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Measuring Mental Health Literacy in Education

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MEASURING MENTAL HEALTH LITERACY IN EDUCATION

Abstract

As part of a larger project to evaluate the efficacy of a program designed to increase the mental health literacy (MHL) of pre-service teachers, we developed the MHL Questionnaire for Education (MHLQ). The purpose of this study was to evaluate the psychometric properties of the scale, ensure that it represents the evolving definition of MHL, and demonstrate that the MHLQ is appropriate for pre-service teachers. Factor analysis was used to identify the underlying themes in the scale that yielded four subscales; *Teaching and Leading in a Mentally Healthy Classroom*, 26 items ($\alpha = .941$), *Expectancies*, 6 items ($\alpha = .959$); *Professional Relational Skills*, 8 items ($\alpha = .884$); and finally, *Role Clarity*, 4 items ($\alpha = .924$). Our findings indicate that the MHLQ is a reliable measure of MHL that is appropriate for use with pre-service teachers and demonstrates good internal consistency.

Keywords: Mental health literacy, factor analysis, scale development, education.

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Introduction

The number of children and adolescents worldwide who are expected to experience mental illness has been recently estimated at 13.4%, with an acknowledgement that there are many more youth who experience symptoms at a sub-clinical level (Polanczyk et al, 2015; Flett & Hewitt, 2013). Research suggests that only one in five children who need services will receive them (UNICEF Canada, 2007) due to a host of structural barriers including access, family health, socioeconomic status, stigma, and the “fit” between youth needs and available services (Kutcher & McDougall, 2009; Mukolo, Heflinger, & Wallston, 2010). We do know that most children, including those who have mental illnesses or mental health problems, are enrolled in school. However, the research also tells us that most teachers have not received any formal education or professional development about mental health and feel unprepared to support these students in their classrooms (Froese-Germain & Riel, 2012). Further, most initial teacher education programs do not include this in their programs of study (Rodger, Leschied & Hibbert, 2014).

It is essential for everyone to work together to support the well-being of other members of society to maximize the potential of all (Whitley & Gooderham, 2016). Mental Health Literacy (MHL) is particularly important in an educational environment, considering the age of onset for many mental health disorders occurs during childhood and adolescence (Smith & Carlson, 1997; Whitley, Smith, & Vaillancourt, 2013). This project is part of a larger study that is intended to fully evaluate a program that has been designed to: (1) provide mental health education within an initial teacher education program; (2) work towards a definition of MHL that fits in the educational context; and (3) develop and evaluate a new MHL measure. The latter goal is the focus of this study.

Mental Health and Mental Health Literacy

Foundational to any discussion of mental health literacy (MHL) is the definition of mental health. The larger project of which this study is part, employs the Dual-Continuum Model (Keyes, 2002). This framework (Fig. 1) distinguishes mental health (which can be represented as a continuum that ranges from languishing to flourishing) from mental illness (which can be represented as a continuum that ranges from no symptoms of mental illness to serious mental illness symptoms). The Dual-Continuum Model framework is one that has been widely adopted in Canada at multiple levels and within influential education contexts; for example, the framework has been adopted by School Mental Health Assist, the Ontario Ministry of Education's implementation support team that guides the provinces 72 school boards in promoting student mental health and well-being.

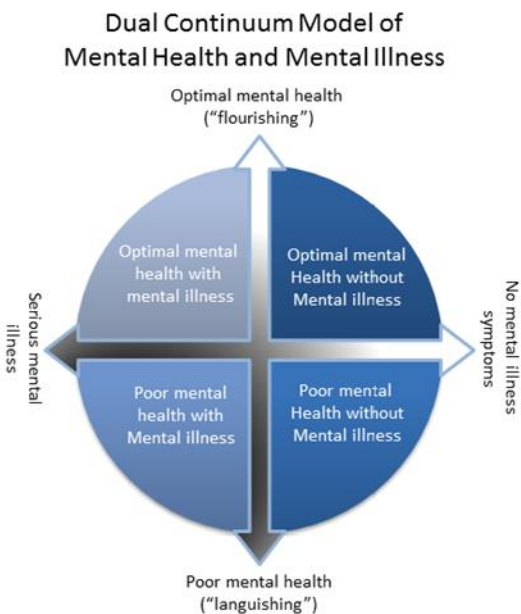


Figure 1 Dual Continuum Model of Mental Health and Mental Illness (Keyes, 2002; used with permission, SMH Assist)

As part of a national campaign to improve mental health outcomes for all Canadians, the Mental Health Commission of Canada provides many resources (publications, toolkits, training) to improve MHL, leveraging the connection between education and desired outcomes such as managing potential or developing mental health problems for self and other (Mental Health Commission of Canada, n.d.). Programs aimed at improving MHL, such as Mental Health First Aid, have been shown to be successful in improving knowledge, attitudes, and helping behaviours (Hadlaczky, Hokby, Mkrtchian & Wasserman, 2014).

MHL was first defined as having an understanding of mental illness and the commonly held views about mental illnesses that can help to recognize and manage the symptoms of that illness or prevent it altogether (Jorm, Korten, Jacomb, Rodgers, & Politt, 1997). The evolution of mental health literacy has been initiated and guided by scholars in psychiatry and public health such as Jorm (1997) and is rooted in health literacy and the conviction that it is related to health and social outcomes (Baker, Wolf, Feinglass, 2007; Berkam, Sheridan, Donahue, 2011). More recently, work by Canadian experts in psychiatry and health care has expanded the definition of MHL to four main components (Kutcher, Wei and Coniglio, 2016).

These four factors were used as the basis of an education program that was developed to enhance the MHL of adolescents (Kutcher & Wei, 2015). In Kutcher's model of MHL he states that four main elements are necessary for a comprehensive MHL program (Kutcher et al., 2013): it must develop an individual's capacity to attain and maintain mental health; it should provide information about up-to-date evidence-based practices, and information about mental disorders, including potential warning signs (although he makes it clear that teachers should not be considered mental health practitioners); this increased knowledge should also help to identify

and (ideally) eliminate stigmatizing attitudes and stereotypical responses to mental illness; and finally, effective MHL programs need to increase help-seeking behaviours of the participants.

There are good reasons to focus on MHL for teachers: teachers are especially prone to burnout (Larrivee, 2012); schools often provide the first indication of mental health issues in children and adolescents (Kutcher, Wei, McLuckie, & Bullock, 2013; Smith & Carlson, 1997); and both teachers and students are vulnerable to mental health stressors which often creates a feedback loop between teachers and their students (Arens & Morin, 2016; Oberle & Schonert-Reicl, 2016).

Progression of Mental Health Literacy Definitions. MHL is both a subsection and an extension of health literacy in that health literacy is a broad term encompassing knowledge and access to health in the broadest sense. It is considered in the present context to be an evolving concept that includes knowledge, skills and attitudes in relation to mental health, schools and education, and is considered to be part of comprehensive school health. In the current context, it is also connected to effective initial teacher education. As Lea (2011b) writes, “Defining a particular set of capabilities as a ‘literacy’ means that: they are a pre-requisite or foundation for other capabilities; they are critical to an individual’s life chances; they are essential to the making and sharing of culturally significant meanings; as a result, there is or should be a society-wide entitlement to these capabilities at some level” (p. 2). In this way, MHL is part of the foundation of effective teaching and teacher preparation. According to noted experts in initial teacher education, programs that encompass education about mental health and the competencies or capabilities associated to working with mental health issues in a classroom are critical in preparing the next generation of teachers to serve the needs of children, schools, families and professional communities (Weston, Anderson-Butcher & Burke, 2008).

Social environments and societal structures that an individual or group frequently connect with, are likely to influence both the needs they have, and the biases they form related to mental health and mental illness. Kutcher, Wei, and Coniglio (2016) state that programs designed to increase MHL should be formulated based on the target audience, paying special attention to their daily environment and developmental level, with programs being incorporated into the social and structural elements of their lives.

The inclusion of enhancing wellbeing within the context of developing MHL highlights the definitional differences recognized between mental health and simply the absence of mental illness where “Mental health is a state of well-being in which the individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his own community” (Mental Health Commission of Canada, 2012, p. 14). In other words, MHL provides a framework to encourage not only a good working knowledge of what mental illness looks like, but also promotes the acquisition and maintenance of mental wellbeing. Positive psychology focuses on building strengths and concentrating on the psychological protective factors that can help an individual to avoid, eliminate, or minimize the negative effect of mental illness or environmental stressors, and has helped shape the progression of MHL. Throughout the study of psychology there has been a concentration on mental illness and responding to disease, in response to the symptoms once they occur, rather than engaging in prevention.

It is difficult to change response patterns within society in changing the focus from reacting to mental health problems, to enacting preventative measures that have the potential to reduce negative outcomes for people with mental health concerns before they occur. This shift in thinking requires the creation of a collective understanding of potential mental health problems,

and the common symptoms or indicators that offer clues of that mental health problem. Shifting from simply reacting to mental health issues to making attempts to prevent them requires an increase in knowledge of mental health disorders, including what is known about their prevalence rates and the common age of onset. Creating a shift in perceptions about best practices in increasing psychological health and well-being requires knowledge of the necessary skills and behaviours that can be learned or adopted that are likely to enhance psychological health. According to the World Health Organization (WHO, n.d.) “Mental disorders comprise a broad range of problems, with different symptoms. However, they are generally characterized by some combination of abnormal thoughts, emotions, behaviour and relationships with others” (p. 1). It is widely accepted within the fields of psychology and health that mental health issues can have a substantial effect on the lives of people who suffer from mental illness, their families or friends, and society as a whole. These negative effects have a broad reach and indicate the potential services required to address the problems that are created; however, in order to provide those services, it is necessary to understand the prevalence of different mental health issues including the average age of onset to estimate the number and type of interventions which need to be provided.

It is notable that this definition of MHL has evolved, but is still seen here to be focused on increasing individuals’ knowledge related to mental health and illnesses. This may not be the central concern in the classroom, where teachers are working with students on developing social and developmentally-specific environments over the course of days, weeks, and even years. Researchers who subscribe to a biomedical model of health and mental disorders speak about mental health literacy from a medical model of *deficits*, illness and treatment; mental health and education researchers consider teacher skills, knowledge and approaches that *promote* healthy

development and school success among students using a strengths-based model. The idea of a definition of MHL that is contextualized for education and for teachers is rooted in the different ways and opportunities to exert influence within different sectors. In contrast, the opportunities to notice and support mental health in the health sector tend to be confined to infrequent visits with family doctors and public health nurses, while Canadian teachers (K-12) spend about 21 hours per week in direct classroom contact with their students where they build relationships and understand each student and their functioning (OECD, 2014).

An expanded definition of mental health literacy that is contextualized for education was developed by the Canadian School Mental Health Literacy Roundtable (2012) and provides guidance for schools and systems as they focus on educators. This definition is helpful because it describes what schools can do to promote mental health, focusing on “the knowledge, skills, and beliefs that help school personnel: create conditions for effective school mental health service delivery; reduce stigma; promote positive mental health in the classroom; identify risk factors and signs of mental health and substance use problems; prevent mental health and substance use problems; and help students along the pathway to care” (SMHSA Consortium, 2012, p. 4). This definition highlights the value of teachers’ MHL as a resource or asset without placing educators in the role of expert; rather, it “is a means to enabling individuals to exert greater control over their health and the range of person, social, and environmental determinants of health” (Nutbeam, 2008, p. 2074). The belief is that a definition of MHL embedded in education, more readily considers how mental health literacy is integrated into Initial Teacher Education where it is viewed as part of a Comprehensive School Health approach.

Comprehensive School Health presents four components of school health, namely:

- 1) Social and physical environments. This includes the quality of relationships between staff and students at school, the emotional wellbeing of students, relationships with families and community, and the importance of building competence, autonomy, and connectedness.
- 2) Teaching and learning. The facilitation of student learning and wellness, and teacher education, with school health policies and guidelines that are culturally relevant and access school community assets.
- 3) Policy. It is the structure and management of schools and teaching that will promote student wellness and achievement and shape a healthy school environment for all, sustainably.
- 4) Partnerships and Services. At the community and school-based level health and education sectors can work together toward student and community wellness, and communities have much to offer schools by way of volunteer work, support for programs or initiatives, and donations of time, goods and energy (Morrison & Peterson, 2013).

Prevalence rates and age of onset for mental health disorders. Prevalence rates of mental health disorders vary across the world and estimates within the literature are highly debated. Kessler and Ustun (2004) state that early estimates of worldwide mental health disorder rates were as high as 50% over the lifespan with as many as 30% of the population of a given country meeting the diagnostic criteria for a mental health disorder based on the International Classification of Diseases manual within the previous year. High prevalence of mental health disorders translates into high cost for the provisioning of services to deal with these problems that result. The Mental Health Commission of Canada (2016) estimated that 85,000 children are

affected by a conduct disorder - if only 10% of these cases could be effectively treated, it would result in a savings of just over three billion dollars over the lifetime of those individuals affected. According to the Canadian Mental Health Association (2012), the prevalence of mental disorders across the lifespan in Canada is approximately 20%. The Ministry of Children and Youth Services (2012) estimate that of the almost two million children in public schools in Ontario, 400 thousand children may experience mental health issues; however, only just over 2% of those children are referred to outside mental health agencies. Improving MHL is related to decreasing stigma associated with mental health issues, increasing feelings of self-efficacy in managing issues related to mental health, and can lead to early intervention when there is sufficient knowledge about mental health to provide or refer on for help.

The fact that that one in five Canadian citizens will be affected by mental illness emphasizes the importance of MHL, since by increasing knowledge about mental health the public has some awareness of both the prevalence and examples of what mental illness is.

Considering that many of these disorders have an age of onset in childhood or adolescence (Kutcher et al., 2013), additional training for individuals who have the most contact with children, such as teachers, may yield the most favourable cost to benefit ratio. Additionally, it is widely accepted that early intervention can minimize the negative outcomes often associated with mental illness (Farrer, Leach, Griffiths, Christensen, & Jorm, 2008; Kelly, Jorm, & Wright, 2007). Finally, in addition to enhancing a population's skill at identifying and understanding mental health disorders, programs designed to enhance MHL also enhance protective factors, by augmenting skills associated with attaining and maintaining good mental health.

MHL in the education system. The education system has the potential to enhance the well-being of people in society through academic achievement, but it is not limited to this aspect

of well-being. Well-being within society is likely to increase with increased MHL among teachers, and through the facilitation of early assessment and mental health interventions for students in an educational setting (Kelly et al., 2007). Schools create an environment that facilitates the early detection of mental health issues, as elementary and secondary schooling remains one of the few community activities in which all citizens typically participate.

Given that the age of onset for many mental health disorders is adolescence, there has been research done and programs developed with the intent to increase the MHL of this population. Mcluckie, Kutcher, Wei, and Weaver (2014) evaluated a MHL program developed for adolescents through the use of a questionnaire pre and post course delivery and found that students' knowledge increased and attitudes toward those with mental health issues significantly improved; they hypothesized that by increasing knowledge about mental health stigmatization of those with mental health problems can be reduced.

There is a growing awareness of mental health issues in both the general community, and within the teaching profession. Mental health is a growing concern within the school system for several reasons which affect everyone involved in the school system. Teachers are especially vulnerable to burnout (Larrivee, 2012). A significant amount of teacher stress and burnout can be attributed to feeling like they are not trained enough on managing behavioural issues in the classroom (Stormont & Young-Walker, 2017). Kutsyuruba, Godden, and Tregunna (2014) in their review of literature regarding the high attrition rates in the education field found that according to research many teachers leave the profession within five years of graduating stating that teacher turnover rates in 2004 was 30% in Canada and that approximately 25% of the students who graduated in 1995 were never employed as teachers at all; however, they do state that these rates vary across regions of Canada. Schaefer, Long, and Clandinin (2012) state that

early attrition estimates for teachers range from 5-50% based on research and suggest that early attrition rates are greatly affected by contextual factors such as regional differences, salary variability, consistency of opportunities for professional development, and school culture as well as individual characteristics of new teachers. Additionally, teachers' mental health concerns can have negative impacts on their students (Collie, Shapka, & Perry, 2012; Froese-Germain & Riel, 2012; Kovess-Masféty, Rios-Seidel, & Sevilla-Dedieu, 2007; Yoon, 2002); and bullying and stigmatization of students (both with and without prior mental health concerns) can have far reaching and severe detrimental outcomes (Lee, Kim, & Kim, 2015; Whitley et al., 2012). Atkins, Hoagwood, Kutash, and Seidman (2010) suggest that when considering mental health in schools, and the integration of mental health services into an educational setting, the needs of the entire school population must be considered in order to be effective. Recognizing limited resources and the varied cultural concerns in different schools, programs must be tailored to the needs of that particular school and should encompass health promotion, prevention efforts, and make use of evidence based universal programs. Increasing the MHL of pre-service teachers could be a starting point for which these mental health concerns within the school system can be addressed.

According to a national survey of teachers conducted by the Canadian Teachers' Federation (2012), "87% of teachers surveyed agreed that a lack of adequate staff training in dealing with children's mental illness is a potential barrier to providing mental health services for students in their school, including 52% who "strongly" agreed" (p. 12). This statement illustrates that although there is a growing concern and building awareness of mental health issues and the negative impact those issues can have for students, there is still a lack of knowledge within the education community about prevalent mental health illnesses, and imperfect information about

the available supports which can help to minimize the negative outcomes for those that suffer from them. Teachers are uniquely positioned to assist both students and their families in identifying when there is a potential mental health issue and connect those families and students to supports in the community available to them (Bourget & Chenier, 2007; Kutcher et al., 2013; Sharma, Loreman, & Forlin, 2011; Whitley et al., 2012). It is evident from this research that more training is necessary for education students to benefit from increased MHL among teachers.

Based on their research surrounding existing programs that support MHL, Kelly et al. (2007) recommended that programs be customized to suit the audience for the program under development – an approach that was followed in the present research, by delivering a course in MHL specifically designed for pre-service teachers. Although there are some programs available that are intended to increase MHL, there are few that target pre-service teachers specifically (Kelly et al., 2007). When added to the feeling that there are insufficient supports in place to deal with mental health issues, a lack of adequate training can add to the stress which is already a part of the teaching profession.

Increase MHL to decrease stress in the classroom. Stress can have positive and negative outcomes, both of which are important to increasing the MHL and effective coping skills of pre-service teachers. By increasing the MHL of pre-service teachers, we can potentially increase their knowledge about the ways in which they can assist and work with students who have mental health issues. This changes the way that children cope with the stress that results from dealing with behaviour issues in the classroom. Teachers have stated that a significant portion of their stress is related to behavioural problems in students (Froese-Germain & Riel,

2012; Hoglund, Klinge, & Hosan, 2015; Larrivee, 2012) which can often be a result of mental disorder, bullying, or stigmatization (Lee, Kim & Kim, 2015; Moses, 2010).

Stress has been investigated in several different ways in relation to teaching and the education system; researchers have looked at the potential consequences of high stress for teachers related to their perceived self-efficacy and job satisfaction (Klassen & Chiu, 2010; Sharma et al., 2011; Yoon, 2002) , studying the effect that school climate has on teacher stress and the way that social-emotional learning occurs in those schools (Collie et al., 2012), and the effects that teacher stress has on the student-teacher relationship (Kovess-Masféty et al., 2007; Yoon, 2002).

Increasing MHL can help to change the way that new teachers approach mental health issues in themselves and their students and in doing so minimize some of the negative outcomes which often result from low MHL (Whitley, Smith, & Vaillancourt, 2012). Increasing MHL can also increase teachers' perceived self-efficacy in dealing with the mental health issues in students in inclusive classrooms (Sharma, Loreman, & Forlin, 2011). Finally, promoting MHL in pre-service teachers may be one way to improve the coping strategies used by teachers and help to increase their perception of self-efficacy in relation to teaching their students' who have mental health issues and in learning about methods they can use to maintain their own mental health.

Theoretical Influences

Teacher Efficacy. Efficacy is a complex issue, and an “elusive concept” according to Tschannen-Moran and Woolfolk Hoy (2001, p. 783). It is nevertheless considered here as important in relation to the MHL of pre-service teachers. When teachers feel that they are equipped to handle the mental health issues they are presented with in the classroom and for themselves, their sense of self efficacy, the belief that they have the capabilities to bring about

desired student outcomes, can be impacted. Bandura (1993) proposed that self-efficacy beliefs are formed through both affective and cognitive processes therefore by working to change teachers' attitudes toward working with mental health issues and increasing knowledge around mental health perceptions of self efficacy in relation to handling mental health issues should improve. Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) discuss the complexities within the concept of self-efficacy for teachers specifically; the level of specificity, the influence of contextual factors, and the level of experience the teacher has. Teacher efficacy is specific; in other words, a teacher may feel confident in their ability to teach children in one particular subject or children from a particular cultural background but struggle with feeling confident in different subject or if a child has other characteristics that they are not as familiar with. Teachers may also feel efficacious when managing a regular class but have difficulty integrating students with more diverse needs (McCrimmon, 2015). According to Tschannen-Moran and Hoy (2007), teacher self-efficacy is related to both their behaviour in the classroom and student outcomes such as students' self-efficacy beliefs, motivation and achievement. These authors also discuss the complexities within the concept of self-efficacy for teachers, such as their role in schools and classrooms, their locus of control, and measurement challenges. Aside from the measurement issues, this theoretical framework based on Bandura's Social Cognition Theory and the concept of self-efficacy beliefs, reflects the importance of confidence in one's own abilities, and the motivation to achieve professional competencies.

The leadership qualities of principals, other teachers, and boards can also affect teachers' own sense of both personal self-efficacy and the collective efficacy generated in that particular environment (Leithwood & Jantzi, 2008; Tshannen-Moran et al.,1998). Klassen and Tze (2014) completed a meta-analysis to investigate the relationship between self-efficacy or personality and

teacher success as measured by student achievement and teachers' formal evaluations; they found a small but significant between self-efficacy and student achievement and a larger but still small relationship between self-efficacy and formal teacher evaluations across 43 studies. An important connection here is the relationship between teacher self-efficacy and their knowledge and skills about mental health. This is reflected within the previously-cited Canadian Teacher Federation study (Froese-Germain & Riel, 2012), and the opportunities that teachers have to build and exercise their expertise in an environment that is subject to policies, directives and guidelines from multiple sources of authority, such as the Ministry of Education, School Boards and Professional Colleges.

Self Determination Theory (SDT). SDT posits that there are three basic universal needs which are shared by all of humanity, autonomy, competence, and relatedness. The need for autonomy is one that states that an individual has some measure of control over their environment; competence is related to feeling that an individual is capable of managing whatever stimulus is in their environment; and, relatedness refers to the need for support and kinship from significant others in an individual's life (Deci, Eghrari, Patrick, & Leone, 1994; Ryan & Deci, 2000). These three basic needs were reflected in the development of the MHLQ, by formulating questions for pre-service teachers around: their sense of responsibility; their feelings of competence in relation to promoting their own mental health, as well as identifying and coping with mental health issues among their students (including the management of behavioural and emotional problems in the classroom); and asking questions in relation to communication and dealing with conflict with others in a school setting.

The Evolving Definition of Mental Health Literacy in Education

Based on the foregoing, the current working definition of mental health literacy is rooted in a comprehensive school health framework, an appreciation for the critical importance of equity and access to good health and education outcomes for children, and the context of education and teaching as a profession in which teachers are given much responsibility but arguably little freedom, resources or support, to meet the needs of students. The definition is operationalized as resulting in a set of skills, knowledge and attitudes that support teachers in developing their own abilities to notice, support, act and reflect about what they think, do and believe about mental health in schools.

1. Attitudes: Seeing their students in the context of their lived experience (for example, race and citizenship status, family structure and access to stable housing and employment, maltreatment, health) and seeing their role as one that includes noticing, engaging, supporting and advocating for mental health. Willingness to seek out and develop capacity to support mental health in schools.
2. Knowledge: Understanding the context of children's lives, the risks posed by social determinants of health, adverse childhood experiences, and mental illness and how these influence student mental wellbeing. Knowing what mental illness and wellbeing looks like in the classroom, and what is typical or atypical for the age and stage of their students. Knowing the resources and pathways to care for mental health, and how to help others access these.
3. Skills: The ability to form and maintain positive relationships and promote active engagement in wellbeing and responding to mental illness with students, families, communities, colleagues and other professionals. Skills in leadership, advocacy, partnerships and support for mental health in schools. The ability to notice, to attend, to

evaluate the efficacy of their responses, to reflect on their efforts, and use this information to make decisions for the next time they are called to action.

Measuring Mental Health Literacy

Once the concept of mental health literacy for education has been defined, and a course is designed to enhance mental health literacy for preservice students, the next step in the larger project was to evaluate the effectiveness of the intervention (i.e. the course) with the use of a measure of MHL. However, there is a lack of psychometrically and methodologically robust measures of the concept (O'Connor & Casey, 2015). In fact, Wei and colleagues (2016) observe, "There is a paucity of tools to measure mental health literacy" (p. 297). With this gap, and the awareness that context is important, the larger project team used the working definition of MHL to guide the development of the MHLQ, where items were developed and refined in consultation with experienced educators, researchers, and mental health professionals, and pilot tested (unpublished, 2015).

Research Questions

Given the foregoing, MHL encompasses several factors and is often specialized based on specific need dependent on an individual's profession, level of development, or specialization (Kelly et al., 2007). The MHLQ is intended to measure the MHL of pre-service teachers' skills, knowledge, and attitudes regarding mental health and wellbeing. The research questions ask:

1. Is the measure valid?
2. Does it represent the current definition of mental health literacy?
3. Is it appropriate for use with pre-service teachers?

Methods

This research project is part of a larger study that is evaluating the effectiveness of a program designed to enhance pre-service teachers' MHL. For the purposes of this project we expect that by providing MHL training to pre-service teachers, we will change their level of MHL. Additionally, an important goal is to teach educators about effective or positive coping skills, the relationship that these skills have to managing stress, and dealing with mental health issues in the classroom when these students begin their teaching careers. Specifically, within the larger project, we are interested in building social support seeking behaviours and investigating the effect that the program has on the way that pre-service teachers' self-control behaviours change in response to stressful situations. These issues are directly addressed in specific modules of the MHL course.

Ethics Approval

Program evaluation. This larger research project from which this particular study was derived was a program evaluation, which examined the effectiveness of a mandatory second year Bachelor of Education mental health literacy course. Using guidelines derived from the Non-Medical and Health Sciences Research Ethics Boards, ethics officials determined that this research fell under the category of program evaluation, and provided the researchers with a 'Letter of Exception' (See Appendix A). Criteria for determining whether a project is considered program evaluation rather than research include determinations that the applied intervention (in this case, the course) was not developed to answer a specific research question or test a hypothesis; there was no comparison of multiple interventions; the course did not involve additional burdens; and the course was evaluated with the purpose of improving the structure of

the course. Thus, ethics approval was not needed for this research and was deemed as program evaluation. The development of the MHLQ was considered to be a Quality Improvement activity, to aid in the enhancement of further improvements to the course.

Procedure

Self-report questionnaires were administered before and after the course delivery and students received class participation marks (up to 7% of their final grade) for their participation in the study. These measures included many different scales including basic demographic information from the participants including their age and program of study, measures to identify teachers' feelings of efficacy and stress, stigma associated with mental health problems, and the newly developed measure intended to evaluate an individual's level of MHL which is the focus of this paper.

The Mental Health Literacy Questionnaire for Education (MHLQ) is a 45-item scale developed primarily by Dr. Susan Rodger, Dr. Andrew Johnson, and Dr. Karen Weston. The scale was developed with the intention of measuring the different knowledge and leadership skills necessary for pre-service teachers to demonstrate MHL. These skills were derived from existing theory that MHL should include not only knowledge about how to recognize different mental health problems and manage the associated symptoms, but also work towards reducing the stigmatization of those suffering from mental health issues, and promote skills that can help individuals improve their psychological well-being; for example, soliciting help from appropriate sources when needed (Kutcher et al., 2013; Wei, Mcgrath, Hayden, & Kutcher, 2017). Each item on the scale uses a five-point Likert scale ranging from strongly disagree to strongly agree, with higher ratings representing more agreement with the item and a higher level of MHL.

Participants

The participants for this study were students from a university in Southwestern Ontario who completed a class on MHL as part of the requirements of their program. They received course credit for participating in these studies. Of the students in the course, 272 (203 females, 65 males, and 1 transgender) completed the pre-course surveys. Of these participants 14.3% were studying the psychology of achievement, inclusion, and mental health, while 25.7% were in early childhood education. This may help to explain the high percentage (71%) of the participants who stated that they have learned about mental health or illness outside of this specific course. After the course had been delivered, 265 of these participants completed the same self-report questionnaire again for course credit.

Results

The main purpose of this part of the study is to identify and evaluate the psychometric properties and underlying factors within the MHLQ; exploratory factor analysis was used to evaluate this scale in SPSS (version 21). In order to ensure that the data possessed a structure that would be amenable to factor analysis, and variables themselves (including the relationships among variables) satisfied assumptions of exploratory factor analysis, we first analyzed the collected data outside the factor analysis. Little's MCAR test was not significant ($\chi^2(700) = 699.54, p = .498$), which suggests that the missing data in our sample is random. This is important, as SPSS employs listwise deletion for cases that contain missing data (on any variable) when completing a factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .899, which is well above the minimum accepted value (.7). This suggests that the intercorrelations among the items on the measure are sufficient to allow for data

reduction (i.e., factor analysis). Further support for the factorability of the data was found with Bartlett's test of sphericity, which was significant ($\chi^2(990) = 8357.3, p < .001$).

An exploratory principal components analysis was used to identify the underlying factors within the scale and create composite scores from the items identified by those factors. The scree plot from this analysis suggested five potential factors. Examination of the eigenvalues associated with the three, four, and five-factor models suggested that the five-factor model would account for 58.78% of the variance, the four-factor model would account for 55.21%, and the three-factor model would account for 49.81%. Only one item, *I know who to talk to when my student seems to be struggling with behaviours or emotions*, did not load at a level of .3 or above. The elimination of this question may be due to the nature of our sample. As our sample was made up of pre-service teachers this question may have been difficult for them to answer if it were interpreted by the students as being related to school specific social resources. Further analysis was necessary to evaluate the different models based on other aspects of the resulting item loadings.

The five-factor model was problematic due to a high number of items overlapping onto multiple factors and a lack of clear underlying themes in the resulting factors. It was decided that the four-factor model was more appropriate based on the way the items loaded into the factors of that particular model. Additionally, the difference in the amount of variance explained between the four and five factor models was only about 3.5%.

The four-factor model thus yielded the most interpretable results. A varimax rotation with Kaiser normalization was initially utilized because it tends to maximize interpretability in principal components factor analysis, owing to the fact that it maintains the orthogonality established within the initial extraction used within a principal components analysis (Tabachnick

& Fidell, 2013). This analysis resulted in a few overlapping items – which is to be expected, as it is reasonable for the factors to be correlated with each other. Owing to the conceptual similarity of the factors, we subsequently applied an oblique rotation (oblimin), in order to examine the factor interpretations for factors that are allowed to be correlated with each other during, and after, the interpretational rotation. This analysis resulted in the most interpretable results with the fewest number of overlapping items. Table one shows the oblimin-rotated factor loadings for each item, on each of the four factors. The first factor, *Teaching and Leading in a Mentally Healthy Classroom*, was predominantly predicted by twenty-six items. The second factor, *Expectancies*, was defined by six items; the third was labeled *Professional Relational Skills* and saw primary loadings from eight items; and finally, *Role Clarity* was defined by the remaining four items.

Table 1

Items and oblique factor loadings for the MHLQ

<u>Item #</u>		<u>One</u>	<u>Two</u>	<u>Three</u>	<u>Four</u>
	<i>Factor 1: Teaching and Leading in a Mentally Healthy Classroom</i>				
1	I know who to talk to when my student seems to be struggling with behaviours or emotions				
2	I know the steps to take to make a referral for my student who seems to be struggling with behaviours or emotions	.398			
3	I know about the resources available in my community to support students' mental health	.616			
4	I can effectively address the situation wherein a student confides in me that he/she is contemplating suicide	.575			
5	I can lead others to create effective supports for students who have had adverse experiences	.723			
6	I can create a classroom that is physically safe for all students	.472			
7	I can create a classroom that is emotionally safe for all students	.451			

Items and oblique factor loadings for the MHLQ

<u>Item #</u>		<u>One</u>	<u>Two</u>	<u>Three</u>	<u>Four</u>
8	I can effectively teach students who have had adverse experiences, such as abuse, household dysfunction, or inadequate housing/nutrition/social support.	.622			
9	I can effectively teach/work with a student who is highly anxious	.614			
10	I can communicate effectively with parents/family members about their child's behaviour and emotions	.567			
11	I can create positive relationships with parents or caregivers of my students who may be struggling with behaviour or emotions	.562			
12	I can effectively teach students who seem overly sad	.630			
13	I can adapt my curriculum or practices for students who are suffering from behavioural or emotional problems	.626			
14	I can work with families who have done damaging things to their children	.614			
15	I can cope with my own stress in my work as a teacher	.387			
16	I can identify a student who is flourishing in the classroom	.413			.385
17	I can identify a student who is languishing in the classroom	.437			.324
18	I can identify a student who is mentally healthy in the classroom	.499			
19	I can identify a student who is mentally unwell in the classroom	.537			
20	I can explain the contextual factors that contribute to students' behaviours and emotions	.695			
21	I can effectively explain to a colleague, the early signs of a mental illness	.757			
22	I can effectively explain to a colleague how to create a classroom environment that is supportive of students with behavioural or emotional problems	.763			
23	I can create a classroom environment that is supportive of students with behavioural or emotional problems	.801			
24	I can contribute to a student support team process when the student in question has behavioural or emotional problems	.736			

Items and oblique factor loadings for the MHLQ

<u>Item #</u>		<u>One</u>	<u>Two</u>	<u>Three</u>	<u>Four</u>
25	I can access the resources available in my community to support students' mental health	.641			
26	I can help/support others (teachers) cope with their stress	.679			
45	I am confident in my ability support students with their problems	.377		-.310	
<i>Factor 2: Expectancies</i>					
31	I will be working with children/adolescents who are sometimes violent		.848		
32	I will be teaching students who exhibit significant behavior problems		.980		
33	I will be teaching students who exhibit significant emotional problems		.975		
34	I will be teaching students who have multiple adverse childhood experiences		.889		
35	I will be teaching students who have significant attention problems		.846		
36	I will be teaching students who have significant learning problems		.838		
<i>Factor 3: Professional Relational Skills</i>					
37	I know how to build relationships with students			-.409	
38	I know how to build relationships with parents/caregivers			-.620	
39	I know how to build relationships with administrators			-.636	
40	I know how to build relationships with other teachers			-.514	
41	I am confident in my ability to manage conflict with parents/caregivers			-.668	
42	I am confident in my ability manage conflict with students			-.501	
43	I am confident in my ability manage conflict with administrators			-.860	
44	I am confident in my ability manage conflict with other teachers			-.840	

Items and oblique factor loadings for the MHLQ

<u>Item #</u>		<u>One</u>	<u>Two</u>	<u>Three</u>	<u>Four</u>
<i>Factor 4: Role Clarity</i>					
27	I have a responsibility to meet the needs of students with behavioural and emotional problems				.802
28	I have a responsibility to promote the mental health of students				.846
29	I have a responsibility to meet the needs of students with mental illness				.807
30	I have a responsibility to continue learning about the most effective ways to support children facing behavioural and emotional problems				.851
<i>Note: Goodness-of-fit Test (χ^2 (816) = 2357.76, $p < .001$).</i>					

In order to evaluate the internal consistency of the items in relation to the factor structure we performed an item analysis on the sets of items which loaded onto the factors. Table 2 shows the item-total statistics for each item organized by factor. Cronbach's alpha, a measure of the internal consistency of a scale, was computed for each factor, and scores ranged from .88 to .96. The squared multiple correlation score (SMC) is a statistic that involves regressing each item against all of the other items on the scale and can be interpreted as indicating the strength of the relationship between that particular item and the rest of the items in that factor. According to Tabachnick and Fidell (2013), SMCs should be between 0 and 1 to indicate good internal consistency of the items in relation to the factor with which they load. SMCs that are closer to 1 indicate a more stable factor structure, while lower SMCs suggest that a particular item is less closely related to the factor. Table 2 also shows that the variance is not greatly affected by any one item, and that Cronbach's alpha is consistently greater than .8 across all items.

Table 2

Item #	<u>Corrected</u> <u>Item-Total</u> <u>Correlation</u>	<u>Squared</u> <u>Multiple</u> <u>Correlation</u>	<u>Cronbach's</u> <u>Alpha if</u> <u>Item</u> <u>Deleted</u>
<i>Factor 1: Teaching and Leading in a Mentally Healthy Classroom</i>			
2	0.493	0.449	0.942
3	0.605	0.575	0.939
4	0.58	0.474	0.94
5	0.69	0.568	0.938
6	0.484	0.567	0.94
7	0.526	0.562	0.94
8	0.678	0.57	0.938
9	0.613	0.536	0.939
10	0.636	0.568	0.939
11	0.622	0.558	0.939
12	0.639	0.577	0.939
13	0.69	0.549	0.938
14	0.624	0.491	0.939
15	0.498	0.361	0.94
16	0.473	0.805	0.94
17	0.48	0.8	0.94
18	0.521	0.493	0.94
19	0.568	0.5	0.939
20	0.636	0.512	0.939
21	0.658	0.653	0.938
22	0.678	0.683	0.938
23	0.723	0.704	0.938
24	0.747	0.661	0.937
25	0.665	0.531	0.938
26	0.659	0.491	0.938
45	0.597	0.429	0.939

Cronbach's alpha = .941

Factor 2: Expectancies

31	0.823	0.733	0.959
32	0.914	0.873	0.947
33	0.914	0.873	0.947
34	0.881	0.801	0.951
35	0.866	0.845	0.953
36	0.854	0.834	0.954

Cronbach's alpha = .959

Item #	<u>Corrected Item-Total Correlation</u>	<u>Squared Multiple Correlation</u>	<u>Cronbach's Alpha if Item Deleted</u>
<i>Factor 3: Professional Relational Skills</i>			
37	0.544	0.437	0.882
38	0.7	0.59	0.865
39	0.674	0.592	0.868
40	0.58	0.54	0.877
41	0.712	0.627	0.864
42	0.585	0.435	0.876
43	0.749	0.729	0.86
44	0.747	0.711	0.86
Cronbach's alpha = .884			
<i>Factor 4: Role Clarity</i>			
27	0.829	0.714	0.9
28	0.781	0.66	0.916
29	0.845	0.745	0.897
30	0.859	0.755	0.892
Cronbach's alpha = .924			

Closer examination of the items that had lower SMCs suggested that these values may be related to sample characteristics, rather than a measurement failure within each subscale of the measurement tool. Items with SMCs lower than .5 (after rounding) were:

item 2: *I know the steps to take to make a referral for my student who seems to be struggling with behaviours or emotions*

item 15: *I can cope with my own stress in my work as a teacher*

item 42: *I am confident in my ability manage conflict with students*

item 45: *I am confident in my ability support students with their problems*

item 37: *I know how to build relationships with students.*

Given that all of our participants are education students with limited experience in the classroom, the low predictive power demonstrated by these items may simply reflect their lack of experience, as opposed to being a reflection of the items' usefulness in the measure.

The mean and variability of the items can also provide information as to their relevance to the scale structure.

Table 3

Item Mean and Standard Deviation Scores Organized by Factor

<u>Item #</u>	<u>Mean</u>	<u>Standard deviation</u>
<i>Factor 1: Teaching and Leading in a Mentally Healthy Classroom</i>		
1	4.19	.883
2	3.35	1.241
3	3.45	1.112
4	3.43	1.096
5	3.50	.939
6	4.47	.667
7	4.38	.637
8	3.98	.797
9	4.07	.731
10	3.98	.809
11	4.18	.769
12	3.96	.791
13	3.97	.807
14	3.29	.975
15	4.04	.939
16	4.54	.672
17	4.49	.697
18	3.93	.851
19	3.78	.878
20	3.61	.856
21	3.31	1.013
22	3.55	.934
23	3.97	.773
24	3.93	.817
25	3.73	.912
26	4.00	.820
45	4.45	.634
<i>Factor 2: Expectancies</i>		
31	4.35	.760
32	4.50	.667
33	4.52	.649
34	4.50	.703

Item Mean and Standard Deviation Scores Organized by Factor

<u>Item #</u>	<u>Mean</u>	<u>Standard deviation</u>
35	4.59	.610
36	4.59	.624
<i>Factor 3: Professional Relational Skills</i>		
37	4.81	.425
38	4.35	.775
39	4.41	.697
40	4.66	.590
41	3.90	.895
42	4.42	.605
43	3.85	.912
44	4.02	.867
<i>Factor 4: Role Clarity</i>		
27	4.76	.513
28	4.81	.468
29	4.75	.547
30	4.81	.456

Table 3 shows the means and standard deviations of all items and demonstrates that items 42, 45, and 37 could be more susceptible to a ceiling effect as the means are high and the variability is low. This could be explained by a potential social desirability bias being exhibited as these three items are related to being able to support children which is reasonably a key self-identified strength in students wanting to become teachers. The high variability and middling mean of item 2 may indicate that participants either interpreted the question generally as in they knew to refer to the principal or other health care professionals or they interpreted it very narrowly as in relation to the actual school or community they will eventually teach in. The higher variability and higher mean score of item 15 is more difficult to interpret but may show that there is a lack of consensus between participants as this item is directly related to their self-perceived capability at managing their own stress. This item may also show that due to the lack of experience that students have teaching they still feel unsure as to their own abilities especially considering that this data was collected at the beginning of the school term.

Discussion

Considering the research on MHL as a whole and the ways that it fits into an educational context the factors did not match our expected underlying themes of knowledge, skills, and leadership as clearly as we anticipated. It was hypothesized that the factor structure would reflect knowledge acquisition, attitudes and leadership qualities, and skills attainment in relation to mental health issues and well being. That is not to say that the items do not match those underlying themes, only that the items in our scale grouped together differently than hypothesized. This is not surprising considering that the research already shows that programs developed to increase MHL should be tailored to the audience based on their common interests, developmental level, and to the contextual concerns of that group (Atkins et al., 2010; Kutcher et al., 2016).

Our first factor *Teaching and Leading in a Mentally Healthy Classroom* speaks to the confidence level of pre-service teachers in recognizing and working with children with diverse mental health needs. These items are linked to these future teachers' belief that they will be able to provide their future students a model that they can follow in terms of demonstrating mentally healthy behaviours. The items also reflect that the participants feel that they have obtained an understanding or good working knowledge of different mental health concerns and the supports which are available for them. Increasing this knowledge has the potential to decrease stigmatizing attitudes that teachers might have around mental health issues (McLuckie et al., 2014). As some of the items that loaded onto this factor concern making referrals to other professionals in the mental health field and within the school this factor also reflects a willingness to seek help and awareness that this is a part of attaining and maintaining mental

health. In relation to our hypothesized components of MHL necessary for teachers to attain this factor encompasses both knowledge acquisition and the development of leadership qualities.

The *Expectancies* factor speaks to the needs of teachers specifically and to decreasing stigmatizing attitudes in regard to mental health issues. These items are directly linked to the types of issues with which teachers should expect that some of their students will struggle. Research indicates that one of the reasons that teachers experience higher rates of burnout and stress than some other professions is feeling unprepared to deal with child behaviour which is often related to mental health issues (McCrimmon, 2015; Stormont & Young-Walker, 2017). It is accepted within the mental health field that stress can result for individuals whose environmental stressors are greater than their perceived resources to handle them. By increasing pre-service teachers' awareness of the issues, they should expect in the classroom and increasing knowledge about resources and coping strategies that can be used it is likely that these individuals will be more able to cope with the behavioural and emotional issues they experience in themselves and in their future students.

Social support can play an important role in coping with early career stress that teachers experience. Building relationships not only with students, but other teachers, administrators and professional colleagues, can lead to increased job satisfaction especially for early career teachers (Vamos, 2007) and act as a protective factor against burnout (Uzman & Telef, 2015). The *Professional Relations Factor* involves items which were designed to capture not only our participants' feelings of self efficacy in relation to forming healthy relationships with others but also to feeling capable to handle difficult relationships through conflict management. Confidence in managing difficult relationships can diminish stress (Hadlaczky et al., 2014; Stormont & Young-Walker, 2017). Research has demonstrated that relationships can be both a protective

factor and a stressor this factor relates to the perceived ability for preservice teachers to acquire support and to manage stressors resulting from others in their working environment.

Teachers have many competing obligations within the school environment, and the awareness of the scope of these duties and sense of responsibility towards managing these obligations can better prepare preservice teachers for difficult working environments in the future. This may be especially important in relation to mental health concerns due to the broad impact these concerns can have on both teacher and student outcomes. Morris, Usher, and Chen (2017) cite research that demonstrates that teachers with a higher sense of responsibility for their students' positive results also reported higher levels of self efficacy. Our *Role Clarity* factor is related to *Expectancies* in some respects, but it is distinct in that if teachers feel a responsibility to learn and work with colleagues, parents, and students who have needs related to mental health concerns they are more likely to continue to learn about these concerns and how to deal with them.

We hypothesized that items related to skills necessary for managing mental health issues in the classroom would group together; however, these items loaded onto both the *Teaching and Leading in a Mentally Healthy Classroom* and the *Professional Relational Skills* factors almost equally. This may reflect an understanding in our participants that skills development is not limited to coping with stress or managing difficult behaviours in the classroom but also applies to developing leadership skills and managing relationships as a whole with all parties involved in the educational system. The psychometric properties of this scale serve to demonstrate that preservice teachers may have a broad understanding of what skills are necessary to be an effective teacher; in other words, skills themselves do not belong in a separate category but should be spread out into several aspects of teaching responsibility.

Strengths and Limitations

One of the main limitations of this study is that we relied on pre-intervention data only to complete our analysis. Further research is planned to evaluate the pre- and post-intervention data to further evaluate the factor structure stability of the scale. There is limited generalizability for the scale properties at present as it was evaluated with education students from a single Canadian university and therefore may not reflect other cultural understandings of MHL or the underlying constructs that were found in this study.

Self report data does have some limitations due to the potential for response bias within a sample that could potentially be a limitation of this study. Morris et al., (2017) state that “Likert-type measures might be prone to problems such as social desirability effect, ceiling effects, or overdependence on certain categories rather than a full range of responses. Moreover, different referential biases, such as school setting, can make it difficult to compare ratings across contexts” (p. 824). As mentioned earlier this ceiling effect may have affected at least three of the items on the MHLQ in this sample. Employing a mixed methods research design by adding a qualitative component such as interviewing some of the participants who completed the MHLQ that assesses their core values, discusses what they have learned, and what skills they feel they have gained through their participation in the course could serve to evaluate if any of these potential biases are present.

Our results demonstrate some of these measurement problems in a variety of ways. Kopcha and Sullivan (2007) found that self-presentation bias was present when they examined teacher self-reports related to technology use in the classroom in relation to personal teaching practices such as curriculum formation and what the researchers termed “learner-centred instruction” as compared to a general assessment of teacher practices (p. 640). The MHLQ may

be particularly vulnerable to this bias as many of the items are worded in relation to personal characteristics rather than general characteristics related to general teaching practices due to the fact that we were interested in determining the underlying constructs of MHL in relation to preservice teachers' feelings of self efficacy in handling mental health issues. The MHLQ was not intended to capture feelings of collective efficacy as preservice teachers have limited experience relating to specific schools in comparison to in service teachers who have an established relationship with a particular school or school board.

As discussed previously at least three items on our scale seem susceptible to ceiling effects in that they demonstrated low variability and consistently high scores. The fact that these items all directly related to being able to support children this may reflect a core value within our sample. Because our sample consisted entirely of preservice teachers, their responses may be impacted by a lack of experience in the field. This is especially evidenced by the one item, which did not load onto the scale, related to knowing who to talk to, and another item related to knowing who to whom to make referrals, which showed high variability but a middling mean; these questions may reflect an awareness in our participants that they do not yet know where they will be teaching and therefore are unable to identify these supports or it may reflect a referential bias. Mean scores were relatively high across most of the items in our scale which may reflect acquiescence or a tendency for our sample to agree with items as a result of proneness to agreeableness or a reflection of extreme point responding tendencies (Ziegler, 2015). Future versions of the MHLQ could include reverse coded items to evaluate the effects of this limitation although the utility of this strategy is debated in the literature (van Sonderen, Sanderman, & Coyne, 2013; Zeigler, 2015).

A strength of our study lies in the fact that it is targeted to pre-service teachers. Given the research that shows that MHL should be specific to the needs of the intended audience, it is necessary that measurement tools are also specific to that group. We also had a large sample size of 272 participants which according to most standards is sufficient for a 45-item scale (MacCallum, Widaman, Zhang, & Hong, 1999). According to MacCallum et al., (1999) “If results show a relatively small number of factors and moderate to high communalities, then the investigator can be confident that obtained factors represent a close match to population factors, even with moderate to small sample sizes” (p. 97). Having a healthy sample size helps to ensure the internal consistency of a scale and adequately identify the underlying themes which are associated to MHL.

By designing a scale specifically for pre-service teachers, we were able to capture the specific needs of this population in relation to MHL. As previously indicated teachers are prone to burnout and often leave the profession within the first five years of graduating. When feelings of self-efficacy are present it can act to increase a teacher’s commitment to their profession (Chestnut & Burley, 2015). Increasing MHL has the potential to help new teachers feel that they can manage the mental health needs of students, manage their own stress, and increase knowledge about where to seek help which has the potential to ameliorate attrition rates of new teachers.

Future Directions

Further development of this scale is planned to investigate the possibility of reducing the number of items on the scale. There is also potential to examine the MHLQs utility as a pre and post measurement tool. As previously stated the development of the MHLQ is part of a larger

study designed to evaluate a program designed for pre-service teachers to increase their MHL. The MHLQ also has the potential to be used with in-service teachers as a measure of their MHL.

It was not the intent of the MHLQ to evaluate the effects of collective efficacy nevertheless it is an area of research that could be investigated in relation to MHL. “The interrelationship between self-efficacy and collective efficacy should be examined” (Tschannen-Moran et al., p. 241, 1998). In an educational environment where teachers are affected by their peers, their students, school boards, and various regulatory bodies collective efficacy determinations in relation to mental health a common set of knowledge, attitudes, and skills in relation to handling mental health concerns may be especially important.

Conclusions

The development of the MHLQ is an important first step in evaluating the MHL of pre-service teachers. Due to the complexities inherent in MHL and the evolving definition of it not only in the public definition but also its nuanced differences related to specific populations and contexts it is reasonable that the development of measurement scales will also be a complicated process. Through continued work in developing these types of measurement tools the underlying themes related to MHL can be identified and programs designed to increase MHL can be adequately evaluated.

References

- Arens, K. A., & Morin, A. J. (2016). Relations between teachers' emotional exhaustion and students' educational outcomes. *Journal of Educational Psychology, 108*(6), 800-813. Retrieved from <https://www.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com/docview/1871580727?accountid=15115>
- Atkins, M. S., Hoagwood, K. E., Kutash, K., & Seidman, E. (2010). Toward the integration of education and mental health in schools. *Administration and Policy in Mental Health and Mental Health Services Research, 37*(1-2), 40-47.
- Baker, D., Wolf, M., Feinglass, J. (2007) Health Literacy and mortality among elderly persons. *Arch International Medicine. 167*, 1503-1509.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*(2), 117-148. 10.1207/s15326985ep2802_3 Retrieved from http://resolver.scholarsportal.info/resolve/00461520/v28i0002/117_psidaf
- Berkam, N.D., Sheridan, S.L., Donahue, K.E. (2011) Low health literacy and health outcomes: An updated systematic review. *Ann International Medicine. 155*(2), 97-107.
- Bourget, M. C., & Chenier, R. (2007). Mental Health Literacy: A Review of the Literature. *Canadian Alliance on Mental Illness and Mental Health. Bourget Management Consulting*. Retrieved from <http://books.scholarsportal.info/viewdoc.html?id=368363>
- Canadian Mental Health Association. (2012). *Access to Services*. Retrieved from http://www.cmha.ca/public_policy/access-to-services-2/#.WLNTpTsrLIU
- Canadian Teachers' Federation. (2012). *Understanding teachers' perspectives on student mental health: Findings from a national survey*. Ottawa, Ontario

- Chesnut, S. R., & Burley, H. (2015). Self-efficacy as a predictor of commitment to the teaching profession: A meta-analysis. *Educational Research Review*, 15(Complete), 1-16.
10.1016/j.edurev.2015.02.001 Retrieved from http://resolver.scholarsportal.info/resolve/1747938x/v15icomplete/1_saapoccttpam
- Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social–emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology*, 104(4), 1189-1204. Retrieved from <https://www.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com/docview/1026861287?accountid=15115>
- Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. R. (1994). Facilitating internalization: the self-determination theory perspective. *Journal of Personality*, 62(1), 119–142.
- Farrer, L., Leach, L., Griffiths, K. M., Christensen, H., & Jorm, A. F. (2008). Age differences in mental health literacy. *BioMed Central Public Health*, 8(125). doi: 10.1186/1471-2458-8-125
- Flett, G. L. & Hewitt, P.L. (2013). Disguised distress in children and adolescents “Flying under the radar”: Why psychological problems are underestimated and how schools must respond. *Canadian Journal of School Psychology*, 28(1), 12-27
- Froese-Germain, B., & Riel, R. (2012). *Understanding teachers’ perspectives on student mental health: Findings from a national survey*. Retrieved from /Research-Library/StudentMentalHealthReport.pdf
- Government of Ontario: Ministry of Children and Youth Services - Policy Development and Program Design Division (2012). Moving on mental health: A system that makes sense for children and youth. Retrieved from <http://cmho.org/documents/res-cmho-plenary-session-MCYS-nov-20.pdf>

- Hadlaczky, G., Hökby, S., Mkrtchian, A., Carli, V., & Wasserman, D. (2014). Mental Health First Aid is an effective public health intervention for improving knowledge, attitudes, and behaviour: A meta-analysis. *International Review of Psychiatry, 26*(4), 467-475.
doi:10.3109/09540261.2014.924910
- Hoglund, W. L. G., Klinge, K. E., & Hosan, N. E. (2015). Classroom risks and resources: Teacher burnout, classroom quality and children's adjustment in high needs elementary schools. *Journal of School Psychology, 53*(5), 337-357. doi:10.1016/j.jsp.2015.06.002
- Jorm, A. F., Korten, A. E., Jacomb, P. A., H, C., Rodgers, B., & Politt, P. (1997). Mental health literacy: A survey of the public's ability to recognize mental disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia, 166*(4), 182-186.
Retrieved from <https://www.mja.com.au/journal/1997/166/4/mental-health-literacy-survey-publics-ability-recognise-mental-disorders-and>
- Kelly, C. M., Jorm, A. J., & Wright, A. (2007). Improving mental health literacy as a strategy to facilitate early intervention for mental disorders. *The Medical Journal of Australia, 187*, S25-S30. Retrieved from https://www.mja.com.au/system/files/issues/187_07_011007/ke110278_fm.pdf
- Kessler, R. C., & Ustun, T. B. (2004). The world mental health (WMH) survey initiative version of the world health organization (WHO) composite international diagnostic interview (CIDI). *International Journal of Methods in Psychiatric Research, 13*(2), 93-121.
doi:10.1002/mpr.168
- Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior, 207-222*.

- Klassen, R. M., & Tze, V. M. C. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *Educational Research Review*, 12(Complete), 59-76. 10.1016/j.edurev.2014.06.001 Retrieved from http://resolver.scholarsportal.info/resolve/1747938x/v12icomplete/59_tspateam
- Kopcha, T. J., & Sullivan, H. (2007). Self-presentation bias in surveys of teachers' educational technology practices. *Educational Technology Research and Development*, 55(6), 627-646. 10.1007/s11423-006-9011-8 Retrieved from http://resolver.scholarsportal.info/resolve/10421629/v55i0006/627_sbisotetp
- Kovess-Masféty, V., Rios-Seidel, C., & Sevilla-Dedieu, C. (2007). Teachers' mental health and teaching levels. *Teaching and Teacher Education*, 23. doi: 10.1016/j.tate.2006.07.015
- Kutcher, S., & McDougal, A. (2009). Problems with access to adolescent mental health care can lead to lead to dealings with the criminal justice system. *Pediatric Child Health*, 14, 15-18.
- Kutcher, S., & Wei, Y. (2015). *Mental Health and High School Curriculum Guide: Understanding Mental Health and Mental Illness (updated edition)*. Retrieved December 19, 2016, from <http://teenmentalhealth.org/curriculum/wp-content/uploads/2015/09/Mental-Health-High-School-Curriculum-Guide.pdf>
- Kutcher, S., Wei, Y., & Coniglio, C. (2016). Mental health literacy: past, present, and future. *The Canadian Journal of Psychiatry*, 61(3), 154-158.
- Kutcher, S., Wei, Y., McLuckie, A., & Bullock, L. (2013). Educator mental health literacy: A programme evaluation of the teacher training education on the mental health & high school curriculum guide. *Advances in School Mental Health Promotion*, 6(2), 83-93. doi:10.1080/1754730X.2013.784615

- Kutsyruba, B., & Treguna, L. (2017). Curbing early-career teacher attrition: A pan-Canadian document analysis of teacher induction and mentorship programs. *Canadian Journal of Educational Administration and Policy*, (161).
- Larrivee, B. (2012). *Cultivating teacher renewal: Guarding against stress and burnout*. Lanham, Maryland: Rowman & Littlefield Education.
- Lea, M. (2011b). Digital literacies: competing discourses and practices in higher education. *New Media, New Literacies, and New Forms of Learning; Institute of Education, London*.
- Lee, S., Kim, C.-J., & Kim, D. H. (2015). A meta-analysis of the effect of school-based anti-bullying programs. *Journal of Child Health Care*, 19(2), 136–153.
<http://doi.org/10.1177/1367493513503581>
- Leithwood, K., & Jantzi, D. (2008). Linking leadership to student learning: The contributions of leader efficacy. *Educational Administration Quarterly*, 44(4), 496-528.
10.1177/0013161X08321501 Retrieved
from http://resolver.scholarsportal.info/resolve/0013161x/v44i0004/496_lltstcole
- MacCallum, Robert C., Keith F. Widaman, Shaobo Zhang, and Sehee Hong. 1999. Sample size in factor analysis. *Psychological methods* 4(1) (03): 84-99, <https://www-lib-uwo-ca.proxy1.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com.proxy1.lib.uwo.ca/docview/614333348?accountid=15115>
- McCrimmon, A. W. (2015). Inclusive education in Canada: Issues in teacher preparation. *Intervention in School and Clinic*, 50(4), 234-237.
- McLuckie, A., Kutcher, S., Wei, Y., & Weaver, C. (2014). Sustained improvements in students' mental health literacy with use of a mental health curriculum in Canadian schools. *BMC psychiatry*, 14(1), 379.

- Mental Health Commission of Canada. (n.d.). *Mental Health First Aid*. Retrieved from <https://www.mentalhealthcommission.ca/English/focus-areas/mental-health-first-aid>
- Mental Health Commission of Canada. (2016). *Making the case for investing in mental health in Canada*. Retrieved from http://www.mentalhealthcommission.ca/sites/default/files/2016-06/Investing_in_Mental_Health_FINAL_Version_ENG.pdf
- Morris, D. B., Usher, E. L., & Chen, J. A. (2017). Reconceptualizing the sources of teaching self-efficacy: A critical review of emerging literature. *Educational Psychology Review, 29*(4), 795-833.
- Morrison, W., & Peterson, P. (2013). Schools as a setting for promoting positive mental health: Better practices and perspectives. JCSH Library Cataloguing-in-Publication Data. Retrieved from https://www.jcsh-cces.ca/upload/JCSH%20Best%20Practice_Eng_Jan21.pdf
- Moses, T. (2010). Being treated differently: Stigma experiences with family, peers, and school staff among adolescents with mental health disorders. *Social Science & Medicine, 70*, 985–993. doi:10.1016/j.socscimed.2009.12.022
- Mukolo, A., Heflinger, C.A., & Wallston, K.A. (2010). The stigma of childhood mental disorders: a conceptual framework. *Journal of the American Academy of Child and Adolescent Psychiatry 49*(2):92-103
- Nutbeam, D. (2008) The evolving concept of health literacy. *Social Science and Medicine, 67*(12), 2072-2078.
- Oberle, E., & Schonert-Reichl, K. A. (2016). Stress contagion in the classroom? the link between classroom teacher burnout and morning cortisol in elementary school students. *Social Science & Medicine, 159*, 30-37. doi:10.1016/j.socscimed.2016.04.031

O’Conner, M. & Casey, L. The Mental Health Literacy Scale (MHLS): A new scale-based measure of mental health literacy. *Psychiatry Research*, 229, 511-516.

OECD (2014), “Indicator D4: How much time do teachers spend teaching?”, in *Education at a Glance 2014: OECD Indicators*, OECD Publishing. <http://dx.doi.org/10.1787/888933120005>

Polanczyk GV, Salum GA, Sugaya LS, Caye A, Rohde LA. Annual research review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *Journal of Child Psychology and Psychiatry*, 56(3), 345-65. doi:10.1111/jcpp.12381.

Rodger, S., Hibbert, K. & Leschied, A. (2014). Mental health education in Canada: An analysis of teacher education and provincial/territorial curricula. A report for Physical and Health Education Canada.

Ryan, R. M., & Deci, E. L. (2000). Self-Determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. doi: 10.1037/110003-066X.55.1.68

Schaefer, L., Long, J. S., & Clandinin, D. J. (2012). Questioning the research on early career teacher attrition and retention. *Alberta Journal of Educational Research*. 58(1), 106-121.

School-Based Mental Health and Substance Abuse Consortium (supported by the Mental Health Commission of Canada), *Survey on School-Based Mental Health and Addictions Services in Canada* (April 2012).

Self-Determination Theory. (n.d.). Retrieved from <http://selfdeterminationtheory.org/theory/>

Sharma, U., Loreman, T., & Forlin, C. (2011). Measuring teacher efficacy to implement inclusive practices. *Journal of Research in Special Education Needs*, 12(1), 12–21. doi: 10.1111/j.1471-3802.2011.01200.x

- Smith, C., & Carlson, B. E. (1997). Stress, coping, and resilience in children and youth social service review. *Social Service Review*, 71(2), 231–256. doi:0037-7961/97/7102-0004\$0
- Stormont, M., & Young-Walker, L. (2017). Supporting professional development needs for early childhood teachers: an exploratory analysis of teacher perceptions of stress and challenging behavior. *International Journal on Disability and Human Development*, 16(1), 99-104.
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using Multivariate Statistics* (6th ed.). United States: Pearson.
- Tschannen-Moran, M., Woolfolk-Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*. 68(2), 202-248.
- UNICEF Canada (2007) What's right for some: 18 @18. A portrait of Canada's first generation growing up under the UN Convention of the Rights of the Child. Toronto: ON: Author
- Uzman, E., & Telef, B. B. (2015). Prospective teachers' mental health and their help-seeking behaviours. *Dusunen Adam The Journal of Psychiatry and Neurological Sciences*, 28(3), 242-254. doi: 10.5350/DAJPN2015280307
- Vamos, S. (2007). Experiences of beginning health educators and changes in their high school students' health behaviors and attitudes. *Health Education & Behavior*, 34(2), 376-389. 10.1177/1090198106288513 Retrieved from http://resolver.scholarsportal.info/resolve/10901981/v34i0002/376_eobheasshbaa
- van Sonderen, E., Sanderman, R., & Coyne, J. C. (2013). Correction: Ineffectiveness of reverse wording of questionnaire items: Let's learn from cows in the rain. *PLoS One*, 8(9). doi 10.1371/annotation/af78b324-7b44-4f89-b932-e851fe04a8e5

- Wei, Y., McGrath, P. J., Hayden, J., & Kutcher, S. (2017). Measurement properties of mental health literacy tools measuring help-seeking: a systematic review*. *Journal of Mental Health, 26*(6), 543-555. doi:10.1080/09638237.2016.1276532
- Wei, Y., McGrath, P.J., Hayden, J. & Kutcher, S. (2016). Measurement properties of tools measuring mental health knowledge: a systematic review. *BMC Psychiatry, 16* (1), 297-306.
- Weston, K. J., Anderson-Butcher, D., & Burke, R. W. (2008). Developing a comprehensive curriculum framework for teacher preparation in expanded school mental health. *Advances in School Mental Health Promotion, 1*, 25-41.
- Whitley, J., & Gooderham, S. (2016) Exploring and Promoting Mental Health Literacy and Outcomes: Introduction to the Special Issue. *Exceptionality Education International, 26*, 1-4. Retrieved from <http://ir.lib.uwo.ca/eei/vol26/iss2/1>
- Whitley, J., Smith, J., & Vaillancourt, T. (2013). Promoting mental health literacy among educators: Critical in school-based prevention and intervention. *Canadian Journal of School Psychology, 28*(1), 56-70. doi:10.1177/0829573512468852
- Williams, B., Onsman, A., & Brown, T. (2014). Exploratory factor analysis: A five-step guide for novices . *Australasian Journal of Paramedicine, 8*(3). Retrieved from <https://ajp.paramedics.org/index.php/ajp/article/view/93>
- World Health Organization. (n.d.). *Mental Disorders*. Retrieved from http://www.who.int/topics/mental_disorders/en/
- Yoon, J. S. (2002). Teacher characteristics as predictors of teacher-student relationships: Stress, negative affect, and self-efficacy. *Social Behavior and Personality, 30*(5), 485. Retrieved

from <https://www.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com/docview/209837570?accountid=15115>

Ziegler, M. (2015). “F*** you, I won’t do what you told me!” – Response biases as threats to psychological assessment. *European Journal of Psychological Assessment*, 31(3), 153-158. Retrieved from <https://doi.org/10.1027/1015-5759/a000292>

Appendix A: Letter of Exception



Research Ethics

June 23, 2016

Dr. Susan Rodger
Associate Professor
Faculty of Education
Western University

Dear Dr. Rodger,

Re: NMREB Project – Program evaluation of a new, mandatory online course in Fall/Winter 2016/2017 (5018 Mental Health Literacy).

Thank you for your call and email regarding the program evaluation of your new course 5018 Mental Health Literacy.

Within your email of June 14, 2016 you indicated that none of the planned data collection is happening outside of the course (everything is done as part of normal curriculum) including completion and grading of assignments, discussion and quizzes.

You have indicated that students will complete a pre-test and post-test but that it will help tailor the learning materials for this course in the future.

Based on this information, as this is being done as program evaluation and quality improvement of your course, the Tri-Council Policy Statement Article 2.5 indicates that ethics approval is not needed.

I wish you the best of luck with your work.

Most sincerely,

[signature redacted]

Ethics Officer
Office of Research Ethics

[private information redacted]

Appendix B: Curriculum Vitae

NAME Amy Hatcher

EDUCATION

2016-2018 (June) Western University - London, Ontario, Canada
M.A. Counselling Psychology

2011-2016 Nipissing University - North Bay, Ontario, Canada
B.A. Honours Specialization Psychology
B.A. (second degree) Social Welfare

1995-1997 Fanshawe College – London, Ontario, Canada
Basic Business Accounting Diploma

AWARDS AND SCHOLARSHIPS

2016-2018 Admissions Scholarship - Western University

2014 Georgia Lyons Memorial Award - Nipissing University
Awarded by nomination from the Office of Student Development

2014 Nipissing University Alumni Association Psychology Award
Awarded by nomination of the Psychology Department

PROFESSIONAL AND RESEARCH EXPERIENCE

2017-2018 Intern: Child and Family Therapist – Focused Family Therapy
Madam Vanier Children's Services - London, ON

2014-2016 Teaching Assistant / Research Assistant / Peer Tutor
Nipissing University - North Bay, ON

2014-2015 Student Assistant to the Chair of the Psychology Department
Nipissing University - North Bay, ON

2012-2013 Learning support: Literacy and Basic Skills for Adult Centre
Division of Near North District School Board - North Bay, ON

THE UNIVERSITY OF WESTERN ONTARIO

SCHOOL OF GRADUATE AND POSTDOCTORAL STUDIES