

**The Influence of an Interactive Online Learning Module on Pre-Service Teachers' Mental  
Health Literacy**

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### Abstract

Ensuring that teachers have high mental health literacy (MHL) is paramount, particularly because the prevalence rate for mental illness among children and adolescents is 10-20% (Mental Health Commission of Canada, 2013). Currently, there are few programs designed to increase the MHL of teachers, and the research base examining these is scant. As a result, more research is required to find effective methods of improving MHL among teachers. The current study explored the influence of a new, interactive MHL learning module on the MHL levels of B.Ed. candidates. A questionnaire largely adapted from existing measures was developed and factor analysis was conducted. Pre- and post-module MHL scores were analyzed using descriptive approaches and a repeated-measures MANOVA. Results indicate that pre-service teachers have high knowledge and non-stigmatizing beliefs in relation to MHL which did not change post-module completion; self-efficacy levels did show a small, non-significant increase.

*Keywords:* mental health literacy; pre- and in- service teachers; factor analysis; education

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## The Influence of an Interactive Online Learning Module on Pre-Service Teachers' Mental Health Literacy

### **Introduction**

To some, “health literacy” may solely refer to an individual’s knowledge related to physical diseases. However, health literacy has evolved to capture a more general construct that is important for improving health outcomes, making health care systems easier to navigate, and providing education to teach adequate knowledge and skills for people to improve their health (World Health Organization, 2013). With help from improvements in health literacy, basic knowledge about prevention, intervention and treatment of major physical diseases or illnesses is now seen as common knowledge. For example, it is well-known that using condoms reduces a risk for sexually transmitted diseases, and that refraining from smoking reduces a risk for lung cancer. Further, it is not uncommon for people in developed countries to promptly seek help for a physical illness and have the knowledge of where and how to get the help they need. However, this situation is quite different in relation to mental disorders and illnesses. Many people in society lack the basic knowledge related to prevention, intervention and treatment of mental health difficulties (Jorm, 2012).

Jorm (2012) defined mental health literacy (MHL) as having components consisting of a) knowledge on preventing mental disorders, b) recognizing when a disorder is developing, c) knowledge of available help-seeking options and treatments, d) knowledge of effective self-help strategies for milder problems, and lastly, e) first aid skills to support others who are developing a mental disorder. More recently, MHL has been defined as “understanding how to obtain and maintain positive mental health; understanding mental disorders and their treatments; decreasing stigma related to mental disorders; and enhancing help-seeking efficacy” (Kutcher, Wei, & Coniglio, 2016, p. 155). Although there are numerous differing definitions of MHL, Kutcher,

Wei, and Coniglio's (2016) definition focuses less on mental illness and more on obtaining and maintaining positive mental health and having high help-seeking efficacy, which best align with roles appropriate for classroom teachers, as well as the goals of this study. Therefore Kutcher, Wei, and Coniglio's (2016) definition of MHL is the definition that has been adopted presently.

Jorm (2012) explains that the lack of public knowledge in the mental health field can cause barriers and difficulties to recognizing and treating mental illnesses for those who are affected. He suggests that the delayed recognition of mental health disorders can be partially attributed to the fact that most mental illnesses and disorders have an initial onset during the first quarter of life. Jorm argues that prevention and interventions particularly based in educational settings may greatly improve mental health outcomes due to schools' educational mission and the specific age-groups they serve. Further, the Final Report of The Standing Senate Committee on Social Affairs, Science and Technology, chaired by Kirby and Keon (2006) emphasizes the importance of implementing early mental health education and awareness in schools. The Committee recommends that "teachers be trained so that they can be involved in the early identification of mental illness," and that "teachers be given the time and practical resources and supports necessary to take on this new role" (p. 19). These resources and training are particularly important as the majority of teachers report a lack of skills and knowledge relating to helping children with mental health difficulties, with one of the explanations for this problem being lack of funding and insufficient mental health training (Reinke, Stormont, Herman, Puri & Goel, 2011).

The present study examined the influence of a new, interactive MHL learning module on the MHL of B.Ed. candidates. Findings from the present study will add to the small research base relating to teacher MHL, and to professional practice by providing insight to the educational

community with additional knowledge to create more mentally healthy classrooms. In turn, although beyond the scope of this study, by exploring effective approaches to improving educator MHL, pre-service teachers can be better equipped to help prevent, intervene and obtain help for a student who may have a mental illness.

## **Literature Review**

### **Mental Health Literacy of Educators**

An understanding of mental health in the classroom environment is paramount, particularly because overall prevalence rates for mental illness among children and adolescents is high at 10-20% (Mental Health Commission of Canada, 2013). Although teachers and other school personnel may be the first to notice mental health difficulties in their students, approximately 85% of teachers state they do not have proper mental health training (Moon, Wilford & Mendenhall, 2017). A study of 186 pre-service teachers found that only 8% of participants had either “quite a bit” or “extensive” professional experience with mental health, and about half of participants reported having no professional experience at all (Whitley & Gooderham, 2016). In contrast, Kutcher, Wei and Alaffe (2018) found that of 124 educators, almost 70% reported having had mental health training, most often Mental Health First Aid (Kitchener & Jorm, 2000). However, when knowledge, competency, attitudes and help seeking frequency were assessed, educators were found to have generally low levels of mental health literacy. Although MHL-specific research relating to teachers' actual practices has not yet been conducted, findings from related fields such as bullying suggest a significant and likely reciprocal relationship that teacher beliefs and efficacy have with their intervention and support practices, which are also influenced by the complex contexts of classrooms and schools (e.g. Buehl & Beck, 2015; Song, Lee, & Park, 2018; Troop-Gordon & Ladd, 2015). To effectively

promote mental health and to support and obtain help for students with mental health difficulties, then, it is imperative that teachers have high mental health literacy. It is important to highlight that although MHL is widely and commonly examined, it is defined and operationalized differently by many researchers, resulting in MHL measures that vary widely. Consequently, Kutcher, Wei, and Coniglio's (2016) definition of MHL has been used for this study, as it can and has been readily applied to teachers and to a classroom setting. This is in contrast to the other most often used definition by Jorm (2012), which focuses more on mental disorders and on mental health literacy in the general population, rather than among teachers. A scant research base currently exists that explicitly assesses the knowledge, levels of self-efficacy and beliefs that comprise the MHL of pre-and in-service teachers.

**Knowledge.** Rothi, Leavey and Best (2008) argue that there is a growing expectation for teachers to act as tier-one mental health professionals, which involves the early identification and intervention of mental health difficulties in their students. Their UK-based study examined teachers' views and knowledge of mental health and their experiences of the expectations put upon them through semi-structured interviews. The findings suggest that teachers do feel responsible for the identification and management of students' mental health issues, but in general they feel inadequately prepared to assume the responsibilities of this role. Studies examining teacher mental health knowledge through surveys found that teachers reportedly lack mental health information and training (Walter, Gouze and Lim, 2006) and only 47% of teachers either agreed or strongly agreed to having knowledge of their students' social, emotional and mental health (Askell-Williams & Cefai, 2014).

In one study, over 3900 Canadian teachers were surveyed on student mental health in schools and over 68% had not received professional development focusing on knowledge

acquisition or skills training to address the mental health needs of their students (Canadian Teachers' Federation, 2012). Kutcher, Wei and Alaffe (2018) found that of 124 educators that participated in a MHL knowledge survey, the average score of correct answers was only 48%. In a study of 186 Canadian pre-service teachers (Whitley & Gooderham, 2016), participants were consistent in their identification of cases of anxiety and ADHD, but variation was seen in terms of whether certain behaviours, drawn from criteria for depression (e.g. loss of interest in formerly enjoyable activities), were likely associated with depression, home life difficulties or substance abuse. Finally, even after education that was designed specifically to teach educators how to identify depressed students, teacher participants were unable to do so upon evaluation (Moor et al., 2007). Thus whether assessed through self-report or more objective measures of MHL knowledge, most studies note a need for improvement in this aspect of MHL for teachers.

**Self-Efficacy.** Teacher self-efficacy is an important factor to examine in regard to teacher mental health literacy, as both of the previously presented MHL definitions referred to an ability to provide self-help or to help others when it comes to mental health or mental illness (Jorm, 2012; Kutcher, Wei, & Coniglio, 2016). Research suggests that teachers express an ability to recognize mental health difficulties among students with externalizing problems but are less able to do so for students with internalizing problems (Whitley & Gooderham, 2016; Williams, Horvath, Wei, Van Dorn & Jonson-Reid 2007). Additionally, teachers have demonstrated a lack of confidence in personally supporting students with mental health difficulties, particularly with the fear of saying or doing the wrong thing (Mazzer & Rickwood, 2014). More specifically, when asked if teachers believed that they had the skills required to meet the mental health needs of the students they work with, only a combined 34% either agreed or strongly agreed (Reinke, Stormont, Herman, Puri & Goel, 2011). In a similar study, less than half of teachers reported

having high self-efficacy in helping students in different social and emotional areas relating to mental health (Askell-Williams & Cefai, 2014). Reports summarizing findings from a national survey state that Canadian teachers expressed a need for more assistance by mental health professionals to best support the mental health needs of students in their schools (Froese-Germain & Riel, 2012) and an Ontario study of board-level educational leaders believed that teachers are ill-equipped to manage the severity of mental health difficulties presenting in schools (Short, Fergusen & Santor, 2009). Kutcher, Wei and Alaffe (2018) found that when teacher participants were asked if they were comfortable identifying a student with a mental health difficulty, the average answer from participants was only “somewhat comfortable”. Evidently then, research conducted over the past decade in Ontario, Canada and beyond suggests that teachers report concerns with self-efficacy related to supporting students with mental health needs in the classroom.

**Beliefs.** Although there is a wealth of literature examining teacher beliefs about teaching and including students with exceptionalities such as learning disabilities or autism spectrum disorder (Arnett, Mady & Muilenburg, 2014; Talib & Paulson, 2015), there is minimal research investigating teacher beliefs specifically focusing on mental health difficulties and/or teachers' beliefs of their responsibilities for supporting mental health in schools. When teachers were asked about issues they faced in their schools and about preferred topics for professional development, teachers often suggested the topic of mental health issues (Canadian Teachers' Federation, 2012). Research by Graham, Phelps Maddison and Fitzgerald (2011) suggests that only 40% of teachers believed their school viewed teacher mental health education as a very important subject. Further, 89% of teachers agreed that schools should be involved in addressing

the mental health needs of students, however only 34% reported that they felt they had the skills to properly do so (Reinke, Stormont, Herman, Puri & Goel, 2011).

Pre- and in-service teachers report positive attitudes towards inclusive education and supporting mental health in their schools but are least accepting of students with emotional and behavioural disorders (Avramidis & Norwich, 2002; O'Toole & Burke, 2013). In one study, pre-service teachers completed the *attitudes towards inclusive education* scale with scores ranging from 1 (least favourable attitudes towards inclusion) to 5 (most favourable attitudes towards inclusion). Pre-service teachers' average response was the lowest for items relating to students with emotional and behavioural difficulties, averaging at 2.90, comparing to items relating to students with speech and language difficulties where the average score was 4.27 (O'Toole & Burke, 2013).

In exploring teacher beliefs through a lens of their own personal experiences, Kutcher, Wei and Alaffe (2018) found that educators generally have positive attitudes towards mental health, however when asked if they would disclose having a mental illness without fear of being treated differently, only 63% of respondents said yes, indicating one third of teachers still may have stigmatizing beliefs regarding having a mental illness. Further, less than 40% of the teacher participants who experienced a mental health problem actually sought help. Teachers' beliefs and experiences related to their own mental health may influence their perceptions of students and their needs. Presumed teacher stigma towards mental illness is problematic for a number of reasons, with a key reason being that it is one of the largest barriers preventing those with mental health difficulties from getting help (Canadian Teachers' Federation, 2012). An understanding of pre-service teachers' beliefs regarding mental health difficulties is a necessary step to ensuring

that teachers are prepared to support students in receiving appropriate and prompt mental health help when necessary.

Additionally, beliefs and attitudes about inclusive practice have demonstrated to be related to self-efficacy in teaching in inclusive classrooms (Savolainen, Engelbrecht, Nel & Malinen, 2013). In one study, pre-service teachers completed a course on attitudes, concerns and teaching efficacy related to inclusive classrooms and found that as participants' attitudes improved about inclusive practice, their self-efficacy in teaching in inclusive classrooms also improved (Sharma & Sokal, 2015). Thus, teachers believe supporting mental health in their classrooms and schools is important, and pre- and in-service teachers' own beliefs about children with emotional and behavioural difficulties may create a bidirectional relationship on their level of self-efficacy in teaching these children.

MHL is defined as having proper mental health knowledge, non-stigmatizing beliefs about mental health, and self-efficacy to get proper help for mental health difficulties (Kutcher, Wei, & Coniglio, 2016, p. 155). Through reviewing the scant research base on teacher MHL, it can be concluded that teachers believe they could benefit from additional training and educational programs on mental health literacy in order to improve their knowledge, beliefs and self-efficacy regarding mental health and mental illness in the classroom setting. Improving teachers' MHL will, in theory, aid teachers to create mentally healthy environments in classrooms, and assist them in supporting and referring students who may be living with mental health difficulties.

### **Improving Mental Health Literacy of Educators**

Given the results of the above studies, professional learning opportunities for mental health are clearly warranted for teachers. There are currently only a small number of

interventions in the literature that are designed to increase the mental health literacy of pre- and in-service teachers.

One of the most prevalent MHL-focused training programs is the Youth Mental Health First Aid course (Kitchener & Jorm, 2000). This course is 12-hours in length and teaches participants how to apply a plan of action for a youth who may be developing a mental health problem or who is going through a mental health crisis. Teachers all over the world have completed this course, including thousands in Canada (Massey, Brooks & Burrow, 2014). A study by Jorm, Kitchener, Sawyer, Scales and Cvetcovski (2010) evaluated the Youth Mental Health First Aid course through a randomized trial where teachers at 7 Australian schools received training in Youth Mental Health First Aid ( $n = 221$ ) and teachers from another 7 schools ( $n = 106$ ) were waitlisted. The effects of the training were evaluated through pre-and post-training questionnaires and at a 6-month follow up. The questionnaires focused on mental health knowledge, stigma, confidence in providing help to those with a mental illness, and school policy and procedures, among other topics. Results indicated an increase in teachers' knowledge of mental health in addition to an increase in confidence in providing help to students, suggesting that the Youth Mental First Aid training was effective in increasing teacher mental health literacy. A second study of the Youth Mental Health First Aid course (Gryglewicz, Childs & Soderstorm, 2018) similarly found that the program resulted in significant improvements in mental health literacy among of a sample of 356 elementary, middle and high school staff (81% of whom were teachers), and a large majority of the participants either agreed or strongly agreed to statements such as "the information learned in the training will be easy to integrate into my work". Although the Youth Mental Health First Aid course has demonstrated to significantly increase general adults' frequency of talking to young people about mental health after training

(Kelly et al., 2011), there is currently no published studies that examine if this course specifically affects teacher practice in the classroom setting.

A more student-focused program that has been widely used in Canada is the Mental Health and High School Curriculum Guide (the Guide), which was created by Dr. Stan Kutcher in conjunction with the Canadian Mental Health Association (Teen Mental Health, 2012). This program was designed to improve mental health literacy among students, teachers and staff in educational institutions by the effective translation and transfer of scientific knowledge. The Guide underwent modifications and now addresses classroom mental health literacy through six teacher-ready online modules (Kutcher & Wei, 2014). Evaluation of the implementation of the modules in seven English school boards in Nova Scotia demonstrated that using this program for the middle- and secondary-school classroom significantly and substantially increased teachers' knowledge about mental health (Sun Life Financial Chair in Adolescent Mental Health, 2013). In addition, a study by Kutcher, Wei, McLuckie and Bullock (2012) examined the impact of the Guide on MHL outcomes for teachers at one school board in Nova Scotia. Eighty-nine teachers who taught the Healthy Living component of the school curriculum were required to participate in the one-day, face-to-face educator training on how to implement the Guide in the classroom. Each participant completed a 30-item questionnaire that measured knowledge and attitudes towards mental health before receiving any training (pre-test) and immediately after completing the training (post-test). Results indicated a significant increase of knowledge in general mental health, as well as increased knowledge related to the Mental Health Curriculum, indicating that even training teachers on *how* to integrate the Guide into their classroom had significant impacts on their own MHL. An alternate version of the Guide called the African School Mental Health Curriculum also exists and training for the Guide has demonstrated similar positive results

(Kutcher et al. 2016). Similarly to the Youth Mental Health First Aid course, there is currently no published research that evaluates the impacts of the Guide on teacher practice in the classroom setting.

In terms of programs strictly designed for pre-service teachers, the results of a systematic review of more than 60 teacher preparation programs across Canada yielded only two courses that focus on evidence-based approaches to understanding mental health in the classroom (Rogers & Pilgrim, 2014). An older review of 80 syllabi from pre-service teacher programs in the United States (State, Kern, Starosta & Mukherjee, 2011) similarly noted minimal content related to working with students with social, emotional and behavioural difficulties, including a specifically focus on mental health issues.

In terms of mental health literacy, Woloshyn and Savage (2018) examined pre-service teachers' reported understandings of mental health and coping strategies following the completion of a fourth-year undergraduate course that spanned the length of a semester which focused on mental health and wellness. Results demonstrated that through completing this course, participants reported a more complete understanding of mental health and wellbeing. Similarly, Atkins and Rodger (2016) found that pre-service teachers who participated in a semester-long mental health literacy course reported a greater understanding of the mental health and wellness of children and developed mental health literacy to support the learning and growing needs of their students. Embedding explicit content related to supporting students with mental health needs in classrooms at the pre-service level is one key step in developing teacher mental health literacy; the initial research conducted in the area demonstrates that although improvements in MHL can be made in this context, few programs or courses within B.Ed. programs have made this a priority.

### **Individual Characteristics and MHL**

In addition to examining the efficacy of a MHL module, participant individual characteristics were also collected in the present study to explore if these variables moderate the learning impact of the module. Past research examining teachers' perceptions of the inclusion of students with both internalizing and externalizing difficulties found that information such as professional experience, age, gender and ethnic background had no effect (Loades & Mastroiannopoulou, 2010). Further, a study examining pre-service teachers' mental health literacy found that individual characteristics such as levels of personal and professional experience with mental health difficulties did not have an influence on the MHL of the participants (Whitley & Gooderham, 2016).

More specific to MHL learning programs, research examining the individual characteristics of participants of the Youth Mental Health First Aid course (Kitchener & Jorm, 2000) suggests that variables such as gender or ethnicity had no significant impact on the rate of change in MHL, but racial minorities showed greater improvements in this domain compared to Caucasians (Gryglewicz, Childs & Soderstorm, 2018). Authors stipulated these results may be due to the fact that the training reinforces the importance of early mental health intervention, and that among minorities, this reinforced idea may have inadvertently debunked misconceptions relating to mental illness. Further, participants with no prior experience or who were not exposed to mental health training had greater levels of improvements in MHL (2018). Although individual characteristics such as personal and professional experience with mental health have not been found to impact MHL, these and other potentially salient influences have not been fully explored in the literature and will thus be included in the current study.

Programs available that are designed to increase teacher mental health literacy have demonstrated to be effective. However, there are many ways in which opportunities can be expanded and differentiated to meet the needs of a greater number of pre-and in-service teachers, particularly given recent data that show that teachers continue to express concerns regarding their preparedness and efficacy in supporting student mental health needs in classrooms (Froese-Germain & Riel, 2012; Whitley, Smith, Vaillancourt, & Neufeld, 2018). Access to a range of MHL intervention options to fit within different program structures and to suit different learners and learning contexts is needed. For example, both the Guide and the Youth Mental Health First Aid course require a large time commitment to complete, which may not be ideal for pre-service teachers with heavy course loads and practica responsibilities. Furthermore, the two in-class MHL interventions for pre-service teachers ranged a full semester, revealing a gap for short and accessible training that can fit within B.Ed. courses.

Additionally, the majority of the previously-mentioned MHL interventions focus on intermediate-and secondary-school teachers and students and include mental illness-focused content. A variety of MHL programs for elementary school teachers where prevention and mental health promotion are a priority, and where mental illness is less likely to occur among students, are also required. As well, there are few and mixed results describing whether individual characteristics such as sex, teaching panel, previous experience and expertise with mental health moderate the impact of MHL training programs – more findings in this area will help with planning of ongoing interventions. Finally, recent data continues to show that teachers continue to express concerns regarding their preparedness and efficacy in supporting student mental health needs in classrooms.

### **Online Learning**

In an effort to increase availability and accessibility of MHL programs, virtual offerings are increasingly common (Teen Mental Health, 2012). As previously described, training associated with the Guide (2012) has been shown to increase MHL among pre-and in- service teachers who complete the six online modules (approximately 6 hours, 30 minutes). However not all virtual courses or programs are equally as impactful; as with face-to-face classroom pedagogies, elements such as organization and differentiated learning activities are key to learning, but also the particular interface, platform and nature of the online activities are important to consider (Yang & Liu, 2007).

Ossiannilsson and Landgren's (2011) emerging E-Learning conceptual framework states that quality e-learning sources comes from both a complex and holistic approach. More specifically, according to this emerging framework, for e-learning to be successful, a student's education needs to be flexible (e.g., time, space, and through learning styles/modalities), the course material should be inviting and attractive (e.g., interactiveness, participation and personalization), the material must be easily accessible, and finally, the material must be transparent (e.g., through good infrastructural resources).

Barriers to user satisfaction with online learning include course flexibility and quality, perceived usefulness, ease of use and diversity in assessments (Sun, Tsai, Finger, Chen, & Yeh, 2008). Additionally, it can be more challenging to develop an e-learning environment that fosters student-teacher relationships, instructor accessibility, and regular feedback and monitoring, all of which can improve the learning experience and outcomes (Song, Kim & Luo, 2016; Warren, Rixner, Greiner & Wong, 2014). However, a recent meta-analysis by Wisneski, Ozogul and Bichelmeyer (2016) suggests that online learning environments can produce equal learning outcomes when compared to face-to-face learning environments. Additionally, teachers who

employ extra opportunities to engage with their students online (e.g., virtual office hours and webcasts) and teachers who are passionate about the information they are teaching increase the likelihood of student engagement (Hew, 2014). Online learning also has the potential to further engage students in learning with interactive content (Cho & Cho, 2014).

Research demonstrates that interactive online learning is both effective and increases enthusiasm to learn (Huckstadt et al., 2005). One university in Australia switched from their regular, non-interactive learning module to an interactive online learning module due to low satisfaction and poor academic learning outcomes from the non-interactive module (Andrews, 2014). The upgrade included an interactive, real-time classroom and the use of videos, images, quizzes and interactive activities in order to keep the students engaged in their learning. Results demonstrated that students gave high positive feedback to the interactive learning modules and reported high participation and interaction. For MHL specifically, online training programs have demonstrated to be an efficient method of training workplace managers about mental health information and practices to best support their staff (Gayed et. al., 2018).

To reap the benefits of both online and face-to-face learning, blended learning possesses online accessibility to learning content while offering opportunities for face-to-face, personalized instruction (Wanner & Palmer, 2015). Research on blended learning has demonstrated that it can be effective in addressing diverse learning styles, increasing access to knowledge and fostering social interaction (Ogusthorpe & Graham, 2003; Uğur, Akkoyunlu & Kurbanoğlu, 2009). Further, undergraduate students in blended learning courses reported higher learning motivation and learning outcomes as compared to students in traditional courses (Tseng & Walsh, 2016). Current approaches to online learning focus on a number of the above elements such as blended learning, increased student control, and accessibility and flexibility (teachonline.ca, 2018). B.Ed

courses are increasingly adding online/virtual courses and elements, but research exploring the efficacy of these is lacking.

### **Description of the Problem**

Due to the growing number of children and adolescents with mental health difficulties, ongoing support for teachers is required to best support these student populations. Teachers are key to creating environments that support and promote mental health as well as providing timely referrals to professional services to ensure proper aid is provided to students who require mental health help (Jennings & Greenberg, 2009; Rothi, Leavey & Best 2008). The small body of research that exists suggests that teachers have limited MHL and want more training to improve efficacy in the area (Askell-Williams & Cefai, 2014; Canadian Teachers' Federation, 2012; Froese-Germain & Riel, 2012; Reinke, Stormont, Herman, Puri & Goel, 2001; Walter, Gouze and Lim, 2006; Whitley et al., 2018). Mixed findings have been reported regarding the availability of these mental health components in B.Ed. programs (Rogers & Pilgrim, 2014). Additionally, little is known about the role of participants' individual characteristics and mental health literacy; and the related findings are mixed (Gryglewicz, Childs & Soderstorm, 2018; Whitley & Gooderham, 2016). The few structured MHL training programs that have been evaluated have had promising findings (Jorm, 2000; Kutcher, Wei, McLuckie & Bullock, 2012), however a broader range of flexible learning opportunities related to MHL are needed to increase uptake and accessibility. Blended learning and e-learning options provide flexibility for pre-service educators and can be used to fit within courses or programs without large time commitment. Thus, there is a need for research that explores the MHL of educators and the potential influence of virtual, interactive programs on MHL, while also considering the potential

role that individual characteristics, such as B.Ed program panel, highest degree obtained and previous experience learning about mental health play in the effectiveness of these programs.

### **Conceptual Framework**

This study examined the effects of an online, interactive mental health literacy module on pre-service teachers' knowledge, beliefs and self-efficacy relating to mental health and mental illness in the classroom environment. This study has been framed through combining Kutcher, Wei and Cognilio's (2016) conceptualization of MHL, Ajzen's (1985) Theory of Planned Behaviour and Bandura's (1994) Self-Efficacy Theory.

### **Mental Health Literacy**

Kutcher, Wei and Cognilio's (2016) conceptualization of MHL consists of "understanding how to obtain and maintain positive mental health; understanding mental disorders and their treatments; decreasing stigma related to mental disorders; and, enhancing help-seeking efficacy (knowing when and where to seek help and developing competencies designed to improve one's mental health care and self-management capabilities)" (p. 155). This conceptualization advances previous perceptions that mental health literacy is strictly knowledge of mental health disorders and includes the notion that mental health is more than the absence of mental illness; it includes wellbeing, healthy functioning, and coping.

The authors further explain that similar to health literacy, MHL must be developed and applied in different contexts of every-day life, it must be developmentally appropriate, and it must be integrated into social and organizational structures such as schools. In terms of MHL interventions, the authors stress that although the core components of MHL need to be addressed, MHL interventions must be tailored and applied to fit in the context to which they will be deployed. For example, a MHL intervention for teachers cannot be identical to a MHL

intervention for emergency service workers due to the context of which the information from these interventions will be used. This conceptualization of mental health literacy acts as a base for this study by providing a secure description of the necessary constructs required for an individual to be mental-health literate.

### **Theory of Planned Behaviour**

Ajzen's Theory of Planned Behaviour (Ajzen, 1985) has also been used as a framework for this study. This framework is an advancement of the Theory of Reasoned Action (Fishbein and Ajzen, 1975) which proposed that an important mediating variable between an individual's attitudes and eventual actions was one's intent to act out the behaviour. The Theory of Planned Behaviour is an extension of the Theory of Reasoned Action that consists of three constructs 1) an attitude towards a behaviour 2) subjective norms and 3) perceived behavioural control.

This theory posits that a) an individual's intentions for a behaviour largely reflect their personal attitudes and beliefs about the behaviour, b) subjective norms that an individual is exposed to will affect their intentions and c) the intentions and behaviour carried out by an individual are affected by what they believe to be their ability to actually perform the behaviour (known as perceived behavioural control). In other words, all of one's attitudes, subjective norms and perceived behavioural control affect one's intentions of carrying out an action. Further, one's intention to enact a behaviour affects the probability of said action taking place. In sum, the Theory of Planned Behaviour states that behaviour is determined by intentions, attitudes and subjective norms.

### **Self-Efficacy Theory**

Finally, Bandura's (1994) Self-Efficacy Theory is also important to address in terms the conceptual framework for this study. Bandura (1994) explains that perceived self-efficacy is

defined as “people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives” (p. 79). Bandura further describes that these beliefs determine how individuals behave and affect one's capabilities to produce certain levels of performance. According to Bandura, self-efficacy is developed through four main sources of influence 1) mastery experiences, 2) through vicarious experiences provided by social models 3) through social persuasion, and 4) by relying on somatic and emotional states to judge one's capabilities. Bandura states that self-efficacy beliefs are most often developed through mastery experiences; which can be interpreted as the act of overcoming obstacles through learning and perseverance, which eventually leads to success.

Furthermore, Bandura (1994) posits that there are a number of processes related to activating self-efficacy. For example, Bandura states cognitive processes encourage goal setting and the evaluation of self-capabilities; that the strength of an individual's perceived self-efficacy is related to an individual's commitment to achieve the goals they set for themselves.

Additionally, motivational processes (cognitive motivators) may also influence the activation of perceived self-efficacy. For instance, Bandura explains that motivation is directed by an expectation that a certain action or behaviour will result in a certain outcome. This motivation can indirectly be affected by perceived self-efficacy. Research demonstrates that self-efficacy is a motivating factor that affects teachers' responses and behaviours in the classroom (Klassen et al., 2011), further supporting the notion that teacher self-efficacy beliefs can play a significant role in facilitating effective teacher behaviour in identifying and aiding students with mental health difficulties.

This study examined teacher mental health literacy through Kutcher, Wei and Cognilio's conceptualization of MHL along with Ajzen's Theory of Planned Behaviour and Bandura's Self-

Efficacy theory with the understanding that by increasing pre-service teachers' knowledge, attitudes and beliefs about MHL, by creating an environment that supports MHL, and by helping pre-service teachers feel efficacious in acting in ways that promote mental health in the classroom, behaviours that support student mental health will be more likely to take place in their eventual teaching practice. Further, by completing a MHL module that is intended to improve pre-service teachers' knowledge, beliefs and self-efficacy relating to mental health in the classroom, pre-service teachers are subsequently increasing their self-efficacy beliefs, which will in theory lead to increased helping behaviours with students learning with mental health difficulties.

### **Significance of Research**

Many studies have found that teachers lack basic mental health literacy (Askell-Williams & Cefai, 2014; Canadian Teachers' Federation, 2012; Kutcher, Wei & Alaffe, 2018; Walter, Gouze and Lim, 2006), and the training programs available may not be appropriate for all teaching populations. Although there is research available noting change among pre- and in-service teacher mental health literacy as a result of participation in training programs (Kitchener & Jorm, 2000; Teen Mental Health, 2012), there remains a gap in the research for brief, interactive and accessible mental health training tools that can be offered to educators who teach elementary school as well as secondary and that can be readily embedded into B.Ed. courses. The current study explores the effect of one such offering by evaluating the influence of a mental health module on self-reported mental health literacy levels of pre-service teachers. Although beyond the goals of the current study, improved MHL resulting from engaging in the module may in turn, may impact teacher practice and their classroom environments and further help children living with mental health difficulties.

### **Research Questions**

The purpose of this quantitative study was to examine the effects of a new classroom mental health module on the mental health literacy of B.Ed. pre-service teachers at the University of Ottawa. The following research questions have guided this study:

- 1) What is the factor structure and psychometric properties of a measure of teacher mental health literacy?
- 2) What is the influence of an interactive, virtual learning module on the mental health literacy levels of B.Ed. candidates?
- 3) Do individual characteristics such as sex, teaching panel, previous experience, year of study and expertise with mental health moderate the impact of the learning module on the mental health literacy of B.Ed. candidates?

Given the existing literature, it was hypothesized that through completing the MHL module, the MHL levels of B.Ed candidates would increase. Additionally, it was hypothesized that participants' individual characteristics would moderate the impact of the module. Limited existing research precludes generating hypothesis with respect to the influence of sex or teaching panel but it was anticipated that participants with prior mental health learning experience would demonstrate a lesser increase in MHL as compared to participants with no prior mental health learning experience.

### **Methods**

This study draws data from a larger evaluation of online modules within the Inclusive Education and Learning Theories courses in the B.Ed. program at the University of Ottawa in the 2017-2018 school year. These courses (PED3142/4142) are required as part of the B.Ed. program for all students. This study adopted a quantitative approach to best examine if and how

pre-service teachers' mental health literacy changed after completing a classroom mental health module. A mental health literacy questionnaire was completed by participants before and after engaging with an interactive mental health module. This questionnaire was developed by combining existing measures and adding a small number of novel items and was designed to assess the knowledge, beliefs and self-efficacy of teachers relating to classroom mental health. Factor analyses were conducted in order to confirm the structure of the questionnaire and internal consistency was calculated. Quantitative data have been analyzed using descriptive statistics and a repeated measures MANOVA.

### **Participants**

Participants were students enrolled in either the first or second year of a 2-year post-degree B.Ed. program at the University of Ottawa who completed the MHL module as part of their coursework. All panels (primary/junior, junior/intermediate and intermediate/senior) were included. Specifically, students enrolled in the first or second year of the Inclusive Education and Learning Theories course (6 classes,  $N = 144$  students), and whose professors chose to include the MHL module, were required to answer a pre-and post- MHL self-assessment questionnaire (Appendix A) for completion of their course activities. However, it was up to individual students to decide whether or not they wished to have the data from the questionnaire used as part of the research study. Before beginning the questionnaire, students had an opportunity to click a checkbox that provided basic consent information in order to agree to have their data used for the larger evaluation (Appendix B). The courses in which the module was embedded took place in the winter semester. For students completing their first year of study in the B.Ed. program, they would have completed one 3-week practicum and for those in their second year, 16 weeks of

practicum would have been completed. In addition, all students spend one day/week in their practicum schools throughout the school year.

Originally, the sample consisted of 144 participants who completed the pre-test, however only 117 of the original sample completed the post-test, yielding an attrition rate of 18.75%. Key individual characteristics of the original and final samples can be seen in Table 1 with no differences between the two groups noted.

Table 1.

*Key individual characteristics of the original and in the final samples*

	Original Sample ( $N = 144$ )	Final Sample ( $N = 117$ )
Female	122 (84.7%)	99 (84.6%)
Primary/Junior Section	104 (72.2%)	85 (72.6%)
Previous MHL Learning	122 (84.7%)	98 (83.8%)
Second year of B.Ed.	127 (88.2%)	105 (89.7%)
Previous Degree		
Social Science	48 (33.3%)	39 (33.3%)
Arts and Humanities	60 (41.7%)	48 (41.0%)

As can be seen in Table 1, of the final sample of 117 participants, the vast majority were female and were completing their B.Ed. in the Primary/Junior section. Of the remaining participants, 17.9% were enrolled in the Junior/Intermediate section, and 9.4% in the Intermediate/Senior section. An overwhelming majority of participants were in their second year of their B.Ed. program leaving a mere 10.3% of participants who reported they were in their first year of study. Most of the participants had completed their previous degree in the areas of either

Social Sciences or Arts and Humanities; the remaining participants completed their previous degree in Science (6.8%), Health Sciences (6.8%), Social Work (1.7%), Religion/Divinity (1.7%) or another degree that was not listed (8.5%). A vast majority of participants' highest degree was an undergraduate degree, with 98.3% choosing this option. Two participants' (1.7%) highest degree was a master's degree. Finally, students also indicated the B.Ed. cohort to which they belong. Upon registration, all students in the B.Ed. program have to choose one of four or five cohorts (depending on the grades they intend to teach) to align themselves with. Cohorts are based upon themes which are infused throughout students' coursework and practica. Students take the same courses regardless of the cohort they belong to. At the University of Ottawa, students enrolled in the primary/junior-focused program choose between Comprehensive School Health, Global Education, Second Language Education and Imagination, Creativity and Innovation cohorts. The Global Education cohort is also offered to the junior/intermediate sections, and the Imagination, Creativity and Innovation and the Urban Communities cohorts are offered to the intermediate/senior sections (University of Ottawa, 2019). The majority of the participants were in the "Comprehensive School Health" cohort (35.0%), 21.4% of the remaining participants were in the "Developing Global Perspectives for Educators" cohort, 17.9% were in the "Urban Communities" cohort, and 25.6% of participants were in the "French as a Second Language" cohort.

### **Procedure**

Self-report questionnaires were administered before and after engagement with the module. There is no detailed information on a specific timeline of when the post-test was completed following the module as it varied between classes. However, the maximum time students had to complete the pre-test, the module and the post-test was nine weeks, which was

the length of the course. All participants had a choice of whether their results would be used for research purposes. The participants' level of mental health literacy before and after completing an interactive, online module focusing on promoting classroom mental health was examined through a MHL self-assessment questionnaire (Appendix A).

**The Module.** Following Ossiannilsson and Landgren's (2011) emerging E-Learning conceptual framework, the MHL module used for this study was created to ensure that pre-service teachers had an online course that was flexible, inviting, easily accessible and transparent. As opposed to other online MHL modules previously discussed which focus primarily on mental illness, this module possesses a mental health perspective. Rather than learning about the different mental illnesses and their presentations, students are offered a perspective that focuses on the promotion of wellness, as well as an opportunity to explore the underlying causes for emotional difficulties. Having a mental health and wellness perspective for classroom mental health learning has demonstrated to be effective in research by Woloshyn and Savage (2018) whose whole mental health literacy course consisted of various approaches to mental health and wellness, including mindfulness-based activities and coping-related activities. The three-hour module in the present study possesses interactive activities and modes of learning outside the traditional read-write methods (e.g., podcasts, videos, matching games).

There are three sections to this module consisting of a) The Basics b) The Classroom Context and c) Leading Mentally Healthy Classrooms (See Appendix C for detailed information). In part one "The Basics," students are required to complete eight learning activities that focus on the meaning of mental health, mental illness and mental health literacy. For example, students are able to explore through a short quiz and written paragraph how they interpret mental health literacy and what it means to them. Next, participants are able to learn the

difference between mental health and mental health literacy. Additionally, students are able to look at the “dual continuum model” of mental health and mental illness with the intention to demonstrate that a person can indeed have mental health and mental illness concurrently. Finally, students are introduced to school mental health literacy.

Part two, “The Classroom Context” consists of eight learning activities that focus on what role students and teachers play in classroom well-being, as well as how teachers can help when they notice a problem. For example, there is an activity that asks students to reflect on their Community Service Learning/Practica placement in terms of school mental health literacy. Additionally, there are links to the roles of teachers and students in mentally healthy classrooms and about the duty to report should the participants notice a student may need immediate help.

Finally, part three “Leading Mentally Healthy Classrooms” consists of 13 learning activities focusing on the role of stress in the classroom, the importance of resilience and how to help students develop resilience, ways to foster a mentally healthy classroom, and information on burnout and self-care for teachers. For example, a podcast with an attached visual document explains the role of stress in the classroom, and how it may affect both teachers and students. Further, information on how a mentally healthy classroom can be structured is another learning activity, as well as a case study relating to creating a welcoming classroom for a Syrian newcomer.

The current module has multiple self-assessment tools throughout the different topics, with the first and last self-assessments being the MHL questionnaire that is being examined for this study. Content for the module was collected through a combination of information from The Guide (Teen Mental Health, 2012), a MHL course module created by Dr. Susan Rodger at Western University, and through current research and theory on MHL. As per Kutcher, Wei and

Cognilio's (2016) conceptualization of MHL, the module was created to help pre-service teachers increase their knowledge, beliefs and self-efficacy of mental health through different learning modalities.

**The MHL Questionnaire.** The questionnaire was completed by participants before and after completing the mental health module. The search for an appropriate questionnaire resulted in a number of options that either focused too heavily on mental illness (Teen Mental Health, 2012), were not relevant to in-and pre-service teachers or the classroom context (Reavely & Jorm, 2012) or only focused on one or two of the three aspects of MHL (Wei, McGrath, Hayden & Kutcher, 2015). Very few MHL measures had any established psychometric properties or had been used in more than one study. As a result, a questionnaire was created by combining a number of items from two existing questionnaires, as well as adding 10 knowledge-testing items related to module content to see if information from the module was retained, to ensure it was relevant to the desired population and to ensure the questionnaire captured all three aspects of MHL. The pre-post questionnaire is comprised of 74 questions, including 8 questions exploring participants' individual characteristics, 11 items from The Guide (Teen Mental Health, 2012), 45 items from the Mental Health Literacy Questionnaire (in development, Weston, Rodger & Johnson), and 10 knowledge-testing questions related to the content in the module that were developed by the research team. The questionnaire is estimated to take approximately 10 minutes to complete. Items from the questionnaire focus on individual characteristics (e.g., year of the program, B.Ed. program panel, previous degree, highest degree obtained, previous experience learning about mental health and where that experience took place) and three overall themes that tap into all aspects of mental health literacy: knowledge, beliefs and self-efficacy (See Appendix A for the full version of the questionnaire).

**Knowledge.** In order to properly examine participant knowledge on mental health, the first portion of the questionnaire consists of 19 items. These items come from a combination of the questionnaire test-bank of the Guide (3 items), which have been frequently used as an assessment of mental health knowledge (Teen Mental Health, 2012), of novel knowledge-testing items developed specifically for the purposes of this study (10 items) and of six items identified by Weston, Rodger & Johnson in the Mental Health Literacy Questionnaire (in development, Weston, Rodger & Johnson). For the current knowledge subscale of MHL, the 6 items identified by Weston et al. as comprising 'knowledge' were added – these items specifically relate to expectancies pre-service educators have about the students they are likely to be teaching (for example, *I will be teaching students who exhibit significant emotional problems*). The group of knowledge items from the Mental Health Literacy Questionnaire (in development, Weston, Rodger & Johnson) that measure knowledge all had factor loadings above .80 in the analysis conducted by Weston et al. with a sample of 269 pre-service teachers.

The questions from the Guide focus on knowledge-based items from the modules of the Guide and are intended to comprise a student survey (Teen Mental Health, 2017). One of these items was negatively worded and subsequently reverse coded. Two authors involved in field testing of the Guide, who have extensive expertise in the field of mental health literacy (Dr. Stan Kutcher and Dr. Yifeng Wei) developed knowledge items based on material included in the resource (Milin et al., 2016). There are 30 items in the student evaluation within the Guide, however many focus on specific information relating to information not relevant for the current study, specifically that pertaining to mental illness or suicide (e.g. "People who have schizophrenia often get a split personality" or "Self-harming behaviors may sometimes accidentally lead to death"). Participants were asked to choose the response option that best

described the extent to which they agreed to the knowledge statements (e.g., “People who have mental illness can at the same time have mental health”). In the original test bank, respondents chose from the options of ‘true, false, or I don’t know’ for each item. In order to allow for analyses appropriate for the current research questions, response options were adapted to a 5-point Likert scale ranging from (1) Strongly Disagree to (5) Strongly Agree. The 10 novel items directly reflecting information learned from the MHL module (e.g., “All mental distress will develop into mental illness over time” and “Mental health difficulties can be demonstrated as disruptive behaviour and anger in a student”) aim to examine if content from the module was understood through providing answers consistent with the module content. Participants responded to these items on a 5-point Likert scale ranging from (1) Strongly Disagree to (5) Strongly Agree.

**Beliefs.** In addition to measuring participant knowledge about mental health, participant beliefs about mental health and mental illness were examined in order to better assess the mental health literacy of pre-service teachers. This portion of the questionnaire contains eight belief-based questions from the test-bank of the *attitudes towards mental illness* questionnaire section of the Guide (Teen Mental Health, 2012). Items for the attitudes section were developed by Milin and Ferril in collaboration with other experts in the fields of mental health and education (Milin et al., 2016). The belief-based questions focus on common judgements and stigmas related to mental health difficulties or about those suffering with mental health problems (e.g., “Most people who have a mental illness are dangerous and violent”). Participants were asked to respond to questions on a 5-point Likert scale ranging from (1) Strongly Disagree to (5) Strongly agree. The internal consistency as measured by Cronbach’s  $\alpha$  for the stigma items was 0.65 when measured a first time ( $n = 516$ ) and 0.68 ( $n = 471$ ) when measured a second time (Milin et al.,

2016). There were five negatively worded items in this portion of the questionnaire, as having statements worded both positively and negatively helps support the psychometric properties of the measure.

***Self-efficacy.*** Lastly, in order to ensure all of the aspects of mental health literacy were being measured, 39 mental health self-efficacy items were included. Participants were required to respond to items from the Mental Health Literacy Questionnaire (in development, Weston, Rodger & Johnson). As described previously, Weston et al., used factor analysis to identify the underlying themes in this scale – the two sets of items labeled as *skills* and *leadership* were selected for inclusion in the current self-efficacy subscale. This decision was made through careful analysis of the items and the evident alignment of the content of the items with the conceptual understanding of self-efficacy as described by Kutcher, Wei and Cognilio, (2016). For example, items included “I can create a classroom environment that is supportive of students with behavioural or emotional problems” and “I can lead others to create effective supports for students who have had adverse experiences”. In the present questionnaire, participants responded to items on a 5-point Likert scale ranging from (1) Strongly Disagree to (5) Strongly Agree.

### **Ethics Approval**

The current study was approved by the University of Ottawa Ethics Board (See Appendix D). Participants had the option to consent or refuse consent for their answers from the questionnaire to be used for research. Participants had the option to complete the questionnaire when or wherever they chose (within the confines of the course semester) and could have exited their internet browser at any point if they became uncomfortable. Identifying information was not collected by participants to maintain anonymity. Data was stored on a password-protected

computer on a password-encrypted document. This data was only accessible by the primary researchers.

## **Results**

Factor analysis and internal consistency of the theorized subscales was first conducted on the questionnaire as a whole. Study variables were then analyzed descriptively, in order to get a general sense of the responses of participants and to check for normality. Next, to measure changes in participant mental health literacy after completion of the model, the results from the pre-and-post questionnaires, participants' individual characteristics and prior experience learning about mental health were analyzed through a repeated measures MANOVA using SPSS (IBM, 2017). The repeated measures MANOVA is the most appropriate design to use for this research in order to determine any statistical differences in the mean scores from the pre-and post-questionnaire and if the scores were affected by participant individual characteristics such as such as year of program, sex, teaching panel (elementary vs. secondary), previous experience and past knowledge about mental health. The three MHL subscales (knowledge, beliefs and self-efficacy) were analyzed separately in order to capture variability in the individual scores of each element of MHL and to allow for the possibility of the module influencing subscales differentially.

### **Factor Analysis of MHL Questionnaire**

Given that the MHL questionnaire for the current study was developed by drawing on novel items as well as items selected from existing measures with little psychometric basis, factor analysis was first conducted. The goals of the analysis were to determine what, if any, factor structure existed in the questionnaire and if the three hypothesized subscales (knowledge, beliefs and self-efficacy) were supported within the current data. An exploratory factor analysis

was conducted on pre-test scores from the MHL questionnaire for the full original sample of 144 participants using the Maximum Likelihood (ML) estimation method. The ML estimation method was chosen so that it “allows for the computation of a wide range of indexes of the goodness of fit of the model [and] permits statistical significance testing of factor loadings and correlations among factors and the computation of confidence intervals” (Fabrigar, Wegener, MacCallum & Strahan 1999, p. 277). The ML estimation method accepts that the data being analyzed are sample data (i.e. makes distributional assumptions). This therefore allows researchers to evaluate the hypothesis that there are a certain number of factors that anticipate the relationships among interfactor correlations, items and factor loadings (Schmitt, 2011). The sample used for factor analysis in the current study contained 144 participants, which has been demonstrated to be sufficient as per the variable-to-factor ratio of this particular questionnaire (Mundfrom, Shaw & Lu Ke, 2005). The Kaiser-Meyer-Olkin measure of sampling adequacy was .72, indicating a high degree of shared variance among variables and suggesting that the data set is well suited for factor analysis. Additionally, Bartlett’s test of sphericity was significant,  $\chi^2(2415) = 6522.76, p < 0.001$ , also indicating that the variables are related and thus suitable for factor analysis.

An oblique method of rotation for this analysis was chosen under the assumption that there would be some correlation among factors, which is common in the psychological and educational fields. The oblique rotation allows the factors to correlate, so it is often seen as producing accurate results for research in the social sciences (Costello & Osborne, 2005). When factors are assumed uncorrelated (for example, using the Varimax criterion), item loadings will become inflated if the factors are truly correlated (Schmitt, 2011). Therefore, the oblique method of rotation was the best fit for this analysis. Initially, the scree test suggested four potential

factors, so solutions for three and four factors were examined using the direct oblimin rotation. Initial eigenvalues indicated that the first four factors explained 19%, 8%, 5% and 4% of the variance, respectively. Results from the pattern matrix indicated that the three-factor model, which accounted for 33% of the variance, created the cleanest factor structure, with more items loading above .30, few item crossloadings and no factors with three items or less.

A total of 18 items from the questionnaire were removed because they did not contribute to a factor structure or have a minimum factor loading of .30 or above. A total of 12 items from the knowledge section, 6 items from the self-efficacy section and one item from the beliefs section were removed. None of the knowledge-testing questions related to the content of the module had a factor loading above .30. Finally, a ML estimation factor analysis of the remaining 48 items was conducted using the direct oblimin rotation, of which the three factors explained 40% of the variance. All items had primary loadings in the pattern matrix above .30. The pattern matrix for this final solution is presented in the Appendix (See Appendix E). The correlations between each of the factors are presented in Table 2.

Table 2

<i>Correlations between MHL factors</i>			
	Knowledge	Beliefs	Self-Efficacy
Knowledge	1.00	-	-
Beliefs	-0.25*	1.00	-
Self-Efficacy	0.86	-0.65*	1.00

\* *Correlation is significant at the 0.05 level*

Based on the findings of the factor analysis, the conceptual structure proposed at the beginning of this project required some slight modifications. Initially, the three factors of a) beliefs about mental health and mental illness b) self-efficacy related to working with children with mental health and mental illness c) knowledge about mental health and mental illness were hypothesized. However, after removing 18 items from the questionnaire and examining the relationships among the remaining items, the three factors that became apparent were a) beliefs about mental health and mental illness, b) self-efficacy related to working *in schools* relating to mental health and mental illness, and c) knowledge of *the mental health needs of students in classrooms*, which is more specifically related to expectations of the diversity they are likely to experience in their classroom. Labels were assigned based on subjective interpretation of the latent concepts underlying the questions that clustered together in alignment with theories of MHL (Jorm, 2012; Kutcher, Wei, & Coniglio, 2016) which were additionally confirmed by the research team. These labels align quite well with the original understanding of MHL but became more specific through the factor analysis.

The knowledge factor requires some discussion and explanation. Surprisingly, the data collected in the present study did not support the idea that knowledge-testing items from the module content would serve as an adequate contribution to the knowledge section of the questionnaire. In fact, the only items that remained following factor analysis are those from the Weston et al. measure, that look specifically at expectations of pre-service teachers regarding the presence of students with attention, learning, emotional and behavioural needs in the classroom. Thus this measure of knowledge is more focused on awareness and a comprehension of the diversity they are likely to experience in their classroom, rather than on retention of facts related to mental health and mental illness. Interpretation of findings related to this subscale need to be

understood through the notion that many researchers have defined mental health knowledge in different ways, and have thus examined MHL using different measures, as exemplified by Jorm (2012) Kutcher, Wei, and Coniglio, (2016) and Weston, Rodger and Johnson (in development). MHL is a widely used umbrella term within which our study and measure fit; however suggestions for greater alignment and consistency of MHL conceptualizations and measures are put forth in the discussion section. The current measure can be clearly identified with a heavier focus on beliefs and self-efficacy than knowledge. With this in mind, foregoing analyses of data are based on this revised version of the questionnaire. Descriptive analyses are now presented for the final sample of participants who completed the MHL questionnaires at both time points ( $N = 117$ ).

### **Descriptive Analyses of MHL Questionnaire**

**Previous Mental Health Learning Experience.** Three items in the section of the questionnaire exploring participants' individual characteristics asked participants about any previous mental health learning experience, where that experience took place and the climate of their last practicum experience in regard to mental health in the school. Previous research is limited examining if these variables influence the MHL of teachers and teacher candidates. Responses revealed that 83.8% of participants had at least one previous mental health learning experience, which is surprising and contrary to existing research (Bryer & Signorini 2011; Canadian Teachers' Federation, 2012; Gowers, Thomas & Deeley, 2004). This result may be due to some of the individual characteristics of the sample. For example, a possible panel effect of the primary/junior group may have influenced this result, some of whom have backgrounds in child studies, early childhood education or have worked as educational assistants, as well as the high numbers of participants who completed their undergraduate degree in Social Sciences

where exposure to mental health subjects is more likely. Approximately 47.9% of these respondents reported having engaged in their past mental health learning experience within an undergraduate course. The remaining participants received this experience from a training course (17.9%), a post graduate course (2.6%) or something other than what was listed (15.4%). The possible ramifications of these individual characteristics are explored further in the discussion section of the paper.

When asked about perceptions related to mental health supports in their last practicum placement, a majority of participants (57.3%) agreed that *teachers* in their practicum school were supportive of the needs of children and youth with mental health concerns, 16.2% agreed that *administrators* were supportive of the needs of children and youth with mental health concerns, 8.5% agreed that administrators were supportive of the needs of *teachers* with mental health concerns, and 5.1% agreed that teachers were supportive of the needs of *other teachers* with mental health concerns.

In an effort to gain a deeper understanding of the considerable majority of participants who received a prior mental health learning experience from their undergraduate degree, a cross-tabulation was performed between these two variables (Table 3). Results demonstrate that the vast majority of participants who completed their undergraduate degree in the Social Sciences or in Arts and Humanities engaged in a prior mental health learning experience; these two areas of study made up the bulk (74.3%) of participants.

Moreover, in search of more information regarding participants' past experience with a previous mental health learning experience, a crosstabulation of this variable and the year of the B.Ed. program of participants (first year vs. second year) was conducted (Table 3). Information on participants' year of study was obtained by noting from which class each data set came from.

Results indicate that 83.3 % of participants in the first year of their B.Ed. program and 82.9% of participants in the second year of their B.Ed. program have had a previous mental health learning experience. Thus further analysis did not differentiate between the small number of students in the first year vs. the second year of the program and there is no evidence that the past experience with mental health was gained during the first year of the program.

Table 3.

*Crosstabulation between participants' previous mental health learning experience with most common previous field of study and year of B.Ed. study from the final sample (N = 117).*

		Previous MH Learning	
		Yes	No
Year of B.Ed.			
	First	10 (83.3%)	2 (16.7%)
	Second	87 (82.9%)	18 (17.1%)
Previous Degree			
	Science	6 (75.0%)	2(25.0%)
	Health Science	7 (87.5%)	1 (1.7%)
	Social Science	36 (92.3%)	3 (7.7%)
	Arts and Humanities	38 (79.2%)	10 (20.8%)

**MHL Scores.** In assessing change based on completing the Mental Health Module, pre- and post-test data were analyzed based on subscales that each comprise one of the three components of MHL. Factor names have been shortened for ease of reference as can be seen in Table 4. Teacher candidates responded on a 5-point Likert scale ranging from (1) Strongly

Disagree to (5) Strongly Agree, with 1 indicating low knowledge or self-efficacy and negative beliefs, and five indicating high knowledge and self-efficacy and positive beliefs. Six negatively-worded items from the beliefs scale were reverse coded so the responses would remain consistent with the remaining items.

Descriptive data for the subscales, including an estimation of internal consistency of each at the pre- and post-module administration is also included in Table 4. Cronbach's  $\alpha$  for the subscales were high at both pre-and-post module.

Table 4.

*Descriptive statistics for the three subscales and the scale as a whole pre-module (N = 144) and post module (N = 117)*

	Number of items	Min		Max		Mean		SD		Cronbach's $\alpha$	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Knowledge	6	3.00	3.00	5.00	5.00	4.02	4.07	0.62	0.62	0.96	0.97
Beliefs	13	3.38	2.85	5.00	5.00	4.39	4.36	0.34	0.43	0.78	0.86
Self-Efficacy	29	2.34	3.00	4.83	5.00	3.72	4.01	0.41	0.42	0.92	0.95
Scale Total	48									0.92	0.96

As can be seen in Table 4, participant pre-scores for knowledge and beliefs were fairly high, with minimum pre-scores above the mid-point on the 5-point scale. However, relatively lower perceptions of self-efficacy were observed, with a pre-score below the mid-point on the 5-point scale. The means ranging from 4.02 ( $SD = .62$ ) on the knowledge scale to 4.39 ( $SD = .34$ ) for belief scale on the pre-test indicate that the participants were already beginning this module

with strong sense of knowledge of mental health and non-stigmatizing beliefs regarding mental health and mental illness. Pre-module levels of knowledge, beliefs and self-efficacy did not vary by sex or by the type of B.Ed. program students were in, but higher scores in all three subscales were seen for students who did have previous training in mental health (as described, this was the vast majority of the sample) Knowledge,  $F(1, 116) = 8.72, p = .00$ ; Beliefs,  $F(1, 116) = 14.05, p = .00$ , Self-Efficacy,  $F(1, 116) = 8.33, p = .00$ .

An important finding to report from this data is the existence of a ceiling effect. Analyses show that almost 14% of participants had the highest scores in knowledge (5.00), indicating that a pre-post-change for these participants was impossible. This reflects a possible issue with the measure, in that it does not allow for much variability in responses with the knowledge subscale, which is limited in scope. This also highlights the unique nature of the sample who have demonstrated strong knowledge and positive beliefs in mental health before engaging with the module.

**Repeated Measures MANOVA.** In order to determine whether any differences in the knowledge, beliefs and self-efficacy of the participants before and after completing the MHL module were significant, data was analyzed through a repeated measures multiple analysis of variance. For this analysis, pre-test and post-test (time) was considered the independent variable, the knowledge, beliefs, and self-efficacy that comprise MHL were considered the dependent variables, and participant B.Ed. program was a covariate. Other relevant descriptive statistics, such as sex, past mental health learning experiences, and past practicum experience did not have enough variability in their responses to be analyzed as covariates. For example, about 85% of the sample self-identified as female, leaving only 15% of the sample being self-identified males.

Similarly, out of seven options where participants could state their undergraduate degree, about 75% of the sample was either in the Social Sciences or Arts and Humanities.

The question examining participants' B.Ed. program was originally divided into three panels (primary/junior, junior/intermediate and intermediate/senior), with the majority (72.6%) being in the primary/junior panel. Of the remaining participants, 17.9% were enrolled in the junior/intermediate panel, and 9.4% in the Intermediate/Senior panel. This item was recoded into two groups of primary/junior (72.6%) and junior/intermediate/senior (27.3%) and was used as a covariate to determine if B.Ed. program panel had any effect on the MHL of the participants after completing the module. A repeated-measures MANOVA was chosen for this analysis due to the fact that the goal is not to assess the impact of the B.Ed. program on the MHL, but to assess whether the B.Ed. program moderated the change score, so that students in one group might see greater or less change than students in another group.

A repeated measures MANOVA was conducted to determine differences in the three subscales of MHL before and after completing the MHL module, and to determine if participant's B.Ed. program had an effect on the possible difference. The alpha level was set at .05 for this analysis and all subsequent analyses. The difference between the pre-test and post-test on the participants' MHL as a whole was not statistically significant,  $F(1,113) = 2.10, p = .10$ , Wilks'  $\Lambda = .95$ . Additionally, the effect of B.Ed. program on the difference in participant MHL before and after completing the module was not statistically significant  $F(1,113) = .61, p = .61$ , Wilks'  $\Lambda = .98$ . It is clearly not appropriate to conduct univariate tests following a non-significant MANOVA finding, however given the explanatory nature of the study and the novel measure being employed, they were examined out of interest. A Bonferroni correction was applied for multiple comparisons ( $.05 * 3 = .02$ ). While self-efficacy showed a greater change

than the other factors of knowledge and beliefs, it remained non-significant  $F(1,113) = 5.16, p = .03$  with a small effect size of .04. Summarized results from the analysis of the three factors are summarized in Table 5.

Table 5.

*Univariate post-hoc tests examining differences in MHL factors pre and post module completion*

Factor	<i>F</i>	<i>df</i>	<i>p</i>	Mean square	Partial eta <sup>2</sup>
Knowledge	0.17	1.00	.68	.03	.00
Beliefs	0.12	1.00	.57	.12	.00
Self-Efficacy	5.16	1.00	.03	.40	.04

### Discussion

Teachers are in a critical position to support the mental health needs of their students. In order to support teachers in this complex role, learning opportunities focused specifically on developing mental health literacy are warranted. Consequently, the objectives of the current study were to 1) examine the factor structure of the mental health literacy questionnaire used in the study, 2) to evaluate the impact of a mental health literacy module on pre-service teachers' mental health literacy through the examination of three underlying factors consisting of knowledge, beliefs and self-efficacy in relation to mental health in the classroom, and finally, 3) to examine if any participant characteristics, such as sex, teaching panel (elementary vs. secondary), previous experience, year of study and expertise with mental health moderate the impact of the learning module. The results from this study suggest that the mental health literacy questionnaire is an appropriate and reliable measure of two of the three constructs of mental health literacy; the knowledge subscale is limited in scope and produced little variability among

the sample and should be reconsidered before being used in future studies. Further, results indicate the online mental health literacy module had a small, non-significant influence on the self-efficacy of the participants. The module potentially had no effect on participants' knowledge or beliefs, however due to possible ceiling effects, the results for these variables cannot be made with certainty.

### **Factor Structure of the Questionnaire**

In order to assess the MHL of participants in the current study, examining the factor structure of a novel measure of MHL was required. Few measures of MHL for teachers exist and those that have been used are limited in terms of psychometric properties, have a heavy focus on older students and on mental illness, and fail to capture a multidimensional view of MHL (Kitchener & Jorm, 2000; Teen Mental Health, 2012). The current questionnaire contains items from existing measures as well as novel items and was chosen/developed based on a multidimensional view of MHL as comprising three underlying factors: knowledge, beliefs and self-efficacy (Kutcher, Wei and Coniglio, 2016). Initial scree test results indicated four factors, but upon running solutions for both three and four factors, and through examination of the different factor structures, it was concluded that the three-factor model was the best fit for this analysis. The factor structures aligned very similarly to MHL as defined by Kutcher, Wei, & Coniglio (2016) through the knowledge, beliefs and self-efficacy in relation to mental health and mental illness but also adopt a broader view of mental health and mental illness in classroom and school contexts.

While internal consistency of the measure was strong, it may not allow for enough variety in responses to be considered appropriate for use among teachers who already have knowledge and beliefs in MHL. In the current study, assessing change in MHL resulting from

the module was complicated by the limitations of the measure. The measure may be better suited to those who are new to the field, or should be adapted and expanded to allow for assessment of MHL that is more nuanced and in-depth for use with populations with previous mental health learning experiences. This is particularly true of the knowledge subtest which focused quite narrowly on expectancies of having students with mental health needs in a diverse classroom and thus captures just a sliver of possible knowledge related to mental health and mentally healthy classrooms.

In sum, the findings from the factor analysis suggest that the MHL questionnaire is a reliable and practical measure for assessing MHL in terms of participant beliefs about mental health and mental illness, self-efficacy related to working in schools relating to mental health and mental illness, and knowledge of needs of children in the classroom relating to mental health and mental illness. Cautions regarding ceiling effects for those with previous expertise/experience with mental health and examination of other possible items and measures that assess the knowledge aspect of MHL is recommended for future research in the area.

### **Teacher Mental Health Literacy**

Results from the present study indicate that the majority of pre-service teachers *have* had a previous mental health learning experience which is contrary to the current literature (Bryer & Signorini 2011; Canadian Teachers' Federation, 2012; Gowers, Thomas & Deeley, 2004). The data from this study was collected in the first- and second-year of the pre-service teachers' B.Ed. program, indicating that students are undergoing their B.Ed. program with previous mental health learning experiences, regardless of their year of study. However, the type of mental health learning experience that was provided to these students is unknown. The majority of participants stated that they received this experience during their undergraduate degree, yet it was unspecified

whether it occurred from class work, personal learning experiences, or on-campus initiatives. Anecdotally, many students in the primary/junior panel in particular (consisting of about 73% of participants) have a degree or a minor in Psychology or Child Studies, and some enter the program with backgrounds as Early Childhood Educators and Educational Assistants, so it is likely that some of their classes consisted of either a mental health or mental wellness component, or information on how to best support children's mental health and wellness. For example, there are a number of Psychology classes at the University of Ottawa that could directly contribute to these results such as Psychology of the Family, Social Development of the Child and Psychological Disorders Among Children and Adolescents (See course descriptions in Appendix F).

Furthermore, it was noted that a large percentage (92%) of participants who received undergraduate degrees in the Social Sciences had a previous mental health learning experience during the completion of their degree, which renders speculation that there may have been a mental health learning component included in some of their classes due to the nature of the Social Sciences program. Similarly, this may provide an explanation of why both of the participants from Social Work received a mental health learning experience during their undergraduate degree. Interestingly, although also a small percentage of the overall participants, both of the participants who obtained their degree in Religion/Divinity also received a previous mental health learning experience from their degree. It is possible that this program has an emphasis on holistic approaches to wellness that may include spirituality and mental wellness, that are incorporated in classes and learning activities.

The high proportion of students entering their B.Ed. program with prior mental health expertise or learning may also reflect a societal shift where an increased focus on individual

mental health and mental illness can be seen in communities broadly (Centre for Disease Control and Prevention, 2012), and on university campuses in particular (Giamos, Lee, Suleiman, Stuart & Chen, 2017; Healthy Minds, 2019). The Council of Universities of Ontario (2017) outlines mental health and well-being initiatives at twenty of Ontario's universities, demonstrating how Ontario universities are prioritizing mental health awareness and providing support to best assist their students.

Although the results are promising in terms of pre-service teachers possessing prior mental health learning experiences, it is unknown which specific aspects of MHL were addressed within these prior learning experiences or whether or not they were applicable to teaching and the classroom setting. This interpretation is more consistent with the literature, whereby undergraduate students are receiving some learning experiences in mental health, but the experiences that may not be directly transferrable to working with children or working within a classroom and school setting (Goh, Selvarajan, Chng, Tan & Yobas, 2016; Savoji & Ganji, 2013).

The primary objective of the present study was to examine the influence of an online MHL module on pre-service teachers' mental health literacy. The MHL questionnaire was completed before and after the completion of an online, interactive MHL learning module. Descriptive results indicate that initial levels of knowledge and beliefs were high among this sample of pre-service teachers and that self-efficacy levels were relatively lower. With respect to the impact of the module on the knowledge, beliefs and self-efficacy of pre-service teachers, small and non-significant changes were found only for the self-efficacy subscale. Finally, the one participant characteristic that was found to be suitable for inclusion in the analysis, namely preparation for primary/junior or more senior levels of teaching, did not interact significantly

with change in MHL. It is important to note that any pre-post differences within the scales may be subject to both recency effects and practice effects. As a result of having no set timeframe within the nine-week semester to complete the post-test following the module, some participants may have completed the pre- and post-test within a short period, resulting a recency effect and/or practice effect. Both of these effects must be considered when interpreting the results.

The initial high levels of knowledge and beliefs were possibly due to the mental health learning experiences engaged in during undergraduate programs prior to the B.Ed., which were reported by the vast majority of students. Given the nature of the knowledge subscale, which captures expectancies of teaching students with complex behavioural and learning needs, and the fact that the majority of students had completed two practica, assumedly in somewhat diverse classes, before engaging in the module, high scores in this area might be expected. It would be interesting to administer the measure at the very beginning of participants' B.Ed. program, to determine what their expectancy knowledge is before becoming familiar with the realities of current elementary and secondary classrooms. The unavoidable positioning of the courses and the MHL module in the final semester of the program allows for the possibility that students gained experience through their practicum settings that impacted their knowledge. However, as was reported in the results, previous experience did not differ depending on being in first or second year, so it is possible that the experience students had was largely gained prior to beginning the B.Ed. program.

While knowledge and beliefs were high and positive however, the relatively lower self-efficacy scores on the pre-test suggest that pre-service teachers are less confident in their ability to actually apply mental health practices in the classroom setting, in spite or because of the time they had already spent in practicum classrooms, and the self-reported mental health training they

had engaged with prior to their B.Ed. program. In terms of Kutcher, Wei, and Coniglio's (2016) conceptualization of mental health literacy, high knowledge and non-stigmatizing beliefs are insufficient; high self-efficacy is also required in order to create a comprehensive understanding of MHL. The current findings, where pre-service teachers begin the module with high levels of knowledge and beliefs and relatively lower levels of self-efficacy related to supporting student mental health indicates a need for more specific mental health training that is transferrable to the classroom setting such as the current module. The results from participants' individual characteristics suggest that it is quite possible that the participants were previously immersed in programs that were non-stigmatizing towards mental health, and that the participants acquired enough information about mental health and mental illness from these programs to adequately adjust their attitudes and adapt to the subjective norms on this matter. This interpretation is in line with Ajzen's (1985) Theory of Planned Behaviour in that participants' past learning experiences related to mental health and mental illness affected their beliefs and subsequently changed their understanding of the subjective norms relating to this topic, further illustrating a possible reason why the knowledge and beliefs scores were high at the pre-test stage. However, it may have been that their perceived behavioural control (their perceived ability to actually perform the behaviour in question) was low, which may indicate why the only change from pre-test to post-test was in the factor of self-efficacy.

Little is known about efficacy specifically related to mental health, however many previous studies have found that general teaching efficacy is lowest and more influenced by contextual factors (e.g. teaching resources) in novice teachers and eventually becomes more firmly rooted over the length of their career (Bandura et al., 1997; Tschannen-Moran & Woolfolk Hoy, 2007). Longitudinal analyses conducted by Woolfolk Hoy and Burke Spero

(2005) indicate initial increases in teacher efficacy over the course of practicum within B.Ed. programs, followed by significant declines during the first year of teaching. The relatively low initial self-efficacy scores among the sample despite the previous training that they reported, may support the previously-stated notion that undergraduate students are receiving mental health learning opportunities, but these experiences may not be related to the teaching profession (Goh, Selvarajan, Chng, Tan & Yobas, 2016; Savoji & Ganji, 2013).

Furthermore, although pre-service teachers in their B.Ed. program may have had prior learning experience in mental health, it may be that these experiences were only conceptual; the participants, hypothetically, may not have had many opportunities to employ their mental health knowledge into real-life contexts, which would limit their exposure to mastery experiences, inadvertently affecting their perceived behavioural control, as theorized by Bandura (1994). Research suggests that experience in teaching students with disabilities is a prominent predictor of teacher self-efficacy (Malinen et. al., 2013), indicating that perhaps these findings can be extended to experiences in teaching students with mental health difficulties.

Although studies specifically related to MHL are scarce, previous literature has shown that pre- and in-service teachers who teach in elementary as opposed to secondary grades report more positive attitudes and greater efficacy regarding the inclusion of students with a range of exceptionalities (McHatton & McCray, 2007; Specht & Metsala, 2018). Explanations for these findings suggest a focus on specific subjects and academic preparation for post-secondary teaching, which is more typical at secondary levels and less compatible with diverse classes, rather than emphasis on student social and emotional development, which is more heavily emphasized in elementary grades, which may better support a positive outlook on student diversity. However, the current findings failed to find any interaction between levels taught and

the change in participant MHL, suggesting that self-efficacy may have been equally influenced by the module, regardless of preparing for elementary or secondary settings. Although the Guide (2012) has demonstrated to be aimed towards secondary levels, the current findings demonstrate that the content of the module, which was developed through a combination of the Guide, content from a MHL course module created by Dr. Susan Rodger at Western University, and from current research and theory on MHL, provides to be a useful tool for pre-service teachers in both elementary and secondary settings. Thus, once engaged in the current module which describes numerous different approaches to creating mentally supportive classrooms and provides information on how to specifically support students' mental health needs in classroom and school settings, pre-service teachers felt more competent about their abilities related to mental health and thus reported higher self-efficacy ratings.

Results from this study highlight a need to consider a definition of MHL that is more closely related to the classroom context, including elements that focus on the implementation of teachers' mental health knowledge, beliefs and self-efficacy into the classroom. Having multiple different definitions of MHL, and in turn having multiple methods of measuring MHL, has resulted in a small body of literature exploring the efficacy of these programs in increasing teacher MHL, but not on if and how teachers are actually applying their MHL into the classroom.

An interesting similarity to MHL in regard to prevention and intervention of emotional and behavioural difficulties is the trauma-sensitive school movement. As the prevalence of trauma and its impact are becoming understood, the need for schools to have trauma-informed practice has increased (SAMHSA, 2014). The trauma-sensitive school movement aims to provide safe and supportive school environments for students who may have experienced trauma. In a number of ways, this movement overlaps with the ideas that support mentally

healthy classrooms, particularly having school staff consider a student's relationships, self-regulation and physical and emotional well-being (Trauma Sensitive Schools, 2019). Also comparable to MHL, there are multiple conceptualizations of "trauma-sensitive" or "trauma-informed" care, which vary across the literature (Chafouleas, Johnson, Overstreet, & Santos, 2015).

However, unlike MHL, this movement has more published literature focusing on the school-based approaches for prevention and intervention for emotional and behavioural outcomes (Phifer & Hull, 2016). A review by Phifer and Hull (2016) note that these interventions do have one commonality: they focus on multi-tiered approaches. They further explain a number of these programs through case studies that focus on attachment, knowledge acquisition on trauma-informed practices, self-regulation, relationship building between teachers and students, implementing a social-emotional curriculum as well as including both the teachers and the students (Dorado, Martinez, McArthur, & Leibovitz 2016; Perry & Daniels, 2016; Shamblin, Graham, & Bianco, 2016).

In terms of MHL, implications are two-fold: that multi-tiered trauma-sensitive school approaches indicate that it is possible for programs like this to be implemented in schools and demonstrate success, in addition to being tested for effectiveness in relation to not just knowledge, self-efficacy or beliefs, but to actual classroom and school implementation. A tiered approach to MHL may be more practicable in terms of broad application of these programs, with knowledge, self-efficacy and beliefs relating to Tier 1, followed by exploring how teachers can implement these variables in the classroom as subsequent tiers.

Results from this study, while strictly suggestive, support mounting evidence that teachers may struggle with feeling able to properly support students with mental health

difficulties and provide the proper interventions when necessary (Askill-Williams & Cefai, 2014; Froese-Germain & Riel, 2012; Mazzer & Rickwood, 2014). When framed through the theoretical lens described by Ajzen (1985), it is understood that beliefs and knowledge are key to the development of intention, but a sense of skills, abilities and actual control need to be in place before we have an expectation of behaviour. Likewise, Bandura (1994) supports that this sense of skills and control are developed through repeated success in certain experiences, in this case applying mental health strategies in the classroom, and practice that supports students with mental health needs. The results of this study indicate that the MHL module may potentially improve teachers' self-efficacy in relation to mental health in the classroom, and understanding the results through both Ajzen's (1985) and Bandura's (1994) theories may provide some clarity for the lower self-efficacy scores in both the pre-and post-test as compared to knowledge and beliefs scores.

Due to the lack of change in pre-service teachers' knowledge and beliefs about mental health and mental illness, and the small, non-significant change in pre-service teachers' self-efficacy, the results suggest a need for more exploration regarding these variables, particularly, exploring training for pre-service teachers in the practical application of mental health and wellness in the classroom. Research suggests that when perceived self-efficacy exists, it can increase a teacher's commitment to their profession (Chestnut & Burley, 2015) indicating an essential need for more practical training in classroom mental health so pre-service teachers can feel confident in their abilities before entering their profession.

### **Limitations**

Despite the idea that this study will provide insight into the research available on pre-service teachers' mental health literacy following training, there are a number of limitations to

the study that should be noted. First, the participation in this study was voluntary, which may indicate that the self-selection of the participants led to a sample of pre-service teachers who were already interested in learning about mental health in the classroom or had previous knowledge of mental health in classrooms and schools. This may have led to a sample for this study that is not entirely representative of the pre-service teacher population. However, the vast majority of students who completed the questionnaire agreed to have their results included for research purposes so response bias is likely not a significant factor in the current study.

Furthermore, this study used a mental health module that was newly created for use in the B.Ed. program. The current sample of participants are the first group of pre-service teachers to complete this module, there is no prior information on the efficacy of the module in regard to accurately training individuals about mental health in schools. On a similar note, the MHL questionnaire consists of two other questionnaires, as well as new knowledge information relating to the MHL module directly. This was also the first time these individual questionnaires were combined into a single questionnaire to be utilized as a measure of MHL, and, similarly to the module, improvements will be noted as more students provide feedback. Limitations specifically related to the knowledge subscale, including its narrow conception of mental health knowledge as consisting solely of expectancies, have been highlighted and should be kept in mind when interpreting findings from the study.

A noteworthy procedural limitation of the present study is that there may have been variability in the delivery method of the module. It is possible that some professors who taught the courses where students took the MHL module followed up with more class discussions or activities related to the content of the module as compared to other professors. If there was variability in the way the module was presented to each class, it may have affected the results by

offering an additional route to learning more information about mental health in the classroom, which may have been reflected in the post-test results. Anecdotal information suggests that professors did not tend to discuss the module information in class or expand upon it. However in future research, collecting professor data and coding for professor effects may further address this limitation. Without a control group, it is also possible that changes seen in the self-efficacy scale may be due to other aspects of the program or experiences students were engaged in. This design was not practically possible but should be considered in future evaluations and studies.

Finally, although this module and the questionnaire aims to reach to the multiple learning modalities of pre-service teachers, they are not fully accessible for individuals with auditory, visual and some physical disabilities. It is possible that because of these technical restrictions, some pre-service teachers in the B.Ed. program may have been excluded from participation if the module or questionnaire did not accommodate to their specific learning needs. Every effort was made to provide inclusive, universally designed content and no students raised issues regarding accessibility.

### **Research Contribution and Future Avenues for Exploration**

Aside from the limitations discussed above, this research highlights implications to the research fields of both Education and Mental Health by building on existing knowledge of pre-and-in service teacher mental health literacy. It has been established that there is currently minimal research exploring pre-service teacher mental health literacy, and of mental health literacy training programs for this population. In turn, this research can contribute an interactive teacher mental health program to the existing literature that reaches to multiple learning preferences and needs.

Furthermore, the results from this research may help the participants themselves be more literate in mental health, which, in turn, might encourage them to be advocates for mental health in their practicum schools, subsequently increasing mental health literacy in schools all across the city. Overall, study findings will add to the small research base relating to teacher mental health literacy, as well as to professional practice in empowering the educational community with additional knowledge to create more mentally healthy classrooms.

In the present study, it was discovered that a majority of B.Ed. students have had a past mental health learning experience, but this study did not uncover what kind of learning experiences the students were given. It may be advantageous to deeper explore the details of these students' past mental health learning experiences to determine if these learning experiences have actually been helpful in developing the classroom MHL of pre-service teachers.

Given the findings, it may be beneficial to reconceptualize how MHL is assessed to best fit the teaching context and to align as closely as possible with teachers' intended and actual behaviours in working with students and in classrooms. Although theoretically speaking it is beneficial to have knowledge, non-stigmatizing beliefs and strong self-efficacy in relation to mental health in the classroom, there is virtually no data exploring if and how teachers are taking this learned information and implementing their MHL into the classroom. Due to the differing definitions of MHL, it remains important to adopt a multi-faceted conceptualization of MHL in order to further unpack where pre-service teachers may need more support, possibly including the actual implementation of MHL within classroom settings. If findings are similar to this study, it would be beneficial to examine different mental health classroom preparation programs for teachers that focus more on the self-efficacy aspect of MHL. Perhaps, responding to pre- and post-measures that assess MHL are not sufficient in grasping how teachers may implement MHL

in the classroom. Many researchers have explored ways of assessing teacher beliefs that go beyond self-report questionnaires (e.g. Hart & DiPerna, 2017; Schraw & Olafson, 2015; Yoon et al., 2016). It may be beneficial to explore MHL measures with questions that closely reflect MHL in the classroom context, in addition to measuring aspects of MHL through vignettes or simulations to examine how teachers may use their MHL in practice. By creating such measure, it may eliminate the ceiling effects found in this study and measure a more holistic conceptualization of MHL that reflects teacher behaviours likely within a classroom and teaching context.

Additionally, since there is little research investigating teacher mental health training programs that are delivered through interactive, online modules, future research would benefit from an increase in exploring this topic. By creating and researching these kinds of interactive learning modules, there is opportunity for broad implementation for teaching mental health literacy to both pre-and in-service teachers. This, in turn, may eventually lead to mentally-health literate classrooms that are inclusive for all children that may have emotional, behavioural and mental health difficulties.

Finally, future research may investigate the delivery method of the MHL module (as measured with a newly reconstructed assessment) to explore if in-class supplements to the module would lead to even greater post-test scores. Concurrent with findings from Woloshyn and Savage (2018) allocating greater emphasis on mental health literacy discussions in the B.Ed. classroom, directly related to the module content, may render a larger impact on the consolidation of the material presented in the module and help participants acquire a deeper understanding of mental health in the classroom. It may also offer B.Ed. students an opportunity to discuss their concerns related to self-efficacy and mental health in the classroom with their

peers to gather a more holistic view on classroom strategies to increase mental health and wellness.

### **Conclusion**

Due to the growing number of children and adolescents with mental health difficulties, ongoing support for these populations is required, which often includes support within the classroom context (Rothi, Leavey & Best, 2008). Development of pre-service teacher MHL training programs is a crucial step in assisting this population to best support the needs of their students. The analysis of a novel, online MHL module was analyzed using a MHL questionnaire that aimed to measure knowledge, beliefs and self-efficacy related to mental health. Results demonstrated factor structures from the MHL questionnaire were similar to Kutcher, Wei and Cognilio's (2016) conceptualization of MHL, but related more to the classroom context. Quantitative data collection for this study examined the effects of a brief and accessible online MHL module, and explored if participants' individual characteristics moderated the impact of the module. The findings of the current study speak to the importance of continued support for pre-service teachers' MHL, in addition to suggesting that the learning needs of pre-service teachers lie within the actual application of their mental health knowledge and beliefs into the classroom context. Through continued work in developing MHL learning tools for teachers, hopefully, in turn, pre-service teachers will be better equipped to help prevent, intervene and obtain help for students in their classes that might be struggling with mental health difficulties.

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### Appendix A: MHL Questionnaire

<b>Individual Characteristics</b>		
Please indicate, for each question, which response best describes you or your experience:		
	Item	Response Options
1	Sex(open answer)	
2	BEd program	Primary/Junior Junior/Intermediate Intermediate/Senior
3	Cohort	Comprehensive School Health Developing Global Perspectives for Educators Innovation, Imagination, Creativity Urban Communities FSL
4	Previous degree	Science (biology, chemistry, physics, mathematics) Health Sciences (kinesiology, nursing, medicine) Social Sciences (geography, sociology, anthropology, Economics, Political Science, Psychology) Arts & Humanities (English, History, Women's Studies, Philosophy, French...) Social Work Religion/Divinity Other (please specify)
5	Degree obtained	Highest degree obtained: Undergraduate Masters PhD Other (describe)
6	Prior learning about mental health	I have learned about mental health and mental illness before this course Y/N if yes, go to next question
7		If YES, choose one of the following: Training Program (such as ASIST or Mental Health First Aid) Undergraduate course Post graduate course Other (describe)
8	Student teaching experience	Which of these describes your experience in your last practicum placement? <ul style="list-style-type: none"> <li>• Administrators were supportive of the needs of children and youth with mental health concerns.</li> <li>• Administrators were supportive of the needs of teachers with mental health concerns.</li> <li>• Teachers in the school were supportive of the needs of</li> </ul>

		<p>children and youth with mental health concerns.</p> <ul style="list-style-type: none"> <li>Teachers in the school were supportive of the needs of other teachers with mental health concerns.</li> </ul>
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<b>Knowledge</b>	9	People who have mental illness can at the same time have mental health	TeachMentalHealth (The Guide) Module 1 Test bank
	10	Mental health is more than an absence of mental illness	Questions developed based on module content
	11	A large percentage of teachers have not received professional development to address student mental health in their school.	
	12	For young people, the best way to address Mental Health Literacy is through their school.	
	13	Both students and teachers play a role in creating a mentally healthy classroom environment	
	14	All mental distress will develop into mental illness over time	
	15	Mental disorders affect a student's ability to learn	
	16	Mental health difficulties can be demonstrated as disruptive behaviour and anger in a student	
	17	Stress can bring both positive and negative effects on a person	
	18	All children have the capacity to adequately adapt to the challenges of life when they have the support they need	
	19	A mentally healthy classroom is one in which the teacher works to try and make sure that the environment is stress-free.	
	20	Mental illness is caused by the stresses of everyday life	TeachMentalHealth (The Guide) Module 1 Test bank
	21	Mental distress is rare (R)	Mental Health Literacy Questionnaire (Weston, Rodger & Johnson)
	22	<b>I will be...</b>	
	23	working with children/adolescents who are sometimes violent.	
	24	teaching students who exhibit significant behavior problems.	
	25	teaching students who exhibit significant emotional problems.	
		teaching students who have multiple adverse childhood experiences.	

	26	teaching students who have significant attention problems.	
	27	teaching students who have significant learning problems.	
<b>Beliefs</b>	28	I would be willing to have a person with a mental illness at my school	The Guide Student Evaluation Test Bank
	29	I would be happy to have a person with a mental illness become a close friend	
	30	Mental illness is usually a consequence of bad parenting or poor family environment (R)	
	31	People who are mentally ill do not get better (R)	
	32	It is easy to tell when someone has a mental illness because they usually act in a strange or bizarre way (R)	
	33	A mentally ill person should not be able to vote in an election (R)	
	34	Most people who have a mental illness are dangerous and violent (R)	
	35	Most people with a mental illness can have a good job and a successful and fulfilling life	
<b>Self-Efficacy</b>		<b>I know...</b>	Mental Health Literacy Questionnaire (Weston, Rodger & Johnson)
	36	Who to talk to when my student seems to be struggling with behaviours or emotions.	
	37	The steps to take to make a referral for my student who seems to be struggling with behaviours or emotions.	
		<b>I can...</b>	
	38	effectively address the situation wherein a student confides in me that he/she is contemplating suicide.	
	39	lead others to create effective supports for students who have had adverse experiences.	
	40	create a classroom that is physically safe for all students.	
	41	create a classroom that is emotionally safe for all students.	
	42	effectively teach students who have had adverse experiences, such as abuse, household dysfunction, or inadequate housing/nutrition/social support.	
43	effectively meet the emotional needs of <i>all</i> children/adolescents with whom I work.		

44	effectively teach/work with a student who is highly anxious.
45	communicate effectively with parents/family members about their child's behavior and emotions.
46	create positive relationships with parents or caregivers of my students who may be struggling with behaviour or emotions.
47	effectively teach students who seem overly sad.
48	adapt my curriculum or practices for students who are suffering from behavioral or emotional problems.
49	work with families who have done damaging things to their children.
50	identify a student who is flourishing in the classroom.
51	identify a student who is languishing in the classroom.
52	identify a student who is mentally healthy in the classroom.
53	identify a student who is mentally unwell in the classroom.
54	explain the contextual factors that contribute to students' behaviours and emotions.
55	effectively explain to a colleague the early signs of a mental illness.
56	effectively explain to a colleague how to create a classroom environment that is supportive of students with behavioural or emotional problems.
57	create a classroom environment that is supportive of students with behavioural or emotional problems.
58	contribute to a student support team process when the student in question has behavioural or emotional problems.
59	access the resources available in my community to support students' mental health.
60	I know about the resources available in my community to support students' mental health.
61	I have a responsibility to promote the mental health of students.
62	I have a responsibility to meet the needs of students with behavioural and emotional problems.

	63	I have a responsibility to meet the needs of students with mental illness.	
	64	I know how to locate resources in my school	
	65	I can help/support others (teachers) cope with their stress	
	66	Students can come to me with their problems	
		<b>I know how to build relationships with:</b>	
	67	Students	
	68	Parents	
	69	administrators	
	70	other teachers	
		<b>I am confident in my ability to:</b>	
	71	Manage conflict with parents	
	72	Manage conflict with students	
	73	Manage conflict with administrators	
	74	Manage conflict with other teachers	

*(R) refers to items that were reverse scored*

## **Appendix B**

### **Request for Consent**

Dr. Jess Whitley in the Faculty of Education is conducting a research study focusing on the mental health literacy of pre-service teachers before and after taking part in this mental health literacy module. The goal of the study is to explore professional learning approaches that are effective in order to develop better B.Ed. programs.

It would be very helpful if the data from this self-assessment questionnaire could be included in the study. The data will not be linked to your name and personal information in any way and your professor will not know whether or not you have participated. Your responses will be added with those from other sections of 3142/4142 and analyzed as a whole group. Dr. Whitley will only have access to the data after the course has finished and grades have been finalized. All data will be stored on a password protected computer in a locked office on campus. There is no pressure for you to take part and you will not be penalized in any way if you choose not to. If you have any questions about the study or the ethics process, you can contact the uOttawa ethics office ([ethics@uottawa.ca](mailto:ethics@uottawa.ca); 613-562-5387; 550 Cumberland St. Room 154). You can print or save a copy of this consent page for your records.

- I consent
- I do not consent to the use of my anonymous results for research purposes

## Appendix C Outline of the MHL Module

### ☰ Part 1: The Basics ▼

#### By the end of Part 1, you will be able to:

- Understand the meaning of mental health and mental illness
- Understand the meaning of mental health literacy and why it is important

As future educators, you are being prepared to teach literacy in a number of different subjects such as numeracy and language. However, it is possible that mental health literacy has not crossed your mind as an important aspect of a student's learning experience. Let's begin this module by:

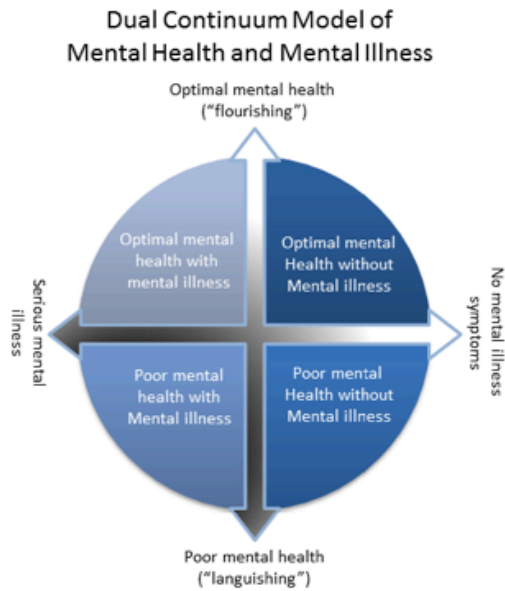
- 1) Completing a brief (ungraded!) survey to gauge your starting beliefs, knowledge and understanding.
- 2) Completing a reflective self-assessment
- 3) By exploring the terms "mental health" and "mental illness."

To get started, scroll down to the "MHL Survey" and follow the prompts.

☰ MHL Get Started Questionnaire 📄 Survey	▼	✓
☰ What Does Mental Health and Mental Health Literacy Mean to You? 📄 Assignment	▼	✓
Please write a brief description of what mental health and mental health literacy mean to you.		
☰ What Does Mental Health and Mental Health Literacy Mean to You? 📄 Quiz	▼	✓
☰ What are Mental Health and Mental Health Literacy? 🌐 Web Page	▼	✓

Let's Think About It.. Dual Continuum Model ✓

Assignment



Think of an example for the following four quadrants:

1. **Optimal mental health with mental illness**
2. **Optimal mental health without mental illness**
3. **Poor mental health with mental illness**
4. **Poor mental health without mental illness**

Let's Think About it.. Dual Continuum Model ✓

Quiz

The Inter-Relationship of Mental Health States ✓

Quiz




School Mental Health Literacy ✓

Web Page

 Part 2: The Classroom Context **Part 2: The Classroom Context**

Now that you have an understanding of mental health and mental health literacy, let's examine their connection to the classroom environment. By the end of part 2, you will understand:

- What role students play in classroom well-being
- What role teachers play in classroom well-being
- How teachers can help when they notice a problem

 [The Roles of Students and Teachers](#)   
 Web Page




 [How Teachers Can Help](#)   
 PDF document



 [More Ways to Help](#)   
 Web Page



 [Mental Health Promotion in CSL/Practicum](#)   
 Quiz



☰ [Mental Health Promotion in CSL/Practicum](#) ✓  
📄 Assignment

Please answer the following questions:

1. How have you seen mental health and well-being promoted in your CSL/practica setting?
2. How does your CSL/practicum placement support students who may be at risk for emotional difficulties?

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☰ [Duty to Report](#) ✓  
🌐 Web Page

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☰ [Simple Ways to Promote A Mentally Healthy Classroom](#) ✓  
📄 Quiz


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☰ [Self-Check Quiz - Part 2](#) ✓  
📄 Quiz


### ☰ Part 3: Leading Mentally Healthy Classrooms ▾


Now that you have basic understanding of mental health literacy in the classroom context, you can learn what it takes to create and foster your own mentally healthy classroom. By the end of section three you will understand:

- **The role of stress in the classroom environment and tips to manage your own stress**
- The importance of resilience and how to help students develop resilience
- Ways you can foster a mentally healthy classroom


☰ [The Role of Stress](#) ▾ ✓  
 Web Page

☰ [Caring for Students and Ourselves: The Role of Stress Part 1](#) ▾ ✓  
 Web Page

☰ [Caring for Students and Ourselves: The Role of Stress Part 2](#) ▾ ✓  
 Web Page

☰ [What Do You Think About Stress in the Classroom?](#) ▾ ✓  
 Assignment

Write down a list of stressors that you think students and teachers may bring to the classroom (eg.: being hungry or tired, family conflict) and how you might try to relieve these stressors in the classroom setting.

☰ [What Do You Think About Stress in the Classroom?](#) ▾ ✓  
 Quiz

☰ The role of Resilience ✓  
🌐 Web Page

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☰ What Does A Mentally Healthy Classroom Look Like? ✓  
🌐 Web Page

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☰ Creating a Welcoming Classroom Case Study ✓  
📄 Quiz

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☰ Creating a Welcoming Classroom Case Study ✓  
📄 Assignment

Susy, a Syrian newcomer, has just joined your grade three classroom. She is having trouble relating to the other students in your class and often isolates herself at recess and free-time. Susy's English skills are not at grade-level, however she can speak and understand the language with the help of visuals or gestures. When it is time to work, Susy has trouble concentrating and is often distracted. When she cannot understand her peers or the required classwork, she gets extremely frustrated and gives up.

Please answer the following questions about Susy:

1. How could you create a classroom environment that is welcoming for Susy ?
2. How could you help Susy with her struggles?
3. How could you encourage inclusiveness in the rest of your students to help Susy feel welcomed in both the class and with her peers?

☰ [Creating Welcoming School Environments](#) ✓  
📄 PDF document

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☰ [Reflect](#) ✓  
🔍 Quiz

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☰ [Reflect](#) ✓  
📄 Assignment

Please answer the following questions:

1. In the case study with Susy, what strategies for creating a welcoming classroom did you **not** mention from the "Creating Welcoming School Environments" PDF that you think would be important to implement in your future classroom?
  2. From the "Creating Welcoming School Environments" PDF, what welcoming strategies (if any) have you seen in your CSL or Practicum?
  3. How have you contributed to making your CSL/Practicum environment welcoming for both newcomers and all students in general?
- 

☰ [Self-Check Quiz - Part 3](#) ✓  
🔍 Quiz

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☰ [MHL Get Started Questionnaire 2](#) ✓  
📄 Survey

## Appendix D Ethics Approval

10/01/2019

**Université d'Ottawa**

Bureau d'éthique et d'intégrité de la recherche

**University of Ottawa**

Office of Research Ethics and Integrity

### CERTIFICAT D'APPROBATION ÉTHIQUE | CERTIFICATE OF ETHICS APPROVAL

<b>Numéro du dossier / Ethics File Number</b>	S-01-19-2177
<b>Titre du projet / Project Title</b>	The Influence of an Interactive Online Learning Module on Pre-Service Teachers' Mental Health Literacy
<b>Type de projet / Project Type</b>	Thèse de maîtrise / Master's thesis
<b>Statut du projet / Project Status</b>	Approuvé / Approved
<b>Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)</b>	10/01/2019
<b>Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)</b>	09/01/2020

#### Équipe de recherche / Research Team

Chercheur / Researcher	Affiliation	Role
Bianca D'AGOSTINO	Faculté d'éducation / Faculty of Education	Chercheur Principal / Principal Investigator
Jessica WHITLEY	Faculté d'éducation / Faculty of Education	Superviseur / Supervisor

**Conditions spéciales ou commentaires / Special conditions or comments**

### Appendix E

*Factor loadings from the Pattern Matrix based on a Maximum Likelihood analysis with oblimin rotation for the 48 items in the Mental Health Literacy Questionnaire (N = 144)*

<i>Item</i>	<i>Factor</i>		
	<i>Knowledge</i>	<i>Self-Efficacy</i>	<i>Beliefs</i>
<i>I will be teaching students who exhibit significant emotional problems</i>	.937		
<i>I will be teaching students who exhibit significant behavior problems</i>	.937		
<i>I will be teaching students who have multiple adverse childhood experiences</i>	.885		
<i>I will be teaching students who have significant learning problems</i>	.875		
<i>I will be teaching students who have significant attention problems</i>	.848		
<i>I will be working with children/adolescents who are sometimes violent</i>	.707		
<i>I am confident in my ability to manage conflict with parents</i>		.682	
<i>I can adapt my curriculum or practices for students who are suffering from behavioural or emotional problems</i>		.668	
<i>I am confident in my ability to manage conflict with administrators</i>		.652	
<i>I can create a classroom environment that is supportive of students with behavioural or emotional problems</i>		.635	
<i>I can effectively teach students who have had adverse experiences, such as abuse, household dysfunction, or inadequate housing/nutrition/social support</i>		.627	
<i>I can effectively explain to a colleague how to create a classroom environment that is supportive of students with behavioural or emotional problems</i>		.619	
<i>I know about the resources available in my community to support students' mental health</i>		.608	
<i>I can contribute to a student support team process when the student in question has behavioural or emotional problems</i>		.594	
<i>I am confident in my ability to manage conflict with students</i>		.591	
<i>I can effectively teach students who seem overly sad</i>		.586	
<i>I can create a classroom that is physically safe for all students</i>		.583	
<i>I can effectively meet the emotional needs of all children/adolescents with whom I work</i>		.583	

<i>I am confident in my ability to manage conflict with other teachers</i>	.582
<i>I can effectively explain to a colleague the early signs of a mental illness</i>	.577
<i>I can lead others to create effective supports for students who have had adverse experiences</i>	.570
<i>I can effectively teach/work with a student who is highly anxious</i>	.561
<i>I know the steps to take to make a referral for my student who seems to be struggling with behaviours or emotions</i>	.554
<i>I can create a classroom that is emotionally safe for all students</i>	.547
<i>I know how to locate resources in my school</i>	.537
<i>I can access the resources available in my community to support students' mental health</i>	.532
<i>I know how to build relationships with administrators</i>	.527
<i>I can communicate effectively with parents/family members about their child's behaviour and emotions</i>	.521
<i>I can help/support other teachers cope with their stress</i>	.480
<i>I know how to build relationships with parents</i>	.472
<i>I know how to build relationships with other teachers</i>	.464
<i>I can create positive relationships with parents or caregivers of my students who may be struggling with behaviour or emotions</i>	.460
<i>I can explain the contextual factors that contribute to students' behaviours and emotions</i>	.437
<i>I can work with families who have done damaging things to their children</i>	.338
<i>I know who to talk to when my student seems to be struggling with behaviours or emotions</i>	.308
<i>I have a responsibility to meet the needs of students with behavioural and emotional problems</i>	-.787
<i>I have a responsibility to promote the mental health of students</i>	-.767
<i>I have a responsibility to meet the needs of students with mental illness</i>	-.714
<i>It is easy to tell when someone has a mental illness because they usually act in a strange or bizarre way</i>	.483
<i>I would be willing to have a person with a mental illness at my school or workplace</i>	-.440
<i>Students can come to me with their problems</i>	-.431
<i>I would be happy to have a person with a mental illness become a close friend</i>	-.404
<i>Most people who have a mental illness are dangerous and violent</i>	.375

<i>I know how to build relationships with students</i>	<i>-.369</i>
<i>Mental distress is rare</i>	<i>.350</i>
<i>A mentally ill person should not be able to vote in an election</i>	<i>.342</i>
<i>People who are mentally ill do not get better</i>	<i>.337</i>
<i>Mental illness is usually a consequence of bad parenting or poor family environment</i>	<i>.315</i>

**Appendix F**  
**Psychology Course Descriptions at the University of Ottawa**

<b>PSY3123</b>	<b>The Psychology of the Family</b>	<b>(3,0,0) 3 cr.</b>
Relationships, separation, divorce, remarriage and step-parenting. Childlessness, infertility, pregnancy. Caring. Poverty. Abuse of children, spouse or elders. Balancing work and family. Psychopathology and treatment.		
Prerequisites: PSY1101, PSY1102, (PSY2105 or PSY2114).		
<b>PSY3135</b>	<b>Social Development of the Child</b>	<b>(1.5,0,1.5) 3 cr.</b>
Study of children's social relationships and social interactions from infancy to puberty. Influence of the family, home, school, peers, and society on the development of children as social beings. Course includes laboratory activities.		
Prerequisite: 54 university credits including PSY1101, PSY1102, (PSY2105 or PSY2114).		
<b>PSY4105</b>	<b>Psychological Disorders among Children and Adolescents</b>	<b>(3,0,0) 3 cr.</b>
The course presents general concepts of psychopathology within the context of normative child development processes. An overview is provided of the major psychological disorders of childhood and adolescence, including their features and the interventions used to help overcome them.		
Prerequisite: 54 university credits including PSY1101, PSY1102, PSY3171, (PSY2105 or PSY2114). Reserved for students registered in the Major, Joint Honours, and Honours with specialization programs in psychology.		