin et al., 2016). A study focusing on a Norwegian population found concerning results regarding increased self-reported PD from 2010 to 2018 among students in higher education (Knapstad et al., 2021), demonstrating that mental health problems are continuing to increase in its prevalence among this population. Similarly, a recent study on Italian university students reported that more than one in three students reported severe PD (Porru et al., 2021). Congruent with the aforementioned findings, a large sample size of 5972 students from six universities in China reported that 40.7% of students were identified of having at least one symptom of mental

distress (Tang et al., 2018). Lastly, a study in Ireland with another large sample size of 1557 reported 41.9% of students reported significant PD (Deasy et al., 2014).

It appears that students in all disciplines and levels of study are susceptible to mental health issues. One study encompassing students from areas of applied medical, pharmacy, business administration, computer sciences and sciences, found that out of 4760 participants, 78.5% reported experiencing PD, with 21.3% reporting mild levels, 21.1% reporting moderate, and 36.1% reporting severe (Porru et al., 2021). Another study that investigated teacher education and nursing/midwifery students, claimed that students' practicum components was an added stressor, as there was still coursework that was expected during practicum and there was a lack of support for nurses who encountered traumatic experiences with their patients (Deasy et al., 2014). It was reported that of these 1577 participants, 41.9% have experienced some level of PD (Deasy et al., 2014). An additional study focusing on law students, reported that while such students are demonstrating significant mental distress, it is not sufficient to conclude that they experience higher levels than other programs or levels of study (Larcombe et al., 2015). Thus, it is evident from previous literature that PD can undoubtedly affect any undergraduate student regardless of their area of study.

An additional find in the literature that is noteworthy, is that female students tend to demonstrate elevated levels of PD in comparison to male students (Deasy et al., 2014; Hakami, 2018). It is assumed that such findings could be attributed to female students being more willing to report more mental and physical symptoms than males (Hakami, 2018). Even though females have reported higher levels of PD, the mental health of both males and females should be regarded as equal importance.

**Consequences of Psychological Distress**

When the PD of university students is not attended to or appropriately addressed, serious ramifications may transpire. One study reported that young students enrolled in higher education are so psychologically distressed that they envisage or attempt to end their own life, despite having the opportunity to potentially succeed and live a meaningful life (Eskin et al., 2016). Just under 10% of individuals in the overall population who have made medically serious suicide attempts have died within five years from the time in which they initially attempted (Beautrais, 2003), raising concern for university students who are experiencing suicidal ideation and attempt. According to Statista (2021), approximately 35.9% of university students from 2019 to 2020 in the United States who received mental health services had seriously considered suicide. Thus, PD can result in significant mental illnesses that lead to serious outcomes.

Another consequence of university students who experience PD is that they are more likely to drop out, thus increasing attrition rates. According to Megivern et al., (2003), the most reported reason for students leaving college before completing their degree was due to psychiatric symptomatology. As psychiatric symptomatology negatively impacted students' academic performance, it eventually led to attrition (Megivern et al., 2003). Two additional reasons for dropping out, were due to a lack of academic integration, and competing life circumstances or financial problems (Megivern et al., 2003). Thus, according to Storrie et al., (2010), a critical factor in helping students remain in university, is their ability to appropriately deal with their emotional distress, which could possibly be accomplished through appropriate mental health knowledge and support.

## Mental Health Literacy

Mental health literacy (MHL) refers to an individual's knowledge and beliefs regarding mental disorders (Gallagher & Watt, 2019). It is imperative to note, however, that only having

knowledge of psychological disorders is not sufficient to demonstrate adaptive MHL (Jorm, 2012). Mental health literacy further encompasses knowledge of obtaining and maintaining positive mental health, recognizing mental disorders and their corresponding treatments, decreasing mental health stigma, and ameliorating HSB (Kutcher et al., 2016). The MHL was developed from the health literacy (HL) which was initially created to assist health care workers in better understanding medical information and treatment (Kutcher et al., 2016). While MHL is a rather novel and incipient concept (Kutcher et al., 2016), it is currently being researched across the globe (Elsheshtawy et al., 2020; Gallagher & Watt, 2019; Naal et al., 2020; Pehlivan et al., 2021; Zhang et al., 2023)

**Predictors of Mental Health Literacy**

There are some factors that may predict one's MHL level. A study investigating predictors of MHL among university students in Lebanon reported that students who were enrolled in psychology courses were shown to have higher levels of MHL (Naal et al., 2020). Thus, those who are receiving direct and purposeful education regarding MHL variables may have superseded other variables studied (e.g., gender and religion) (Naal et al., 2020). Interestingly, however, nursing students in Australia were found to have higher levels than 372 first year undergraduate psychology students that were assessed in a previous study by O'Connor in 2015 (Saito & Creedy, 2021). This finding, however, could be attributed to the fact that these psychology students were first year students, and the nursing students were in their second and third year (Saito & Creedy, 2021), thus having more exposure to psychology-related coursework. Likewise, Saito and Creedy's findings support the notion that third year students had higher levels of MHL, followed by second year students, and then first year students (Saito & Creedy, 2021). An additional predictor of MHL included those who have previously sought help

(Gorczynski et al., 2017; Saito & Creedy, 2021). For instance, over half of the students (57%) in one study who had sought help in the past, were found to have higher levels of MHL in comparison to those who had not previously sought support (Saito & Creedy, 2021). A third potential indicator of MHL is empathy, in particular its facets of empathetic concern and perspective-taking (Furnham & Sjokvist, 2017). From the study's findings, it is assumed that individuals who demonstrate the aforementioned empathetic traits become more literate on all aspects related to mental health as they show more interest in those with a mental health problem (Furnham & Sjokvist, 2017).

While there are some identified factors that predict MHL, there are also some that may not be accurate predictors. For instance, it was found that psychological symptoms and parental education were not related to MHL (Naal et al., 2020). Moreover, students who were currently experiencing psychological symptoms did not appear to know more about disorders than those who were not experiencing psychological symptoms (Naal et al., 2020).

## Help-Seeking Behaviour

There is no singular definition of HSB in the literature, rather there are a combination of different ones with overlapping themes. According to Rickwood et al., (2005) help-seeking refers to one's behaviour of actively seeking help from others. Cornally et al., (2011) would also agree as they claimed that help-seeking is the action of seeking help, which is an intentional process. Furthermore, Rickwood et al., (2005, p. 4) claims, "it is about communicating with other people to obtain help in terms of understanding, advice, information, treatment, and general support in response to a problem or distressing experience". It is also a type of coping where people rely on others, thus making it dependent on social relationships and interpersonal skills (Rickwood et al, 2005). According to Rickwood et al., (2005, 2012), there are two dimensions of

help-seeking, which include formal and informal help-seeking. Informal help-seeking includes support from individuals such as friends and family members, or information on websites, while formal help-seeking encompasses support from professionals who have a recognized role and significant training in providing support, such as mental health and health professionals, teachers, and youth workers either online or in-person (Rickwood et al., 2005).

**Predictors of Help-Seeking Behaviour**

Some individuals are more willing to seek help for their own personal problems than others. There have been some findings from the literature that suggest predictors of HSB, as well as predisposing factors that impedes one's actions in seeking help. In fact, it appears that fewer are reaching out for help than one would hope, as Doll et al., (2021) reported that only 22.5% of individuals ages 16-40 with mental health problems would seek any help. Moreover, Doll and their colleagues suggested that those with a mental health problem are more likely to seek help when they have previously experienced functional impairments in some areas of life (Doll et al., 2021). Additional researchers suggests that the severity of depression (e.g., longer, and more frequent episodes), and the presence of an anxiety disorder are related to higher help-seeking rates (Magaard et al., 2017; Nagai, 2015). Similarly, Fine and their colleagues (Fine et al., 2018) suggested that individuals suffering from generalized anxiety disorder without major depressive disorder refrain from seeking treatment or referrals until their fear of anxiety-related symptoms and sensations reach a certain threshold. Thus, a common theme that appears to derive from the previously mentioned studies, is that the severity of one's mental illness can be a driving force for some individuals to seek support.

Some researchers reported that individuals who have major depression, are young or elders, are male or have lower educational status, were less likely to seek support (Magaard et

al., 2017). In addition, individuals belonging to certain ethnic groups were also less likely to seek support (Magaard et al., 2017). For instance, a study exploring treatment utilization among individuals with major depressive disorder (MDD), reported that of the 1304 participants who sought treatment, 172 identified as Black, 37 identified as American Indian, 20 identified as Asian/Hawaiian and 233 as Hispanic, with the remaining 842 identifying as Caucasian (Chartrand et al., 2012). Similarly, Diala and their colleagues found that while those who identified as African American demonstrated more positive attitudes towards the use of mental health services, they actually used fewer services than those who identified as Caucasian (Diala et al., 2000). Another study which focused on a Canadian population, reported that Canadian Caucasians were more likely to use mental health services than those from Asian countries (Tiwari & Wang, 2008). In addition, individuals who had a major depressive episode and identified as Chinese were less likely to seek support than those identifying as Caucasian (Tiwari & Wang, 2008). Congruent with the aforementioned studies, Hankerson and his colleagues reported that those who identified as Black American were less likely than White Americans to receive treatment for MDD (Hankerson et al., 2011). Magaard, Mojtabai and their colleagues suggested that this may partially be a result of certain structural or attitude-related barriers (Magaard et al., 2017; Mojtabai et al., 2011). Lastly, while the severity of depression is suggested to increase HSB, depression itself can actually inhibit help-seeking (Nagai, 2015). For instance, the feeling of hopelessness and suicide ideation associated with depression can reduce one's motivation to cope with their problems (Nagai, 2015).

### Reported Mental Health Literacy

Whether students are lacking Mental Health Literacy (MHL) by having negative attitudes towards mental health or being reluctant in receiving help from mental health professionals, it is

essential to further explore previously reported MHL given the abnormally increased levels of PD among university students worldwide.

**Recognition of Disorders**

Individuals across the globe have been lacking knowledge regarding depression and suicide. While identification of depression tends to be higher, an understanding of exactly what it entails is lacking. A study in Oman investigating undergraduate pre-medical students and medical students, measured depression literacy and suicide literacy among these two groups using the Depression Literacy Questionnaire (D-Lit) and found that depression literacy was lower in pre-medical students than the medical group (Elsheshtawy et al., 2020). Furthermore, they also reported that similar results were obtained when assessing suicide literacy. Students in the medical group yielded significantly higher scores on questionnaire items regarding suicide, however, a great number of students from the two groups incorrectly assumed that talking about suicidal thoughts and ideations would increase the risk of suicide and believed that those who were experiencing suicidal ideation could effortlessly change their mind (Elsheshtawy et al., 2020). Another study in India which focused on paramedical students (nursing, pharmacy, speech, and hearing) and medical students found similar results when they used the Depression Literacy Questionnaire, reporting that both groups of students demonstrated misconceptions and uncertainty regarding depression and suicide, with paramedical students showing slightly more misconceptions (Ram et al., 2016). Moreover, it was concluded that in India, suicide literacy is relatively low, and talking about it, is socially unacceptable (Ram et al., 2016). The results from these two studies create concern as many individuals may report to the hospital when enduring a mental health crisis such as suicide ideation. Furthermore, it demonstrates that even those who are training to become medical health professionals are lacking compulsory knowledge

surrounding mental health. Comparably, research conducted among Turkey and Lebanon university students that used clinical vignettes and MHL-related questions found that their MHL were also relatively low, even though those in Lebanon were able to correctly identify depression more so than anxiety (Naal et al., 2020; Pehlivan et al., 2021). Contrary to the aforementioned findings, however, some researchers that conducted research on university students in the Netherlands and Germany reported that the overall mean score for MHL was reasonably high but revealed that there is still room for improvement, especially among non-health-related students (Reichel et al., 2021). The researchers in this study used a combination of clinical vignettes, questions from the Depression Literacy Scale, and questions from the Depression Literacy website and CBT skills training website to assess participants MHL.

Aside from depression and suicide, university students also reported lower levels of literacy among other mental disorders. A study published by researchers in the United Kingdom explored over 400 university students' MHL by looking at 100 psychiatric problems from the DSM-IV-TR (Furnham et al., 2011). It was reported that there were only eight disorders (anorexia nervosa, anxiety disorder, autism, bulimia nervosa, obsessive-compulsive disorder, Parkinson's, post-traumatic stress disorder, schizophrenia, and sleepwalking disorder) that over 75% have heard of, and seven disorders (acute stress disorder, antisocial personality disorder, attention-deficit disorder, bipolar disorder, dementia, depressive disorder, and sleep disorder) that over 70% have heard of (Furnham et al., 2011). When these participants were asked if they could define or describe the disorders and their symptoms, there were only nine disorders where more than half said they could (Furnham et al., 2011). Thus, hearing about and understanding mental disorders are not the same thing. Similarly, it has been reported that Arab university students are more efficient at identifying emotional and behavioural symptoms (Khatib & Abo-

Rass, 2021). Moreover, students found it quite effortless to identify severe emotional and behavioural symptoms of severe mental illnesses such as schizophrenia and obsessive-compulsive disorder (Khatib & Abo-Rass, 2021). They were, however, less able to recognize that somatic symptoms could be a possible indicator of a mental disorder (Khatib & Abo-Rass, 2021). In contrast, however, a small number of students from Oman were able to accurately identify psychotic symptoms, management of depression, and behavioural symptoms of depression (Elsheshtawy et al., 2020).

While there are some mental disorders that students were able to correctly identify compared to others, such as depression, it is evident that regardless of being able to identify some disorders, university students across the globe are reporting considerably low MHL scores, as they are not able to define or describe them in detail. Thus, this raises some concern for the MHL of the university population.

**Help-Seeking Behaviour**

In addition to identification of mental disorders, HSB is another important aspect in demonstrating adaptive MHL. A study investigating undergraduate nursing students in Australia reported that one of the most common categories identified was students requesting more information on where and how to seek help (Saito & Creedy, 2021). Another researcher claimed that a quarter of pharmacy students in Saudi Arabia showed a reluctance in seeking help when they endure a personal or emotional problem (Almanasef, 2021). The study, however, did not focus on the factors that may impact such reluctance (Almanasef, 2021).

**The Influence of Mental Health Literacy**

Students in Korea and the United Kingdom who demonstrated higher levels of MHL were more likely to seek-help, as MHL was found to directly impact attitudes towards help-

seeking and MHL was positively correlated with HSB (Gorczynski et al., 2017; Kim et al., 2020). Interestingly, it was also found that those who had higher levels of PD were actually less likely to seek support, as opposed to those who demonstrated lower levels (Gorcyznski et al., 2017). Similarly, Moss et al., (2022) reported that postgraduate researchers who had higher levels of MHL were more likely to seek help.

There have been, however, mixed findings regarding the influence of MHL on mental distress. While Gorczynski et al., (2017) found a correlation between MHL and help-seeking, they did not report a relationship between MHL and PD. Likewise, O'Connor & Casey (2015) and Argao et al., (2021) both reported that MHL was not related to one's level of PD. In contrast, others found that those who had higher levels of MHL were less likely to experience mental health issues (Lam, 2014; Moss, 2022; Pehlivan et al., 2021; Zhang et al., 2023). Similarly, Naal et al., (2020) reported that those who had higher PD, did not demonstrate higher MHL; they did not know more about symptoms, regardless of if they were displaying symptoms themselves. Thus, it is unclear whether MHL is correlated with depression, anxiety, and stress.

## Psychological Distress: A Canadian Perspective

As evident from the previous literature, PD is prevalent across university students worldwide and their levels of MHL could use some improvement. This topic is also pertinent to Canadian university students. Considering the previous literature was focused on research from across the globe and this study aimed to emphasize the experience of Canadian university students, the present paper will now review the literature that is grounded within a Canadian context.

### Reported Psychological Distress

Canadian university students of varying ages, backgrounds, geographic locations, disciplines, and level of study are at risk of experiencing PD. Students in professional programs of study such as chiropractic and medical programs were found to have high levels of mental distress (Matheson et al., 2016; Meckamalil et al., 2020). It was reported that moderate to extremely severe symptoms of depression, anxiety, and stress are common among students studying at the Canadian Memorial Chiropractic College (Meckamalil et al., 2020). Similarly, it was found that mental health issues were apparent in almost 42% of medical students and residents, and 7% of those had thoughts of suicide within the last 12-month period (Matheson et al., 2016). Psychological distress is also prevalent among undergraduate programs. One of the first studies in Canada to explore Canadian undergraduate students' level of PD was in 1998, which reported that mental distress among this population is significantly greater than that of the general population, suggesting that the well-being of the undergraduate population is a dominant public health issue (Adlaf et al., 2001).

While PD is apparent across all levels and areas of study, it is found to be prevalent among students with altering cultural backgrounds as well. Hop Wo et al., (2020) investigated the prevalence of distress, depression, anxiety, and substance use issues among an Indigenous population. It was reported that Indigenous post-secondary students in Canada are at an increased risk of experiencing mental health issues (Hop Wo et al., 2020). Moreover, psychiatric diagnoses of depression, anxiety, suicidal ideation, and behaviours, and substance use (including binge drinking) were found to be common among this population (Hop Wo et al., 2020). Similarly, Esmaeelzadeh et al., (2018) reported significantly elevated rates of depression and anxiety among students and found that there was a significant association between depression, tobacco

use, and cannabis use. The previous two studies suggest that increased PD among students can also lead to unhealthy behaviours (Esmaeelzadeh et al., 2018; Hop Wo et al., 2020).

Canadian university students who are actively involved in extra-curricular activities are also found to experience elevated levels of PD. A study investigating mental distress among Canadian university student athletes reported that generalized PD is elevated among the Canadian university sports system (Sullivan et al., 2019). Moreover, 20% of the sample (272 students) demonstrated scores that were indicative of a mental illness (Sullivan et al., 2019).

Based on previous Canadian literature, it does not appear to matter the level of study, program study, cultural background or whether students are involved in extra-curricular, they are all suspectable to experiencing mental health problems, thus impacting their overall mental health and well-being. While some groups reported higher levels than others, the focus should remain on the fact that students from all groups are experiencing some level of psychological distress.

**Reported Mental Health Literacy**

To our knowledge, there was only one study that directly examined Canadian undergraduate students' MHL (Gallagher & Watt, 2019). There were other Canadian studies that investigated MHL; however, it was among the public population (Marcus & Westra, 2012; Wang et al., 2007). The studies focusing on the public population reported that they demonstrated adequate MHL, however, the disorder that individuals were most able to correctly identify was depression in comparison to anxiety and schizophrenia (Marcus & Westra, 2012; Wang et al., 2007). While a significant number of individuals were able to identify depression, the data demonstrated that participants had limited knowledge regarding how an individual with depression could best be helped (Wang et al., 2007). Furthermore, young adults (ages 18-24)

specifically, were less likely to regard seeking help from a family physician as the best way to approach mental health problems, and they also felt more strongly than the older population, that individuals can manage mental health problems on their own, as well as less strongly that mental health problems that are left untreated can result in suicide (Marcus & Westra, 2012). This is concerning, given that most Canadian undergraduate students are young adults.

Undergraduate students across Canada also reported adequate MHL, with some disorders being easily identifiable over others. A study comparing first year psychology students and the public population found that most participants were able to correctly identify depression, schizophrenia, substance use and generalized anxiety (Gallagher & Watt, 2019). Many participants (49%) were unable to correctly identify panic disorder, and the data revealed that older, more emerging adults were significantly more likely to correctly identify panic disorder (Gallagher & Watt, 2019). It was also found that the rate of endorsement for seeking professional help was rather high across all participants, however, it is imperative to note that perceived treatment and help was measured as opposed to actual help-seeking (Gallagher & Watt, 2019). Moreover, it is important to note that almost half of the students in the study were psychology students, who perhaps had more knowledge surrounding mental health matters.

Across all three Canadian studies, it was found that women are typically more apt to recognize mental disorders and display better understanding of whom is best to seek support from as opposed to men, thus demonstrating better MHL (Gallager & Watt, 2019; Marcus & Westra, 2012; Wang et al., 2007). Men were more likely to believe that individuals who have major depressive disorder (MDD) and substance use disorder (SUD) could manage on their own (Gallagher & Watt, 2019; Marcus & Westra, 2019). Moreover, it was found that women appeared to have more knowledge surrounding depression than men regarding recognition and

determining appropriate interventions (Wang et al., 2007). According to Wang et al., (2007), the sex difference could be attributed to lower prevalence of depression among men, and their lack of exposure to the disorder. Furthermore, it could also be attributed to men's lower rate of help-seeking for depression, or the fact that they are more likely to view depression as caused by weakness in character and hold the belief that alcohol could be used as a method to relax (Wang et al., 2007).

### Help-Seeking Behaviour

As previously mentioned, Gallagher & Watt (2019) reported that both undergraduate psychology students and the public population demonstrated high levels of help-seeking, however, it was their perceived levels of help-seeking that were measured. Thus, it does not provide any information regarding what students would have actually done if they were experiencing PD themselves.

## Purpose

Taken together, the findings suggests that PD among Canadian university students can affect all students regardless of their cultural backgrounds, levels of study, program of study, and whether they are actively involved in extra-curricular activities (Adlaf et al., 2001; Esmaeelzadeh et al., 2018; Matheson et al., 2016; Meckamalil et al., 2020; Hop Wo et al., 2020). However, less is known about students' MHL and its impact on PD and HSB in Canada.

To date, Canadian's MHL has only been assessed using clinical vignettes and surveys centered around clinical vignettes (Gallagher & Watt, 2019; Marcus & Westra, 2019; Wang et al., 2007). Furthermore, only one of these Canadian studies have directly measured the MHL of undergraduate students (Gallagher & Watt, 2019). Kutcher et al., (2016) discussed how vignettes come with many limitations. For instance, the entire domain of MHL cannot be assessed using

clinical vignettes as they typically only focus on a few disorders (Kutcher et al., 2016). Moreover, these Canadian studies mentioned how using vignettes was in fact a limitation to their study (Gallagher & Watt, 2019; Marcus & Westra, 2012). Marcus & Westra (2012) also claimed that their measure had not been validated and that accurately identifying mental health problems is far more complex than responding to a vignette. Furthermore, Canadian studies that did assess students' MHL solely focused on MHL without further investigating its relation to PD that students may be experiencing or their actual HSB.

To address these gaps, the current study aimed to explore Canadian undergraduate students' MHL using a questionnaire as opposed to a clinical vignette to thoroughly explore all aspects of students' MHL. In addition, the current study was also interested in exploring whether there was a relationship between students' MHL and their levels of PD, specifically, depression, anxiety, and stress, as well as exploring their HSB.

**Research Questions**

The current study aimed to address the following research questions.

1. To what degree do Canadian undergraduate students demonstrate mental health literacy?
2. Do students who are identified as having high levels of mental health literacy demonstrate lower levels of psychological distress?
3. Are students who are identified as having high levels of mental health literacy more likely to seek professional support?

# Chapter 3: Methods

The general research goal was to recruit a minimum of 300 participants to measure their psychological distress, mental health literacy, gain a greater understanding of their help-seeking behaviour and determine any significant relationships. In this chapter, the participants, measures, procedures, and methods of analysis are further explored.

## Participants

The present study used convenience sampling to recruit participants through the University of Lethbridge's SONA system; a system designed for undergraduate psychology students to participate in studies and earn a bonus mark towards their overall grade in a psychology course. Additionally, the survey was shared online through social media platforms (the primary platforms were Facebook, Instagram, and Reddit). A link to the online Qualtrics survey was shared on social media platforms for participants to access and complete.

### *Inclusion and Exclusion Criteria*

Participants included undergraduate students of all genders and socioeconomic backgrounds attending any university in Canada. Participants of all ages were welcomed to participate as the researcher wanted to capture an authentic representation of all undergraduate students' unique experiences. While there was no limit on the number of individuals allowed to participate, an initial total of 419 students participated by the time the survey was closed. It was stipulated that participants were required to be enrolled in a 4-year undergraduate program. Only those students who were completing their first undergraduate degree were included in the study. Therefore, students who were working towards earning a second undergraduate degree, who were enrolled an undergraduate professional program (e.g., medicine, chiropractic, etc.), or who were enrolled in a graduate or doctorate program, were excluded from the study.

## Measures

### *Depression Anxiety Stress Scale (DASS) (Lovibond & Lovibond, 1995)*

To measure Canadian undergraduate students' level of PD, the Depression Anxiety Stress Scale (DASS) (Appendix C) was used. It is a set of three self-report scales (total of 42 questions) that aim to measure an individual's negative emotional states of depression, anxiety, and stress (Lovibond & Lovibond, 1995). It asks participants to indicate how much the statement has applied to them over the past week using a 4-point severity/frequency Likert scale. There are no right or wrong answers, as it is entirely up to the participant to respond with an answer that most suits them (Lovibond & Lovibond, 1995). The DASS was created and developed by two Australian researchers, Dr. Sydney Lovibond and his son, Dr. Peter Lovibond.

There are 14 questions for each construct (depression, anxiety, and stress). The depression subset assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia (Lovibond & Lovibond, 1995). The anxiety subset assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect (Lovibond & Lovibond, 1995). Lastly, the stress subset assesses levels difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/overreactive and impatient (Lovibond & Lovibond, 1995). Permission to use this scale was granted by one of the authors, Dr. Peter Lovibond. Refer to appendix K for proof of permission that was obtained via email.

### *Test Critique*

***Purpose.*** As previously mentioned, the DASS seeks to measure the negative emotional states related to depression, anxiety, and stress (Lovibond & Lovibond, 1995). Moreover, it is designed to enhance the process of defining, understanding, and measuring ubiquitous and clinically

significant emotional states that are commonly representative of depression, anxiety, and stress (Lovibond & Lovibond, 1995).

***Construction Methodology.*** In constructing the DASS, researchers aimed to determine the main features of each syndrome and removed any item overlap between depression and anxiety. This was done as there was previously no clear distinction between self-report measures that examined depression and anxiety (Lovibond & Lovibond, 1995). As researchers collected data over the period 1979-1990 and refined the scales, a new factor known as stress emerged (Lovibond & Lovibond, 1995).

Based on their pilot work and studying the literature, researchers concluded that there was no evidence to demonstrate that depression and anxiety states in clinical patients differed from non-clinical subjects who experienced depression and anxiety (Lovibond & Lovibond, 1995). Thus, they used a non-clinical population in developing the scales. The subjects included both males and females who voluntarily entered a behavioural program for treating depression in a university clinic. Additional samples included those from university courses (e.g., psychology, medicine, and adult education, and blue- and white-collar employees of a major airline, a bank, a railway workshop, and a naval dockyard).

In selecting the items, researchers began with a small number of items that carefully tapped into symptoms of depression or anxiety, but none that would tap into both (Lovibond & Lovibond, 1995). The three groups that were initially selected included those that were evidently associated with anxiety as a clinical condition but not depression, those that were clearly associated with depression but not anxiety, and lastly, items that were associated with both depression and anxiety, as well as items where there were disagreements about which belonged to which category (Lovibond & Lovibond, 1995). The researchers used a general strategy of

scale construction, otherwise known as *Simultaneous Multi-Scale Dimensioning* (SMD) as it assists in designing measures that contain many empirically related but conceptually distinct dimensions while concurrently achieving maximum discrimination between the scales (Lovibond & Lovibond, 1995).

To initially check the items, an inter-correlation check of 37 originally selected anxiety and depression items was conducted with a sample of 125 participants who were depressed. This revealed the degree of coherence and differentiation of the scales from each other and from the control items (Lovibond & Lovibond, 1995). From the 15 original depression items, the most distinct emphasized negative expectations, self-devaluation, lack of pleasure/satisfaction, dysphoric mood, and lack of interest/involvement (Lovibond & Lovibond, 1995). Non-discriminating items in the depression scale included crying, lack of appetite, guilt, and inability to cope with routine jobs (Lovibond & Lovibond, 1995). For the anxiety scale, there were only two items that did not result in a reasonable degree of coherence: "avoided situations in which I was likely to become anxious"; and "became anxious in the morning when thought of the coming day" (Lovibond & Lovibond, 1995). The remaining 20 items which involved voluntary muscles, autonomic activity, and anxious affected all demonstrated coherence and discrimination (Lovibond & Lovibond, 1995). Of the 14 control items, only two were correlated with either the anxiety or depression scales, and these included items associated with self-disappointment and were moderately correlated with the depression scale (Lovibond & Lovibond, 1995). Finally, the control items that typically form depression scales (e.g., insomnia, loss of libido, indecisiveness) surprisingly failed to correlate with the depression scale (Lovibond & Lovibond, 1995).

Next, multiple groups factor analysis were conducted. All the original anxiety items were kept in defining the anxiety factor, however, only eight of the discriminating factors for

depression were used (Lovibond & Lovibond, 1995). Eight new depression items were added to account for the ones that were previously retained which focused on psychomotor delay and inertia/slowness. To examine the reliability, the previous non-discriminating depression items were used in the list of individual items to be administered, including four additional anxiety items (Lovibond & Lovibond, 1995). Moreover, the original control items were kept, however, the two items that were found to correlate with depression were removed and administered individually (Lovibond & Lovibond, 1995). The total set was piloted to 950 first year university students. Of the 950 students, 504 subjects who demonstrated the highest combined depression and anxiety were kept and a multiple groups factor analysis was conducted (Lovibond & Lovibond, 1995). Researchers also reported that the new depression items demonstrated coherence, while the previous non-discriminating items failed to show discrimination as expected (Lovibond & Lovibond, 1995). From this, researchers demonstrated interest in the items that were originally included to define the control scale and seen the potential to form a third scale, stress (Lovibond & Lovibond, 1995).

The three scales were then administered to six new samples of university students and white-and blue-collar workers. Again, multiple group factor analysis was conducted, and items were removed from the total item pool after three trials (Lovibond & Lovibond, 1995). In carrying out this process, Lovibond & Lovibond were able to confirm the stress scale, make slight modifications to demonstrate the highest degree of discrimination and internal consistency, and determine that there was a high degree of stability (Lovibond & Lovibond, 1995).

Upon completion of the DASS with non-clinical samples, Lovibond & Lovibond (1995) then applied it using a clinical sample. The DASS was administered to 152 psychiatric outpatients who were diagnosed with a depressive or anxiety disorder (Lovibond & Lovibond,

1995). Overall, the clinical sample demonstrated consistent patterns to the non-clinical group across all three scales. There was, however, one depression item that was discriminating in the clinical sample but not with the non-clinical sample which was, "I felt like taking my own life" (Lovibond & Lovibond, 1995). Researchers attributed this to the severity of depression disturbance that clinical subjects were experiencing (Lovibond & Lovibond, 1995).

In the final stage of developing the DASS, researchers tested non-clinical groups in greater detail to create norms for the scales and examined DASS in practical settings (Lovibond & Lovibond, 1995).

***Evidence of Reliability.*** Researchers reported the alpha value for each of the 14-item scales of the DASS. The alpha value for depression was 0.91, anxiety was 0.84, and stress was 0.90 (Lovibond & Lovibond, 1995). Thus, the DASS demonstrates high reliability.

***Evidence of Validity.*** Researchers conducted a two-factor model to assess the validity. The model revealed an improved fit [$X^2$ (818) =3942, $P<0.05$] reported $P<0.05$; adjusted goodness of fit = 0.74] and differed significantly from the one-factor model [$X^2(1) = 1471$, $P<0.05$]. Lastly, they defined three factors that corresponded to three DASS scales. The phi coefficients were Depression 0.61; Anxiety-Stress 0.76; Depression-Stress 0.62 (Lovibond & Lovibond, 1995).

***Pros of Measure.*** The DASS allows for quick and efficient data collection from several participants, and it can be administered using online platforms. Thus, it is easily accessible to participants across the country. In addition, the DASS will allow participants to remain anonymous while completing the measure, therefore, they might be more likely to provide honest answers as they relate to depression, anxiety, and stress.

***Cons of Measure.*** The DASS is a self-report measure, therefore, it relies on the respondents to provide accurate answers. It is possible that participants may inaccurately perceive their symptoms or disguise their symptoms. Thus, unreliable levels of PD could be reported.

***Mental Health Literacy Scale (MHLS-35) (O'Connor & Casey, 2015)***

To assess Canadian undergraduate students' MHL, the Mental Health Literacy Scale (MHLS) (appendix D) was used. It is a 35-item questionnaire that uses a Likert Scaling method. The questions are designed to capture participants' knowledge regarding various aspects of mental health (O'Connor & Casey, 2015). This measure is predominantly concerned with the degree of knowledge; therefore, it is imperative that students choose the answer that most closely aligns with them (O'Connor & Casey, 2015). Permission was granted by Matt O'Connor to use this measure as part of this proposed study (refer to appendix L).

The MHLS was created by two researchers in Australia, Dr. Matt O'Connor and Leanne Casey. It is the first scale-based measure that is able to assess all attributes of MHL (O'Connor & Casey, 2015). When creating and testing this measure, it demonstrated good reliability ($r(69)=.797$, $p<.001$) and all psychometric testing demonstrated good psychometric properties (O'Connor & Casey, 2015). Descriptive statistics for the MHLS showed a mean score of 127.38 (SD = 12.63, *Minimum* = 92.00, *Maximum* = 155.00, 95% CI = 126.09-128.67) (O'Connor & Casey, 2015). The scale was somewhat normally distributed (*Skewness = -115, Kurtosis = -.231*) (O'Connor & Casey, 2015). There were no missing responses in the data (O'Connor & Casey, 2015). The readability of the MHLS was assessed using the Flesch-Kincaid formula and showed a grade level of 7.6 (O'Connor & Casey, 2015). A series of independent t-tests were used to examine the differences between groups expected to differ in their MHL (O'Connor & Casey, 2015). Due to the number of t-tests that were performed, a Bonferroni correction was applied,

demonstrating a significant alpha level of .01 (O'Connor & Casey, 2015). Mental health professionals in the sample had significantly higher MHL (M = 145.49, SD = 7.19) compared to the community sample (M = 127.38, SD = 12.63) (O'Connor & Casey, 2015). Levene's test for equality of variances demonstrated unequal variances (F = 13.195, p<.001) so degrees of freedom were adjusted, t(76.21) = -14.18, p<.001 (O'Connor & Casey, 2015, p.515). The magnitude of the difference in the means (mean difference = -18.11, 95% CI: -20.65 to -15.57) was large (d=1.76) (O'Connor & Casey, 2015, p. 515). Additional analyses showed that those who have had a mental illness had significantly higher MHL (M = 130.97, SD = 13.21) than those who had not (M = 125.19, SD = 11.76, t(370) = 4.39, p <.001 (O'Connor & Casey, 2015). The magnitude of difference in the means (mean difference = 5.79, 95% CI = 3.19-8.38) was small (d = .46) (O'Connor & Casey, 2015, p.515). Individuals who had seen a mental health professional had significantly higher MHL (M = 133.53, SD = 12.02) than those who did not (M = 123.88, SD = 11.61), t (370) = 7.61, p<.001 (O'Connor & Casey, 2015). The magnitude of the difference in the means (mean difference = 9.65, 95% CI = 7.15-12.14) was large (d= .82) (O'Connor & Casey, 2015). Lastly, those who had a family member or friend with a mental illness had significantly higher MHL (M = 129.53, SD = 12.12) than those who did not (M = 122.69, SD = 12.49), t(370) = 5.00, p<.001 (O'Connor & Casey, 2015). The magnitude of the difference in the means (mean difference = 6.84, 95% CI = 4.15-9.52) was medium (d = .56) (O'Connor & Casey, 2015, p. 515). This scale will aid in identifying individuals who have low MHL, and who could potentially benefit from additional education and support (O'Connor & Casey, 2015).

Considering that the MHLS was created with an Australian sample, changes were made to question nine and ten to make the scale applicable to a Canadian context. Question nine, "To

what extent do you think it is likely that in general in Australia, women are more likely to experience a mental illness of any kind compared to men", was changed to "To what extent do you think it is likely that in general in Canada, women are more likely to experience a mental illness of any kind compared to men". Question ten, "To what extent do you think it is likely that in general, in Australia men are more likely to experience an anxiety disorder compared to women" was changed to, "To what extent do you think it is likely that in general, in Canada, men are more likely to experience an anxiety disorder compared to women". The author whom permission was granted from, Dr. Matt O'Connor, also suggested that given the changes to the DSM-5, questions five and eight should be modified. Question five states, "To what extent do you think it is likely that Dysthymia is a disorder" which was modified to, "To what extent do you think it is likely that Persistent Depressive Disorder (Dysthymia) is a disorder". Question eight states, "To what extent do you think it is likely that the diagnosis of Drug Dependence includes physical and psychological tolerance of the drug (i.e., require more of the drug to get the same effect)" was changed to, "To what extent do you think it is likely that the diagnoses of Substance Abuse Disorder can include physical and psychological tolerance of the drug (i.e., require more of the drug to get the same effect)".

### *Test Critique*

***Purpose.*** The MHLS aims to assess all attributes of individuals' MHL. Such attributes include recognition of disorders, knowledge of how to seek mental health information, knowledge of risk factors and causes, knowledge of self-treatments, knowledge of professional help available, and attitudes that promote recognition and appropriate help-seeking which (O'Connor & Casey, 2015).

***Construction Methodology.*** The MHLS was constructed in three phases. Phase one was referred to as the measure development, where authors developed operational definitions of the seven attributes using an iterative process until a consensus was reached within the clinical panel (i.e., clinical psychology staff, and the research team who were registered or provisionally registered psychologists and clinical psychologists) (O'Connor & Casey, 2015). The panel's feedback suggested that there is insufficient knowledge in the field to differentiate from risk factors for mental illness and causes of mental illness, therefore, these attributes were merged into one (knowledge of risk factors and causes) (O'Connor & Casey, 2015). Items for each of the six attributes were created by the research team and clinical panel. For any item that required a correct answer, it was checked by consulting literature for consensus and through further discussion with the clinical panel (O'Connor & Casey, 2015).

The second phase was referred to as item testing. The MHLS pilot (MHLS-P) included 79 questions which were forwarded to another panel of practicing mental health professionals (n=7), including the original clinical panel for feedback (O'Connor & Casey, 2015). The MHLS-P was then administered to a community sample (n=202) to conduct a preliminary analysis of items (O'Connor & Casey, 2015). The participants were recruited online through a snowball sampling technique using social media (Facebook, Twitter, email) (O'Connor & Casey, 2015). The participants were required to be 18 years or older, and they were also required to be Australian residents (O'Connor & Casey, 2015). The data analysis was conducted using the Statistical Package for the Social Sciences (SPSS). For dichotomous items, 39 items showed ceiling effects, having higher than 80% correct endorsement rate (O'Connor & Casey, 2015). To ensure that MHLS would be a sensitive measure of MHL, a split of 80-20 was used. In total, 39 items were above the cut-off (O'Connor & Casey, 2015). The Likert items revealed substantial

skewing and kurtosis, implying that participants had strong positive beliefs regarding their ability to seek mental health information and attitudes towards mental health challenges (O'Connor & Casey, 2015). As a result, 28 items were excluded, and items with less than an 80% correct response rate were retained to improve the sensitivity of the measure, and to better differentiate participants who had high and low levels of MHL (O'Connor & Casey, 2015). Additional modifications based on their results included false items that can be reversed score which increases the difficulty of the measure as answers become less obvious and adapting to a 4-point Likert format and changing the structure of questions to "to what extent do you think" to allow for greater information to be obtained (O'Connor & Casey, 2015). Items written using a Likert Scale were written in a manner that there was still a correct answer, and that a participant's response on the scale indicated their degree of knowledge (O'Connor & Casey, 2015).

The third phase was referred as assessment of psychometrics and methodological quality. The MHLS-P was refined (MHLS-P-R) after obtaining the statistical analyses and feedback from phase two, which resulted in a total of 51 items including, ability to recognize disorders (21), knowledge of where to seek information (4), knowledge of risk factors and causes (2), knowledge of self-treatment (2), knowledge of professional help available (5) and attitudes that promote recognition or appropriate HSB (17) (O'Connor & Casey, 2015). The reason for each attribute having different numbers of items is that some attributes required a larger number of items to appropriately address the attribute (e.g., recognition of disorders) (O'Connor & Casey, 2015). To further refine the measure and evaluate its psychometrics, the MHLS-P-R was then administered to a community sample (n=372) and a sample of mental health professionals (n=43) (O'Connor & Casey, 2015). The community sample consisted of first year university students who completed it as part of their course credit obtained in psychology courses (O'Connor &

Casey, 2015). Testing occurred early in first semester to reduce the impact that taking psychology courses may have had (O'Connor & Casey, 2015). The mental health professionals were recruited through a private online forum for psychologists.

The Mental Health Literacy Scale Pilot-Revise (MHLS-P-R) consisted of 51 items, with 25 reverse scored items (O'Connor & Casey, 2015). The items were scored according to the selected value (1-4 on the Likert Scale). For instance, if a participant selected two, then they scored two (O'Connor & Casey, 2015). Items that assess participant's level of experience with mental health including mental illness, seeking help from a mental health professional, and having friends or family members with a mental illness were only collected from the community sample and not the mental health professional sample (O'Connor & Casey, 2015). To assess test-retest reliability, participants in the community sample were invited to complete the measure for a second time two weeks after later (O'Connor & Casey, 2015).

***Evidence of Reliability.*** To reduce the number of items in the measure and enhance the reliability of the MHLS, items containing a corrected-item total correlation less than 2 were removed to improve the overall Cronbach's alpha (O'Connor & Casey 2015). After removing 22 items, the alpha level was .879, which represented the highest possible Cronbach's alpha, as suggested by examining the projected Cronbach's alpha if further items were removed (O'Connor & Casey, 2015). To ensure there was at least one item to assess each of the six attributes, 6 items were re-entered, which resulted in a total of 35 items and a final alpha level of 0.873 (O'Connor & Casey, 2015). To ensure reliability of the MHLS, participants were retested two weeks after initially completing the MHLS, and the results demonstrated good reliability $r(69) = .797$, $p<.001$. The standard error of measure was reported as 5.70 (O'Connor & Casey, 2015). The final and completed version of the MHLS consisted of 35 items which included the

ability to recognize disorders (8), knowledge of where to seek information (4), knowledge of risk factors and causes (2), knowledge of self-treatment (2), knowledge of professional help available (3), and attitudes that promote recognition or appropriate HSB (16) (O'Connor & Casey, 2015).

***Evidence of Validity.*** The MHLS demonstrate construct validity as it was found to be positively correlated with the General Help Seeking Questionnaire (GHSQ) total scale $r(370) = .234$ $p < .001$, the GHSQ formal scale $r(370) = .146$ $p = .005$ and informal scale, $r(370) = .185$ $p < .001$, which implies that individuals with higher MHL are more likely to seek help overall, as well as from formal and informal sources (O'Connor & Casey, 2015). There, however, was no significant relationship found between MHL and the Kessler Psychological Distress Scale (K10) $r(370) = -.087$ $p < .092$ ns, indicating that levels of PD are not related to MHL (O'Connor & Casey, 2015).

***Pros of Measure.*** The MHLS was found to have good psychometric properties and it can be easily administered and scored (O'Connor & Casey, 2015). The measure itself will assist in efficient evaluation of programs that are aimed to improve MHL and ensure that such programs address all six attributes (O'Connor & Casey, 2015).

***Cons of Measure.*** The MHLS is a self-report measure, therefore, it relies solely on the participants to provide an accurate answer. It is possible that participants may not accurately perceive themselves, therefore, they may choose an inappropriate answer (i.e., one that may not be true), thus reporting an inaccurate level of MHL.

### *Help-Seeking Behaviour*

The current study was interested in investigating students' actual HSB (i.e., if they have previously sought help, from whom they have sought help, and whether they were currently seeking help). Considering there was no standardized scale that measures this information,

questions pertaining to this construct were added to the survey (refer to appendix E for exact questions).

### *Erikson's Psychosocial Theory of Development*

To explore the onset of PD in relation to Erikson's Psychosocial Theory of Development, participants were asked at what point in their life they first noticed or experienced symptoms of PD. Participants were also asked when PD was most prominent in the life (i.e., when it seemed to impact them most). Refer to appendix F for specific questions.

### *Bandura's Social Learning Theory*

To explore participants' direct and modeled experiences of HSB, they were asked what encouraged and discouraged them to seek support for their mental health.

### *Krumboltz's Social Learning Approach to Career Decision Making and Tiedeman & Miller-Tiedeman's Career Decision Making Theory*

To examine what participants based their career decision making process on, they were asked to report what influenced them to pursue university, their chosen major/program, and their chosen university.

## Procedures

Once the study's proposal had undergone a comprehensive review of ethics and permission was obtained to move forward with the study, a pilot survey was conducted. This involved recruiting a small sample of volunteers who were willing to complete the survey on Qualtrics for the sole purpose of checking its' efficacy and ensuring that questions were clear. This helped to ensure that the data collected by actual participants was not hindered by the wording or format of the questions. Following completion of the pilot survey, and addressing small grammatical changes, the Qualtrics survey was shared online through social media

platforms such as Facebook, Instagram, and Reddit. The survey included demographic questions, the DASS, the MHLS, questions pertaining to HSB Erikson's Psychosocial Theory of Development, Bandura's Social Learning Theory, Krumboltz's Social Learning Approach to Career Decision Making and Tiedeman and Miller-Tiedeman's Career Decision Making Theory. The post that was shared on social media platforms outlined voluntary participation, anonymity, estimated time of survey completion, inclusion and exclusion criteria, approval for ethics and a link to the study. Refer to Appendix I, for the social media advertisement. A similar outline was also shared on the SONA platform at the University of Lethbridge. The survey was open for three months and resulted in obtaining a relatively large starting sample size of 419 participants (i.e., prior to data cleaning). Upon completion of data collection, the data was downloaded into Excel from Qualtrics and then it was imported into Statistical Package for the Social Sciences Version 28 (SPSS 28) from Excel. The first step was necessary, as data was not importing properly (i.e., missing values) when it was imported directly from Qualtrics to SPSS Statistics. This process was completed three times to ensure proper importation of the data.

After proper data importation, the researcher initiated the process of data cleaning. Participants were informed at the beginning of the study during the implied consent process that participation was voluntary. As such, they were not obligated to participate, and they could refuse to answer any questions that they did not want to answer. Any participant that left more than two of the DASS and/or MHLS questions blank were removed from the study. This resulted in 84 participants being excluded from the data analysis. The remaining participants' completion rate was 98% or higher, which means that they completed at least 98% of the survey. For those who only missed one or two questions on the DASS and/or MHLS, their missing responses were averaged over the remaining items. Upon completion of the data cleaning, the data analyses were

completed using SPSS 28. Lastly, the discussion, limitations, implications, and future directions section of the study were interpreted and written with the support of relevant literature.

## Test of Normality

To check the normality of the data, a Shapiro-Wilk test was conducted. Results indicated that the data was not normally distributed ($p<0.001$). As such, non-parametric tests were used to analyze the data.

## Method of Analysis

Given that the data was not normally distributed, the results of the current study were analyzed using a non-parametric approach. All the data was extracted from Qualtrics and was analyzed through SPSS 28. The analyses included descriptive statistics, bivariate correlations, Mann Whitney U tests and thematic analysis.

### *Descriptive Statistics*

Descriptive statistics were used to explore participants' demographic information. This assisted in examining the distribution of participants' demographic variables such as age, gender, socioeconomic status, location of study, year of study, and program of study. To explore research question one, "To what degree do Canadian undergraduate students demonstrate mental health literacy?", frequencies were calculated to examine the distribution of participants' total MHL scores. Additionally, frequencies were used to describe the number of students who experienced normal, mild, moderate, severe, and extremely severe levels of PD.

### *Bivariate Correlations*

A Spearman's rho correlation was conducted to explore research question two, "Do students who are identified as having high levels of mental health literacy demonstrate lower levels of psychological distress?". A Spearman Correlation is the non-parametric version of a

Pearson Correlation which measures the strength and direction of association between two variables that must be either ordinal, interval, or ratio (Laerds Statistics, 2018). More specifically, it determines the strength and direction of a monotonic relationship which means when the value of one variable increases, so does the other, or as one variable increases the other decreases (Laerds Statistics, 2018). Given that the data did not follow a normal distribution, and PD and MHL were ordinal variables, meaning that they were categorical variables where values could be ordered, a Spearman correlation was most appropriate to determine the strength of the relationship between participants' MHL and PD. Aside from research question two, an additional Spearman's correlation was conducted to determine if there was a significant relationship that existed between students' GPA and level of PD.

***Mann-Whitney U Test***

A Mann-Whitney U test is designed to determine if differences exist between two independent groups. To utilize a Mann Whitney U test, four assumptions must be met: (1) the dependent variable is ordinal or continuous; (2) the independent variable consists of two categorical, independent groups; (3) an independence of observations exists; and (4) the two variables are not normally distributed (Laerd Statistics, 2018). All four assumptions of this test were met. Given that our independent variable, MHL was ordinal, and current help-seeking behaviour was recorded by answering 'yes' or 'no', making it a categorical variable, the Mann-Whitney U test was most appropriate to examine research question three, "Are students who are identified as having high levels of mental health literacy more likely to seek professional support?". An additional Mann-Whitney U test was performed to explore differences in males' and females' reported levels of PD.

***Thematic Analysis***

To identify themes in participants' responses to open-ended questions, thematic analysis was utilized. The four open-ended questions included, "Please explain how you worry about COVID-19 coming back", "If you have previously sought help or are currently seeking help for your mental health, please describe your experience", "If you did not seek help for your mental health, why not?", and "Why do you think that your level of psychological distress was most prominent at that time your life?". More specifically, an inductive approach was used for thematic analysis, which means that the data was coded without trying to fit it into predetermine coding frames or the researcher's analytic perceptions (Nowell et al., 2017). In other words, themes were identified based on the responses provided in the data set. This allowed the researcher to focus more on the participants' responses to generate new ideas and understandings as opposed to trying to fit them into pre-existing criteria, and potentially miss critical information. Inductive thematic analysis was conducted for the four open-ended questions surrounding HSB, help-seeking experience, the prominence of PD, and COVID-19 implications.

Taken together, the studied relied on a mixed-methods approach. A combination of descriptive statistics, Spearman's Correlation, Mann-Whitney U test and thematic analysis assisted the researcher to answer the three research questions mentioned above.

# Chapter 4: Results

The purpose of the current study was to explore the influence of Mental Health Literacy on university students' levels of psychological distress and help-seeking behaviour. The following research questions were addressed:

1. To what degree do Canadian undergraduate students demonstrate mental health literacy?
2. Do students who are identified as having high levels of mental health literacy have lower levels of psychological distress?
3. Are students who are identified as having high levels of mental health literacy more likely to seek professional support?

This chapter presents the results for each of the three questions. Non-parametric tests were used to analyze the quantitative data which included descriptive statistics, bivariate correlation (Spearman's Correlation) and Mann-Whitney U test. To identify themes in the open-ended questions, thematic analysis was used.

## Descriptive Statistics

Descriptive statistics such as frequencies, were calculated for variables related to the purpose of the current study.

### *Demographics*

***Age, Gender, Ethnicity, Socioeconomic, Work Status and Relationship Status.*** Of the 419 people who submitted responses, 335 participants were included in the study, with the majority identifying as female (*n*=264, 78.8%). The age of participants ranged from 17 to 41 years old (*n* =222*)*, with most participants being between the ages of 18 and 21. Most participants identified as White (*n*=240, 71.6%) and the socioeconomic status of participants ranged from less than $25,000 a year to more than $250,000 a year (*n*=332). Many participants were either working

part-time (*n*=154, 46.0%) or were not working at all (*n*=167, 49.9%). When asked about their relationship status, over half of the participants reported that they were single (*n*=198, 59.1%). Descriptive variables related to participants' demographics are listed below in Table 1.

**Table 1**

*Demographic Variables*

| Demographic Variable | *n* | % |
|---|---|---|
| Age | | |
| 17 | 5 | 1.5 |
| 18 | 37 | 11.0 |
| 19 | 52 | 15.5 |
| 20 | 34 | 10.1 |
| 21 | 28 | 8.4 |
| 22 | 18 | 5.4 |
| 23 | 17 | 5.1 |
| 24 | 8 | 2.4 |
| 25 | 6 | 1.8 |
| 26 | 4 | 1.2 |
| 27 | 3 | 0.9 |
| 28 | 1 | 0.3 |
| 29 | 1 | 0.3 |
| 31 | 4 | 1.2 |
| 33 | 1 | 0.3 |
| 34 | 1 | 0.3 |
| 40 | 1 | 0.3 |
| 41 | 1 | 0.3 |
| Ethnicity | | |
| Arab | 6 | 1.8 |
| Black | 17 | 5.1 |
| Caribbean | 1 | 0.3 |
| Chinese | 4 | 1.2 |
| Filipino | 10 | 3.0 |
| Indigenous | 11 | 3.3 |
| Japanese | 2 | 0.6 |
| Korean | 1 | 0.3 |
| Latin American | 8 | 2.4 |
| South Asian | 21 | 6.3 |
| Southeast Asian | 4 | 1.2 |
| White | 240 | 71.6 |
| Other | 9 | 2.7 |
| Gender | | |
| Male | 55 | 16.4 |

| | | |
|---|---|---|
| Female | 264 | 78.8 |
| Non-Binary | 10 | 3.0 |
| Transgender | 4 | 1.2 |
| Other | 2 | 0.6 |
| Relationship Status | | |
| Single | 198 | 59.1 |
| Common Law | 48 | 14.3 |
| Married | 14 | 4.2 |
| Divorced | 3 | 0.9 |
| Other | 72 | 21.5 |
| Socioeconomic Status | | |
| Less than $25,000 a year | 33 | 9.9 |
| $25,000 to $49,999 a year | 43 | 12.8 |
| $50,000 to $74,999 a year | 36 | 10.7 |
| $75,000 to $99,999 a year | 41 | 12.2 |
| $100,000 to $149,999 a year | 52 | 15.5 |
| $150,000 to $249,999 a year | 36 | 10.7 |
| More than $250,000 a year | 18 | 5.4 |
| I do not know | 67 | 20.0 |
| Prefer not to say | 6 | 1.8 |
| Work Status | | |
| Full-time job | 14 | 4.2 |
| Part-time job | 154 | 46.0 |
| I am not working | 167 | 49.9 |

***Permanent Residence, Location of University, and Current Living Situation.*** The majority of participants permanently resided in Alberta (*n*=277, 82.7%) and the majority also attended post-secondary in Alberta (*n*=300, 89.6%). Over half of participants reported that they did not move for university (*n*=289, 86.3%). Regarding current living situation, approximately a third of participants reported that they were living away from home in an apartment/house with roommate(s) (*n*=119, 35.3%). Descriptive variables related to participants' residence, university and living situation can be located below in Table 2.

**Table 2**

*Residency Variables*

| Residency Variables | *n* | % |
|---|---|---|
| Permanent Residence | | |
| British Columbia | 13 | 3.9 |

| | | |
|---|---|---|
| Alberta | 277 | 82.7 |
| Saskatchewan | 3 | 0.9 |
| Manitoba | 2 | 0.6 |
| Ontario | 1 | 0.3 |
| Newfoundland and Labrador | 3 | 0.9 |
| Prince Edward Island | 15 | 4.5 |
| New Brunswick | 1 | 0.3 |
| Nova Scotia | 9 | 2.7 |
| Yukon | 1 | 0.3 |
| I do not reside in Canada | 9 | 2.7 |
| Location of University | | |
| British Columbia | 2 | 0.6 |
| Alberta | 300 | 89.6 |
| Manitoba | 1 | 0.3 |
| Ontario | 1 | 0.3 |
| Quebec | 1 | 0.3 |
| Newfoundland and Labrador | 3 | 0.9 |
| Prince Edward Island | 8 | 2.4 |
| New Brunswick | 2 | 0.6 |
| Nova Scotia | 16 | 4.8 |
| Moved for university | | |
| Yes | 45 | 13.4 |
| No | 289 | 86.3 |
| Current Living Situation | | |
| Living at home with my parents/guardians | 71 | 21.2 |
| Living at home with my spouse/significant other | 27 | 8.1 |
| Living in university residence with a roommate | 52 | 15.5 |
| Living in university residence without a roommate | 10 | 3.0 |
| Living away from home in an apartment/house with roommate(s) | 119 | 35.5 |
| Living away from home with spouse/significant other | 27 | 8.1 |
| Living away from home in an apartment by myself | 17 | 5.1 |
| Other | 12 | 3.6 |
| Proximity to university from permanent residence | | |
| Less than 60 km | 153 | 45.7 |
| 60 – 100 km | 23 | 6.9 |
| 101 – 300 km | 82 | 24.5 |
| 301 – 500 km | 37 | 11.0 |
| 501 – 700 km | 10 | 3.0 |
| 701 – 900 km | 5 | 1.5 |
| 901 – 1100 km | 10 | 3.0 |
| More than 1100 km | 15 | 4.5 |

***Year of University, Program, Major, Course Information and GPA.*** Over half of the participants were in their early years of their education with 105 participants being in their first

year (31.3%) and they were enrolled in a diverse number of bachelor programs, with many participants being enrolled in Bachelor of Science (BSc) (*n*=113, 33.7%), Bachelor of Arts (BA) (*n*=88, 26.3%) and Bachelor of Arts and Science (BASc) (*n*=69, 20.6%). A little over half of participants reported that they were majoring in Psychology (*n*=176, 52.5%), while 149 participants reported that their major was not in Psychology (44.5%). Almost all the participants were full time students taking three or more courses (*n*=329, 98.2%). Participants' GPA ranged from 0.00-1.00 to 4.00-4.30, with the majority ranging between 2.68-2.99 to 3.68-3.99 (*n*=254, 75.8%). The format of participants' courses was either all in-person (*n*=214, 63.9%) or blended (*n*=119, 35.5%). When asked about their preferred course format, most participants reported that they either preferred all in-person courses (*n*=166, 49.6%) or blended courses (*n*=125, 37.3%). Descriptive variables relating to participants' course information can be found below in Table 3.

**Table 3**

*Course Information*

| Course Information Variables | *n* | % |
|---|---|---|
| Year of University | | |
| Year 1 | 105 | 31.3 |
| Year 2 | 88 | 26.3 |
| Year 3 | 53 | 15.8 |
| Year 4 | 50 | 14.9 |
| Year 5 | 23 | 6.9 |
| Year 6 | 10 | 3.0 |
| Other | 5 | 1.5 |
| Bachelor Program | | |
| Bachelor of Arts (BA) | 88 | 26.3 |
| Bachelor of Arts and Science (BAS) | 69 | 20.6 |
| Bachelor of Business Administration (BBA) | 1 | 0.3 |
| Bachelor of Commerce (BComm) | 1 | 0.3 |
| Bachelor of Education (BEd) | 6 | 1.8 |
| Bachelor of Engineering (BEng) | 6 | 1.8 |
| Bachelor of Health Science (BHSc) | 5 | 1.5 |
| Bachelor of Management (BMgmt) | 1 | 0.3 |
| Bachelor of Music (BMus) | 3 | 0.9 |
| Bachelor of Science Nursing (BScN) | 4 | 1.2 |

| | | |
|---|---|---|
| Bachelor of Science (BSc) | 113 | 33.7 |
| Double Major | 27 | 8.1 |
| Other | 11 | 3.3 |
| Major in Psychology | | |
| Yes | 176 | 52.5 |
| No | 149 | 44.5 |
| Major is undecided | 10 | 3.0 |
| Number of courses | | |
| 2 | 6 | 1.8 |
| 3 | 39 | 11.6 |
| 4 | 132 | 39.4 |
| 5 | 146 | 43.6 |
| 6 | 8 | 2.4 |
| 6+ (more than 6) | 4 | 1.2 |
| GPA | | |
| 0.00-1.00 | 4 | 1.2 |
| 1.01-1.33 | 3 | 0.9 |
| 1.34-1.67 | 3 | 0.9 |
| 1.68-1.99 | 1 | 0.3 |
| 2.00-2.33 | 17 | 5.1 |
| 2.34-2.67 | 19 | 5.7 |
| 2.68-2.99 | 40 | 11.9 |
| 3.00-3.33 | 72 | 21.5 |
| 3.34-3.67 | 72 | 21.5 |
| 3.68-3.99 | 70 | 20.9 |
| 4.00-4.30 | 23 | 6.9 |
| Format of courses | | |
| All in-person | 214 | 63.9 |
| All online | 1 | 0.3 |
| Blended (some in person; some online) | 119 | 35.5 |
| Preferred format of courses | | |
| I prefer all in-person courses | 166 | 49.6 |
| I prefer all online courses | 44 | 13.1 |
| I prefer blended (some in-person; some online) | 125 | 37.3 |

***Severity of Psychological Distress***

Nearly two thirds of participants reported heightened symptoms of anxiety (*n*=209, 62.4%) with severity ranging from mild to extremely severe. Similarly, over half of the participants experienced elevated levels of depression (*n*=204, 60.8%) and elevated levels of stress (*n*=197, 58.8%) ranging from mild to extremely severe. Refer to Table 4 for frequencies of severity levels.

**Table 4**

*Participants' Level of Psychological Distress*

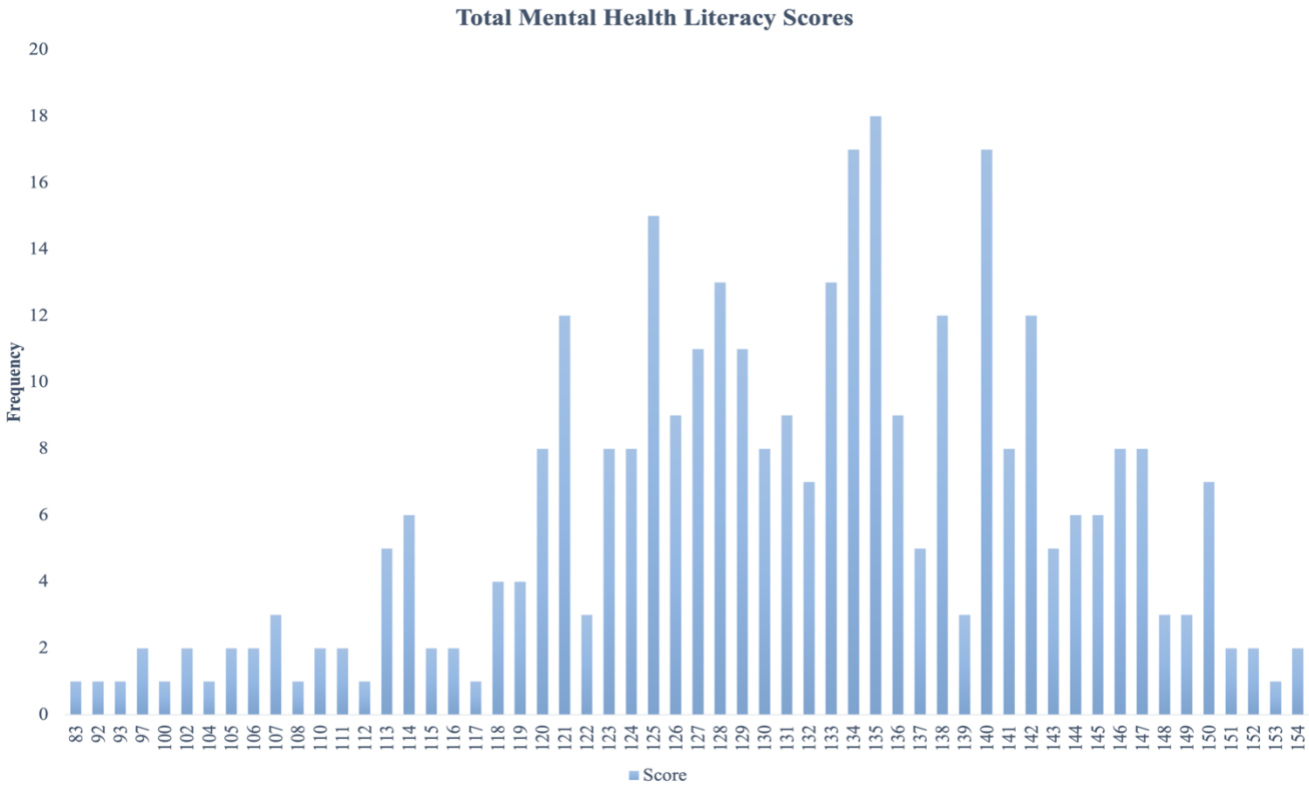
| Psychological Distress | *n* | % |
|---|---|---|
| Anxiety | | |
| Normal | 126 | 37.6 |
| Mild | 25 | 7.5 |
| Moderate | 56 | 16.7 |
| Severe | 42 | 12.5 |
| Extremely Severe | 86 | 25.7 |
| Depression | | |
| Normal | 131 | 39.1 |
| Mild | 45 | 13.4 |
| Moderate | 63 | 18.8 |
| Severe | 46 | 13.7 |
| Extremely Severe | 50 | 14.9 |
| Stress | | |
| Normal | 138 | 41.2 |
| Mild | 47 | 14.0 |
| Moderate | 69 | 20.6 |
| Severe | 57 | 17.0 |
| Extremely Severe | 24 | 7.2 |

**Research Question One**

To determine the degree of Canadian undergraduate students' MHL, descriptive statistics were calculated. The lowest score possible was 30, while the highest score was 160. Participants' scores ranged from 83 to 154. The mean score was 130.95 ($M$=130.95, $SD$ = 11.95). Participants' total MHL scores are presented in Figure 1.

**Figure 1**

Total Mental Health Literacy Scores




**Research Question Two**

To investigate the relationship between students' MHL and their levels of PD, a Spearman's rho correlation was conducted. As seen below in Table 5, there was a significant positive relationship between 'ability to recognize disorders' and depression, anxiety, and stress. A second correlation revealed a negative relationship between 'knowledge of how to seek information' and depression, anxiety, and stress. Finally, a third correlation revealed a positive relationship between 'attitudes that promote recognition or appropriate help-seeking behaviour' and anxiety and stress.

**Table 5**

*Spearman Correlation for Mental Health Literacy and Psychological Distress*

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| 1. Ability to Recognize Disorders | 24.35 | 3.98 | __ | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2. Knowledge of How to Seek Information | 15.47 | 3.25 | __ | | | | | |
| 3. Knowledge of Risk Factors and Causes | 5.27 | 1.01 | __ | | | | | |
| 4. Knowledge of Self-Treatment | 6.48 | .98 | __ | | | | | |
| 5. Knowledge of Professional Help Available | 10.28 | 1.47 | __ | | | | | |
| 6. Attitudes that Promote Recognition or Appropriate Help-Seeking Behaviour | 69.11 | 8.12 | __ | | | | | |
| 7. Anxiety | 12.79 | 9.29 | .110* | -.142** | -.005 | .013 | .025 | .110* |
| 8. Depression | 15.03 | 10.88 | .152** | -.218** | .082 | .003 | .019 | .014 |
| 9. Stress | 17.85 | 9.51 | .138* | -.144** | .035 | .090 | .071 | .114* |

*$p$ <.05. **$p$ <.001.

**Research Question Three**

To investigate whether there was a difference in MHL between those who are currently seeking help from mental health professionals and those who are not currently seeking help, a Mann-Whitney U test was conducted. Results indicated that there were some significant differences. Those who have greater knowledge of where to seek information, knowledge of risk factors and causes, and higher attitudes towards mental health were currently seeking help as seen below in Table 6.

**Table 6**

*Do Differences Exist in Mental Health Literacy Among Those Currently Seeking Help Versus Those Who Are Not?*

| Mental Health Literacy | Seeking Help | Not Seeking Help | Z | Sig. |
|---|---|---|---|---|
| | Mean Rank | Mean Rank | | |
| Ability to Recognize Disorders | 166.69 | 163.67 | -.259 | .796 |
| Knowledge of Where to Seek Information | 189.90 | 154.16 | -3.073 | .002** |

| | | | | |
|---|---|---|---|---|
| Knowledge of Risk Factors and Causes | 183.72 | 157.23 | -2.402 | .016* |
| Knowledge of Self-Treatment | 179.25 | 158.92 | -1.822 | .068 |
| Knowledge of Professional Help Available | 183.09 | 157.47 | -2.243 | .025* |
| Attitudes Towards Mental Health | 194.06 | 153.32 | -3.475 | <.001** |

*$p$ <.05. **$p$ <.001.

**Other Significant Findings**

In addition to the three research questions previously discussed, additional significant results were found. As seen below in Table 7, a Spearman Correlation revealed a significant relationship between GPA and PD. Additionally, a Mann-Whitney U test was conducted to determine if there were differences in reported levels of PD between males and females. As seen in Table 8, a significant difference existed between male and females' level of stress, but no significant difference was reported between anxiety or depression.

**Table 7**

*Spearman Correlation for GPA and Psychological Distress*

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| 1. GPA | | | — | — | | |
| 2. Anxiety | 12.79 | 9.29 | -.243** | — | | |
| 3. Depression | 15.03 | 10.88 | -.208** | — | | |
| 4. Stress | 17.85 | 9.51 | -.181** | — | | |

**$p$ <.001

**Table 8**

*Is There a Difference in Level of Psychological Distress Between Males and Females?*

| Psychological Distress | Male | Female | Z | Sig. |
|---|---|---|---|---|
| | Mean Rank | Mean Rank | | |
| Anxiety | 139.75 | 164.22 | -1.79 | .073 |
| Depression | 154.63 | 161.12 | -.475 | .635 |
| Stress | 128.82 | 166.50 | -2.76 | .006* |

*$p$ <.05.

## Thematic Analysis

Thematic analysis, specifically, an inductive approach was used to identify themes in participants' responses in short open-ended questions. There were four short-answer questions; two that asked participants about their help-seeking experience and behaviour, one regarding the onset of their PD, and one asking how participants worry about COVID-19. After reading through each response set three times to become familiar with the data, the researcher identified themes and subthemes based on the responses participants provided. Once the themes were identified, the researcher counted how many times each theme appeared, and recorded a frequency count.

### *Help-Seeking Behaviour*

While exploring participants' reasons for not seeking help from mental health professionals, thematic analysis indicated that many students did not seek support due to stigmatizations, deeming support as unnecessary, mixed emotions regarding help-seeking, a lack of time and energy, limited access and knowledge, financial barriers, and previous negative experiences. The theme, 'Deeming support as unnecessary' was identified as the most reported factor, which included subthemes such as self-management, no reported mental health concerns, and receiving support from non-mental health professionals such as family and friends.

The second highest reported factor was stigmatizations. Subthemes of 'stigmatizations' included being a burden, worrying about what others think, and believing that their problems were not "big enough" or important. One participant stated, "the professionals probably have more pressing cases to attend to; my case isn't immediately life-threatening", while another said, "I was reluctant to at first because I was worried about what friends or family would think. I also thought doctors or whoever I expressed my concerns to would say it was just in my head or not

that serious". Several participants' responses mirrored subthemes of feeling like a burden to others, and that they did not want to take resources away from others. A third prominent theme that arose was mixed feelings regarding help-seeking. Many respondents reported that they felt scared and nervous to reach out for help, some reported feeling skeptical, and others addressed a fear of being diagnosed and being treated with medication. One participant stated, "… I am a bit scared about taking that next step and calling about seeing a therapist still…because in some ways I am worried/terrified about what would be said, or of actually being diagnosed, because then I would no longer really be able to pretend that I am okay". Other students' responses reflected feeling uncomfortable talking to a stranger and being scared as they convinced themselves that they are faking it. Refer to Table 9 for a list of all themes and subthemes reported by participants.

**Table 9**

*Identified Themes of Reasons for Not Seeking Help from a Mental Health Professional*

| Theme | Subtheme | *f* |
|---|---|---|
| Support is Unnecessary | No self-reported concerns<br>Self-management<br>Support from others | 36 |
| Stigmatizations | Fear of burden<br>Worry about what others think<br>Problems are not important | 32 |
| Mixed Feelings | Scared/Nervous<br>Uncomfortable<br>Skepticism<br>Fear of Diagnosis<br>Fear of Medication | 15 |
| Lack of Time & Energy | Time Management<br>Required Energy<br>Required Effort | 15 |
| Financial Barrier | Low Income | 8 |

| | | |
|---|---|---|
| | Cost of Support | |
| Limited Access & Knowledge | Initiating Support<br>Negative Attitude<br>Limited access to supports | 5 |
| Previous Negative Experience | Rejection<br>Discouragement<br>General unhelpfulness | 5 |

***Help Seeking Experience***

Participants were invited to share their encounters regarding their past and current help-seeking experiences. Thematic analysis indicated that respondents had both positive and negative help-seeking experiences. Themes that emerged included, helpful treatment approaches, mismatch treatment approaches, mismatch with therapist, positive therapist match, benefit of disclosure, and developed skills. The theme 'helpful treatment approaches' was identified as the most reported factor representing students' help-seeking experiences, which included subthemes such as general helpfulness, therapeutic modalities such as medication, cognitive behaviour therapy (CBT), dialectical behaviour therapy (DBT), eye movement desensitization and reprocessing (EMDR), group therapy, art therapy, and animal therapy. One participant stated, "I started seeing my therapist a year ago and I have come a long way since then. It has been extremely helpful and made it possible for me to do everyday things". Another respondent said, "with support and medication, I have been able to feel like I am where I should be and that what I go through is okay to go through".

Contrary to 'helpful treatment approaches', the theme 'Unhelpful and Mismatch Treatment Approaches' was the second highest reported factor. This theme included subthemes such as general unhelpfulness, reliance on medication, surface level support, misdiagnoses, and different therapeutic modalities such as EMDR, CBT and play therapy. Participants made

comments such as “[my] previous experiences involved being misdiagnosed until 21 by psychiatrists and being put on a dangerous combination of medications from a physician”. Similarly, another participant said, “if you don’t find one [psychiatrist] who cares they can just over-diagnose and overmedicate. I had one that sat with me for 10 minutes, diagnosed me with borderline and gave me pills that made me SO sick and essentially used the appointments to make money making me feel bad”. Others made comments such as “I didn’t have a good experience at all and it made me never want to speak to a therapist again”, and “I have jumped between multiple different mental health resources, as I have not been able to receive the help that I need”.

The third highest factor was, ‘Mismatch with Therapist’ which included subthemes such as negative connection, dismissive, overbearing, domineering, biased, judgmental, lack of confidentiality, and lack of time. One participant stated, “I feel that this was ineffective because the therapist seemed to have certain biases about my situation that I did not give insight on. It was not a good experience and I have not since look for someone else”, while another said, “I am still in the process of trying to find professionals who will listen, help, and believe me”. Another participant stated, “finding a good therapist is extremely time consuming, difficult and emotionally exhausting”, and one other said, “the aspect that made it worse for me was that the counsellor made me feel like my issues were miniscule, and I shouldn’t be complaining too much about them because other people have it way worse than I do”. Refer to Table 10 for a list of all themes and subthemes reported by participants.

**Table 10**

*Students’ Past and Current Help-Seeking Experiences*

| Theme | Subtheme | *f* |
|---|---|---|
| Helpful Treatment | General Helpfulness | |

| | | |
|---|---|---|
| | Medication<br>CBT<br>DBT<br>EMDR<br>Group Therapy<br>Animal Therapy<br>Art Therapy | 118 |
| Unhelpful Treatment | General Unhelpfulness<br>Reliance on Medication<br>CBT<br>EMDR<br>Play Therapy<br>Misdiagnoses<br>Surface Level Support | 49 |
| Therapist Mismatch | Negative Connection<br>Dismissive<br>Overbearing<br>Domineering<br>Biased<br>Judgmental<br>Lack of Time<br>Lack of Confidentiality | 42 |
| Therapist Match | Positive Connection<br>Warm<br>Welcoming<br>Informative<br>Non-judgmental<br>Offers Insight into Problems<br>Engaged | 19 |
| Benefit of Disclosure | Talking to a Stranger<br>Venting | 19 |
| Developed Skills | Self-Management<br>Coping Mechanisms<br>Regulating Emotions | 18 |

### *Prominence of Psychological Distress*

Participants were asked to reflect on why their PD was most prominent during the age they identified it to be most notable. Themes that emerged included traumatic life events/moments of hardship, life transitions, personal and emotional life stressors, academic and extracurricular stressors, family dynamic/home life, COVID-19, unidentifiable factors, lack of

social support, and physical and mental health diagnoses. Thematic analysis indicated that traumatic life events/hardship was the highest reported theme of the prominence of PD which included subthemes such as assault, breakup, bullying, death of a loved one, grief, and car accidents. One participant stated "I had a lot more trauma than I had initially realized. It was not until I saw a therapist that I had even realized the experiences from my childhood were considered trauma". Other participants made statements such as "a few traumatic events occurred in a short span of time" and "the aftermath of coming to terms with grief".

The second most reported theme was life transitions, which included subthemes such as moving away from home, adjusting to adulthood, adjusting to a higher level of study, changing schools, and going through puberty. One participant stated, "transitioning from high school to university and moving out of your hometown is a trial that isn't talked about enough, and it can severely damage your mental health". Similarly, another participant said, "it was the year when I moved away to attend university for my first year…I suffered the entire year and did not get help. I was severely depressed and rarely left my room".

The third highest reported theme for the prominence of PD was 'academic and extracurricular stressors', which involved subthemes such as online school, course load, low academic achievement, and sport performance. Refer to Table 11 for a list of all themes and subthemes reported by participants.

**Table 11**

*The Prominence of Psychological Distress*

| Theme | Subtheme | *f* |
|---|---|---|
| Traumatic Life Events/Hardship | Assault<br>Breakup<br>Bullying<br>Death of a loved one<br>Grief | 111 |

| | | |
|---|---|---|
| | Car Accident | |
| Life Transitions | Moving away from home | |
| | Adjusting to adulthood | |
| | Adjusting to higher level of study | 95 |
| | Changing schools | |
| | Puberty | |
| Academic & Extracurricular Stressors | Online school | |
| | Course load | 62 |
| | Low academic achievement | |
| | Sport performance | |
| Family & Home Life | Pressure from parents | |
| | Parents' divorce | |
| | Custody issues | 52 |
| | Poor parent relationships | |
| | Birth and caring for children | |
| | Unsupportive home environment | |
| Personal and Emotional Life Stressors | Identity crisis | |
| | Unsatisfying career | |
| | Work stressors | 48 |
| | Financial worries | |
| | Low self-esteem | |
| | Environmental stress | |
| Lack of Social Support | Loss of friendships | |
| | Friendship conflict | |
| | Isolation (not COVID-19 related) | 45 |
| | Social acceptance | |
| | Difficulty forming connections | |
| COVID-19 | Isolated from peers and family | |
| | Lockdown | 24 |
| | Emergence of COVID-19 cases | |
| | Loss of extra-curricular activities | |
| Physical & Mental Health Diagnoses | Surgical procedures | 16 |
| | Onset of mental illnesses | |
| Identifiable Factors | Difficulty pinpointing contributing factors | 8 |

### *Return of COVID-19 Restrictions*

Participants were asked to share how they worried about COVID-19 returning, and thematic analysis revealed themes such as school, isolation, restrictions, mental and physical health, not applicable, financial worries, and life events. The most reported factor was school, which included subthemes such as online classes, limited access to campus resources, sudden

interruption in learning, diminished learning and grades, decreased motivation, and having to homeschool children while doing their own schoolwork. Participants made comments such as "a change in courses to 100% online would be detrimental to my learning", and "I worry about how COVID-19 restrictions would affect my courses as I don't learn nearly as well online as I do in person". While another participant stated, "it was not a big deal to go online, it was the uncertainty and back and forth that made it stressful…".

The second highest reported theme was isolation which included subthemes such as being unable to socialize with others, unable to see family, and unable to meet new people. Participants stated, "not being able to see anyone which brings me the fear of being lonely and feeling sad a lot of the time", "being unable to socialize and gather with friends, I worry about the isolation". One participant stated, "my first year of university was really hard on my mental health because I never saw the sun or anyone but my parents and brother".

The third highest reported theme was concern regarding restrictions, which included subthemes such as quarantine requirements, absence of extracurricular activities, travel restrictions, businesses shutting down, restrictions for the unvaccinated, mandatory mask requirements, social distancing, and in contrast, a fear of not having enough restrictions. One participant stated, "my province's government is saying that if there is another outbreak that no restrictions will be implemented so I'm nervous how that will affect me and those around me". Other participants felt more discouraged about restrictions and made statements such as, "being restricted to one or a few environments, no gym access, no university access, general anxiety of people around me and myself", and "I most frequently worry about the return of restrictions will interrupt my life in all aspects". Refer to Table 12 for a list of all themes and subthemes reported by participants.

**Table 12**

*Return of COVID-19 Restrictions*

| Theme | Subtheme | *f* |
|---|---|---|
| School | Online classes | |
| | Limited access to campus resources | 134 |
| | Sudden interruption to learning | |
| | Diminished learning and grades | |
| | Decreased motivation | |
| | Homeschool children | |
| Isolation | Unable to socialize with others | 126 |
| | Unable to see family | |
| | Unable to meet new people | |
| Restrictions | Quarantine requirements | |
| | Absence of extra-curricular activities | |
| | Travel restrictions | |
| | Businesses shutting down | 69 |
| | Restrictions for the unvaccinated | |
| | Mandatory mask requirements | |
| | Social distancing | |
| | Lack of restrictions | |
| Mental & Physical Health | General stress | |
| | Worry about health of loved ones | |
| | Fear of getting sick | 42 |
| | Fear of infecting others | |
| | Accessing health services | |
| | Risk of hospitalization | |
| | Division between vaccinated and unvaccinated | |
| Not Applicable | Not worried | 27 |
| Financial Worries | Loss of job | |
| | Laid off | 22 |
| | Tuition costs | |
| | Rent costs | |
| Life Events | Lack of in-person university experience | |
| | Missed opportunities | 12 |
| | Delayed graduations | |
| | Rescheduling planned life events | |

# Chapter 5: Discussion

The present study utilized a mixed methods design to explore Canadian undergraduate students' MHL and its influence on PD and HSB. The research questions that were addressed are: (1) To what degree do Canadian undergraduate students demonstrate mental health literacy? (2) Do students who are identified as having high levels of mental health literacy demonstrate lower levels of psychological distress? (3) Are students who are identified as having high levels of mental health literacy more likely to seek professional support? To the best of our knowledge, this study was the first in Canada to explore participants' MHL using the MHLS as opposed to clinical vignettes. This chapter discusses the study's major findings which was interpreted with the use of relevant literature. As such, the influence of MHL, PD, and HSB is explored and discussed in further detail.

## Interpretation of Results

### *Research Question One*

The first research question intended to garner a better understanding of the degree to which students demonstrate MHL. Previous studies reported that both undergraduate students and the general public reported adequate levels of MHL (Coles & Coleman, 2010; Gallagher & Watt, 2019; Marcus & Westra, 2012; O'Connor & Casey, 2015; Reichel et al., 2021; Wang et al., 2007). Furthermore, medical students were found to have average MHL scores which were comparable to those not enrolled in medicine (Marwood & Hearn, 2019). Given previous findings, it was expected that current participants would demonstrate a relatively high level of MHL.

The findings contribute to existing research that explored individuals' MHL. The descriptive statistics suggested that the average MHL was 130.95 which were similar to scores

reported in other studies which were 127.38 (O'Connor & Casey, 2015), 127.69 (Marwood & Hearn, 2019), and 123.5 (Gorcynzski et al., 2020). As such, the current findings extend previous research that has reported adequate MHL (Gallagher & Watt, 2019; Marcus & Westra, 2012; Marwood & Hearn, 2019; O'Connor & Casey, 2015; Reichel et al., 2021; Wang et al., 2007).

***Recognizing Disorders.*** Furthermore, participants demonstrated significant knowledge of recognizing different mental disorders. The two disorders that participants most correctly identified were bipolar disorder (91.6%) and generalized anxiety disorder (GAD) (91%). Comparably, participants were also able to identify substance abuse disorder (89.2%), personality disorders (88.9%), persistent depressive disorder (87.2%), and social phobia (83.6%). The disorder that participants were least able to identify was major depressive disorder (MDD) (63%). This finding is inconsistent with previous research, as other studies have reported that depression was the most correctly identified disorder in comparison to other disorders such as GAD for example (Marcus & Westra, 2012; Wang et al., 2007; Naal et al., 2020; Pehlivan et al., 2021; Picco et al., 2017). Similarly, Gallagher & Watt (2019) reported that among their Canadian sample, depression was the most correctly identified disorder and personality disorder was the least correctly identified which is also inconsistent with the study's current findings. The lower recognition level of depression and higher recognition among other disorders (e.g., bipolar disorder, GAD, and personality disorders) among the current sample could be attributed to the fact that depression manifests differently in everyone with varying causes. The detection and diagnosis of depression even creates challenges for practitioners given the varying presentations and responses to treatment (Malhi & Mann, 2018). Therefore, participants may have had more difficulty identifying depression than other disorders such as bipolar disorder, which is most often characterized by alternating low and high moods.

***Other Mental Health Literacy Attributes.*** Participants knowledge of how to seek information, knowledge of self-treatment, knowledge of professional help available and attitudes that promote recognition and appropriate HSB were all higher than what has been previously reported in the literature, while knowledge of risk factors and causes remained consistent with previous findings (Gorcyznski et al., 2020; Marwood & Hearn, 2019; Pehlivan et al., 2020).

### *Research Question Two*

The second research question investigated the relationship between students' MHL and their levels of PD. A Spearman's rho correlation did not indicate any significant correlations between one's total PD score, and total MHL score. As such, anxiety, depression, and stress were measured separately with each of the six attributes of the MHLS to determine if any significant correlations existed with the attributes that could provide further insight.

A Spearman's rho correlation revealed a significant positive correlation between the 'ability to recognize disorders' and all three constructs of PD (anxiety, depression, and stress). As the ability to recognize disorders increased, so did one's level of PD. This could be attributed to what Jorm (2012) stated in that solely having knowledge of different psychological disorders is not sufficient to demonstrate adequate MHL. In other words, just because one might have the ability to recognize disorders, it does not mean that it is enough to have a positive influence on their mental health.

A significant negative correlation was found between 'knowledge of how to seek information' and PD. That is, as knowledge of seeking information increased, levels of PD decreased. This suggested that the more knowledge participants have of seeking information about mental health, the more likely they were to have lower levels of PD. Lastly, a significant positive relationship was reported between 'attitudes that promote recognition or appropriate

help-seeking behaviour' and levels of anxiety and stress. Interestingly, the more attitudes that students demonstrated that promoted recognition and appropriate help-seeking, the more anxiety and stress they had. This, however, was not the case for depression. Further research is warranted to explore why this may be the case, as there is currently no explanation for this outcome in the existing literature. The other three attributes, 'knowledge of risk factors and causes', 'knowledge of self-treatment', and 'knowledge of professional help available' indicated no significant relationship with PD.

To our knowledge, only two other studies (Moss et al., 2022; Pehlivan et al., 2021) have been able to identify a correlation between MHL and PD among university students, and two others have reported a negative relationship between MHL and PD among an adolescent population (Lam 2014; Zhang et al., 2023). Others have only been able to find a relationship between MHL and HSB (Gorcyznski et al., 2017; O'Connor & Casey, 2015). The correlations that the current study identified could potentially provide some insight as to what type of mental health knowledge is fundamental in reducing PD.

***Research Question Three***

The third research question aimed to explore whether there was a difference in MHL between those currently seeking help from a mental health professional versus those who reported that they were not currently seeking help at the time they completed the survey. It was expected that those who have higher MHL were more likely to seek professional support.

A Mann-Whitney U test suggested that there was a significant difference in MHL that existed between the two groups. Moreover, those who had higher 'knowledge of how to seek information', 'knowledge of risk factors and causes', 'knowledge of professional help available', and greater 'attitudes that promote recognition or appropriate help-seeking behaviour' were

currently seeking help. These findings extend previous studies where researchers have found that those who have higher MHL were more likely to demonstrate HSB (Gorcyznski et al., 2017; Moss et al., 2022; O'Connor & Casey, 2015). Furthermore, Gorcyznski et al., (2017) reported that higher MHL, specifically in the domain of attitudes that promote help-seeking, was related to increased HSB, which the current study reported.

The two attributes that were not found to have any significant difference between MHL and HSB, were 'recognizing disorders' and 'knowledge of self-treatment'. As previously mentioned, simply recognizing disorders is not enough to demonstrate strong MHL (Jorm, 2012), and therefore, it would make sense as to why there was no difference among those currently seeking help compared to those who are not. Regarding self-treatment, it makes intuitive sense that both groups have similar knowledge of self-treatment. Some individuals might feel as though their self-treatment is enough and therefore, do not demonstrate help-seeking, whereas others might also have this knowledge, but are still reaching out for additional support. However, further research is warranted to explore this finding in greater detail.

***Qualitative Data for Help-Seeking Behaviour***

To further enhance our understanding of participants' HSB, specifically, to explore if reasons for not seeking help were attributed to lower MHL or other reasons, an open-ended question invited participants to share their responses. Participants described not seeking help for reasons attributed to simply feeling like they did not require the support. In other words, they implied that they were doing well. It is, however, unclear whether this was truly the case, or if participants were lacking the ability to identify their need for mental health support.

Others described the fear of feeling like a burden to therapists, worrying about what others might think of them, and believing that their problems are not 'big enough' to receive

support from a mental health professional. These reasons were attributed to stigmatizations. In alignment with results from the Mann Whitney U test and previous research, as stigmatizations (less knowledge of attitudes that promote recognition and appropriate HSB) increased, HSB decreased (Coleman et al., 2017). Moreover, it was reported that stigma is a barrier in seeking help, and it is in fact ranked quite high as an identified barrier (Clement et al., 2015). In addition to stigmatizations, another important note to make is that some participants expressed a lack of time to seek support for their mental health. Further research would assist in determining if those who expressed a lack of time have the necessary knowledge of risk factors and causes, especially risks associated with untreated mental health issues.

Despite significant differences among MHL and HSB identified in research question three, further research is warranted to explore how providing MHL could further enhance HSB. Participants' qualitative reasonings for not seeking help appeared to be attributed to a lack of MHL in the domains of 'attitudes that promote recognition and appropriate help-seeking behavior' and 'knowledge of risk factors and causes'. It would be interesting to see if receiving additional knowledge regarding these two domains would enhance participants' current HSB.

***Other Significant Findings***

It is well known that academic stressors can negatively impact students' mental health (AlKandri, 2019, Deasy et al., 2014; McIntyre et al., 2018). Specific to the current study, a Spearman Correlation test indicated that as GPA decreases, the level of PD increases. This finding mirrors previous studies that have reported an association between GPA and psychological symptoms, specifically a reduction in GPA and an increase in PD (Bruffaerts et al., 2018; Duffy et al., 2020). Similarly, this finding was echoed by some participants' open-ended responses as many referenced lower academic achievements as a source to their PD.

Another significant finding was the difference in stress between males and females. In the current study, females reported a higher level of stress than males. This finding extends previous studies where researchers have reported higher levels of PD in females (Hakami, 2018; Nerdum et al., 2006; Saïas et al., 2014; Stallman, 2010). However, an important factor to note is that other studies have used measures that screened for psychological disorders instead of general symptoms and they did not focus on stress. Moreover, these studies reported higher levels in anxiety and depression in females, whereas the current study found no significant differences in anxiety and depression between males and females. As such, additional research is necessary to further understand the differences in PD between males and females.

***Prominence of Psychological Distress.*** When participants were asked why their level of PD was most prominent at the age they identified it to be, many expressed traumatic life events and life transitions as the largest contributing factors. It was not surprising to learn that traumatic events were the number one source of participants' PD, as it is long known that trauma is positively associated with psychological impairment (Stensland et al., 2013; Williams et al., 2007).

The second most reported factor that participants identified was life transitions, referencing moving away from home, adjusting to adulthood, and adjusting to a higher level of study. This extends on previous research, where researchers reported that being a university student and leaving and moving away from home as stressors that added to one's level of mental distress (Hamaideh, 2011; Logan & Burns, 2021). In addition to post-secondary and life transitions, several participants described identity crisis, and unsatisfying careers as sources of stressors. This finding is best explained by Erikson's Psychosocial Theory of Development where students are experiencing role confusion (Erikson, 1963). Given that the sample is representative of a university sample, with many in their first and second years, career

indecisiveness is common. The uncertainty regarding career and who they are as a person creates significant PD. This notion was exemplified by participants as they made statements implying that they were feeling conflicted about what to do with their life and trying to decide upon a career path.

***COVID-19 Implications.*** Out of the 335 participants, only 51 reported that COVID-19 did not contribute to their levels of PD. This suggests that the global pandemic was negatively impacting most students' mental health. To further explore how students' mental health was being affected by COVID-19, an open-ended question invited participants to share their experiences. Thematic analysis revealed that school, specifically having to do online classes and having limited access to campus were often their biggest worries. Additionally, many also worried about being isolated and unable to socialize with others. Such findings were consistent with previous literature that explored the impacts of COVID-19. In particular, one study reported that the lone factor of being a young person during the global pandemic contributed to heightened levels of PD (Lahav, 2020). Given that most of the sample were in their late teens or early twenties, with many life events and experiences ahead of them, it would make sense as to why the younger population was more affected by the social restrictions of the global pandemic. This was accentuated by participants who expressed that they were missing out on experiencing the campus life and being unable to attend important events such as graduations and weddings.

As we know from Erikson's theory, young adults are at a critical period for forming intimate relationships, and when one struggles to make meaningful relationships, it results in isolation (Erikson, 1963, 1982). Several participants reported that being isolated made it difficult to maintain relationships and meet new people. Too much isolation at that stage in life is what Erikson described as a danger, and it can put individuals at risk of experiencing psychological

distress (Erikson, 1982). Hence the reason why students may have felt that the restrictions from COVID-19, especially isolation, was greatly impacting their mental health.

Taken together, the participants in the current study demonstrated relatively high levels of MHL. Participants were able to accurately recognize many disorders, such as anxiety and schizophrenia for example, but they were least able to identify depression which contradicted what other studies reported. The significant relationship between 'ability to recognize disorders' and PD indicated that the ability to recognize disorders is not necessarily enough to have a positive influence on one's mental health. A negative correlation between 'knowledge of how to seek information' and psychological distress suggested that the more knowledge individuals have about seeking information, the more positive influence it has on their mental health. A positive correlation between 'attitudes that promote recognition or appropriate help-seeking behaviour' and stress and anxiety was a rather unanticipated find. Given there was no explanation in the existing literature to explain this correlation, further research is warranted.

Like previous studies, those seeking professional help demonstrated greater MHL, specifically had greater 'knowledge of how to seek information', 'knowledge of risk factors and causes', 'knowledge of professional help available' and 'attitudes that promote recognition and appropriate help-seeking behaviour'. The two attributes 'recognizing disorders' and 'knowledge of self-treatment' had no influence on help-seeking behaviour which warrants additional research. Taking participants' open-ended responses into consideration, they suggested that stigmatizations is potentially one of the greatest factors that prevents students from seeking mental health support. With all things considered, and to the best of our knowledge, the current study is the third study that has been able to identify a correlation between MHL and PD among

university students. With that said, however, further research is warranted to gain a clearer understanding of this relationship and potentially explore other contributing factors.

**Clinical and Educational Implications**

The results of the study have important clinical and educational implications for practitioners and educators to consider. Students have relatively high MHL, however, there is always room for improvement. With regards to clinical implications, psychologists and other practicing mental health professionals are in an excellent position to increase public's knowledge of mental health by informing their clients about all attributes of MHL. For instance, psychologists can discern any stigmatizations that exist and thus, increase their clients' MHL. Additionally, professionals can ensure that they are informing clients about the different professional help available relevant to their needs and provide clients with reliable sources on how they can seek other information pertinent to their mental health.

When mental health professionals can build their clients' repertoire of mental health knowledge, they are also helping them to increase future HSB, and potentially reduce future heightened levels of PD. Interestingly, when current participants were asked to describe their previous help-seeking experiences, a few of the participants discussed how they noticed their therapist to be much more helpful when they were insightful and were able to provide them with more knowledge. As such, informing clients on MHL attributes may not only increase their MHL but may also create a more positive and effective help-seeking experience.

Similarly, public school and post-secondary educators are also in a unique position to support their students' mental health. Concepts of MHL can easily be integrated into the existing school curriculum to help students learn about the importance of mental health, and the resources and support available to them. Additionally, post-secondary institutions can use such findings to

implement mandatory MHL programs for incoming university students that provide them with necessary knowledge of the importance of seeking help, and how and where to do so. The earlier that students can learn about MHL, the better implications it may have on their future mental health, especially considering that school on its own comes with many academic-related stressors.

Aside from MHL and related PD and HSB, other important factors for mental health professionals to consider are the variables that contribute to one's level of PD. As seen in the current study, there are many other factors aside from MHL that can contribute to mental health problems. Ensuring to explore all aspects of a client's life ranging from GPA to socialization to previous traumatic events, and so forth is fundamental in capturing a full understanding of the client and their presenting concerns. To provide effective and adequate psychological treatment, it is essential that mental health practitioners can thoroughly assess all contributing factors before deciding on a plan of treatment. As witnessed in the current study, some participants claimed that their therapist remained too much on the surface level, and as such, their core underlying problems were not being considered, which led to unsuccessful treatment.

**Limitations and Future Directions**

As with many research studies, there are a few limitations that need to be considered and addressed. One of the greatest limitations to the current study, was the reliance on self-report measures. It is possible that participants may have exaggerated or minimized their symptoms of PD. Furthermore, it is possible that participants demonstrated a social desirability bias (SDB) when responding to questions on the MHLS and DASS. Considering the stigmatizations questions on the MHLS, it is possible that participants did not respond in a manner that was consistent with their own beliefs, but rather in align with what is considered to be socially

acceptable. Tan and their colleagues reported that many studies are in fact affected by SDB (Tan et al., 2021). In addition, participants' scores may have been affected by random guessing, and as a result, distorted their MHL scores.

Another limitation to consider is that SONA was used as method of recruitment. While it assisted in recruiting many participants, it is imperative to note that many students who partook in SONA studies were rewarded with a bonus credit towards their course. As such, it is possible that they put in minimal time and effort just to earn the bonus credit. Moreover, given that the study was distributed through SONA at the University of Lethbridge, most students were from Alberta and, thus, the current findings are not generalizable to other populations in other geographical locations.

A third limitation of the current study is the interpretation of current HSB and MHL. While a difference was reported in MHL between those seeking help, and not seeking help, it is was difficult to account for those who may have had high MHL but were not currently seeking help due to simply not needing it at the time they completed the survey.

Lastly, it is important to consider that not all participants responded to the open-ended questions. While this could partly be attributed to the answer not being applicable to participants, it is unclear whether they left it blank for being not applicable or just chose not to answer it. As such, our open-ended responses are not necessarily truly representative of the entire sample in this study.

Future research should focus on exploring the relationship between MHL and PD. Given the novelty of the study's current findings, further investigation of the influence of MHL on PD can better inform researchers and professionals on what type of mental health knowledge university students should be provided with to reduce psychological impairment.

## Conclusion

Despite the aforementioned limitations, the current study contributed to existing research of university students demonstrating adequate MHL. Additionally, it contributed to other significant findings in that MHL does play an important role in HSB. Even more impressing, was the current study's results revealing a relationship between some attributes of MHL, and PD. To date, and to the best of our knowledge, only two other studies have reported a relationship between the two variables among a university population, and two additional studies have reported a relationship among an adolescent population. Given this finding, further research is warranted to explore what attributes of MHL are most important in reducing PD among university students. Taken together, MHL plays an important role in Canadian undergraduate students' HSB, and PD. Thus, it is imperative for mental health professionals and educators to share their mental health knowledge and discern stigmatizations to better serve and educate this population.

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## Appendix A

## Letter of Implied Consent

**Title of the study:** Investigating Canadian Undergraduate Students' Mental Health Literacy and Its Impact on Psychological Distress and Help-Seeking Behaviour

**Principal Investigator:** Karissa L. Horne
Graduate Student
Faculty of Education, Counselling Psychology
University of Lethbridge
Lethbridge, AB
k.horne@uleth.ca

**Supervisor:** Dr. Kerry Bernes

**Invitation to Participate:** You are invited to participate in this research study about the influences of Canadian undergraduate students' mental health literacy on psychological distress and help-seeking behaviour.

**Purpose of the Study:** From this research, we wish to learn how Canadian undergraduate students' mental health literacy may impact their levels of psychological distress and help-seeking behaviour.

**Participation:** If you wish to participate in this study, please proceed by clicking "next" to complete the survey. The survey should take you approximately 15 to 20 minutes to complete. You do not have to answer any questions that you do not want to answer. Once you have completed the survey, please click on the "submit" button to submit the survey.

**Benefits:** The benefits of the current study include the potential to provide critical information that is needed to implement better, more-researched interventions and preventative educational programs to prospective and current undergraduate students.

**Risks:** The study is interested in investigating undergraduate students' levels of psychological distress, mental health literacy and help-seeking behaviour, thus, it is possible that you may experience some mild emotional discomfort. You will be provided a list of available resources to access mental health support in the event that you experience any discomfort and are wanting and/or needing to seek help.

**Confidentiality and Anonymity:** The information that you will share will remain strictly confidential and will be used solely for the purposes of this research. The only people who will have access to the research data include the researcher, supervisor, and committee members, and it will be locked/encrypted. Your answers to open-ended questions may be used verbatim in presentations and publications but neither you (nor your organization) will be identified. In order to minimize the risk of security breaches and to help ensure your confidentiality we recommend that you use standard safety measures such as signing out of your account, closing your browser

and locking your screen or device when you are no longer using them/when you have completed the study. The data is subject to USA privacy legislation as data is collected via. Qualtrics. Results will be published in pooled aggregate format. Anonymity is guaranteed since you are not being asked to provide your name or any identifying information.

**Data Storage:** Electronic copies of the survey will be encrypted and stored on a password protected computer.

**Compensation (or Reimbursement):** There will be no compensation or reimbursement for this study.

**Voluntary Participation:** You are under no obligation to participate and if you choose to participate, you may refuse to answer questions that you do not want to answer. Should you choose to withdraw midway through the electronic survey simply close the link and no responses will be included. Given the anonymous nature of the survey once you have submitted your responses it will no longer be possible to withdraw them from the study.

**Information about the Study Results:** If you are interested in obtaining information about the study's results, you may contact me via. email (k.horne@uleth.ca)

**Contact Information:** If you have any questions or require more information about the study itself, you may contact the researcher (k.horne@uleth.ca) or her supervisor (kerry.bernes@uleth.ca) at the email addresses mentioned above.

The plan for this study has been reviewed by a Research Ethics Board at the University of Alberta. If you have any questions regarding your rights as a research participant or how the research is being conducted, you may contact the Research Ethics Office at 780-492-2615.

Please print a copy of this for your own records.

Completion and submission of the survey means your consent to participate.

## Appendix B

## Demographic Information

**Please select the most appropriate answer.**

Please indicate your age.

| | | | | |
|---|---|---|---|---|
| ☐ 16 | | | | |
| ☐ 17 | ☐ 26 | ☐ 35 | ☐ 44 | ☐ 53 |
| ☐ 18 | ☐ 27 | ☐ 36 | ☐ 45 | ☐ 54 |
| ☐ 19 | ☐ 28 | ☐ 37 | ☐ 46 | ☐ 55 |
| ☐ 20 | ☐ 29 | ☐ 38 | ☐ 47 | ☐ 56 |
| ☐ 21 | ☐ 30 | ☐ 39 | ☐ 48 | ☐ 57 |
| ☐ 22 | ☐ 31 | ☐ 40 | ☐ 49 | ☐ 58 |
| ☐ 23 | ☐ 32 | ☐ 41 | ☐ 50 | ☐ 59 |
| ☐ 24 | ☐ 33 | ☐ 42 | ☐ 51 | ☐ 60 |
| ☐ 25 | ☐ 34 | ☐ 43 | ☐ 52 | ☐ 60+ |

Please indicate which gender you identify with.

☐ Male
☐ Female
☐ Transgender
☐ Non-Binary
☐ Other_____
☐ Prefer not to say

Please indicate your ethnicity.

☐ Asian
☐ Black
☐ Caucasian
☐ Hispanic or Latino
☐ Indigenous
☐ Native Hawaiian or Other Pacific Islander
☐ Mixed Ethnicity (Please Specify) _____

Please indicate your family's current socioeconomic status (i.e., annual household income).

☐ Less than $25,000 a year
☐ $25,000 to $49,999 a year
☐ $50,000 to $74,999 a year
☐ $75,000 to $99,999 a year
☐ $100,000 to $149,999 a year

☐ $150,000 to $249,999 a year
☐ More than $250,000 a year
☐ I do not know
☐ Prefer not to say

Please indicate the province/territory your permanent address located in.

☐ British Columbia
☐ Alberta
☐ Saskatchewan
☐ Manitoba
☐ Ontario
☐ Quebec
☐ Newfoundland and Labrador
☐ Prince Edward Island
☐ New Brunswick
☐ Nova Scotia
☐ Yukon
☐ Northwest Territories
☐ Nunavut
☐ I do not reside in Canada

Please indicate which province your university is located in.

☐ British Columbia
☐ Alberta
☐ Saskatchewan
☐ Manitoba
☐ Ontario
☐ Quebec
☐ Newfoundland and Labrador
☐ Prince Edward Island
☐ New Brunswick
☐ Nova Scotia

Did you move to a different province to attend university this school year?

☐ Yes
☐ No

Please indicate the proximity of your university to your permanent address.

☐ Less than 20 km
☐ 20-60 km
☐ 61-99 km

☐ 100-299 km
☐ 300-499 km
☐ 500 -699 km
☐ 700-899 km
☐ 900-1099 km
☐ 1100-1299 km
☐ 1300-1499 km
☐ 1500-1699 km
☐ 1700-1899 km
☐ 1900-2099 km
☐ 2100 km or more

Please indicate your current living situation.

☐ Living at home with my parents/guardians
☐ Living at home with my spouse/significant other
☐ Living in university residence with a roommate
☐ Living in university residence without a roommate
☐ Living away from home in an apartment/house with spouse/significant other
☐ Living away from home in an apartment/house with roommates
☐ Living away from home in an apartment/house by myself
☐ Other (Please Specify) _____

Please indicate which year of university you are currently in.

☐ Year 1
☐ Year 2
☐ Year 3
☐ Year 4
☐ Year 5
☐ Year 6
☐ Other (Please Specify) _____

What bachelor program are you in?

☐ Bachelor of Arts (BA)
☐ Bachelor of Arts and Science (BAS)
☐ Bachelor of Business Administration (BBA)
☐ Bachelor of Commerce (BComm)
☐ Bachelor of Education (BEd)
☐ Bachelor of Engineering (BEng)
☐ Bachelor of Environmental Design Studies (BEDS)
☐ Bachelor of Health Science (BHSc)
☐ Bachelor of Management (BMgmt)
☐ Bachelor of Music (BMus)
☐ Bachelor of Science Nursing (BScN)

☐ Bachelor of Science (BSc)
☐ Bachelor of Social Work (BSW)
☐ Double Major (Please Specify) _____
☐ Other (Please Specify) _____

Is your major in psychology?

☐ Yes
☐ No
☐ Major is undecided

Please indicate how many courses you are currently taking this semester.

☐ 1
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6
☐ 6+ (more than 6)

Please indicate your current Grade Point Average (GPA).

☐ 0.00-1.00
☐ 1.01-1.33
☐ 1.34-1.67
☐ 1.68-1.99
☐ 2.00-2.33
☐ 2.34-2.67
☐ 2.68-2.99
☐ 3.00-3.33
☐ 3.34-3.67
☐ 3.68-3.99
☐ 4.00-4.30

Please indicate the format of your courses this semester.

☐ All in-person
☐ All online
☐ Blended (some are in-person; some are online)

Please indicate your preferred format of courses.

☐ I prefer all in-person courses
☐ I prefer all online courses
☐ I prefer blended courses (some in-person; some online)

Please indicate your current work status.

☐ Full-time job
☐ Part-time job
☐ I am not working

Please indicate your relationship status.

☐ Single
☐ Common Law
☐ Married
☐ Divorced

Please indicate how much your romantic relationship contributes to your psychological distress. (Note: psychological distress refers to symptoms of anxiety, depression, and/or stress).

☐ Not at all
☐ Some of the time
☐ A good part of the time
☐ All the time
☐ This does not apply to me

Please indicate how much your romantic relationship contributes to your social support.

☐ Not at all
☐ Some of the time
☐ A good part of the time
☐ All the time
☐ This does not apply to me

Please indicate to what degree was COVID-19 and its implications a contributing factor to your psychological distress.

☐ Not at all
☐ Some of the time
☐ A good part of the time
☐ All the time

Do you worry about COVID-19 coming back? If so, how?

☐ Not at all
☐ Some of the time
☐ A good part of the time
☐ All the time

Please explain how you worry about COVID-19 coming back (e.g., restrictions, fear of getting sick, change in course delivery format, being unable to socialize with others, etc.).

_____

_____

_____

How many hours a day do you use social media? (e.g., Facebook, Instagram, Snapchat, TikTok, etc.)

☐ Less than an hour
☐ 1-2 hours
☐ 3-4 hours
☐ 5-6 hours
☐ 7-8 hours
☐ 9-10 hours
☐ More than 10 hours

Please indicate to what degree your use of social media contributes to your psychological distress. (Note: psychological distress refers to symptoms of anxiety, depression, and/or stress).

☐ Not at all
☐ Some of the time
☐ A good part of the time
☐ All the time

Please indicate what you use social media for. Check all that apply.

☐ News
☐ Socialization
☐ Business
☐ Dating
☐ Other (Please Specify) _____

## Appendix C

### Depression Anxiety Stress Scale (DASS)

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 myself getting upset by quite trivial things | 0 | 1 | 2 | 3 |
| 2. I was aware of dryness in 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 (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion) | 0 | 1 | 2 | 3 |
| 5. I just couldn't seem to get going | 0 | 1 | 2 | 3 |
| 6. I tended to over-react to situations | 0 | 1 | 2 | 3 |
| 7. I had a feeling of shakiness (e.g., legs going to give away) | 0 | 1 | 2 | 3 |
| 8. I found it difficult to relax | 0 | 1 | 2 | 3 |
| 9. I found myself in situations that made me so anxious I was most relieved when they ended | 0 | 1 | 2 | 3 |
| 10. I felt that I had nothing to look forward to | 0 | 1 | 2 | 3 |
| 11. I found myself getting upset rather easily | 0 | 1 | 2 | 3 |
| 12. I felt that I was using a lot of nervous energy | 0 | 1 | 2 | 3 |
| 13. I felt sad and depressed | 0 | 1 | 2 | 3 |
| 14. I found myself getting impatient when I was delayed in any way (e.g., elevators, traffic lights, being kept waiting) | 0 | 1 | 2 | 3 |

| | | | | |
|---|---|---|---|---|
| 15. I had a feeling of faintness | 0 | 1 | 2 | 3 |
| 16. I felt that I had lost interest in just about everything | 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 perspired noticeably (e.g., hands sweaty) in the absence of high temperatures or physical exertion | 0 | 1 | 2 | 3 |
| 20. I felt scared without any good reason | 0 | 1 | 2 | 3 |
| 21. I felt that life wasn't worthwhile | 0 | 1 | 2 | 3 |
| 22. I found it hard to wind down | 0 | 1 | 2 | 3 |
| 23. I had difficulty swallowing | 0 | 1 | 2 | 3 |
| 24. I couldn't seem to get any enjoyment out of the things I did | 0 | 1 | 2 | 3 |
| 25. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat) | 0 | 1 | 2 | 3 |
| 26. I felt down-hearted and blue | 0 | 1 | 2 | 3 |
| 27. I found that I was very irritable | 0 | 1 | 2 | 3 |
| 28. I felt I was close to panic | 0 | 1 | 2 | 3 |
| 29. I found it hard to calm down after something upset me | 0 | 1 | 2 | 3 |
| 30. I feared that I would be "thrown" by some trivial but unfamiliar task | 0 | 1 | 2 | 3 |
| 31. I was unable to become enthusiastic about anything | 0 | 1 | 2 | 3 |
| 32. I found it difficult to tolerate interruptions to what I was doing | 0 | 1 | 2 | 3 |
| 33. I was in a state of nervous tension | 0 | 1 | 2 | 3 |
| 34. I felt I was pretty worthless | 0 | 1 | 2 | 3 |
| 35. I was intolerant of anything that kept me from getting on | | | | |

| | | | | |
|---|---|---|---|---|
| with what I was doing | 0 | 1 | 2 | 3 |
| 36. I felt terrified | 0 | 1 | 2 | 3 |
| 37. I could see nothing in the future to be hopeful about | 0 | 1 | 2 | 3 |
| 38. I felt that life was meaningless | 0 | 1 | 2 | 3 |
| 39. I found myself getting agitated | 0 | 1 | 2 | 3 |
| 40. I was worried about situations in which I might panic and make a fool of myself | 0 | 1 | 2 | 3 |
| 41. I experienced trembling (e.g., in the hands) | 0 | 1 | 2 | 3 |
| 42. I found it difficult to work up the initiative to do things | 0 | 1 | 2 | 3 |

(Lovibond & Lovibond, 1995)

## Appendix D

## Mental Health Literacy Scale (MHLS-35)

The purpose of these questions is to gain an understanding of your knowledge of various aspects to do with mental health. When responding, we are interested in your degree of knowledge. Therefore, when choosing your response, consider that:

Very unlikely = I am certain that it is NOT likely

Unlikely = I think it is unlikely but am not certain

Likely = I think it is likely but am not certain

Very likely = I am certain that it IS very likely

1. If someone became extremely nervous or anxious in one or more situations with other people (e.g., a party) or performance situations (e.g., presenting at a meeting) in which they were afraid of being evaluated by others and that they would act in a way that was humiliating or feel embarrassed, then to what extent do you think it is likely they have **Social Phobia**

Very Unlikely Unlikely Likely Very Likely

2. If someone experienced excessive worry about a number of events or activities where this level of concern was not warranted, had difficulty controlling this worry and had physical symptoms such as having tense muscles and feeling fatigued then to what extent do you think it is likely they have **Generalized Anxiety Disorder**

Very Unlikely Unlikely Likely Very Likely

3. If someone experienced a low mood for two or more weeks, had a loss of pleasure or interest in their normal activities and experienced changes in their appetite and sleep then to what extent do you think it is likely they have **Major Depressive Disorder**

Very Unlikely Unlikely Likely Very Likely

4. To what extent do you think it is likely that **Personality Disorders** are a category of mental illness

Very Unlikely Unlikely Likely Very Likely

5. To what extent do you think it is likely that **Persistent Depressive Disorder** is a disorder?

Very Unlikely Unlikely Likely Very Likely

6. To what extent do you think it is likely that the diagnosis of **Agoraphobia** includes anxiety about situations where escape may be difficult or embarrassing

Very Unlikely Unlikely Likely Very Likely

7. To what extent do you think it is likely that the diagnosis of **Bipolar Disorder** includes experiencing periods of elevated (i.e., high) and periods of depressed (i.e., low) mood

Very Unlikely Unlikely Likely Very Likely

8. To what extent do you think it is likely that the diagnosis of **Substance Abuse Disorder** can include physical and psychological tolerance of the drug (i.e., require more of the drug to get the same effect)

Very Unlikely Unlikely Likely Very Likely

9. To what extent do you think it is likely that in general, in Canada, **women are MORE likely to experience a mental illness of any kind compared to men**

Very Unlikely Unlikely Likely Very Likely

10. To what extent do you think it is likely that in general, in Canada, **men are MORE likely to experience an anxiety disorder compared to women**

Very Unlikely Unlikely Likely Very Likely

When choosing your response, consider that:

- Very unhelpful = I am certain that it is NOT helpful
- Unhelpful = I think it is unhelpful but am not certain
- Helpful = I think it is helpful but am not certain
- Very helpful = I am certain that it IS very helpful

11. To what extent do you think it would be helpful for someone to **improve their quality of sleep** if they were having difficulties managing their emotions (e.g., becoming very anxious or depressed)

Very Unhelpful Unhelpful Helpful Very Helpful

12. To what extent do you think it would be helpful for someone to **avoid all activities or situations that made them feel anxious** if they were having difficulties managing their emotions

Very Unhelpful Unhelpful Helpful Very Helpful

When choosing your response, consider that:

- Very Unlikely = I am certain that it is NOT likely
- Unlikely = I think it is unlikely but am not certain
- Likely = I think it is likely but am not certain
- Very Likely = I am certain that it IS very likely

13. To what extent do you think it is likely that **Cognitive Behaviour Therapy (CBT)** is a therapy based on challenging negative thoughts and increasing helpful behaviours

Very Unlikely Unlikely Likely Very Likely

14. Mental health professionals are bound by confidentiality; however, there are certain conditions under which this does not apply.

To what extent do you think it is likely that the following is a condition that would allow a mental health professional to **break confidentiality:**

*If you are at immediate risk of harm to yourself or others*

Very Unlikely Unlikely Likely Very Likely

15. Mental health professionals are bound by confidentiality; however, there are certain conditions under which this does not apply.

To what extent do you think it is likely that the following is a condition that would allow a mental health professional to **break confidentiality:**

*If your problem is not life-threatening and they want to assist others to better support you*

Very Unlikely Unlikely Likely Very Likely

Please indicate to what extent you agree with the following statements:

| | Strongly Disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| 16. I am confident that I know where to seek information about mental illness | | | | | |
| 17. I am confident using the computer or telephone to seek information about mental illness | | | | | |
| 18. I am confident attending face to face appointments about mental illness (e.g., seeing the GP) | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 19. I am confident I have access to resources (e.g., GP, internet, friends) that I can use to seek information about mental illness | | | | | |

Please indicate to what extent you agree with the following statements:

| | Strong Disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| 20. People with mental illness could snap out if it they wanted | | | | | |
| 21. A mental illness is a sign of personal weakness | | | | | |
| 22. A mental illness is not a real medical illness | | | | | |
| 23. People with a mental illness are dangerous | | | | | |
| 24. It is best to avoid people with a mental illness so that you don't develop this problem | | | | | |
| 25. If I had a mental illness I would not tell anyone | | | | | |
| 26. Seeing a mental health professional means you are not strong enough to manage your own difficulties | | | | | |
| 27. If I had a mental illness, I would not seek help from a mental health professional | | | | | |
| 28. I believe treatment for a mental illness, provided by a mental health professional, would not be effective | | | | | |

Please indicate to what extent you agree with the following statements:

| | Definitely unwilling | Probably unwilling | Neither unwilling or willing | Probably willing | Definitely willing |
|---|---|---|---|---|---|
| 29. How willing would you be to move next door to | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| someone with a mental illness? | | | | | |
| 30. How willing would you be to spend an evening socializing with someone with a mental illness? | | | | | |
| | Definitely unwilling | Probably unwilling | Neither unwilling or willing | Probably willing | Definitely willing |
| 31. How willing would you be to make friends with someone with a mental illness? | | | | | |
| 32. How willing would you be to have someone with a mental illness start working closely with you on a job? | | | | | |
| 33. How willing would you be to have someone with a mental illness marry into your family? | | | | | |
| 34. How willing would you be to vote for a politician if you knew they had suffered a mental illness? | | | | | |
| 35. How willing would you be to employ someone if you knew they had a mental illness? | | | | | |

**Scoring**

Total score is produced by summing all items (see reverse scored items below). Questions with a 4-point scale are rate 1 – very unlikely/unhelpful, 4 – very likely/helpful and for 5-point scale 1 – strongly disagree/definitely unwilling, 5 – strongly agree/definitely willing.

Reverse scored items: 10, 12, 15, 20-28

Maximum score – 160

Minimum score – 35

(O'Connor & Casey, 2015)

## Appendix E

### Help-Seeking Behaviour

**Help-Seeking Behaviour is referred to as actively seeking help from others. Please select the most appropriate answer.**

Have you previously sought help from a mental health professional? (e.g., counsellor, psychologist, psychiatrist, social worker)

☐ Yes
☐ No
☐ Prefer not to say

Have you previously sought help from other professionals for your mental health? (e.g., physician, nurse, professor, etc.)

☐ Yes
☐ No
☐ Prefer not to say

Have you previously sought help/support from family, friends, or significant others for your mental health?

☐ Yes
☐ No
☐ Prefer not to say

Are you currently seeking help from a mental health professional? (e.g., counsellor, psychologist, psychiatrist, social worker)

☐ Yes
☐ No
☐ Prefer not to say

Are you currently seeking help from other professionals for your mental health? (e.g., physician, nurse, professor, etc.)

☐ Yes
☐ No
☐ Prefer not to say

Are you currently seeking help/support from family, friends, or significant others for your mental health?

☐ Yes

☐ No
☐ Prefer not to say

If you have previously sought help or are currently seeking help for your mental health, please describe your experience (i.e., if it has helped you, if there are some aspects that have helped, others that have not, etc.).

_____
_____
_____
_____

If you did not seek help for your mental health, why not?

_____
_____
_____
_____

## Appendix F

### The Onset of Psychological Distress Using Erikson's Psychosocial Theory of Development

Please indicate how old you were when you first experienced symptoms of psychological distress (i.e., anxiety, depression, and/or stress).

☐ 0-60+ (Dropdown Option)

Please indicate how old you were when your psychological distress was most prominent in your life? (i.e., when your psychological distress affected you the most).

☐ 0-60+ (Dropdown Option)

Why do you think that your level of psychological distress was most prominent at that time in your life? (e.g., tragic life event, life transitions, grief, etc.)

_____
_____
_____
_____

## Appendix G

### Bandura's Social Learning Theory

What encouraged you to seek help for your mental health?

☐ Previous positive personal experience when I sought help
☐ Previous positive experiences of friends/family when they sought help
☐ I did not seek help
☐ Other (Please Specify) _____

What discouraged you to seek help?

☐ Previous negative personal experience when I sought help
☐ Previous negative experience of friends/family when they sought help
☐ I did not require help for my mental health
☐ Other (Please Specify) _____

## Appendix H

### Krumboltz's Social Learning Approach to Career Decision Making and Tiedeman & Miller-Tiedeman's Career Decision Making Theory

Who or what influenced you to pursue university?

☐ Pressure from my parents
☐ All my friends were going to university
☐ My teacher
☐ To pursue my dream career
☐ To get a career that pays well
☐ Other (Please Specify) _____

Who or what influenced you to pursue your major/program?

☐ Pressure from my parents
☐ All my friends are doing this major/program
☐ My teacher
☐ My dream career
☐ I can get a career immediately after without pursing graduate studies
☐ Other (Please Specify) _____

Who or what influenced your choice of university?

☐ It is close to my permanent residence
☐ It is the only university I got accepted to
☐ It is the only university that offers my program
☐ All my friends are going to this university
☐ My parents went to this university
☐ My siblings went to this university
☐ It is one of the most prestigious universities
☐ Other (Please Specify) _____

## Appendix I

### Social Media Advertisement

As part of my Master's Thesis in Counselling Psychology, I am searching for volunteers to take part in a research study investigating Canadian undergraduate students' Mental Health Literacy and its impact on Psychological Distress and Help-Seeking Behaviour. The online survey is anonymous; thus, you will not be required to provide any identifying information. The survey will take approximately 10-15 minutes to complete. I am looking for participants who are in the process of completing their first undergraduate degree at any Canadian university. Full time and part-time students are welcomed to participate, and students of all ages are welcomed. Any student who is completing their second undergraduate degree, is enrolled in a professional undergraduate program (e.g., medicine, chiropractic, etc.), or is enrolled in a graduate or doctorate program, will, therefore, be excluded from the study.

If you or anyone you know might be interested in completing the survey, please feel welcomed to share this post and ensure that the link is provided. It is imperative to note that participating in the study is completely voluntary, and there is absolutely no pressure to do so. For those who wish to participate in the study, all your data will remain anonymous, which means that no one, including, myself, will be able to tell who participated.

To participate in the study, click on the link provided below.
(Link)

Thank you for your time!

## Appendix J

## Debriefing Form

Thank you for participating in this study! Your participation is greatly appreciated.

Purpose of the Study:

We previously informed you that the purpose of the study was to investigate Canadian undergraduate students' mental health literacy and its impact on psychological distress and help-seeking behaviour. The goal of our research is to determine if one's level of mental health literacy will influence their levels of psychological distress and help-seeking behaviour (i.e., if one has high levels of mental literacy, we hypothesize that they will have lower levels of psychological distress and will be more likely to seek support).

We realize that some of the questions asked may have provoked strong emotional reactions. As researchers, we do not provide mental health services and we will not be following up with you after the study. However, we want to provide every participant in this study with a comprehensive and accurate list of mental health resources that are available, should you decide you need assistance at any time. Please see information pertaining to resources at the end of this page.

Confidentiality:

Please do not disclose research procedures and/or hypotheses to anyone who might participate in this study in the future as this could affect the results of this study.

Final Report:

If you would like to receive a copy of the final report of this study (or a summary of the findings) when it is completed, please feel free to contact us.

Useful Contact Information:

If you have any questions or concerns regarding this study, its purpose, or procedures, or if you have a research-related problem, please feel free to contact the researcher, Karissa Horne, k.horne@uleth.ca.

If you have any questions concerning your rights as a research subject, you may contact the University of Alberta Human Participant Research Ethics, ulethics@ualberta.ca.

If you feel upset after having completed the study or find that some questions or aspects of the study triggered distress, talking with a qualified mental health professional may help. If you are a student at the University of Lethbridge and feel you would like assistance, please contact the University of Lethbridge Counselling Services via. email, counselling.services@uleth.ca or by phone 403.317.2845 to schedule an appointment. In the case of an emergency, you may contact

the Distress and Suicide Prevention Line of Southwestern Alberta which is available 24/7 at 403.327.7905 or 1.888.787.2880. For those who are outside of the Lethbridge area, a list of Canada-wide mental health resources is available:

- Crisis Services Canada
  Toll Free (24/7): 1.833.456.4566
  Text Support (4pm-12am ET daily): 45645

- Canadian Crisis Hotline
  1.888.353.2273

- Better Help
  Online access to professional counsellors
  www.betterhelp.com

- The LifeLine App
  Direct access to phone, online chat, text, and email crisis support
  Available for iPhone and Android users
  www.thelifelinecanada.ca

In a serious emergency, please remember that you can also call 911 for immediate assistance.

(Template from: University of Massachusetts Amherst)

https://www.umass.edu/research/form/debriefing-form-general

## Appendix K

## Permission to use Depression Anxiety Stress Scale

PL

Peter Lovibond <p.lovibond@unsw.edu.au>
Wed 2021-11-24 5:24 PM
To: Horne, Karissa

Caution: This email was sent from someone **outside of the University of Lethbridge**. Do not click on links or open attachments unless you know they are safe. Suspicious emails should be forwarded to phishing@uleth.ca.

Dear Karissa,

You are welcome to use the DASS in your research. You can download the questionnaires (including translations in certain languages) and scoring key from the DASS website www.psy.unsw.edu.au/dass/

Depression Anxiety Stress Scales - DASS

The DASS is a 42-item self report instrument for measuring depression, anxiety and tension/stress.

www.psy.unsw.edu.au

. Please also see the FAQ page on the website for further information.

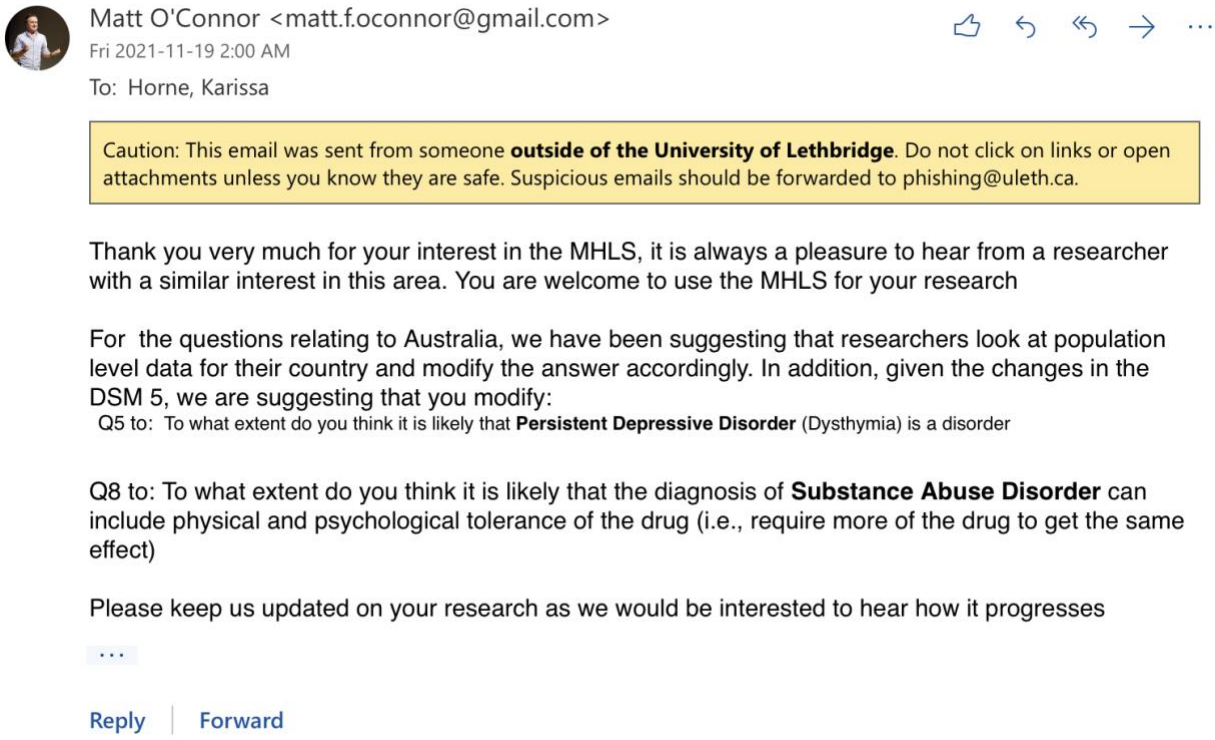
Best regards,
Peter Lovibond

...

Reply | Forward

# Appendix L

## Permission to use Mental Health Literacy Scale



Matt O'Connor <matt.f.oconnor@gmail.com>
Fri 2021-11-19 2:00 AM
To: Horne, Karissa

Caution: This email was sent from someone **outside of the University of Lethbridge**. Do not click on links or open attachments unless you know they are safe. Suspicious emails should be forwarded to phishing@uleth.ca.

Thank you very much for your interest in the MHLS, it is always a pleasure to hear from a researcher with a similar interest in this area. You are welcome to use the MHLS for your research

For the questions relating to Australia, we have been suggesting that researchers look at population level data for their country and modify the answer accordingly. In addition, given the changes in the DSM 5, we are suggesting that you modify:
Q5 to: To what extent do you think it is likely that **Persistent Depressive Disorder** (Dysthymia) is a disorder

Q8 to: To what extent do you think it is likely that the diagnosis of **Substance Abuse Disorder** can include physical and psychological tolerance of the drug (i.e., require more of the drug to get the same effect)

Please keep us updated on your research as we would be interested to hear how it progresses

...

Reply | Forward

## Appendix M

## Other Frequency Results

**Table M1**

*How Much Romantic Relationship Contributes to Psychological Distress*

| Variable | *n* | % |
|---|---|---|
| Not at all | 64 | 19.1 |
| Some of the time | 120 | 35.8 |
| A good part of the time | 44 | 13.1 |
| All the time | 15 | 4.5 |
| This does not apply to me | 92 | 27.5 |

**Table M2**

*How Much COVID-19 and its Implications Contribute to Psychological Distress*

| Variable | *n* | % |
|---|---|---|
| Not at all | 51 | 15.2 |
| Some of the time | 169 | 50.4 |
| A good part of the time | 100 | 29.9 |
| All the time | 15 | 4.5 |

**Table M3**

*How Much Social Media Contributes to Psychological Distress*

| Variable | *n* | % |
|---|---|---|
| Not at all | 62 | 18.5 |
| Some of the time | 199 | 59.4 |
| A good part of the time | 64 | 19.1 |
| All the time | 10 | 3.0 |

**Table M4**

*Age When Symptoms of Psychological Distress First Appeared*

| Variable | *n* | % |
|---|---|---|
| Does not apply to me | 13 | 3.9 |
| 0 | 1 | .3 |
| 2 | 1 | .3 |
| 3 | 4 | 1.2 |
| 4 | 8 | 2.4 |

| | | |
|---|---|---|
| 5 | 24 | 7.2 |
| 6 | 16 | 4.8 |
| 7 | 14 | 4.2 |
| 8 | 23 | 6.9 |
| 9 | 10 | 3.0 |
| 10 | 28 | 8.4 |
| 11 | 12 | 3.6 |
| 12 | 35 | 10.4 |
| 13 | 35 | 10.4 |
| 14 | 33 | 9.9 |
| 15 | 24 | 7.2 |
| 16 | 19 | 5.7 |
| 17 | 9 | 2.7 |
| 18 | 6 | 1.8 |
| 19 | 4 | 1.2 |
| 20 | 7 | 2.1 |
| 21 | 1 | .3 |
| 22 | 1 | .3 |
| 24 | 3 | .9 |
| 28 | 1 | .3 |
| 42 | 1 | .3 |

**Table M5**

*Age When Psychological Distress was Most Prominent*

| Variable | *n* | % |
|---|---|---|
| Does not apply to me | 13 | 3.9 |
| 5 | 2 | .6 |
| 6 | 2 | .6 |
| 7 | 1 | .3 |
| 8 | 3 | .9 |
| 10 | 3 | .9 |
| 11 | 4 | 1.2 |
| 12 | 8 | 2.4 |
| 13 | 11 | 3.3 |
| 14 | 30 | 9.0 |
| 15 | 38 | 11.3 |
| 16 | 42 | 12.5 |
| 17 | 43 | 12.8 |
| 18 | 46 | 13.7 |
| 19 | 23 | 6.9 |
| 20 | 22 | 6.6 |
| 21 | 8 | 2.4 |
| 22 | 8 | 2.4 |

| | | |
|---|---|---|
| 23 | 5 | 1.5 |
| 24 | 4 | 1.2 |
| 25 | 2 | .6 |
| 26 | 2 | .6 |
| 27 | 5 | 1.5 |
| 28 | 1 | .3 |
| 30 | 1 | .3 |
| 34 | 1 | .3 |
| 37 | 1 | .3 |
| 39 | 1 | .3 |
| 40 | 1 | .3 |
| 52 | 1 | .3 |

**Table M6**

*Have You Previously Sought Help from a Mental Health Professional?*

| Variable | *n* | % |
|---|---|---|
| Yes | 221 | 66.0 |
| No | 109 | 32.5 |
| Prefer not to say | 5 | 1.5 |

**Table M7**

*Have You Previously Sought Help from Other Professionals?*

| Variable | *n* | % |
|---|---|---|
| Yes | 175 | 52.2 |
| No | 156 | 46.6 |
| Prefer not to say | 4 | 1.2 |

**Table M8**

*Have You Previously Sought Help/Support from Family and Friends?*

| Variable | *n* | % |
|---|---|---|
| Yes | 261 | 77.9 |
| No | 70 | 20.9 |
| Prefer not to say | 3 | .9 |

**Table M9**

*Are You Currently Seeking Help from a Mental Health Professional*

| Variable | *n* | % |
|---|---|---|
| Yes | 90 | 26.9 |

| | | |
|---|---|---|
| No | 238 | 71.0 |
| Prefer not to say | 6 | 1.8 |

**Table M10**

*Are You Currently Seeking Help from Other Professionals?*

| Variable | *n* | % |
|---|---|---|
| Yes | 67 | 20.0 |
| No | 263 | 78.5 |
| Prefer not to say | 5 | 1.5 |

**Table M11**

*Are You Currently Seeking Help/Support from Family and Friends?*

| Variable | *n* | % |
|---|---|---|
| Yes | 178 | 53.1 |
| No | 150 | 44.8 |
| Prefer not to say | 7 | 2.1 |

**Table M12**

*What Encouraged You to Seek Help for your Mental Health?*

| Variable | *n* | % |
|---|---|---|
| Previous positive experience when I sought help | 42 | 12.5 |
| Previous positive experiences of friends/family when they sought help | 81 | 24.2 |
| I did not seek help | 88 | 26.3 |
| Other | 121 | 36.1 |

**Table M13**

*What Discouraged You to Seek Help?*

| Variable | *n* | % |
|---|---|---|
| Previous negative personal experience when I sought help | 84 | 25.1 |
| Previous negative experiences of friends/family when they sought help | 36 | 10.7 |
| I did not require help for my mental health | 64 | 19.1 |
| Other | 113 | 33.7 |

**Table M14**

*How Much Does your Romantic Relationship Contribute to your Level of Social Support?*

| Degree of Contribution | *n* | % |
|---|---|---|
| Not at all | 38 | 11.3 |
| Some of the time | 40 | 11.9 |
| A good part of the time | 60 | 17.9 |
| All the time | 101 | 30.1 |
| This does not apply to me | 96 | 28.7 |

**Table M15**

*Do you worry about COVID-19 Returning?*

| Variable | *n* | % |
|---|---|---|
| Not at all | 86 | 25.7 |
| Some of the time | 179 | 53.4 |
| A good part of the time | 43 | 12.8 |
| All the time | 27 | 8.1 |

**Table M16**

*Purpose of Social Media Use*

| Variable | *n* | % |
|---|---|---|
| News | 6 | .3 |
| News & Socialization | 134 | 40.0 |
| News, Socialization & Business | 28 | 8.4 |
| News, Socialization, Business & Dating | 7 | 2.1 |
| News, Socialization, Business & Other | 1 | .3 |
| News, Socialization & Dating | 25 | 7.5 |
| News & Business | 4 | 1.2 |
| News & Dating | 24 | 7.2 |
| News & Other | 2 | .6 |
| Socialization | 2 | .6 |
| Socialization & Business | 4 | 1.2 |
| Socialization & Dating | 15 | 4.5 |
| Socialization, Dating & Other | 3 | .9 |
| Socialization & Other | 10 | 3.0 |
| Dating & Other | 1 | .3 |
| Other | 10 | 3.0 |

**Table M17**

*Hours of Social Media Use*

| Variable | *n* | % |
|---|---|---|
| Less than 1 hour | 14 | 4.2 |
| 1-2 hours | 83 | 24.8 |
| 3-4 hours | 159 | 47.5 |
| 5-6 hours | 54 | 16.1 |
| 7-8 hours | 15 | 4.5 |
| 9-10 hours | 6 | 1.8 |
| More than 10 hours | 4 | 1.2 |

**Table M18**

*Who or What Influenced You to Pursue University?*

| Variable | *n* | % |
|---|---|---|
| Pressure from my parents | 48 | 14.3 |
| All my friends were going to university | 7 | 2.1 |
| My teacher | 3 | .9 |
| To pursue my dream career | 135 | 40.3 |
| To get a career that pays well | 80 | 23.9 |
| Other | 59 | 17.6 |

**Table M19**

*Who or What Influenced You to Pursue your Major/Program?*

| Variable | *n* | % |
|---|---|---|
| Pressure from my parents | 12 | 3.6 |
| All my friends are doing this major/program | 2 | .6 |
| My teacher | 22 | 6.6 |
| My dream career | 199 | 59.4 |
| I can get a career immediately after without pursuing graduate studies | 18 | 5.4 |
| Other | 79 | 23.6 |

**Table M20**

*Who or What Influenced your Choice of University?*

| Variable | *n* | % |
|---|---|---|
| It is close to my permanent residence | 130 | 38.8 |
| It is the only university I got accepted to | 39 | 11.6 |
| It is the only university that offers my program | 22 | 6.6 |

| | | |
|---|---|---|
| All my friends are going to this university | 18 | 5.4 |
| My parents went to this university | 7 | 2.1 |
| It is one of the most prestigious universities | 13 | 3.9 |
| Other | 104 | 31.0 |