

Measurement and Design in Surveys of Teachers' Mental Health Literacy: A Scoping Review

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Abstract

Mental health literacy (MHL) was introduced four decades ago as a term referring to knowledge and beliefs about mental disorders that aid in their recognition, management, or prevention. This scoping review mapped the peer-reviewed literature to understand how MHL is defined, conceptualized, and measured in studies involving those becoming teachers (pre-service teachers) and working teachers (in-service teachers). The search was performed following the method for scoping reviews by the Joanna Briggs Institute (JBI). Searches were conducted in four scientific databases with no time limit, although all sources had to be written in English or French. Primary studies ($N = 35$) that measured MHL for pre- and in-service teachers provided a global snapshot of MHL conceptualization and measurement across five continents. Global conceptualizations of MHL were largely driven by the definition and measures developed by Jorm, though the definition by Kutcher et al. was used in one fourth of the papers. Few studies explicitly stated a theoretical framework. Most studies used closed-ended scales, or a combination of closed-ended scales and vignettes to measure MHL. From a closer examination of the results, Canada emerged as a major leader in teacher MHL. Future research in this area should aim to include vignette measures, especially for pre-service teachers, and explicit theoretical frameworks, including socio-ecological and social or structural determinants of health-related frameworks that take an intersectional approach to MHL.

Keywords: mental health literacy, education, pre-service teachers, teachers, psychoeducation

Introduction

When teachers recognize the early indications of mental illness and unhealthy, persistent stress; know about the best types of help available; and know how to access support,

they are equipped to facilitate appropriate help-seeking for their students and themselves. Proactively, when teachers know how to achieve and maintain mental health, they may be able to apply helpful strategies for themselves and in their classrooms for their students. Having

positive mental health means enjoying a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to his or her community (World Health Organization, 2004). The ability to access, understand, and use information to promote mental health may lead to positive outcomes through early intervention (Jorm et al., 1997a). Being mental health literate entails holding “knowledge and beliefs about mental disorders which aid their recognition, management, or prevention” (Jorm et al., 1997a, p. 182). Mental health literacy (MHL) also involves knowing how to achieve and maintain positive mental health, and understanding and engaging in anti-stigma work (Kutcher et al., 2015). Anti-stigma work could include providing recent, best available evidence on mental health and mental illness, as well as contact-based education to increase the target population’s understanding of the lived experiences of those living with mental illnesses (Link & Phelan, 2001).

As both elementary and high school students usually do not seek professional health support on their own (Stiffman et al., 2004; Zimmerman, 2005) and are more likely to discuss their mental health with friends and trusted others than with medical professionals (Burns & Rapee, 2006; Kelly et al., 2007), the role of teachers in supporting student mental health is considerable. According to Stiffman et al. (2004), friends and trusted others can be seen as gateway providers, whose knowledge and awareness of services and assessment of youth’s symptoms, diagnosis, and impairment are essential in recommending services for youth. Indeed, teachers spend most of their working days with students, hopefully developing positive connections with them and becoming those trusted gateway providers.

A recent systematic review of MHL programs for adolescents (preteens and teenagers) has shown increases in knowledge, positive attitudes, helping behaviour, and confidence in helping other students following program participation (Olyani et al., 2021). Knowledge of appropriate pathways for support

for students has been shown to increase the quality of care decisions made by gateway providers (Stiffman et al., 2004). At the same time, fostering students’ ability to obtain and maintain positive mental health can promote their well-being (Bjørnsen et al., 2019). Thus, knowledge is a necessary foundation for making purposeful health-promoting decisions (Bjørnsen et al., 2019), and this knowledge can best be shared by teachers (herein referred to as in-service teachers) in school settings (Kutcher, Wei, & Morgan, 2015). Those studying to become teachers (herein referred to as pre-service teachers, synonymous with Bachelor of Education students or teacher candidates) are in an especially important upstream position to enter the profession with strong MHL. Understanding the scope of the current field of pre- and in-service teacher MHL research is an important first step for faculties of education, educational administrators, and their research partners in determining if and how to effectively move forward with increasing the MHL of their teachers.

Student Mental Health

Prior to COVID-19, 14% of Canadian children and youth were living with mental illness (Malla et al., 2018; Waddell et al., 2013), and it has been observed that most adults who live with mental illness experience symptoms before the age of 18 (Kessler et al., 2007). Most students with mental illness do not receive treatment, and those who do will often receive treatment that is not evidence-based (Vaillancourt & Boyle, 2021). Recent evidence suggests this reality is exacerbated by the impacts of COVID-19 on youth and adult mental health. For example, a global study demonstrated that during the pandemic there were significant increases in the number of school-aged youth, particularly females, attending emergency rooms for suicide attempts and ideation (Madigan et al., 2023). A study of Icelandic youth aged 13–18 showed elevated depressive symptoms and worsened mental health up to two years into the pandemic (Thorisdottir et al., 2023). A meta-analysis by

Sun et al. (2023) claimed that most people “recovered” from the mental health problems they faced during the pandemic; however, a rapid response critique by Vaillancourt et al. (2021) argued that a closer analysis of the data reveals evidence of worsening general mental health among parents and women, which is linked to the role primary caregivers have in the well-being of youth. Given the evidence to date, we advocate for an increased sense of urgency when it comes to the need for mental health support for young people, which we believe includes increasing teacher (and student) MHL as a mental health promotion effort.

Importance of Mental Health Literate Teachers

Important MHL work can begin before teachers enter the profession full-time. Pre-service teachers who complete MHL-based courses or modules—whether online, face to face, or a combination of the two (Atkins & Rodger, 2016; Carr et al., 2018; Gilham, Neville-MacLean, & Atkinson, 2021)—show significantly increased knowledge of MHL and increased self-efficacy for inclusion. Pre-service teachers who leave their teacher education programs with training in MHL could have a lasting impact on student success by being better equipped to promote positive mental health in their schools and seek appropriate and timely help for themselves and their students. This is important, given that the highest attrition rates for in-service teachers occur within the first five years of teaching (Carver-Thomas & Darling-Hammond, 2017), though attrition rates vary by region. Addressing students’ mental health needs has been cited as a significant source of compassion fatigue, which is a predictor of teacher burnout and early retirement (Farmer, 2020). Conversely, supporting the well-being and mental health of teachers has been shown to foster resilience and reduce the likelihood of burnout (Gray et al., 2017).

A systematic review on teacher MHL programs (Yamaguchi et al., 2020) concluded that most studies show a significant

improvement in MHL outcomes, suggesting that programs that educate teachers through direct engagement with MHL content have a positive impact, though the overall quality of evidence was considered very low (Yamaguchi et al., 2020). Among in-service teachers, MHL programming has led to increased self-help behaviours (Kutcher, Wei, Gilberds, et al., 2016; Kutcher et al., 2017; Ojio et al., 2015), also assisting teachers and students with the management of mental disorders and their treatments (Carvalho et al., 2022, p. 4; Kutcher, Wei, & Coniglio, 2016; Sweileh, 2021).

School-based MHL programs for students, delivered by teachers, lead to demonstrated increases in students’ knowledge about mental health and mental illness, treatments, and their intention to seek help and to support peers with mental health-related problems (Ojio et al., 2015). For example, when teachers use teacher-friendly resources (Kutcher et al., 2017), their students achieve similar results in increased MHL—specifically, a decrease in stigma-related attitudes. A recent systematic review found a positive effect of school-based educational interventions on improving MHL in adolescents (Olyani et al., 2021) and decreased stigma associated with mental illness (Carvalho et al., 2022, p. 3; Kutcher, Wei, & Coniglio, 2016; Sweileh, 2021). The more knowledge teachers have to identify and develop coping strategies for themselves and their students, the greater the possibility of better outcomes for student mental health. These positive outcomes are especially significant due to the increased need for mental health support for both teachers and students during the COVID-19 pandemic.

Rationale

In a systematic review just prior to COVID-19 (Yamaguchi et al., 2020), the following characteristics of MHL programs for teachers were analyzed: country, study design, school type, timing of data acquisition, sample size, recruitment method, method of intervention, duration of intervention, and outcome measurement. A strong narrative

discussion summarized the field and noted the need for more uniform measures and high-quality evaluations (Yamaguchi et al., 2020). Given these recent documented characteristics, we aim to extract additional information that would present an overall characterization of school-based surveys on teacher MHL such as MHL definitions and conceptualization, theoretical framework, type of educational professional, and consideration of socio-ecological levels or social determinants of health. We included studies involving pre-service and in-service teachers to paint a contextually and thematically refined picture of the current state of knowledge, whereby patterns and gaps can be further identified for future programming and evaluation.

Objective

Research question: What characterizes school-based surveys on teacher MHL?

Sub-question 1: How has MHL been defined in studies that surveyed teachers?

Sub-question 2: How has MHL been empirically measured in surveys of teachers?

Methods

This scoping review was conducted in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews (Peters et al., 2020). Scoping reviews address an exploratory research question by systematically searching, selecting, and synthesizing a wide range of literature to determine the breadth of evidence on a particular topic (Peters et al., 2020). They are a type of knowledge synthesis that scopes or maps a body of literature with relevance to time, location, source, method, and origin (Levac et al., 2010). In accordance with the JBI methodology, our review is specific to a population (teachers in public schools) and outcome (level of MHL in teachers), with a particular focus on context (classrooms). We follow the JBI methodology (Peters et al., 2020) for evidence screening and selection (two reviewers screen each source with a third

reviewer involved to resolve conflicts) and study selection process (narrative and flow diagram format), and without quality appraisal of sources. Data extraction and analysis is further aligned with JBI methodology, which states “the analysis of the extracted data should not involve anything more than basic descriptive analysis (i.e., frequency counts of concepts, populations, or location of studies” (Peters et al., 2020, p. 2125).

Database Search of Peer-Reviewed Literature

A preliminary search of PROSPERO, the Cochrane Database of Systematic Reviews, and *JBI Evidence Synthesis* was conducted and no current or in-progress scoping reviews on the topic were identified. We then began our database search for articles (see Appendix A for search strategy). Articles published in English or French were included. The databases include PsycInfo (EBSCO), MEDLINE (PubMed), ERIC, and CINAHL, and were searched on June 21st, 2021. The search was rerun and updated on May 4th, 2022. The result of the search is reported in a Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) flow diagram (Tricco et al., 2018; see Figure 1). The data extracted from relevant published literature (see Appendix B for data extraction tool) are displayed to include details relevant to the following:

- bibliography (e.g., author and year of publication, journal of publication, country),
- conceptualization (e.g., purpose of study, definition and citation used for defining MHL),
- design (e.g., scale used to measure MHL, study design),
- sample (e.g., size, teacher type, school type), and
- results (e.g., level of MHL in teachers, key findings of surveys).

Data were organized based on pre-service and in-service teacher studies, and subsequently classified into themes using content analysis. A discussion accompanies the tabulated data to describe how the results relate to the research objective.

Results

Summary of Included Articles

The database searches resulted in the screening of 601 studies. Relevant papers were hand-searched for additional references not captured by our database search. After 127 duplicates were removed, we screened 474 articles, deeming 433 irrelevant (see Figure 1). This resulted in 41 full-text studies to screen, of which six were excluded. A total of 35 articles were reviewed. Results are categorized by

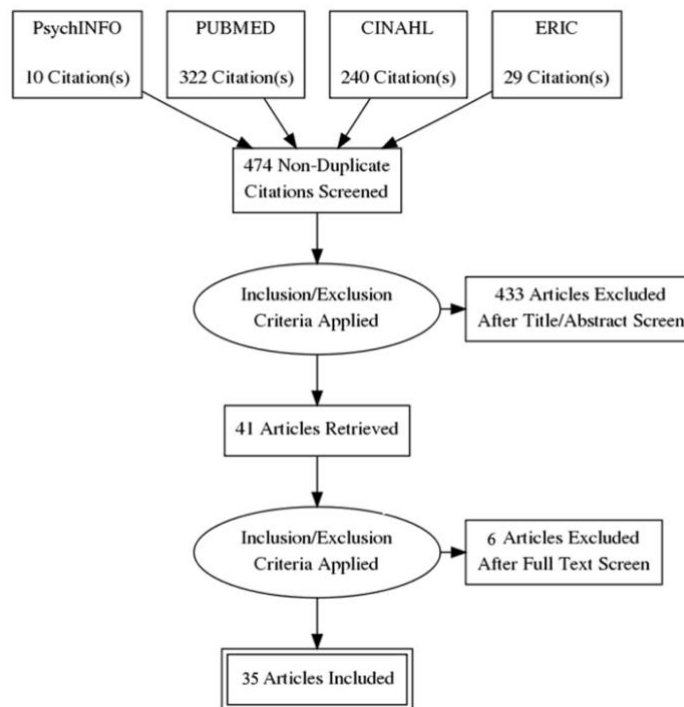
bibliographic details (see Appendix C) and study characteristics (see Appendix D).

Bibliographic Details

The majority of the research was conducted in Asia ($N = 11$; Japan = 2, Vietnam = 2, India = 2, Malaysia = 1, Cambodia = 1, Taiwan = 1, Sri Lanka = 1, Pakistan = 1), followed by Canada ($N = 9$), Africa ($N = 8$; Kingdom of Eswatini = 1, Malawi = 3, Tanzania = 3, Nigeria = 1), United States ($N = 5$), Europe ($N = 3$; Norway = 1, Portugal = 1, Scotland = 1), and Australia ($N = 2$). The total number of countries exceeds the number of articles ($N = 35$), as some studies took place in more than one country. Before the year 2016, only five articles on teachers' MHL were published (in 2004, 2011, 2013, 2014, and 2015). Between 2016 and 2022, an increase in articles can be observed, as a total of 30 were published. The majority of the articles were

Figure 1

Identification of Peer-Reviewed Articles From Database Search



published in 2019 ($N = 6$) and 2021 ($N = 7$) so far. The years 2016 ($N = 4$), 2018 ($N = 5$), and 2020 ($N = 4$) also saw an increase in the amounts of articles being published, while the years 2017 ($N = 2$) and 2022 (as of May; $N = 2$) saw a slight decrease in the number of articles being published.

Of the articles focused on pre-service teachers ($N = 8$), most were from Canada ($N = 6$), with one additional study from Scotland and Australia and another from the United States. Of the articles focused on in-service teachers ($N = 28$) most were from Asia ($N = 10$ [in 11 countries]; Japan = 2, India = 2, Vietnam = 2, Malaysia = 1, Cambodia = 1, Pakistan = 1, Taiwan = 1, and Sri Lanka = 1), followed by Africa ($N = 8$; Malawi = 3, Nigeria = 1, Tanzania = 3, Kingdom of Eswatini = 1), the United States ($N = 4$), Europe ($N = 2$ Norway = 1, Portugal = 1), and Canada ($N = 3$). One article, included in the in-service teachers category, surveyed both in-service teachers and professional staff.

Conceptualization of MHL

Across the 35 articles, most provided a definition of MHL ($N = 29$; 81%). The most cited definitions ($N = 11$) referred to Jorm et al. (1997a). Either the short or long form of their definition was used:

Short form: Knowledge and beliefs about mental disorders which aid their recognition, management or prevention.

Long form: MHL is defined as the ability to gain access to, understand, and use information in ways which promote and maintain good mental health. It refers to knowledge and beliefs about mental disorders which aid their recognition, management or prevention including the ability to recognize specific disorders; knowing how to seek mental health information; knowledge of risk factors and causes, of self-treatments, and of professional help available; and attitudes

that promote recognition and appropriate help-seeking. (p. 182)

Additionally, the other most-cited definitions were the ones from Jorm (2012; $N = 7$), Kutcher, Bagnell, & Wei (2015; $N = 5$), Jorm (2000; $N = 3$), and Kutcher, Wei, & Coniglio (2016; $N = 3$). In a handful of articles, no MHL definition was provided ($N = 7$; 20%).

Jorm's (2012) definition is the following:

The ability to gain access to, understand, and use information in ways which promote and maintain good mental health. It refers to knowledge and beliefs about mental disorders which aid their recognition, management or prevention including the ability to recognize specific disorders; knowing how to seek mental health information; knowledge of risk factors and causes, of self-treatments, and of professional help available; and attitudes that promote recognition and appropriate help-seeking. (p. 231)

Kutcher, Wei, & Coniglio (2016) further refined this conceptualization to emphasize the maintenance of good mental health, understanding of and empowerment to seek out treatment, and reduction of stigmatizing attitudes toward mental health disorders.

MHL was either examined in terms of specific disorders ($N = 8$), general mental illness ($N = 23$), or both ($N = 2$). The medical perspective used to examine MHL was not explicitly reported in two articles. Among the studies examining specific disorders, the most mentioned disorder was depression ($N = 7$), followed by schizophrenia ($N = 2$), anxiety ($N = 1$), substance abuse ($N = 1$), psychosis ($N = 1$), and post-traumatic stress disorder ($N = 1$).

Design

The most reported study design across all the articles was cross-sectional ($N = 16$), followed by program evaluation ($N = 9$). Other, less common designs in this case were used in a total of ten articles: randomized control trial (N

= 2), and longitudinal design ($N = 1$), including a feasibility study ($N = 1$), cross-sectional analytical and pre/post intervention methodology ($N = 1$), qualitative research ($N = 1$), cohort study ($N = 1$), prospective cohort study ($N = 1$), a repeated measures/within participants design ($N = 1$), and a quasi-experimental research design ($N = 1$).

MHL was measured with a total of 43 scales across all articles. The most used measurement method was a questionnaire ($N = 24$), while vignettes were nearly never used on their own ($N = 1$). However, a combination of both questionnaires and vignettes was used in eight articles. The selected measures were not reported in two articles. The most used questionnaires were the Mental Health Literacy Scale (MHL; O'Connor & Casey, 2015; $N = 5$), the Adolescent Depression Awareness Program (ADAP) Depression Knowledge Questionnaire (Hart et al., 2014; $N = 2$), and the Reported and Intended Behavior Scale (Evans-Lacko et al., 2011; $N = 2$).

Here is an example of a vignette from Whitley and Gooderham (2016):

Chris is an 8-year-old boy in Grade 2 at Sunshine elementary school. Chris's teacher, Jayne, has some concerns about Chris's behaviour. Chris has always done well in school, getting good marks and finishing his work quickly. Over the past couple of months, however, Jayne has noticed that Chris is frequently unfocused, and his work is rarely finished at the end of the class. As a result, his grades are starting to drop. He has also stopped participating in intramural soccer, saying that he was tired and having lots of headaches. Jayne has also seen Chris snap at his classmates over pretty minor things like humming while working at their desks or asking to borrow an eraser. (p. 91)

Examples of scale questions include the following: "Seeing a mental health professional means you are not strong enough to manage

your own difficulties," "People with a mental illness could snap out of it if they wanted" (O'Connor & Casey, 2015), "The cause of Major Depression is well known," "A person with depression always feels sad" (Hart et al., 2014), "Are you currently living with, or have you ever lived with, someone with a mental health problem?" and "In the future, I would be willing to work with someone with a mental health problem" (Evans-Lacko et al., 2011).

Some authors developed their own questionnaire ($N = 13$), including questions such as the following: "My efforts to support mental health/social, emotional, and behavioural disorders make a difference in the lives of my students," "Whether or not I support student mental health/SEB is entirely within my control," (Dods, 2016) "A person can have a mental illness without being stressed out," and "Depression and Bipolar Disorder are two examples of mental illnesses called mood disorders" (Kutcher et al., 2013).

Of the articles that focused on pre-service teacher MHL ($N = 8$), questionnaires were used in five of the articles. A close reading of selected non-fiction was the primary activity in one article, a vignette was used in one article, and the measure of choice was not reported in one article. Of the articles that focused on in-service teacher MHL ($N = 27$), questionnaires/scales were used in 18 of the articles, while eight articles used a combination of vignettes and questionnaires. One article did not report their choice of measure.

Sample

Sample sizes varied from 25 to over 400 teachers ($N = 7$). The sample size was not reported in two articles. The sample was characterized as pre-service teachers ($N = 5$) or BEd/Bachelor of Education Students ($N = 3$) for a total of eight studies involving pre-service teachers, and in-service teachers ($N = 27$) or professional support staff ($N = 1$) for a total of 28 studies involving in-service teachers. School

types included public ($N = 20$), private ($N = 8$), specialized ($N = 3$), Catholic ($N = 2$), and not reported ($N = 10$). The total school type exceeds the number of articles ($N = 35$) because some studies took place in more than one school type.

Reported Outcomes

With regard to reported levels of MHL, low levels of MHL among teachers were identified in seven articles, medium/moderate levels in two articles, high levels in three articles, and mixed levels in one article (low to medium). MHL levels were also described as “improved” ($N = 10$), “below average level” ($N = 1$), and “less than satisfactory” ($N = 1$). The level of MHL was not explicitly reported in 11 articles.

Of the articles focused on pre-service teacher MHL ($N = 8$), reported levels of MHL were as follows: improved ($N = 3$), low ($N = 1$), and medium ($N = 1$). MHL levels were not explicitly reported in three articles. Of the articles focused on in-service teacher MHL ($N = 27$), reported levels of MHL were as follows: improved ($N = 7$), low ($N = 5$), high ($N = 3$), and medium ($N = 1$). MHL was also reported as “less than satisfactory” in one article and “below average level of MHL” in one article. MHL was not explicitly reported in nine articles.

We did not complete a deeper scan of these various outcomes and how they are interpreted, nor did we assess the quality of the outcomes, typically the task of a systematic review.

Discussion

We took stock of the evidence base of pre- and in-service teacher MHL by mapping the literature on MHL in teachers to further clarify empirical measurement in this literature. In the following narrative description, we discuss major themes to emerge from our content analysis of the results. Then we briefly discuss the theoretical framework, design, and methods within the literature.

Canada Leads in Teacher Mental Health Literacy

While Asia had the most studies in the field of teacher MHL ($N = 11$), these particular teacher MHL studies are spread out over eight countries. We found that Canada had the highest number of studies ($N = 9$) of any single country in the reviewed articles. Furthermore, of these Canadian studies, two-thirds involved pre-service teachers ($N = 6$). Considering we found only eight total pre-service teacher studies worldwide, Canada clearly leads the field in evaluating pre-service teacher MHL.

A closer look at the Canadian studies revealed that all were published between 2016 and 2021. More than half of these studies were published between 2018 and 2021 by authors who have worked together to create MHL resources for pre-service teachers. When looking at the authorship of publications on pre- and in-service teacher education ($N = 11$), many involve this same authorship team. Of the seven studies completed in Africa, five were co-authored by the lead of that team, Senator Stan Kutcher, as part of his role as the SunLife Chair in Adolescent Mental Health at the IWK Health Centre in Halifax, Nova Scotia ($N = 2$, Malawi; $N = 3$, Tanzania).

Within the mixed MHL outcomes that we found ($N = 25$), 11 articles or almost 50% of the papers sharing MHL outcomes involved *TeenMentalHealth.org* and/or academics associated with this team. Within the 11 papers, eight specifically reported high or improved MHL scores for pre- and in-service teachers, which represents 62% of the total articles ($N = 13$) that reported high or improved MHL scores for pre- or in-service teachers. In the Yamaguchi et al. (2020) systematic review, outcomes from several of the *TeenMentalHealth.org*-led studies were of fair to good quality.

Spiker and Hammer (2019) have argued that the benefits of MHL as a unified construct or theory include helping practitioners, program developers, and policy-makers make informed

decisions about how to improve MHL at both the individual and community level. MHL evaluations would benefit from a more explicit account of how MHL serves as the main theoretical framework or construct underlying the research. As noted by Spiker and Hammer (2019), good theory is testable. Once the main constructs and interrelationships between those constructs are clear, they can be either substantiated or replaced. Similarly, MHL as a theory can then also be compared to other prominent theories. Such testing can lead to a more robust theory of MHL and more shared work among researchers, perhaps leading to greater practice-related outcomes.

Bjornson et al. (2018) claimed to have found no specific MHL measures that relate to the construct of positive mental health; however, there are specific knowledge questions related to achieving and maintaining good mental health in most of Kutcher's evaluations. Bjornson et al. (2018) developed a measure of positive mental health as a state, which is different from MHL instruments that evaluate knowledge of how to achieve positive mental health. This example elucidates some possible current debate and/or confusion surrounding MHL as a construct that measures mental health states or the literacy of participants, which may or may not include questions on future situations related to help-seeking or stigma (Wei et al., 2019).

Measurement and Design Limitations in Teacher MHL Research

In our review, MHL was most assessed at a single time point using a questionnaire, predominantly the MHLS (O'Connor & Casey, 2015). Systematic and scoping reviews of other available MHL measures reveal that many are of questionable psychometric quality (O'Connor & Casey, 2015; Wei et al., 2015). The preponderance of the MHLS in our review is encouraging from a psychometric standpoint, as this measure has been shown to be a valid and

reliable measure of MHL. However, the MHLS was not constructed to examine MHL specifically within teacher populations. Although the MHLS has been shown to discriminate MHL between mental health professionals and community samples (O'Connor & Casey, 2015), its sensitivity in accurately discriminating between levels of MHL within teacher populations is unknown. More recent work by Wei et al. (2019) has resulted in the development of the Mental Health Literacy Tool for Educators (MHL-ED). This measurement tool builds upon and validates the MHL measurement instruments commonly used in the works by Kutcher and colleagues (Carr et al., 2018; Gilham, Wei, et al., 2021; Kutcher, Gilberds, Morgan, Greene, et al., 2015; Kutcher et al., 2019; Kutcher, Wei, Gilberds, et al., 2016; Kutcher et al., 2013), and may provide a more robust means of assessing specific facets of MHL as they relate to educational contexts, helping to better identify gaps in teacher MHL. No studies directly accounted for socio-ecological and social/structural determinants of health (SDOH) impacts on mental health, though arguments were made for schools as important locations for teachers to serve as gateway providers, especially in locales where psychiatric services are direly lacking. Once gaps in teacher MHL have been accurately identified, efforts can be made to close those gaps through MHL training.

Several studies in our review sought to examine the effectiveness of teacher MHL training. High quality assessment of the MHL of teachers in response to training initiatives ideally requires the use of randomized control trials and validated pre and post measures of MHL, such as the MHLS. These designs are typically costly, time consuming, and present with ethical challenges such as eventually providing control groups with MHL training or education. Systematic constraints within educational contexts often make such studies impractical. Teachers are usually working within tight time constraints, and therefore

assessing teacher MHL at a single time point through quick and easily completed survey designs is most practical. The predominance of cross-sectional designs and the use of surveys or questionnaires, as noted within our review, demonstrates these constraints.

We highlight the observation that, of the studies that used questionnaires to assess teacher MHL, many used vignettes, either in combination with additional survey questionnaires or, rarely, in isolation. The use of vignettes to assess MHL dates back to the earliest community surveys of MHL, conducted by Jorm et al. (1997a) in their seminal paper. Vignette measures typically involve presenting participants with a short written description of a fictional individual exhibiting behaviours indicative of a mental health disorder. Participants read the vignette and are asked to provide their interpretations of the behaviours depicted (e.g., level of concern, diagnostic label, recommended referral actions, beliefs about treatments, outcomes, causes, risk factors, likelihood of interacting with people like those in the vignette, the health status of the fictitious individual, and stigmatizing attitudes toward the person depicted in the vignette). In lieu of conducting lengthy interviews or behavioural observations of teachers in their real-world classrooms, vignette designs provide an ecologically valid means of assessing mental health knowledge and attitudes. Medical research frequently employs clinical vignettes to evaluate training and the quality of physician care. Peabody et al. (2000) have demonstrated the effectiveness of this method in approximating real-world decision making.

The utility of vignettes to explore MHL is particularly relevant for pre-service teachers who may have limited teaching experience to rely on when attempting to apply learned MHL concepts to their teaching. For example, vignette measures have been employed to assess the ability of teachers to identify emerging psychopathologies in students. Page (2021) conducted a study that revealed a significant

correlation between teachers' ability to accurately identify clinically significant levels of mental health distress—as measured through vignettes—and standardized measures of mental health literacy (MHL). These results hold promise in supporting the use of vignette measures as a low-cost, practical means of assessing the interface between MHL learning and pedagogic application, including timely and accurate referrals to care. Additional studies are required to continue to build the evidence base. Although vignette measures inherently carry with them methodological limitations, they may represent the most economical means of assessing gaps in help-seeking pathways (e.g., MHL) that hinder the judicious provision of mental health resources in educational contexts.

Limitations and Future Directions

This review was limited by the search strategy and scope. Our search strategy was developed to identify all peer-reviewed literature that empirically measured MHL in teachers and required sifting through databases to identify papers relevant to this population. Our review does not include information from grey literature, nor did we assess the quality of the outcomes, typically the task of a systematic review.

The most used MHL instruments in the reviewed articles considered MHL a general competency and not specific to the school setting (e.g., no reporting of students, school resources, guidance counselling support, school board psychologists). In the future, surveys may utilize more recent measures that have been designed and validated for teachers (e.g., Mental Health Literacy Questionnaire for Teachers [MHLQT; Leeper, 2018], or the MHL-ED) to get the most accurate picture of teacher MHL.

Future research on teacher MHL surveys should assess and report factors that influence the teacher's ability to become mental health literate, which could help enable appropriate design of surveys (i.e., measuring determinants

of, as well as level of, MHL), in turn informing future implementation of MHL interventions and programs. Finally, a synthesis of MHL levels across different population groups (e.g., students, health professionals) would improve generalizability and add breadth to the current evidence base.

Research on student MHL involves training teachers about MHL so that they can teach MHL content to students, but teachers' MHL is not evaluated during these studies (Gilham, Neville-MacLean, & Atkinson, 2021 for example). It is likely that teacher MHL has also increased because of these student MHL training programs and the delivery of them by teachers. Future research should endeavour to assess both teacher and student MHL when evaluating programs delivered by teachers to increase student MHL.

Conclusion

We mapped the peer reviewed literature to understand themes in the field of pre- and in-service teacher MHL. Worldwide, pre- and in-service teacher MHL is largely conceptualized by definitions by Jorm, and Canada has emerged as a leader in this field. Methodologically, we suggest that future pre-service teacher MHL work involve the use of vignettes, in the absence of more in-service-like teaching experiences. Future MHL projects for this population should include content related to the SDOH, including their intersectionality, and create or adapt evaluations that can assess teacher understanding of these important facets associated with mental health.

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Appendix A

Search Strategy

#	Query	PUBMED	PsycInfo	CINAHL	ERIC
5	("mental health"[Title/Abstract] OR "mental hygiene"[Title/Abstract] OR ("mental health"[Subject] OR "mental hygiene"[Subject])) AND ("literacy"[Title/Abstract] OR "illiteracy"[Title/Abstract] OR "illiterate"[Title/Abstract] OR "literate"[Title/Abstract]) AND (educat* OR teach* [Title/Abstract] OR educat* OR teach* [Subject]) AND (intervention OR program OR train* [Title/Abstract] OR intervention OR program OR train* [Subject])	322	10	240	29
4	(literacy[Title/Abstract] OR illiteracy[Title/Abstract] OR illiterate[Title/Abstract] OR literate[Title/Abstract]) OR (literacy[Subject] OR illiteracy[Subject] OR illiterate[Subject] OR literate[Subject])	29,462	9,557	17,312	13,737
3	("mental health"[Title/Abstract] OR "mental hygiene"[Title/Abstract]) OR ("mental health"[Subject] OR "mental hygiene"[Subject])	187,957	47,632	104,848	9,958
2	(educat* OR teach* [Title/Abstract] OR educat* OR teach* [Subject])	785,714	122,658	398,450	496,139
1	(intervention OR program OR train* [Title/Abstract] OR intervention OR program OR train* [Subject])	1,570,104	153,807	836,907	236,345

Note. Limited to French and English, no time limit imposed. Date of search: May 4, 2022.

Appendix B

Data Extraction Instrument

<p>Title</p> <p>Journal</p> <p>Country in which the study was conducted:</p> <ol style="list-style-type: none"> 1. United States 2. UK 3. Canada 4. Australia 5. Other <p>Aim/purpose of study</p> <p>Theoretical background/framework if given</p> <p>Reported theoretical background?</p> <ol style="list-style-type: none"> 1. Yes 2. No <p style="text-align: center;"><u>MHL conceptualization</u></p> <p>Definition/description of MHL</p> <p>What are the basic components?</p> <ol style="list-style-type: none"> 1. Recognition 2. Attitudes 3. Knowledge 4. All three 5. Other <p>Who do they cite when defining MHL?</p> <p>Anticipated outcome of MHL</p> <p style="text-align: center;"><u>Methods</u></p> <p>MHL measurement</p> <p>Type of MHL</p> <ol style="list-style-type: none"> 1. Overall 2. Disorder specific 3. Both 4. Other <p>Which disorder?</p> <p>How is MHL measured?</p> <ol style="list-style-type: none"> 1. Survey/questionnaire (quantitative) 2. Vignette (qualitative) 3. Both 4. Other 	<p>Scale or vignette used (name and citation)</p> <p>Was individual's own mental health measured?</p> <p>Positive mental health</p> <p>If educator's own mental health was measured, which scale/measure was used?</p> <p style="text-align: center;"><u>Design</u></p> <p>Study design</p> <ol style="list-style-type: none"> 1. Randomized control trial 2. Program evaluation 3. Cross-sectional study (e.g., survey) 4. Longitudinal study (e.g., survey) 5. Qualitative research 6. Other <p style="text-align: center;"><u>Participants</u></p> <p>Population</p> <p>Description of educators</p> <ol style="list-style-type: none"> 1. Pre-service teachers 2. BEd/Bachelor of Education students 3. Teacher candidates 4. Teachers (employed in school setting) 5. Guidance counsellors 6. Professional support staff (e.g., social worker, school psychologist) 7. Other <p>Population description</p> <p>E.g., elementary vs. secondary</p> <p>Type of school</p> <ol style="list-style-type: none"> 1. Public 2. Private 3. Charter (hybrid of public/private) 4. Catholic 5. Specialized (e.g., learning disabilities, exceptionalities, justice) 	<p>Total number of participant educators</p> <p style="text-align: center;"><u>Social determinants of mental health</u></p> <p>Which socio-ecological levels were considered?</p> <p>Beyond the individual</p> <ol style="list-style-type: none"> 1. Classroom 2. School 3. Neighbourhood/community 4. Region/state/province 5. Society/culture <p>Key findings</p> <p>Level of MHL reported in educators</p> <p style="text-align: center;"><u>Program details</u></p> <p>Program description</p> <p>Barriers</p> <p>Facilitators</p> <p>Program effectiveness</p> <ol style="list-style-type: none"> 1. Overall, yes 2. Overall, no 3. Unsure/unreported 4. Other <p>Summary of program effects</p> <p>Conclusion</p>
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Appendix C

Characteristics of Mental Health Literacy Conceptualization in Educator Surveys

Authors	Aim/Purpose of study	MHL definition	Basic MHL components	MHL definition citation	Theoretical framework	Socio-ecological levels	Type of MHL
Aluh et al., 2018	To assess the MHL of secondary school teachers in Southeast Nigeria with specific focus on their knowledge of depression	Not reported	Not reported	Not reported	Not reported	<i>Region/state/province</i> There are currently less than 150 psychiatrists in Nigeria, which has a population of 180 million, so teachers have to be able to recognize symptoms of depression and be able to refer students to appropriate mental health care providers.	Disorder Specific: depression
Armstrong et al., 2019	To identify and examine commonalities and differences in MHL of pre-service teacher education for the purpose of bettering the programming and support systems for teachers once they enter the field	MHL is defined as consistent, coherent, high-quality knowledge about child mental health and the confidence to use this knowledge	Knowledge	Jorm, 2012	Not reported	Not reported	Not reported
Atkins & Rodger, 2016	(a) To evaluate the first iteration of the course and	MHL is defined as an enhanced understanding	Other: awareness, dispositions,	Wei & Kutcher, 2014b;	Social justice framework	<i>Society/culture</i> Since all these participants were pre-service teachers	Not Reported

	teacher candidates' progress toward the five learning objectives, and (b) to invite teacher candidates to share their thoughts about what they were learning and about the personal and professional meaning of their learning	of how to obtain and maintain positive mental health... [and] the awareness, dispositions, beliefs, and values that are necessary first to orient educators to the needs of children and youth, and then to enhance their ability to support students' mental health in school	beliefs and values	Weston et al., 2008		from Western University, they were all graduate students. A study done by Doring, Hodge, and Heo (2014) found that graduate students were more willing to share personal information with their teachers—this meant that they did better on MHL scores because they were willing to share more of their experiences with their peers.	
Carr et al., 2018	To increase mental health knowledge, decrease the stigma and maintain these outcomes at a 3-month follow up	MHL is defined as understanding how to obtain and maintain good mental health, understanding mental disorders and their treatments, developing capacities to decrease stigma and developing capacities to enhance help-seeking efficacy	Recognition, attitudes, knowledge, and other: self-seeking efficacy	Kutcher et al., 2015; Kutcher, Wei, & Coniglio, 2016	Not reported	<i>Classroom/school</i> Before the program was in the classrooms, MHL wasn't the greatest. But when the classrooms were given the "guide pre-service professional development program" (GPPDP), their scores rose significantly. The program in the schools enhanced pre-service educators' understanding of mental health as well as their ability to help others.	Overall

Dang et al., 2018	To assess levels of mental health literacy among Vietnamese teachers, which also helped determine the extent to which mental health literacy training needed to be emphasized in our school mental health programs	MHL is defined as knowledge and beliefs about mental disorders and their treatment, which aid their recognition, management, or prevention	Recognition, attitudes, and knowledge	Jorm, 2000	Not reported	Not reported	Overall
Delgadillo et al., 2020	To examine teachers' preferences for three different interventions varying in intensity and explore attributes and levels associated with a preferred intervention intensity	MHL is defined as the attitude and knowledge of mental disorders that aid their recognition, prevention, or management	Recognition, attitudes, and knowledge	Jorm et al., 1997a	Not reported	<i>Classroom/school</i> No additional socio-ecological information	Overall
Dods, 2016	To establish a baseline understanding of the mental health and MHL of Canadian teacher candidates	MHL is defined as the knowledge, attitudes, beliefs, and skills related to mental health that emerge	Attitudes and knowledge	Jorm et al., 1997a	Theory of planned behaviour	Not reported	Overall

		from experience, education, and existing belief systems					
Ely, 2018	To examine educators' perceptions of current mental health needs within a prestigious private school in the Northeastern United States	MHL is defined as knowledge and beliefs about mental disorders that aid their recognition, management or prevention	Recognition, attitudes, and knowledge	Jorm et al., 1997a	Not reported	<i>Classroom/school</i> There is a gap in educator general understanding related to the ability to preserve optimal levels of student mental health in the classroom. Also, if the educator has been in the classroom working for 11 years or more, they tend to feel more prepared and have the ability to deal with mental health situations, rather than an educator who has been there less than 11 years.	Overall
Evans et al., 2021	To determine the acceptability and feasibility of delivering a mental health training initiative to teachers in Malawi to better enable them to recognize and cope with school children who had been exposed to trauma and substance misuse	MHL is defined as improving mental health knowledge and awareness	Knowledge	Jorm et al., 1997a; Reavley & Jorm, 2011; Jorm, 2012; Wei et al., 2013; Luke et al., 2016	Not reported	<i>Society/culture & neighbourhood/community</i> In this city in Malawi, there is only one outpatient mental health service, with four mental health nurses providing care to an age-blind population, none with specialism in child mental health. Teachers were not linked into the mental health service, so they were unaware what services could be available or how to access or signpost children there.	Disorder specific: substance abuse and trauma

Gilham, Neville-MacLean, & Atkinson, 2021	To examine changes in MHL, perceived stress, and teacher efficacy for inclusive practices in pre-service teachers in elementary and secondary year streams, who took a mandatory 36-hour, nine-week, face-to-face BEd course called Inclusion Two	MHL is defined as understanding how to obtain and maintain good mental health, understanding mental disorders and their treatments, developing capacities to decrease stigma, and developing capacities to enhance help-seeking efficacy, or knowing when, where, and how to seek help	Recognition, attitudes, and knowledge	Kutcher, et al., 2015; Kutcher, Wei, & Coniglio, 2016	Not reported	Not reported	Overall
Ginige et al., 2021	To develop and deliver a teacher-training program to improve MHL on emotional and behavioural disorders of childhood and adolescents	MHL is defined as knowledge and beliefs about mental disorders that aid their recognition, management and prevention	Knowledge	Jorm et al., 1997a	Not reported	Not reported	Overall
Holtz, 2017	To explore teachers' knowledge and awareness of mental health	MHL is defined as knowledge and beliefs about mental disorder that aid	Recognition, attitudes, and knowledge	Canadian Alliance on Mental Illness and Mental	Social cognitive theory	<i>Classroom/school & Neighbourhood/community</i> Teachers in this school specifically reported taking approximately six separate	Overall

	and how prepared they were to respond to issues concerning adolescent mental health	in their recognition, management or prevention		Health, 2007		actions when they recognize that they might have a student with significant emotional or behavioural challenges. However, teachers need help too, and for more improvements additional training and more support from staff is needed.	
Hsu et al., 2019	To explore preschool teachers' attitudes toward the relationship between online learning communities and mental health literacy and clarify the moderating effect of enthusiasm for engagement in this relationship	MHL is defined as an individual's knowledge and beliefs about mental health disorders (their own and those of others), as well as self-help strategies for reducing mental disorders	Knowledge	Dias et al., 2018	Not reported	Not reported	Overall
Imran et al., 2022	To demonstrate the effectiveness of a teacher training programme using the WHO-EMRO Manual of School Mental Health in improving teachers' mental health literacy, self-efficacy, and	MHL is defined as knowledge and beliefs about mental disorders that aid their recognition, management, or prevention	Recognition and knowledge	Jorm, 2012; Kutcher et al., 2013	Not reported	Not reported	Overall

	confidence in helping students with mental health difficulties						
Kurumatani et al., 2004	To characterize the general public's mental health literacy in Japan and Taiwan, and what is reported here is part of a larger survey of Japanese and Taiwanese elementary school teachers	MHL is defined as knowledge and beliefs about mental disorders that aid their recognition, management or prevention	Not reported	Jorm, 2000	Not reported	Not reported	Disorder specific: schizophrenia
Kutcher et al., 2013	To examine the impact of an educator training programme designed to support educators in the delivery of a high school mental health curriculum within their classrooms, such as health class	MHL is defined as encompassing the capacity to understand what constitutes positive mental health and strategies to achieve positive mental health, including knowledge of mental disorders based on evidence-based research; promotes appropriate attitudes	Attitudes, knowledge, and other: help-seeking	Kelly et al., 2007	Not reported	<i>Classroom/school</i> Schools can play an important role in the promotion of positive mental health as well as an integral role in the pathways into mental health care for adolescents. Schools provide an opportunity for mental health literacy to be embedded into the curriculum for a more sustained effect with students. Additionally, as many mental disorders manifest and are typically identified in young people of secondary school	Overall

		towards those living with mental disorders; and enhances the capacity to seek mental health care from appropriate health care providers should that be required				age, improved mental health literacy through embedded curriculum in this population may have impact on improving entry into mental health care by enhancing the ability to self-identify the need for care and by decreasing stigma associated with obtaining care.	
Kutcher, Gilberds, Morgan, Greene, et al., 2015	To determine the impact of a training programme for educators on how to use a culturally adapted school mental health curriculum resource (the African Guide: Malawi version [AGMv]) on the mental health literacy of educators in the Lilongwe, Mchinji and Salima districts of central Malawi	MHL is defined as knowledge and beliefs about mental disorders that aid their recognition, management and prevention	Not reported	Jorm et al., 1997a	Health Literacy	<i>Region/state/province & society/culture</i> There are currently only four psychiatrists to serve the total population of 15.7 million in Malawi, and no child and adolescent psychiatrists (The World Health Organization, 2011, as cited in Kutcher, Gilberds, Morgan, Greene, et al., 2015). There is also a limited number of other mental health care professionals, such as social workers, psychologists and psychiatric nurses. There are three psychiatric hospitals in the entire country, and these are institutions that mostly service individuals who live with the severest and most disabling mental illnesses. Mental health services targeted toward common	Overall

						<p>mental disorders are scarce, as are mental health services specifically for adolescents. Furthermore, mental health promotion and programmes designed to target mental health literacy are uncommon, and the focus tends to be on service delivery for the most severe mental disorders. In addition to the scarcity of services for common mental disorders, poor understanding of mental health and mental illness persists in Malawi. In a 2013 cross-sectional survey of over 2000 adolescents conducted by the Grand Challenges Project team in central Malawi, 95% of the respondents attributed the cause of mental disorders to alcohol and illicit drug abuse, 92.8% to brain disease, 82.8% to spirit possession, and 76.1% to psychological trauma.</p>	
<p>Kutcher, Wei, Gilberds, et al., 2016</p>	<p>To evaluate the impact of a culturally adapted MHL refresher training resource in Tanzania</p>	<p>MHL is defined as how to obtain and maintain positive mental health; understanding mental disorders and</p>	<p>Recognition, attitudes, and knowledge</p>	<p>Kajawi et al., 2016; Kutcher, et al., 2015; Kutcher, Wei, & Coniglio, 2016</p>	<p>Health Literacy</p>	<p>Not reported</p>	<p>Both: overall and depression</p>

		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					
Kutcher et al., 2017	To investigate the impact of the African Guide resource at three time points over a one-year period following its implementation in a sample of Tanzania schools	MHL is defined as how to obtain and maintain good mental health, understanding mental disorders and their treatments, decreasing stigma related to mental disorders and enhancing help-seeking efficacy	Recognition, attitudes, and knowledge	Kutcher et al., 2015	Not reported	<i>Classroom/school, neighbourhood/community, region/state/province, & society/culture</i> Prior to the African Guide training, teachers reported that they had not identified any students at high risk of a mental disorder and that no students had approached their teachers with the concern that they may have a mental disorder. Over the course of the year since the introduction of the African Guide in their schools, 399 students approached their teachers about their personal mental health	Disorder specific: depression

						<p>concerns, and teachers referred 108 students to trained community health care providers for assessment for a potential mental disorder (specifically depression).</p> <p>schools are an institution that can be used to address and improve various aspects of mental health among young people (students) as well as teachers. Available data from Tanzania suggests that the need to address mental health in schools is substantive.</p> <p>Tanzania, a low-income country in sub-Saharan Africa, is one of the poorest countries in the world and has a proportionally very high distribution of youths in its population: 60 percent are aged under 25 (Central Intelligence Agency, 2016). The formal Tanzanian education system includes no mental health curriculum resources</p>	
Kutcher et al., 2019	To develop, apply, and evaluate an effective and frugal mental health policy and programmatic	MHL is defined as 1) enhancing capacity to obtain and maintain good mental health; 2) enhancing	Recognition, attitudes, and knowledge	Wei & Kutcher, 2014b	Not reported	Not reported	Disorder specific: depression

	<p>framework that can simultaneously improve mental health literacy and enhance capacity for improved access to effective mental health care for young people with depression</p> <p>- Improving mental health literacy of communities, youth, and teachers; enhancing case identification and linking schools to community health clinics; improving the capacity of community health care providers to identify, diagnose, and effectively treat depression in youth</p>	<p>understanding of mental disorders and their treatments; 3) decreasing stigma related to mental illness; and 4) enhancing help-seeking efficacy.</p>					
<p>Langeveld et al., 2011</p>	<p>To evaluate the effects of an early detection</p>	<p>MHL is defined as knowledge and beliefs</p>	<p>Recognition, attitudes, and</p>	<p>Jorm et al., 1997a</p>	<p>Norwegian National Plan for</p>	<p><i>Classroom/school</i> A programme entitled "Mental Health in Schools" is</p>	<p>Disorder specific: psychosis</p>

	<p>programme composed of an ongoing information campaign (IC), low-threshold access to an early detection psychosis team and mental health literacy training programme on high school teachers' literacy about psychosis symptoms and on teachers' confidence in the benefits of psychosis treatment on the mental health of pupils with psychotic symptoms</p>	<p>about mental disorders that aid recognition, management or prevention</p>	<p>knowledge</p>		<p>Improved Mental Health Services</p>	<p>part of the government's strategic plan for the mental health of children and young people. The early treatment and intervention in psychosis (TIPS) project in Norway was designed for early case-identification in first-episode psychosis. The Rogaland County site had access to TIPS, a mental health literacy program, information campaigns/educational resources, and early detection teams for psychosis. Teachers at the study site in Rogaland with an ongoing IC and access to an outreaching team for early detection and treatment of psychosis demonstrated a higher level of confidence in the effects of treatment on psychosis.</p>	
<p>Leeper, 2018</p>	<p>To examine personal wellness factors and mental health literacy among teacher candidates and how these factors may contribute</p>	<p>MHL is defined as knowledge and beliefs about mental disorders that aid their recognition, management or prevention.</p>	<p>Recognition, attitudes, and knowledge</p>	<p>Jorm et al., 1997a; Jorm, 2012</p>	<p>Gerald Caplan's Consultee-Centered Consultation (Caplan, 1995)</p>	<p>Not reported</p>	<p>Overall</p>

	to their perceived behaviour management abilities						
Miller et al., 2019	To explore the depression literacy and stigma of teachers and their students	MHL is defined as knowledge and beliefs about mental disorders that aid their recognition, management or prevention	Recognition, attitudes, and knowledge	Jorm et al., 2010	Not reported	Not reported	Disorder specific: depression
Nguyen et al., 2020	To evaluate a school-based MHL program, the "Mental Health & High School Curriculum Guide" ("The Guide"), implemented separately in (1) Vietnam and (2) Cambodia, following adaptations made by the research team	MHL is defined as knowledge and beliefs about mental disorders and their treatment, which aid their recognition, management or prevention	Recognition, attitudes, and knowledge	Jorm, 2000	Not reported	Not reported	Overall
Ngwenya et al., 2022	To estimate the prevalence of correct responses for adolescent	MHL is defined as knowledge and beliefs about mental disorders that	Knowledge	Jorm et al., 1997a	Not reported	<i>Region/state/province</i>	Disorder specific: depression

	depression literacy items among high school teachers in Eswatini and to determine whether teachers' literacy toward adolescent depression varies by urbanicity at scale- and item-levels	aid in their recognition, management, or prevention					
Pereira Amaral et al., 2020	To assess the ProMenteSã program's efficacy and teachers' level of knowledge before and after the application of the training intervention program	MHL is defined as knowledge about factors associated with mental issues and disorders; the capacity to recognize disorders; knowledge about available options and treatment; management interventions in moments of crisis; self-defence against crises; first aid skills to support those who seem to be suffering from mental	Knowledge and recognition	Jorm, 2012; Tay et al., 2018	The program was influenced by the European Framework for Action on Mental Health and Well-being & the WHO's "Mental health action plan 2013-2020"	<i>Neighbourhood/community</i>	Overall

		illness; and knowledge about aid-seeking attitudes					
Prabhu et al., 2021	To assess high school teachers' mental health literacy and predictors	Not reported	Not reported	Not reported	Not reported	<i>Classroom/school</i>	Overall
Tay et al., 2019	To examine effectiveness of a newly developed mental health literacy programme for refugee teachers in Malaysia	Not reported	Not reported	Not reported	Not reported	Not reported	Overall
Ueda et al., 2021	To examine the effectiveness of an MHL educational program for teachers	MHL is defined as knowledge regarding means of preventing mental disorders, ability to recognize when a disorder is developing, knowledge of help-seeking options and available treatments, knowledge of effective self-help strategies	Recognition and knowledge	Jorm et al., 2012	Not reported	<i>Classroom/school</i>	Overall

		for milder problems, and first-aid skills to support others who are developing mental disorders or who are experiencing a mental-health crisis					
Venkataraman et al., 2019	To assess the stigma toward mental illness and the associated factors among higher secondary school teachers in Puducherry, South India	Not reported	Not reported	Not reported	Not reported	Not reported	Overall
Wei & Kutcher, 2014a	To report on a program evaluation on the effectiveness of mental health training of “go-to” educators in early identification of mental disorders, triage and support, and attitudes toward mental illness,	Not reported	Not reported	Not reported	Not Reported	Not reported	Overall

	conducted with the Halifax Regional School Board (HRSB) in the province of Nova Scotia, Canada						
Wei et al., 2020	To investigate whether pre-service teachers will improve their mental health literacy outcomes following the PD session on the Guide, and to investigate whether outcomes will differ when the Guide is presented face-to-face and online as the secondary analysis	MHL is defined as knowing about, obtaining and maintaining mental health, understanding mental disorders and their treatments, reducing stigma, and increasing help-seeking efficacy	Attitudes and knowledge	Kutcher et al., 2015	Not reported	Not reported	Overall
Wei et al., 2021	To report on “Go-To Educator Training” (GTET) implementation in six Canadian provinces between 2012 and 2015 and to investigate	Not reported	Not reported	Not reported	Not reported	Region/state/province	Overall

	whether GTET would have different impacts by locations, gender (male and female), years of professional practice, and the instructor from whom recipients received their training						
Whitley & Gooderham, 2016	To explore the MHL of a sample of pre-service teachers	MHL is defined as knowledge and beliefs about mental disorders that aid their recognition, management, or prevention	Recognition and knowledge	Jorm et al., 1997a	Not reported	Not reported	Overall
Yamaguchi et al., 2021	To assess levels of MHL in Japanese public high school teachers	MHL is defined as knowledge and beliefs that aid in the recognition, management, or prevention of mental health problems	Recognition, attitudes, and knowledge	Jorm et al., 1997a; Jorm, 2012	Not reported	Not reported	Both: overall and depression, schizophrenia, and panic disorder

Appendix D

Characteristics of Mental Health Literacy Survey Design in Educators

Authors	Study Design	MHL Measurement	Measure Citation	Population	Type of School	MHL Level
Aluh et al., 2018	Cross-sectional	Vignette & questionnaire	The Friend in Need Questionnaire (Burns & Rapee, 2006)	104 secondary school teachers	Public	Low
Armstrong et al., 2019	Cross-sectional	Not Reported	Not Reported	24 pre-service teachers	Not reported	Not Reported
Atkins & Rodger, 2016	Qualitative research	Questionnaire	Reading and analyzing nonfiction strategy (Stead, 2014)	7 teacher candidates	Public	Not Reported
Carr et al., 2018	Prospective cohort study	Questionnaire	Mental Health Knowledge & Stigma Survey (developed by authors) SAME Stigma test	60 pre-service teachers	Public	Improved
Dang et al., 2018	Cross-sectional	Questionnaire	Translated version in Vietnam of the Mental Health Literacy Scale (MHLS; O'Connor & Casey, 2015)	353 grade 6-12 teachers	Public	Below average level of MHL
Delgadillo et al., 2020	Cross-sectional	Questionnaire	Mental Health Literacy Scale (MHLS; O'Connor & Casey, 2015)	229 elementary teachers	Public	Not reported
Dods, 2016	Cross-sectional	Questionnaire	Developed by author	385 BEd/Bachelor of Education students	Public	Medium
Ely, 2018	Cross-sectional	Vignette & questionnaire	Mental Health Literacy Scale (MHLS; O'Connor & Casey, 2015); Educator Mental Health Literacy Inventory (developed by author)	41 elementary educators and support personnel	Private	Not reported
Evans et al., 2021	Feasibility study	Not reported	Not reported	Elementary teachers	Public and	Not reported

	(qualitative and collaborative approach)				private	
Gilham, Neville-MacLean, & Atkinson, 2021	Cohort study	Questionnaire	Mental health Knowledge (adapted from Wei et al., 2019); attitudes toward stigma (Milin et al., 2016:); Perceived Stress Scale (PSS; Cohen et al., 1983); Attitudes Toward Help Seeking (Wei et al., 2017); Teacher Efficacy for Inclusive Practice (TEIP; Loreman et al., 2007) Same STIGMA test	71 pre-service teachers	Public	Improved
Ginige et al., 2021	Program evaluation	Vignette & questionnaire	Not reported	251 primary school teachers	Public	Low
Holtz, 2017	Cross-sectional	Questionnaire	Author adapted scale: Mental health literacy and capacity survey for educators	78 high school teachers	Public	Not reported
Hsu et al., 2019	Cross-sectional	Questionnaire	Preschool Teachers Mental Health Literacy Scales (PTMHL; developed by author)	534 preschool teachers	Not reported	Medium
Imran et al., 2022	Randomized controlled trial	Questionnaire	Developed by the WHO	231 secondary school teachers	Private	Improved
Kurumatani et al., 2004	Cross-sectional	Vignette & questionnaire	Developed by author (inspired by Jorm et al., 1997a; Jorm, Korten, Jacomb, Rodgers, & Pollitt, 1997; Jorm et al., 1997b; Angermeyer & Matschinger, 1996; Matschinger & Angermeyer, 1996; Raguram, 1996)	215 teachers	Not reported	Not reported

Kutcher et al., 2013	Program evaluation	Questionnaire	Developed by authors	79 secondary school teachers (specifically grade 9)	Public	Improved
Kutcher, Gilberds, Morgan, Greene et al., 2015	A repeated measures/within-participants study design	Questionnaire	Kutcher et al., 2013	194 teachers	Public, private, and catholic	Improved
Kutcher, Gilberds, Morgan, Udedi, & Perkins, 2016	Program evaluation	Questionnaire	Kutcher et al., 2013	61 secondary school teachers	Public	Improved
Kutcher et al., 2017	Longitudinal study	Questionnaire	The School Mental Health Literacy Impact Data Collection Form (developed by authors)	32 secondary school teachers	Not reported	High
Kutcher et al., 2019	Program evaluation	Questionnaire	Not reported	Teachers	Public, private, and catholic	Low
Langeveld et al., 2011	Cross-sectional	Vignette & questionnaire	Questionnaire on Knowledge and Experience of Social and Emotional Difficulties Among Young People (Doherty et al., 2006)	441 high school teachers	Not reported	Higher for teachers in experimental group
Leeper, 2018	Cross-sectional	Questionnaire	Mental Health Literacy Questionnaire for Teachers (MHLQT; adapted from MHLQ by Davis et al., 2008)	118 BEd/Bachelor of Education students	Not reported	Not reported
Miller et al., 2019	Program evaluation	Questionnaire	The Adolescent Depression Knowledge Questionnaire (Hart et al., 2014); The Reported and Intended Behaviour Scale (Evans-Lacko et al., 2011)	66 secondary teachers	Public and private	Not reported

Nguyen et al., 2020	Program evaluation	Vignette & questionnaire	In both studies: Vietnamese adaptation of the Mental Health Literacy Scale (MHLS; O'Connor & Casey, 2015; adapted from Dang et al., 2018) and Beliefs Towards Mental Illness Scale-BMI (BMI; Hirai & Clum, 2000)	143 grade 8 and 9 teachers	Public	Not reported
Ngwenya et al., 2022	Cross-sectional	Questionnaire	Adolescent Depression Knowledge Questionnaire (ADKQ; Hart et al., 2014)	976 high school teachers	Public	Less than satisfactory
Pereira Amaral et al., 2020	Cross-sectional analytical and before/after intervention methodology	Questionnaire	Mental Health Literacy Questionnaire (MHLq; Campos et al., 2012)	13 second and third cycle teachers	Not reported	Improved
Prabhu et al., 2021	Cross-sectional	Vignette & questionnaire	Australian National Mental Health Literacy and Stigma Youth Survey (Reavley & Jorm, 2011)	460 high school teachers	Public, private, & specialized	Low
Tay et al., 2019	Program evaluation	Questionnaire	Mental Health Knowledge Schedule (MHKS; Evans-Lacko et al., 2010); Reported and Intended Behaviour Scale (RIBS; Evans-Lacko et al., 2011); Attitudes and Knowledge about Mental Health Conditions (Wahl et al., 2019); Mental Health Literacy Questionnaire for Young Adult Form (Dias et al., 2018)	68 refugee centre teachers	Specialized	Not reported
Ueda et al., 2021	Randomized control trial	Questionnaire	Japanese version of the Reported and Intended Behavior Scale (RIBS-J; Evans-Lacko et al., 2011); self-developed	92 teachers	Elementary, secondary, special support,	High for knowledge and help-seeking

			questionnaire (inspired by Griffiths et al., 2004)		middle, & high schools	& low stigma
Venkataraman et al., 2019	Cross-sectional	Questionnaire	Mental Health Literacy Scale (Jorm et al., 1997a)	566 higher secondary school teachers	Public & private	Not reported
Wei & Kutcher, 2014a	Program evaluation	Questionnaire	Developed by authors	120 secondary school teachers	Not reported	Improved
Wei et al., 2020	Quasi-experimental research	Questionnaire	Developed by authors based on the content of the Guide resource	176 secondary and middle school pre-service teachers	Not reported	Improved
Wei et al., 2021	Program evaluation	Questionnaire	Stigma Toward Mental Disorders Survey (informed by Jones et al., 1984; Thornicroft, 2006)	949 junior high and secondary school teachers	Not reported	Improved
Whitley & Gooderham, 2016	Cross-sectional	Vignette	Developed by authors	186 elementary and secondary school pre-service teachers	Not reported	Low to medium
Yamaguchi et al., 2021	Cross-sectional	Vignette & questionnaire	Questionnaire (adapted from Kessler et al., 2007; Kessler et al., 2005; Lee et al., 2014; Ando et al., 2013; American Psychiatric Association, 2013; Yap et al., 2014); vignette (adapted from American Psychiatric Association, 2013)	665 secondary school teachers	Public	Low