Exploring Mental Health Literacy Among Pre-Service Teachers

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Abstract

Worldwide, prevalence rates of students experiencing mental health difficulties are growing, with only one in five receiving treatment. The role of teachers in collaborative efforts both to identify and to provide effective services for these students is an essential one. However, scant research has explored the mental health literacy of pre-service teachers. In the present study, 186 pre-service teachers completed a vignette-based measure (Child or Adolescent version based on each teacher's experience) in order to assess their mental health literacy, comprised of beliefs and knowledge. Results indicate that participants expressed lower efficacy when teaching children or adolescents with externalizing as compared to internalizing behaviours but believed that a child or adolescent experiencing behaviours indicative of depression was of the greatest concern and in need of intervention. Pre-service teachers were able to correctly identify cases of anxiety and ADHD, but many attributed behaviours typical of depression to home life difficulties (Child version) or substance use/abuse (Adolescent version). Results are discussed in light of previous research in the field; recommendations for future research and practice are provided.

According to the World Health Organization, mental health is “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 make a contribution to his or her community” (World Health Organization, 2010, para. 2). Unfortunately, many children and youth do not experience the myriad benefits of mental health. In North America, prevalence rates of children and youth with mental health difficulties, including mental

disorders such as anxiety, behaviour disorders, depression, and substance abuse, are estimated to be approximately 15% to 40% (Arboleda-Flórez, 2005; Merikangas et al., 2010; Roberts, Stuart & Lam, 2008; Waddell & Shepherd, 2002).

Many types of treatment are available for children and youth, most based in communities and clinical settings. However, previous research has found that many children do not receive the services that they require, particularly those with mood, as compared to disruptive, disorders (Essau, 2005; UNICEF Canada, 2007; Vaillancourt & Boylan, 2013). While a number of potential solutions exist, an increasing focus on the role of teachers and other school personnel and ever-growing numbers of school-based mental health programs point to one potential avenue for ensuring that children and youth receive necessary services (Paternite, 2005; Power, Cleary & Fitzpatrick, 2008; Weist, Evans, & Lever, 2003; Whitley, Smith, & Vaillancourt, 2013). In this paper, we examine the issues surrounding the provision of mental health programs in schools, with a focus on teachers' mental health beliefs and mental health literacy more broadly, an area that has not been well researched. We outline and discuss the results of a study that provides insight into the perceptions of pre-service teachers with respect to mental health issues that may be experienced by students they encounter.

Mental Health and Schools

Given the diversity inherent in many inclusive classrooms, most educators and school staff are familiar with mental health difficulties experienced by many of their students as well as the repercussions these may have on learning and broader outcomes. Previous research confirms that students with mental health difficulties are more likely to experience difficulties with academic achievement, to exhibit less school engagement and participation, and to have poorer peer and family relationships, and that they are more likely to drop out of school (McLeod, Uemura, & Rohrman, 2012; Meldrum, Venn, & Kutcher, 2009; Volk, Craig, Boyce, & King, 2006). Long-term outcomes, including employment and education, are also significantly poorer for individuals with mental health difficulties than for those without (Fergusson & Woodward, 2002; Raudino, Woodward, Fergusson, & Horwood, 2012).

Educators continue to search for effective ways to include and support the needs of students exhibiting mental health difficulties. These approaches, which often include collaboration with health professionals, range from school-wide mental health promotion programs to school-based counseling and crisis intervention programs, to systems of care and “wraparound” approaches (Atkins, Graczyk, Frazier, & Abdul-Adil, 2003; Hoagwood et al., 2007; Kutcher, Bagnell, & Wei, 2015; Manion, Short, & Ferguson, 2013; Rones & Hoagwood, 2000; Weist, 2005; Wells, Barlow, & Stewart-Brown, 2003). Most provinces and territories in Canada have put in place curricula, policies, resource guides, frameworks, and/or programs that specifically address the needs of students dealing with mental health issues (e.g., Ontario Ministry of Education, 2013; Government of Yukon, 2016). These often reside within a broader comprehensive school health approach (and thus focus on prevention and promotion, rather than on intervention) and include joint-ministerial collaboration (e.g., Government of Saskatchewan, 2012; Province of Manitoba, 2015; Province of Nova Scotia, 2013).

Students with mental health difficulties also may be identified as having special educational needs and receive support through special education services. In Canada, for example, some provinces include “mental illness” explicitly within their special education categories (e.g., British Columbia Ministry of Education, 2011). Most, however, address mental health issues within a broad “behaviour” category (e.g., Ontario Ministry of Education, 2001). In the United States, students with mental illness may be identified within the “emotional disturbance category” (Individuals With Disabilities Education Act, 2004); and in the United Kingdom, students may receive special education services by virtue of “persistent emotional and behavioural difficulties” (U.K. Department for Education, 2001). Thus teachers may be required to adapt and modify curriculum expectations and to develop and implement classroom management strategies in order to meet the needs of students formally identified as having mental health difficulties and illnesses.

For any of these approaches to be successful and sustainable, be they partnerships with community-based mental health services or support through special education systems, school staff need to have the knowledge, attitudes, and skills to recognize possible mental health difficulties. Further, it is important that educators know the appropriate steps to take, both to include the student effectively in their classroom and to ensure that they receive the assistance that they require.

Mental Health and Teachers

School staff, and specifically teachers, play a key role in the prevention and identification of and intervention in mental health difficulties among children and youth (Franklin, Kim, Ryan, Kelly, & Montgomery, 2012). Clearly the role of educators is not to diagnose or treat mental illnesses; this should be left to professionals trained in these areas. However, teachers and other school personnel are often among the first to observe behaviours that indicate either the emergence or development of mental health issues. Without mental health literacy, teachers may attribute particular internalizing or externalizing behaviours incorrectly and fail to take appropriate action (Gaier, 2015). As has been discussed (see *Mental Health and Schools*, above), mental health issues can contribute to difficulties in academic achievement and in school functioning in a number of domains. “It is therefore imperative that teachers are equipped with the practical tools and knowledge required to recognize and intervene appropriately in situations where mental illness may be a concern” (Meldrum et al., 2009, p. 63).

In addition to knowledge about mental health issues and appropriate referrals and interventions, it is also important that the beliefs of teachers regarding mental health be explored and addressed if necessary. Teacher beliefs about a variety of subjects have long been the focus of educational research as theory and empirical findings support the links between teachers’ beliefs and the judgments and decisions they make in their classroom practice (Ajzen, 2012; Czerniak & Schriver, 1994; Jordan & Stanovich, 2001, 2003; Muijs & Reynolds, 2002; Stanovich & Jordan, 1998; Tschannen-Moran & Woolfolk Hoy, 2001; Whitley, 2010). Teachers’ beliefs are a key component of their mental health literacy, which has been defined by Jorm et al. (1997, p. 182) as “knowledge and beliefs about mental disorders which aid their recognition, management or prevention.” Jorm

lists the following elements of mental health literacy: (a) knowledge of how to prevent mental disorders, (b) recognition of when a disorder is developing, (c) knowledge of help-seeking options and treatments available, (d) knowledge of effective self-help strategies for milder problems, and (e) first aid skills to support others who are developing a mental disorder or are in a mental health crisis (2012; p. 231). An emphasis on decision making and help seeking, rather than solely basic knowledge of mental illnesses, is further evident in more contemporary definitions such as one proposed by Kutcher and Wei (2014), who outline four distinct but related components: “understanding how to foster and maintain positive mental health; understanding mental health disorders and their treatment; decreasing stigma; and, seeking help effectively” (p. 23). When considering these definitions as they apply to teachers, it is clear that understanding disorders and practising help-seeking behaviours apply not only to their individual well-being and personal health decisions but also to their perceptions and support of student issues. Researchers such as Jorm (2000, 2012) and Jorm et al. (2006) have documented the myths and misunderstandings that members of the general public, including medical professionals, hold about mental health issues. Unfortunately, these lead to negative attitudes and stigma, which present barriers to successful and timely intervention as they reduce appropriate referrals and help-seeking behaviour (Jorm, 2000; Martin, Pescosolido, & Tuch, 2000).

Teachers’ mental health literacy. Although the call for teachers to participate in a collaborative effort to serve students with mental health difficulties is widely acknowledged, a number of problematic issues exist. First, there are significant gaps in research exploring the knowledge and beliefs of teachers regarding mental health issues among students. Only a few studies have directly assessed the views of educators in regard to mental health problems in the classroom. Findings from these highlight the lack of information and appropriate professional development that many teachers receive and their concerns that they are ill-prepared to address the mental health needs of their students (Askell-Williams & Cefai, 2014; Bussing, Gary, Leon, Garvan, & Reid, 2002; Canadian Teachers Federation (CTF), 2012; Rothi, Leavey, & Best, 2008; Walter, Gouze, & Lim, 2006). In a recent survey conducted by the Canadian Teachers Federation, teachers listed stress, attention-deficit/hyperactivity disorder (ADHD), anxiety, and depression as pressing concerns among student populations; and 87% agreed that a lack of adequate professional development in dealing with mental illness is a barrier to providing adequate services for students (CTF, 2012).

Most research exploring teachers’ mental health literacy has focused on teacher knowledge of signs, symptoms, causes, and treatments of ADHD. According to a number of studies (Anderson, Watt, Noble, & Shanley, 2012; Bekle, 2004; Blotnick-Gallant, Martin, McGonnell, & Corkum, 2015; Glass & Wegar, 2000; Jerome, Washington, Laine, & Segal, 1998) teachers actually report moderate levels of knowledge of causes and signs of ADHD but understand less about treatment. With respect to teachers’ ability to accurately identify possible mental health issues and disorders (key to harnessing appropriate resources and making correct referrals), a range of findings have been reported. Most research has explored teachers’ roles as informants for externalizing difficulties, again, most often ADHD (e.g., Moldavsky, Pass, & Sayal, 2014; Pelham, Gnagy, Greenslade, & Milich, 1992; Power et al., 1998); fewer studies have explored

their perceptions of internalizing disorders (e.g., anxiety, depression). In these, teachers have been found to be fairly reliable informants of behavioural indicators of ADHD when compared to observation or to vignettes of students with no behavioural issues (Hosterman, DuPaul, & Jitendra, 2008; Moldavsky, Groenewald, Owen, & Sayal, 2013). The ability of teachers to distinguish ADHD from other, similar disorders or difficulties has not been explored, however.

One study that examined both externalizing and internalizing difficulties was conducted by Loades and Mastroyannopoulou (2010) in the United Kingdom. Specifically, teachers' recognition of oppositional defiant disorder (ODD) and separation anxiety disorder (SAD) was assessed. Authors created vignettes of the two disorders, varied by gender and severity (clinical, sub-clinical, and no symptomatology). Primary school teachers ($n = 113$) were asked to respond to a series of questions based on the vignettes, including whether they perceived there to be a problem, how serious they perceived it to be, what their intentions to act would be, and how concerned they would be about the child described. Demographic information (professional experience, age, gender, ethnic background) was also collected from teachers. Results indicated that teachers were able to distinguish problem severity and that they were significantly more concerned about the students with the externalizing than the internalizing behaviours. Furthermore, teachers were more accurate in recognizing gender-typical problems: girls with internalizing and boys with externalizing behaviours. Demographic variables were not related to teacher perceptions. Although limited by a moderate sample size and focusing on only two quite disparate disorders, the Loades and Mastroyannopoulou (2010) study provides insight into the abilities of teachers to identify clinical levels of problem behaviour, both externalizing and internalizing, when presented with paper-based vignettes. Conclusions are limited, however, given the nature of the measure.

The vignettes presented to teachers, which depicted clinical, sub-clinical, and no symptomatology, were strikingly different. For example, in the clinical ODD vignette, the student was said to frequently destroy things, regularly get into fights, destroy belongings frequently, and physically attack others. The comparison vignette (no symptomatology) described a student who never gets into fights, never argues with anyone, has been verbally and physically bullied, is kind and patient, and gets along with others. It is not surprising, then, that 99% of participants thought that the student in the clinical ODD vignette had a significant problem. As well, 26% of participants expressed concern about the student with no symptomatology, possibly because of the bullying described, thus adding confusion to interpretation of the findings. In addition to issues with the measure, the study did not assess the steps teachers would take when faced with students experiencing these types of difficulties, nor their related attitudes or beliefs.

With respect to teachers' attitudes and beliefs about the inclusion of students with mental health issues in the classroom, limited research exists. A series of recent studies conducted in the United Kingdom by Moldavsky et al. (2013, 2014) explored primary school teachers' recognition of ADHD as well as attitudes about pharmacological treatment. Teachers read one of four case-vignettes of students with ADHD, varied by gender and sub-type (inattentive or combined) and responded to a series of open and closed questions focused on behaviour explanations, the need for specialist referral, and the need for various treatments. Results indicated that teachers' recognition of ADHD

was influenced by subtype (combined type was identified as ADHD more often than inattentive) but that the students' gender did not play a role. Teachers expressed the perspective that they felt competent addressing the difficulties experienced by the student with ADHD and were reluctant to initiate referrals too soon; most also believed that medication was inappropriate or a last resort for treatment. The focus on attitudes in the study was mostly limited to medication and treatments.

Given the limited existing literature with a nearly exclusive focus on ADHD, and a preponderance of studies focusing on limited aspects of mental health literacy, there is a need for further research to explore in depth the beliefs and knowledge of educators at both the pre- and in-service levels. In order to develop and implement the professional development that teachers require (CTF, 2012), it is necessary first to identify the knowledge and beliefs held by the potential participants and to tailor approaches accordingly. It has been shown that the decisions that educators make in responding to the difficulties experienced by their students are heavily influenced by the attitudes, beliefs, and affect that they hold regarding the child, their areas of difficulty, and their future academic potential (Ajzen & Fishbein, 1980; Jordan & Stanovich, 2004; Poulou & Norwich, 2002; Whitley, 2010). Kos, Richdale, and Hay (2006) described this relationship: If a teacher believes that ADHD is caused by chemical imbalances in the brain, they are unlikely to use psychosocial, classroom-based interventions to address behaviour. Furthermore, if teachers believe that a student exhibits negative behaviours by choice, rather than as a result of an underlying mental illness, they are more likely to choose punitive measures rather than help-seeking approaches (Tollefson, 2000).

Specific beliefs that have been explored in the literature, and that will be explored alongside teachers' knowledge of mental health issues in the current study to comprise our operationalization of mental health literacy, include self-efficacy, teacher expectations, problem severity, and intervention priority.

Teacher self-efficacy. Teachers' beliefs about their own capacity to include and assist students with a range of difficulties (self-efficacy) has also been shown to impact their willingness to harness resources and expend energy in adapting instruction and assessment approaches and taking responsibility for the success of their students (Anderson, Greene, & Loewen, 1998; Brownell & Pajares, 1999; Raudenbush, Rowan, & Cheong, 1992; Ross, 1992; Soodak & Podell, 1993; Tournaki & Podell, 2005). With respect to the links between teacher efficacy and student characteristics, there is some evidence that teachers feel less efficacious when working with classes of students at lower academic levels or with behaviour difficulties (Raudenbush et al., 1992; Tournaki & Podell, 2005). Other researchers have also found that self-efficacy beliefs were related to teachers' decisions to refer students experiencing learning difficulties to special education (Soodak & Podell, 1993). Teachers with a higher sense of self-efficacy were more likely to recommend a general class placement and to take responsibility for meeting the needs of students with exceptionalities in their classes (Brownell & Pajares, 1999; Soodak & Podell, 1994).

Literature documenting the lack of preparedness expressed by teachers (e.g., Canadian Teachers Federation, 2012; Walter et al., 2006) indicates that self-efficacy in including students with mental health issues is low. Teachers typically reported having

minimal professional learning opportunities related to mental health, and the cited study by Walter et al. showed that education, as well as experience with mental health issues in the classroom, was significantly related to teacher knowledge and self-efficacy. Little is known, however, about the influence of teacher demographics on self-efficacy as it relates to mental health.

Teacher expectations. The influence of teacher expectations of student's academic performance on the behaviours of teachers and students has been explored for many years. As defined by Good (1987), teacher expectations are "inferences that teachers make about the future behavior or academic achievement of their students, based on what they know about these students now" (p. 32). According to Cooper and Good (1983), teacher expectations can result in two effects. The first is a self-fulfilling prophecy effect in which teachers have incorrect expectations and their behaviour subsequently causes the expectations to become true; this is known as the Pygmalion effect. Although the strength and durability of the Pygmalion effect has been questioned in a review of the research, Jussim and Harber (2005) did find that strong self-fulfilling prophecy effects can impact stigmatized groups and those at risk.

The second effect described by Cooper and Good (1983) is a sustaining expectation effect in which teachers expect previously exhibited behaviours to continue to happen and do not recognize and capitalize on changes when they do occur (see Rubie-Davies, Hattie, & Hamilton, 2006). Teacher academic expectations of students are impacted by a number of student factors, including disability labels, attractiveness, socio-economic status, and race (Auwarter & Aruguete, 2008; Clark, 1997; McKown & Weinstein, 2008; Rubie-Davies et al., 2006). For students with mental health issues who are exhibiting internalizing and/or externalizing behaviours, the perspectives of their teachers with respect to their academic potential will affect the type and range of strategies that teachers choose to adopt in working with them. Some evidence suggests that educators may view students with behavioural difficulties as less competent academically than those without (e.g., Whitley, Lupart, & Beran, 2009). While many other contextual factors impact the actual steps that educators take in the face of said difficulties, it is clear that knowledge and beliefs influence the instructional, management, and referral decisions teachers make.

Problem severity and intervention priority. Teachers' perceptions about the severity of an emotional and/or behavioural difficulty they observe and the priority that they assign in terms of intervention provide insight into their behavioural intentions and thus their underlying beliefs about the difficulty. While not explored within the mental health literacy literature, problem severity and intervention priority variables have often been included in bullying research (e.g. Ellis & Shute, 2007; Mauder, Harrop, & Tattersall, 2010; Yoon, 2004). Findings indicate that teachers' decisions about whether or not to intervene in bullying incidents is influenced largely by their perception of the seriousness of the bullying (Ellis & Shute, 2007; Yoon, 2004). We hypothesize that the same would be true for teachers' decisions regarding intervention in the face of mental health difficulties among their students; should teachers believe that the issues are severe, they would make intervention in these cases a priority. Depending on the nature of the perceived difficulties, of course, the intended and actual interventions chosen would presumably vary.

With the pressure on schools to play an active role in the provision of mental health services, teachers are increasingly responsible for the prevention and identification of, and intervention in, mental health difficulties among children and youth (Franklin et al., 2012). It is important that they have the knowledge to enable them to appropriately recognize and address the issues they face. In order to develop effective and relevant plans for mental health literacy improvement, which lead ultimately to more appropriate intervention and improved student outcomes, it is essential to gain a better understanding of teachers' mental health literacy, including related beliefs and knowledge. The current study adds to limited research in this area by exploring the mental health literacy of a sample of pre-service teachers.

Method

Participants

Participants were recruited from a one-year Bachelor of Education program at a large eastern Canadian university located in an urban setting. The program requires pre-service teachers to have at least one undergraduate degree before entry and, upon successful completion of course work and practica, leads to provincial teaching certification. Pre-service teachers can choose to focus on teaching either at the primary/junior (Kindergarten to Grade 6), junior/intermediate (Grades 4–10), or intermediate/senior (Grades 7–12) level. Those at the primary/junior level are subject generalists and are qualified to teach all subjects, while those at the higher levels specialize in one or two subjects (e.g., English and history).

All of the approximately 720 pre-service teachers enrolled in the mandatory class Teaching Exceptional Students over two years (2011–2012 and 2012–2013) were invited to participate in the study. A research assistant visited each section of approximately 40 pre-service teachers during their first or second class, described the study and consent process, answered any questions, and left bookmarks with the web address for the survey behind for pre-service teachers to take should they wish to learn more or participate in the study. Pre-service teachers had not yet completed a practicum and were just beginning the only course in the program that might include content related to mental health, depending on the expertise of the instructor.

In total, 186 participants completed the survey, a response rate of 26%. While lower than hoped for, this rate is in line with web-based surveys completed by undergraduate students (e.g., Kaplowitz, Hadlock, & Levine, 2004) as well as with web-based surveys in general (Hamilton, 2003; Shih & Fan, 2008; University of Texas at Austin Center for Teaching and Learning, 2007); and we have no reason to believe that the non-response is anything but random. Many participants answered the first question during the time period when the study was being described to them in class and then quit the survey shortly thereafter. Among the respondents, 73% were female and the average age was 26.5 years. These demographics are typical of the program as a whole and of Bachelor of Education programs in Canada.

Instruments

A brief measure of educators' mental health literacy, including beliefs and knowledge regarding mental health issues, was created for the study using a vignette-based approach. Vignettes are commonly used in fields such as medicine and social work as an effective and reliable way to elicit beliefs, attitudes, and practical knowledge (Gould, 1996; Hughes & Huby, 2002; Loveman & Gale, 2000; Schoenberg & Ravdal, 2000). The use of vignettes has been increasingly endorsed as an effective way to access and assess the thought processes engaged in by educators, particularly in relation to students with emotional and behavioural difficulties, and to explore teacher beliefs about bullying (e.g., Hughes, Barker, Kemenoff, & Hart, 1993; Mauder, Harrop, & Tattersall, 2010; Poulou, 2001; Soodak & Podell, 1993; Yoon, 2004). If thoughtfully constructed to present as clear, realistic, and unbiased to participants, vignette-based measures can present an alternative to interviews, which may elicit socially desirable responses. Vignettes can also be more effective than traditional surveys, which can be limited in terms of their ability to refer respondents to a particular type of student or situation and which can also be affected by social biases and surface-level responses (Finch, 1987; Kerlinger, 1986; Miles, 1990; Poulou, 2001). Vignettes themselves can "promote reflection and critical thinking ... they can evoke imagination, feelings and thoughts at the same time" (Poulou, 2001, p. 59).

The measure was developed following an extensive review of the literature by an expert panel consisting of instructors in the Bachelor of Education program (who are licensed and practicing teachers) as well as a psychologist and counselor with experience working in schools. Criteria for common psychiatric diagnoses of childhood (depression, anxiety, attention-deficit/hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD) were first considered (American Psychiatric Association, 2000). As well, literature documenting common behavioural indicators of these diagnoses in childhood and adolescence were reviewed (e.g., Canadian Mental Health Association, 2010; Centre of Knowledge on Health Child Development, 2007; Manassis, 2004). The development team examined several draft versions of the measure, both individually and as a group. In light of concerns raised in the research literature about the potential for poorly constructed stories or examples that do not reflect realistic situations, that are too lengthy, or that are ambiguous (Barter & Renold, 1999), close attention was paid to how accurately the cases represented the manifestation of clinically significant levels of the four diagnoses, as well as how closely the cases reflected realistic scenarios seen in elementary and secondary schools.

The measure presented pre-service teachers with four brief hypothetical vignettes describing cases of children or adolescents exhibiting mental health difficulties (see Appendix). Given the literature documenting the influence on teacher perceptions of student characteristics such as the type of behaviours exhibited (e.g., internalizing or externalizing), gender, and the presence of academic difficulties (Soles, Bloom, Heath, & Karagiannakis, 2008), these characteristics were varied across vignettes.

Of the four cases, two were identified as females (one internalizing and one externalizing) and two as males (one internalizing and one externalizing). Academic difficulties were specified for the male with internalizing difficulties and the female with

externalizing difficulties. One set of four vignettes was written depicting elementary-aged children and another set with secondary-aged adolescents. In this way, participants could choose to examine the scenario typical of the age range they were familiar with, as mental health issues present quite differently depending on age and developmental level. After reading each vignette, respondents then answered a series of forced-choice questions that tap into their beliefs and knowledge regarding the inclusion of a child or adolescent with the characteristics described. Given the limited research findings that demonstrate the influence of some teacher demographic variables on self-efficacy and mental health knowledge, the survey also included a brief demographic questionnaire that asked the study participants their program type (primary/junior, junior/intermediate, intermediate/senior), gender, and age as well as personal experience and professional expertise with mental health issues or mental illness issues.

Piloting of survey with pre-service teachers. Once the expert panel had agreed upon a version of the measure, a small group of pre-service teachers ($n = 12$) in the Bachelor of Education program were recruited for a pilot test. The measure took approximately 30 minutes to complete and was administered electronically, on individual laptop computers. Following the completion of the measure, the study participants were interviewed by the research assistant and lead researcher as to the readability, comprehension, and interpretation of the survey items, which took an additional 15 to 20 minutes. Notes were taken by the research assistant to facilitate later revisions. Next, the research team examined the data both from the measure and from the interviews conducted with each participant. Based on this information, the measure was further revised for improved clarity and by eliminating questions that were either confusing for participants, produced no variability, or proved redundant. The expert panel again reviewed and approved the revised version.

Final version of the survey. The vignettes used in the final version of the measure are presented in the Appendix. After reading each vignette, participants answered a series of forced-choice questions that tapped into their beliefs and knowledge regarding the mental health issues presented (see Table 1). A relative ranking was used for the first set of questions. Rather than simply asking participants to rate, for example, their efficacy with respect to each case vignette on a 5-point Likert scale, they were asked to provide a ranking for one case relative to the rest. In this way, we were able to avoid interpreting ratings that are very similar (e.g., somewhat confident, very confident) and were able to draw stronger conclusions about the perceptions of pre-service teachers regarding children and adolescents with various mental health issues. This approach also limited social desirability bias as teachers were unable to assign a high score to every case vignette on every question; they were forced to assign importance or priority to one over another. Recent research in teacher beliefs has begun to explore the benefits of forced-choice approaches in contrast to traditional measures using approaches such as Q-sort (Rimm-Kaufman, Storm, Sawyer, Pianta, & LaParo, 2006).

Table 1
Measure Items and Response Options

Variable	Question	Response range
1 Teacher efficacy	Please rate the student cases in terms of your confidence in being able to teach them effectively.	1: <i>Least confident</i> to 4: <i>Most confident</i>
2 Teacher expectations	Please rate the student cases in terms of how far you think the students will likely go in school.	1: <i>Lowest amount of schooling</i> to 4: <i>Highest amount of schooling</i>
3 Problem severity	Please rate the student cases in terms of your level of concern with the behaviours.	1: <i>Least concerned with</i> to 4: <i>Most concerned with</i>
4 Intervention priority	Please rate the student cases in terms of priority of intervention.	1: <i>Least in need of intervention</i> to 4: <i>Most in need of intervention</i>
5 Teacher strategies	What three steps could you, as a teacher, take to resolve the students' problems?	Open-ended
6 Behaviour explanation	What most likely explains the students' behaviour?	a) No mental health problem b) Attention-deficit/hyperactivity disorder c) Anxiety disorder d) Bipolar disorder e) Bullying f) Depression g) Home life difficulties h) Obsessive-compulsive disorder i) Oppositional defiant disorder j) Conduct disorder k) Substance use/abuse l) Schizophrenia m) Learning disabilities

Each of the forced-choice questions captured a particular construct that provided a multi-faceted assessment of the mental health literacy of educators with respect to mental health issues. The first four items assessed were (a) teacher efficacy, (b) teachers' academic expectations, (c) problem severity, and (d) intervention priority. Assessing mental health literacy is a complex endeavour, and researchers who have attempted to capture beliefs as they relate to a range of subjects (e.g., disciplinary practices, use of technology, constructivist approaches, mathematics education, inclusive education) have employed varying types of measures (Carter & Norwood, 1997; Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurur, 2012; Woolley, Benjamin, & Woolley, 2004). As was discussed (see Mental Health and Teachers/Teachers' mental health literacy), teacher efficacy and expectations reflect beliefs about students with mental health issues and their inclusion in the classroom; they influence decision making in the classroom as well as instructional and assessment choices. Assessing teacher perceptions of relative problem severity and intervention priority allowed for a deeper exploration of beliefs

about mental health issues and approaches as it relates to students with specific behavioural and academic profiles. These variables related more closely to the behavioural intentions teachers had; if they believed that an issue presented in a vignette was more severe than others, and was a priority for intervention, then they were in theory more likely to act when faced with behavioural profiles in their classroom practice. Many other studies have reported on the importance of assessing intervention priority and problem severity as indicative of beliefs and of intended practice when studying bullying (Ellis & Shute, 2007; Mauder, Harrop & Tattersall, 2010; Yoon, 2004).

Once the participant completed the questions relating to efficacy, expectations, problem severity, and intervention priority following each vignette, they were asked to list three strategies that they would employ should they be faced with a child or adolescent with the characteristics listed in the vignette. This item spoke to the decisions teachers intended to make with respect to mental health issues in the classroom and to their perceptions of responsibility in dealing with mental health issues; this variable in various forms has been included in many studies focused on mental health and bullying (Reinke, Stormont, Herman, Puri, & Goel, 2011; Yoon & Kerber, 2003). This item also aligns with the definition of mental health literacy proposed by Kutcher and Wei (2014) in which a focus on help-seeking efficacy and mental health decision making are key elements.

Finally, participants were asked to identify from a list provided a single barrier to learning most likely experienced within the child or adolescent vignette. The list included the specific diagnosis that the vignette was based upon but also included a range of options. This item spoke to the knowledge of the participant with respect to the behavioural indicators of mental health difficulties and also to their beliefs about underlying explanations. This dimension of mental literacy is described by Jorm, who lists “recognition of developing mental disorders” (2012, p. 231) and by Kutcher and Wei’s “understanding mental disorders and their treatment” (2014, p. 23).

Scoring guide. As can be seen in Table 1, questions 1 through 4 were answered along a 4-point Likert-type scale. Given the forced-choice, relative-ranking nature of the measure, the inclusion of a neutral mid-point of the traditionally used 5- or 7-point scale was not deemed appropriate. Participant responses were summarized using basic descriptive analyses. Question 5, which asked respondents to indicate the steps they would take in dealing with the behaviours presented in the vignettes, allowed for brief, open-ended responses. These responses were grouped by two independent analysts into seven emergent categories; namely, participants described that they would: (a) have discussions with the student to try to uncover reasons for their difficulties, (b) talk to parents about possible issues at home, (c) develop and implement instructional strategies and/or accommodations, (d) develop and implement behavioural management strategies, (e) develop and implement social-emotional strategies, (f) consult with school professionals (e.g., counselor), or (g) refer the student to a medical professional. The frequency with which participants endorsed each category was then calculated in order to gain a sense of the common perspectives of participants with respect to actions taken when faced with mental health issues in the classrooms.

Findings

The purpose of this study was to explore the mental health literacy, including beliefs and knowledge, of pre-service teachers with respect to mental health issues among students. A vignette-based measure was created with case descriptions of four hypothetical children or adolescents: two with internalizing disorders (depression and anxiety, specifically obsessive compulsive disorder [OCD]) and two with externalizing disorders (ADHD, ODD). Gender and academic difficulties were varied across the case vignettes resulting in (a) Chris (depression, with academic difficulties; DEP + ACA), (b) Erin (ADHD, with academic difficulties; ADHD + ACA), (c) Robyn (anxiety, without academic difficulties; ANX – ACA), and (d) Dan (ODD, without academic difficulties; ODD – ACA). Participants were asked to read the vignettes and answer a series of closed (forced-choice) and open questions exploring their beliefs and knowledge related to the issues described. Results are presented for each question. The vignettes are referred to using the assigned name (e.g., Chris) in order to simplify the text.

Demographic Data

In total, 186 pre-service teachers completed the measure. Approximately half were registered in the primary/junior stream and the remainder was split between junior/intermediate and intermediate/senior. Among participants, 55% chose the Child version and 45% the Adolescent version. A cross-tab analysis revealed that 87.5% of respondents who completed the Child version of the questionnaire were in the primary/junior panel; the rest were in the junior/intermediate group. Of those who completed the Adolescent version, 65% were in the senior/intermediate panel, with the remainder was in junior/intermediate.

Pre-service teachers with a range of backgrounds, both educational and professional, enrol in the Bachelor of Education program. Pre-service teachers often have previous degrees in fields such as psychology and social work and may have specific expertise in the area of mental health. In addition, many pre-service teachers have had personal experiences with mental health issues, be they personal struggles or those of family or friends. Therefore, capturing this variation among the respondents, and the potential influence of this experience and expertise on mental health literacy, is an important consideration. In terms of professional experience working with individuals with mental health issues, responses were largely split between *Some experience* (48.3%) and *None at all* (42.0%). A few pre-service teachers responded with *Quite a bit of experience* (8.6%) and *Extensive experience* (1.1%). Somewhat similar findings were noted when respondents indicated the personal experience they had with mental health issues, with almost 60% of respondents indicating having *Some*, 22% *None*, and 18% having *Quite a bit* or *Extensive* experience.

An analysis was conducted that compared the responses of pre-service teachers with varying levels of personal experience and professional expertise with mental health issues. Given the little variation that existed in the experience and expertise variables, dichotomous variables were created that specified either *no experience/expertise* or *some experience/expertise*. Results indicated that the levels of personal experience and

professional expertise did not have a significant influence on the mental health literacy of participants; for this reason, these findings will not be presented in detail.

Teacher Efficacy

The responses of the participants on the teacher efficacy item are summarized in Table 2. Teacher efficacy was lowest with respect to working with Dan (ODD – ACA) and highest when working with Robyn (ANX – ACA). Paired t-tests were conducted between the responses of participants for each vignette. Significant differences are indicated for each pair of vignettes using subscripts. Different subscripts indicate differences significant at the .05 level following a Bonferroni correction applied in light of the multiple comparisons (.05/6 = .008). For the Child version, significant differences were found between Chris and Dan, $t(97) = 4.56$, $p = .000$; between Robyn and Dan, $t(97) = 5.18$, $p = .000$; and between Erin and Dan, $t(98) = 5.43$, $p = .000$. For the Adolescent version, significant differences were found between Robyn and Dan, $t(75) = 3.67$, $p = .000$, and between Erin and Dan, $t(77) = 2.83$, $p < .006$.

Table 2
Teacher Efficacy Ratings Assigned to Each Vignette Child or Adolescent

Teacher Efficacy	Child Version Mean (SD)	Adolescent Version Mean (SD)
Chris (DEP + ACA)	2.69 _a (1.07)	2.51 _{ab} (1.28)
Robyn (ANX – ACA)	2.75 _a (1.03)	2.81 _a (0.99)
Erin (ADHD + ACA)	2.69 _a (1.08)	2.58 _{ab} (0.99)
Dan (ODD – ACA)	1.86 (1.02)	2.16 _b (1.06)

Note. Means with differing subscripts within columns are significantly different at $p < .008$ following Bonferroni correction

Teacher Expectations

The perspectives of the participants with respect to academic expectations of the children and adolescents described in the vignettes are summarized in Table 3. As can be seen, in the Child version, expectations were lowest for Dan (ODD – ACA) and highest for Robyn (ANX – ACA); whereas in the Adolescent version, expectations were lowest for Chris (DEP + ACA) and highest for Robyn (ANX – ACA). For the Child version, significant differences were found using paired t-tests between Chris and Robyn, $t(97) = -3.40$, $p < .001$; Chris and Dan, $t(100) = 3.88$, $p = .000$; Robyn and Erin, $t(97) = 4.60$, $p = .000$; and Robyn and Dan, $t(98) = 7.05$, $p = .000$. In the Adolescent version, differences were significant between Chris and Robyn, $t(78) = -4.85$, $p = .000$, and between Chris and Erin, $t(76) = -2.92$, $p < .005$.

Table 3
Teacher Expectation Ratings Assigned to Each Vignette Child or Adolescent

Teacher Expectations	Child Version Mean (SD)	Adolescent Version Mean (SD)
Chris (DEP + ACA)	2.58 _a (0.99)	2.02 _a (1.21)
Robyn (ANX – ACA)	3.13 (1.03)	2.96 _b (1.01)
Erin (ADHD + ACA)	2.36 _a (1.04)	2.54 _{ab} (0.94)
Dan (ODD – ACA)	1.92 (1.07)	2.49 _{ab} (1.14)

Note. Means with differing subscripts within columns are significantly different at $p < .05$ following Bonferroni correction

Problem Severity and Intervention Priority

The perceptions of educators regarding the level of concern as well as the relative need for intervention across the four vignettes is an indication of their assessment of the severity of the problems experienced within the case. The level of concern also gives insight into the urgency that is felt by the educator with respect to developing or seeking interventions. The responses of participants on these items are summarized in Table 4.

Problem severity was rated most highly for Chris (DEP + ACA) in both versions and lowest for Erin (ADHD + ACA). Significant differences in the ratings of respondents completing the Child version were seen between all vignettes except between Chris and Dan and between Robyn and Dan. Specifically, in the Child version, paired t-tests showed significant differences in the responses of participants between Chris and Robyn, $t(101) = 3.56, p < .001$; Chris and Erin, $t(102) = 6.77, p = .000$; Robyn and Erin, $t(101) = 3.60, p < .000$; and Erin and Dan, $t(102) = -5.09, p = .000$. In the Adolescent version, significant differences were found between Chris and Robyn, $t(78) = 7.25, p = .000$; Chris and Erin, $t(77) = 9.21, p = .000$; Chris and Dan, $t(78) = 6.44, p = .000$; and Robyn and Erin, $t(76) = 2.82, p = .006$.

For intervention priority, ratings were aligned in that Chris (DEP + ACA) was seen as a top priority and Erin (ADHD + ACA) as the lowest. In the Child version, significant differences in participant responses for the vignettes were found between Chris and Robyn, $t(102) = 2.91, p < .004$; Chris and Erin, $t(100) = 6.87, p = .000$; Chris and Dan, $t(102) = 2.70, p = .008$; Robyn and Erin, $t(100) = 4.66, p = .000$; and Erin and Dan, $t(100) = -4.15, p = .000$. In the Adolescent version, findings were similar, with significant differences found between Chris and Robyn, $t(81) = 12.43, p = .000$; Chris and Erin, $t(80) = 16.22, p = .000$; Chris and Dan, $t(80) = 7.43, p = .000$; and Erin and Dan, $t(80) = -3.91, p = .000$.

Table 4
***Problem Severity and Intervention Priority Ratings Assigned
to Each Vignette Child or Adolescent (Scale 1–4)***

	Child Version Mean (SD)	Adolescent Version Mean (SD)
Problem Severity		
Chris (DEP + ACA)	3.03 _a (1.12)	3.49 (0.94)
Robyn (ANX – ACA)	2.43 _b (1.03)	2.30 _a (0.92)
Erin (ADHD + ACA)	1.88 (0.90)	1.88 _b (0.87)
Dan (ODD – ACA)	2.65 _{ab} (1.09)	2.26 _{ab} (1.07)
Intervention Priority		
Chris (DEP + ACA)	3.04 (1.11)	3.71 (0.71)
Robyn (ANX – ACA)	2.53 _a (1.00)	2.02 _a (0.92)
Erin (ADHD + ACA)	1.85 (0.98)	1.83 _a (0.72)
Dan (ODD – ACA)	2.57 _a (1.06)	2.43 (1.02)

Note. Means with differing subscripts within columns are significantly different at $p < .05$ following Bonferroni correction

Teacher Strategies

As was discussed (see Mental Health and Teachers), the beliefs and attitudes held by educators significantly influence the decisions they make in response to student difficulties (Ajzen & Fishbein, 1980; Poulou & Norwich, 2002; Stanovich & Jordan, 1998). Teachers' mental health literacy will impact the choices they make in teaching and working with students who exhibit mental health difficulties. While the survey cannot capture the actual steps that educators take in such instances, it does include an item related to the behavioural intentions of educators; that is, what they list as possible solutions or strategies that they would choose to ameliorate the situation described in the vignette. This captures an element of their literacy and reflects their understanding of the nature of the difficulties described.

Across the four cases, strategies listed by participants typically included speaking to the child or adolescent and speaking to parents about issues at home. Various instructional strategies and accommodations were suggested for Chris (DEP + ACA) and Erin (ADHD + ACA), the two vignettes describing academic difficulties. Behaviour management strategies were suggested for Dan (ODD – ACA), the vignette describing externalizing difficulties. Consulting with school professionals (e.g., resource teacher) was suggested for Robyn (ANX – ACA), and, among those completing the Adolescent version, for Chris and Dan as well. Other approaches such as social-emotional strategies and referrals to medical professionals were suggested but were not among the three most often endorsed by respondents.

Behaviour Explanation

The knowledge of educators with respect to mental health issues, including their ability to identify likely explanations for certain sets and patterns of behaviours, certainly influence the interventions and approaches that they choose. Table 5 summarizes the explanations made by the pre-service teachers; the labels that are capitalized and in bold font are the correct ones. When the measure was created, obsessive compulsive disorder was considered a type of anxiety disorder within the *DSM-IV* (APA, 2000; the *DSM-V* [APA, 2013] has separated these into separate categories)—thus responses of participants were considered correct if they chose either *anxiety* or *obsessive-compulsive disorder*. Responses that were endorsed by a small number of participants were collapsed into an “other” category. Participants were generally correct in their explanations, although some disagreement or confusion can be seen in the responses for Chris (DEP + ACA) and for Dan (ODD – ACA) as well as for the adolescent version of Robyn (ANX – ACA).

Table 5
*Identification of Likely Explanations for the Behaviours
in the Four Case Vignettes*

Case Vignette	Child Version		Adolescent Version	
	Problem Identification	%	Problem Identification	%
Chris (DEP + ACA)	Depression	38.50	Depression	39.70
	Home life difficulties	37.50	Substance use	35.90
	Other	18.10	Home life difficulties	19.20
	Bipolar disorder	6.30	Other	8.20
Robyn (ANX – ACA)	Anxiety or OCD	89.60	Anxiety or OCD	53.80
	Home life difficulties	4.20	ADHD	19.20
	Other	6.50	LD	11.50
			Other	16.40
Erin (ADHD + ACA)	ADHD	84.40	ADHD	82.10
	LD	11.50	LD	6.40
	Other	5.00	Other	11.50
Dan (ODD – ACA)	ODD	47.90	ODD	47.40
	Conduct disorder	14.60	Conduct disorder	10.30
	Home life difficulties	10.40	No mental health problem	15.40
	Anxiety disorder	5.20	Learning disabilities	7.70
	Other	21.40	Other	19.20

Note. Bolded option indicates correct response

Discussion

In this study, a vignette-based measure of mental health literacy was developed, piloted, and administered to a group of approximately 180 pre-service teachers in a Bachelor of Education program. A number of interesting findings emerged that provide insight and add to the limited existing research base. Firstly, pre-service teachers completing the Child version reported similar levels of efficacy in response to all vignettes except for Dan (ODD – ACA), which was rated significantly lower than the other vignettes. Results were similar for the Adolescent version, although the differences were less magnified, with a single significant difference between Dan (ODD – ACA) and Robyn (ANX – ACA). Evidently the difficulties associated with depression, anxiety, and ADHD, even in conjunction with some academic difficulties, were perceived by educators to be more manageable than the oppositional behaviours. Existing research supports the moderate levels of knowledge as well as relatively high self-efficacy educators report with regard to teaching students with ADHD (Bekle, 2004; Jerome, Gordon, & Hustler, 1994; Jerome et al., 1998; Moldavsky et al., 2013; Moldavsky et al., 2014). The relative lack of efficacy with respect to working with Dan (ODD – ACA) may be expected by virtue of the type of behaviours depicted in the vignette. Previous research findings have documented the concerns that teachers express in regard to the inclusion of students with externalizing behaviour difficulties in their classroom (Loades & Mastroiannopoulou, 2010; Raudenbush et al., 1992). Teachers are also less willing to include students with externalizing difficulties in the classroom, as compared to those with physical or learning disabilities (Avramidis & Norwich, 2002). Pre-service teachers continue to require additional knowledge, strategies, and experiences that lead to an improved sense of efficacy in including students with behavioural difficulties.

With respect to the academic expectations of students, pre-service teachers responded somewhat differently depending on the version they completed. Those completing the Child version appeared moderately influenced by the academic difficulties described in the vignette, in that they believed that a student like Robyn was likely to achieve the highest academic success, followed by Chris and Erin—the vignettes that listed academic difficulties. Although described as “continuing to get good grades,” Robyn’s vignette also included a number of behaviours that affected her functioning at school, including checking in repeatedly with the teacher, repeatedly erasing and redoing work, and refusing to play with peers. These behaviours, however, were not seen to impact long-term academic success to the same extent as problematic behaviours in other vignettes. Participants believed that Dan (ODD – ACA), regardless of his relative academic success presently, was the least likely to be successful academically in the long term. They may have assumed that should his negative behaviours persist, his ability to complete school work and maintain his achievement would eventually falter. These respondents appeared to rely on a combination of behavioural and academic characteristics in their responses.

Respondents to the Adolescent version, in contrast, appeared to rely heavily on the academic information provided within the vignettes and rated the two vignettes not experiencing difficulties with their school work (Robyn and Dan) as the highest; although most differences were not significant. Dan’s behavioural difficulties were not perceived to impact his academic success. Research to date has not explored the academic expectations of teachers with respect to students presenting with mental health issues.

Participants completing the Child version appeared to weigh information about present externalizing behaviours more heavily than information about present academic success. This finding is supported by a few studies in which teacher perceptions of students' academic outcomes, as well as objective measures of school success (e.g., GPA), were negatively impacted by externalizing behaviours (Hafen, Ruzek, Gregory, Allen, & Mikami, 2015; Whitley et al., 2009), mediated by variables such as student–teacher relationship (Birch & Ladd, 1997; Silver, Measelle, Armstrong, & Essex, 2005). In general, research has demonstrated that teachers tend to develop relationships that are less close and more often conflict laden with students who display externalizing behaviours, and that this relationship can negatively influence academic outcomes (Fowler, Banks, Anhalt, Der, & Kalis, 2008; Hughes, 2012).

Unlike the Child sample, however, the Adolescent sample rated student potential contrary to expectations and estimated the academic outcomes for students with anxiety, who were not currently experiencing academic difficulties, as the mostly likely to be successful. It may be the case that in the Adolescent version, vignette students are represented as being closer to completing high school; and if they are doing well academically, they may be perceived as likely to complete at least their secondary education. Further research in the area is necessary to untangle the relative influence of student characteristics on teacher expectations among those teaching varying grade levels.

Of further interest are the ratings of problem severity and intervention priority by respondents, who, overall, specified Chris (DEP + ACA) as the most significant cause for concern and also in need of intervention. Respondents were split as to the vignette next in most need between Robyn and Dan; all listed Erin (ADHD + ACA) as the lowest concern. When combined with participants' ratings of low self-efficacy in teaching Dan, as well as the Child sample's rating Dan as having the lowest academic outcomes, the identification of Chris as the vignette of greatest concern is particularly interesting. Respondents felt fairly confident in teaching Chris and believed that he had academic potential, but they also felt that he was most in need of help.

These findings are contrary to those reported in the literature, which suggest that educators are more likely to notice and refer students with externalizing behaviours (e.g., Green, Clopton, & Pope, 1996; Percy, Clopton & Pope, 1993; Soles et al., 2008). Students exhibiting internalizing difficulties are typically seen as under-referred and underserved (e.g., Papandrea & Winefield, 2010). Perhaps the internalizing behaviours combined with the academic difficulties within Chris's profile increased the levels of concern of the respondents. Chris's depression may also be perceived as contrary to gender stereotypes, thus warranting further notice and concern by respondents. Soles et al. (2008) found that teachers rated gender-contrary behaviours more severely than gender-consistent behaviours. Future research in the area would benefit from varying gender, academic difficulties, and internalizing vs. externalizing behaviours in order to untangle educator perceptions of students with mental health issues.

The steps theoretically taken by participants to address the issues described included a combination of important strategies, such as speaking to the student and their families as well as more targeted suggestions based on the nature of the behaviours or the academic difficulties. The suggestions were quite general but appropriate for the

situations and reflected an initial response to uncover more information and involve the student and family in a problem-solving approach. Previous research does not exist to support these findings but in the present sample, educators did display a level of understanding and willingness to explore underlying reasons for behaviours, which is in line with the initial approach suggested in many resource guides and provincial guidelines (e.g., Ontario Ministry of Education, 2013). Interestingly, those educators focusing on teaching older students were more likely to turn to help outside of their classroom rather than to develop strategies within their classroom. It is unclear whether this group of educators feel less prepared than their elementary-focused counterparts, believe that there are more resources available in schools, or are less willing to include students with behavioural difficulties, as has been shown in previous research (Alvarez McHatton & McCray, 2007; Avramidis & Norwich, 2002). Again these findings are fodder for future research in the area to provide greater depth in unpacking the perceptions of elementary- and secondary-focused educators.

Pre-service teachers completing the Child version were generally able to identify the diagnosis associated with the behaviours in each vignette, with approximately 85% choosing either anxiety or OCD for Robyn and ADHD for Erin. Those completing the Adolescent version also correctly identified ADHD as the most likely explanation for Erin's behaviours (82%); however, while most participants chose anxiety for Robyn (54%), a sizable percentage (19%) believed that ADHD explained the behaviours described. Variety was also seen in the responses to Dan's vignette with approximately 50% choosing ODD; however an additional 10% identified conduct disorder, which shares many similarities. Interestingly, 15% of participants completing the Adolescent version did not believe that Dan's behaviours indicated any kind of mental health problem at all.

Around 40% of respondents identified depression as the explanation for Chris's behaviour, although a significant number also identified home life difficulties in the Child version and substance use/abuse in the Adolescent version. Thus pre-service teachers appear to be most likely to correctly identify the signs of anxiety and ADHD and are less likely to recognize the signs of depression, especially in younger children. Previous research has also documented the moderate level of understanding and knowledge that educators, both pre- and in-service, hold with respect to ADHD (Bekle, 2004), as well as the ability of educators to identify students with high levels of anxiety (Layne, Bernstein, & March, 2006; Mesman & Koot, 2000). However, it is important to note that, particularly among adolescents, difficulties arising from depression, including substance use/abuse, can be more obvious and appear a higher priority for teachers than the underlying reasons for depression. The responses of pre-service teachers who identified substance use/abuse as explanations for Chris's behaviour may not reflect a deep understanding of the nature of depression, but they are certainly logical given the situation described in the vignette.

Given the findings, pre-service teachers express the most concern, and the least amount of knowledge, about the behaviours of students displaying symptoms of depression. As expected, efficacy was lowest when dealing with a student with ODD: a challenging externalizing diagnosis that presents many issues in a busy classroom. However, the views of prospective teachers of younger children were somewhat different

than those of adolescents in terms of academic expectations. Those in the former group were influenced solely by the behaviour in the student vignette; and the latter group, in contrast, estimated long-term academic success based on the present academic difficulties in the student vignette.

It is also of note that the responses of pre-service teachers were not significantly influenced by prior professional or personal experience with mental health. This finding may have been in part due to the limited range observed within the experience variables. About half of the pre-service teachers surveyed reported having no professional experience with mental health, and about half reported having *Some experience*; less than 8% of respondents had either *Quite a bit* or *Extensive experience*. Participants reported slightly more experience personally, but the majority chose *Some experience*. It is possible that differences would have emerged if a sizable percentage of participants had had experiences that were more extensive and intensive than those in the current sample.

Implications and Future Research

Several interesting findings emerged from the current study and provide avenues for future research as well as considerations for professional learning opportunities developed and implemented at the pre- and in-service level. Limited research exists that explores the mental health literacy, and specifically the related beliefs, of educators. Current findings suggest that educators do have basic knowledge about various mental illnesses and are able to correctly identify these based on vignettes. Knowledge is lowest with respect to depression and ODD, compared to ADHD and anxiety. However, educators express the least confidence in teaching a student with ODD, regardless of current academic success. Finally, educators suggest several appropriate preliminary steps to take when faced with a student experiencing mental health difficulties, although those teaching adolescents had a higher tendency to suggest referrals rather than addressing issues within their classroom, a decision that may be well-justified. Future programs and courses should focus on developing competency among educators in the areas of depression and ODD and exploring educator beliefs with respect to academic expectations.

A number of limitations exist that limit the generalization of findings from the current study. First, while the measure underwent a rigorous process of development based on best practices, it does not have established psychometric properties beyond face validity. As well, as with all hypothetical and self-reported surveys, possible discordance between the actual versus reported or imagined behaviour of the participants remains an issue (Hughes, 1998; Lucas, Collins, & Langdon, 2009), as does the possibility that respondents may provide socially desirable responses (Barter & Renold, 1999). Finally, the use of single items to measure constructs such as self-efficacy further limits interpretation within the existing study. Within the vignettes, the gender of the child or adolescent may have played a role and influenced some of the current findings; given the modest number of participants within each version of the survey, it was not possible to vary the gender of the child or adolescent in order to explore this possibility. Given the findings described in this paper, greater insight into the perceptions of educators may be gained by varying the gender of the students in order to gauge the influence of these variables.

As well, demographic data that were collected, including educators' personal experience, professional expertise, age, gender, and program (primary/junior, junior/intermediate, intermediate/secondary) may also affect perceptions; interactional analyses between these were not possible at this stage given the sample size. Finally, as with all paper-based, theoretical measures, it would also be valuable to explore the relationship between the measure used in the study and the actual behaviours and practices of educators once they engaged in real-life settings.

As educators play a key role in early identification of mental health issues as well as in timely and appropriate referral and intervention, exploring their mental health literacy, including beliefs and knowledge, and designing educational programs that are aligned with these is essential. Although based on a limited sample, the current findings certainly suggest that further education and professional development is required for pre-service and potentially practising teachers, particularly in the areas of depression and externalizing behaviour difficulties. Furthermore, given our findings, it may be of value to create opportunities for educators that are specifically focused on children or adolescents rather than combining these, as the signs and symptoms presented at different ages and the responses necessary from educators vary.

Given the growing number of students worldwide who require mental health services and the far fewer number who actually receive the help they need, the exploration of teacher mental health literacy, as well as evaluations of targeted professional development of educators at all stages of their careers, should be a top priority for researchers, policy makers, and educators.

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Appendix: Student Vignettes

Chris: Depression/Male/Academic difficulties (DEP + ACA)

Child Version

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.

Adolescent Version

Chris is a 15-year-old boy in Grade 10 at Sunshine secondary school. Chris' English 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 during class and his work is rarely handed in. As a result, his English grade has dropped substantially since midterm reports. He used to be a member of the volleyball team but Jayne has recently learned that Chris quit the team. In her own class, Jayne has noticed that Chris no longer sits with his friends but prefers to sit alone. She has also noticed that he frequently looks tired; and on more than one occasion, Jayne has thought she smelled alcohol on Chris's breath.

Robyn: Anxiety/Female/No academic difficulties (ANX – ACA)

Child Version

Robyn is an 8-year-old girl in Grade 2 at Sunshine elementary school. Robyn's teacher, Jayne, has some concerns about Robyn's behaviour. Over the past few weeks, Robyn has been arriving late to school, apparently because she was unable to get ready fast enough in the morning. At school, Robyn spends a lot of time erasing and rewriting words in her notebook until she considers her printing "neat enough." She also frequently asks for the bathroom pass or tries any excuse to be allowed to leave the classroom. Jayne has noticed that Robyn doesn't play outside with her peers during recess. When asked why, Robyn said that the playground equipment had been "dirtied" by the other students. Robyn has continued to get good grades in most of her subjects.

Adolescent Version

Robyn is a 15-year-old girl in Grade 10 at Sunshine secondary school. Robyn's English teacher, Jayne, has some concerns about Robyn's behaviour. Lately, Robyn has been inattentive in class and often appears to be daydreaming. She was also unable to complete a test during class time. Jayne noticed on Robyn's test paper that she had erased and rewritten the same answers in several places. During class, Robyn asks the same questions of Jayne repeatedly. This habit disrupts the class and takes up a lot of Jayne's time. Jayne has also noticed that Robyn doesn't socialize with her peers. Robyn avoids group work by complaining that she feels sick and worries she might spread her illness if she has to sit near the other students. Robyn has been able to maintain good grades in this subject overall.

Erin: ADHD/Female/Academic difficulties (ADHD + ACA)

Child Version

Erin is an 8-year-old girl in Grade 2 at Sunshine elementary school. Erin's teacher, Jayne, has some concerns about Erin's behaviour. Erin interrupts Jayne's lessons frequently with questions or comments about the information being presented. Erin often gets up from her desk throughout the day and initiates conversations with her peers, who become annoyed at the interruption. Erin usually does well in Physical Education, Art and Drama but needs frequent reminders to follow instructions. Her Language Arts and Math work is often unfinished, and she has difficulty organizing her materials in Science. As a result, her grades in these subjects are low.

Adolescent Version

Erin is a 15-year-old girl in Grade 10 at Sunshine secondary school. Erin's English teacher, Jayne, has some concerns about Erin's behaviour. Erin frequently interrupts Jayne's lessons with questions or comments about the information being presented. Erin often gets up from her desk and initiates conversations with her peers, who become annoyed at the interruption. Jayne has noticed that Erin's friends now exclude her from group work activities. Although Erin has shown that she does understand the material, she often does not complete assignments and cannot seem to organize her work. As a result, her mark in this subject is low.

Dan: ODD/Male/No academic difficulties (ODD – ACA)

Child Version

Dan is an 8-year-old boy in Grade 2 at Sunshine elementary school. Dan's teacher, Jayne, has some concerns about Dan's behaviour. Dan has frequently refused to complete worksheets assigned by Jayne, stating that his "annoying" classmates make it hard for him to concentrate. The work Dan has completed shows he does understand the material, and as a result he is passing most of his subjects. He has become very angry in Phys Ed class when reminded of the rules of the basketball game insisting that the rules are "stupid." When Dan threw a basketball on the roof of the school, he lied and claimed that it was another student who had actually done it.

Adolescent Version

Dan is a 15-year-old boy in Grade 10 at Sunshine secondary school. Dan's English teacher, Jayne, has some concerns about Dan's behaviour. Dan has frequently refused to complete in-class assignments, openly stating that his "annoying" classmates make it hard for him to concentrate. The work Dan has completed shows that he does understand the material, and as result his mark is average. He became angry with his peers during a group activity, complaining that the task was "lame and stupid." His group members complained that he was telling them what to do but was not actually contributing anything himself. Dan claimed they were lying and were just trying to get him in trouble. Dan has been sent to the office repeatedly for arguing with other teachers.