Teachers' Knowledge, Recognition, and Referral of Common Mental Disorders

by

Deepak Singh

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Abstract

Mental disorders are one of the leading health problems affecting Canadian children and youth. Teachers are considered frontline workers in child mental health due to the amount of time children spend at school. Given the high prevalence of mental disorders, and the amount of time teachers spend with children, there is a need to assess the mental health literacy of teachers to better understand the extent to which they can support students' mental health. Research regarding Canadian teachers' mental health literacy for common childhood mental disorders is lacking. In the current study, I examined Canadian teachers' mental health literacy in terms of their knowledge, recognition, and referral of four mental disorders commonly seen in schools (i.e., attention-deficit/hyperactivity [ADHD], oppositional defiant disorder [ODD], depression, and anxiety). One hundred in-service teachers were recruited through social media websites to participate in an online survey. The survey included selected-response and open-ended questions. Descriptive statistics, repeated measures ANOVAs, mixed ANOVAs, post hoc tests, and thematic analyses were used to analyze the data. Overall, teachers' knowledge of the four mental disorders was lacking, and they demonstrated difficulty recognizing relevant symptoms. However, teacher knowledge and recognition varied depending on the type of disorder and teacher demographics. Teachers' willingness and likelihood to refer students for mental health services (i.e., assessment or intervention) varied by disorder. These results are discussed within the context of their implications for improving teacher training and their mental health literacy.

Keywords: mental disorders, mental health literacy, Canadian teachers, ADHD, ODD, depression, anxiety

Preface

This dissertation is an original work by Deepak Singh. The research project, of which this dissertation is a part, received research ethics approval from the University of Alberta Research Ethics Board, Project Name "Teachers' Knowledge, Recognition, and Referral of Common Mental Disorders in Schools", No. Pro 00099998, July 30th, 2020.

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Chapter 1: Introduction

Mental disorders are one of the leading health problems affecting Canadian children and youth with a prevalence rate ranging from 10 to 20% (Canadian Institute for Health Information, 2020). Approximately 70% of mental disorders have their onset during childhood or adolescence, which emphasizes the importance of early recognition and intervention (Kessler et al., 2007; Youth Mental Health Stats in Canada, 2019).

Accurately identifying and reducing the effects of mental disorders cannot be overstated. The economic burden of mental disorders in Canada is estimated to be approximately $51 billion per year (Centre for Addiction and Mental Health, 2019). There are several long-term consequences of untreated mental disorders, such as increased mortality, risk of suicide, stigmatization in social and workplace settings, loss of productivity, and reduction in health-related quality of life (Centre for Addiction and Mental Health, 2019; Lim et al., 2008; Waddell et al., 2005). Not only do mental disorders have severe long-term consequences for individuals, but they can also significantly impact daily functioning. For children and youth, poor mental health is often associated with lower grades in school and a reduced capacity to build social relationships in comparison to peers with good to excellent mental health (Statistics Canada, 2019). Among Canadian youth, mental disorders such as depression and anxiety, also impact school related behaviours and outcomes, such as frequent absenteeism and incomplete homework (Duncan et al., 2021). Together, the short- and long-term consequences of mental disorders further stress the importance of recognizing and treating their symptoms in a timely manner, especially in children and youth.

In comparison to other high-income countries, Canada ranked 31st out of 38 on measures of well-being, which is defined by feeling positive and having good mental health (Vaillancourt,

2021). Canada also ranked 35th out of 38 in terms of preventing teen suicide (Vaillancourt, 2021). Furthermore, Canada has shown little, if any, improvement over the past decade with regards to mental health, as indicated by percentage of adolescents reporting concerns over their mental health (Gromada et al., 2020). Canadian children's mental health has also worsened since the start of the COVID-19 pandemic. Studies of Canadian children and youth, including cross sectional and longitudinal studies, have provided evidence of deterioration in at least one mental health domain, particularly for those with a pre-existing diagnosis (Cost et al., 2021; De France et al., 2021). Finally, anxiety and depression scores were found to be significantly higher than previously predicted trajectories, thus indicating that mental disorders are on the rise (Cost et al., 2021; De France et al., 2021).

Mental Disorder: Definition and Contributing Factors

Many terms, such as mental illnesses and mental disorders, are often used interchangeably to describe diagnosable conditions. Mental illnesses are often characterized by changes in thinking, mood, or behaviour associated with significant distress that results in impaired functioning (Government of Canada, 2020). The *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* defines mental disorder as a "syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behaviour that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning" (p. 20; American Psychiatric Association, 2013). In addition to the *DSM-5*, there are other diagnostic manuals such as the *International Statistical Classification of Diseases and Related Health Problems - ICD-11* (World Health Organization, 2019). These diagnostic manuals not only provide descriptions of different mental disorders, but they are commonly used by health care professionals for identifying the symptoms relevant to different

mental disorders. Furthermore, these manuals help professionals conduct research on mental disorders, and create a shared language for communicating about client's psychological challenges. Conversely, mental health is defined as a state of well-being which allows individuals to adapt to the environmental stressors and function to the best of their abilities (World Health Organization, 2022a). According to the Canadian Mental Health Association (2020), good mental health may include: (a) a sense of purpose, (b) strong relationships, (c) feeling connected to others, (d) having a good sense of self, (e) coping with stress, and (f) enjoying life. Therefore, mental health is more than an absence of a mental disorder and is often described as a state of general well-being.

When discussing factors contributing to mental disorders, it has become increasingly evident that most forms of child psychopathology are etiologically heterogenous and cannot be attributed to a homogenous cause (Hayden & Mash, 2014). A variety of risk markers lead to the development of psychopathology in children, such as: (a) genetic influences (Goodyer et al., 2009; Rutter, 2004, Sheikh et al., 2013); (b) temperament (Frick, 2004; Muris & Ollendick, 2005; Nigg 2006); (c) insecure child-parent attachments (Lee & Hankin, 2009; Priddis & Howieson, 2012; Sroufe et al., 1999); (d) social cognitive deficits (Luebbe et al., 2010); (e) social learning deficits (Lansford et al., 2010); (f) emotion regulation and dysregulation (Sheppes et al., 2015; Southam-Gerow, & Kendall, 2002); (g) effortful control (Gusdorf et al., 2011); (h) neuropsychological or neurobiological dysfunction (Cicchetti & Cannon, 1999); (i) poverty related stressors (Costello et al., 2003; Najman et al., 2010); (j) institutional deprivation (Ellis et al., 2004; Kennedy et al., 2016) and (k) trauma (Abraham et al., 2022; Putnam, 2009). Furthermore, there are parental risk markers that may contribute to child psychopathology,

including maladaptive patterns of parenting, parental psychopathology, and parental conflict (Hayden & Mash, 2014).

There are several models that have been proposed to help explain the etiology of various mental disorders, such as the developmental psychopathology, psychodynamic, attachment, behavioural/reinforcement, social learning, interpersonal, cognitive, neurobiological, affective, and family systems models (Hayden & Mash, 2014). Each of these research-informed models provides unique insight into the factors contributing to child psychopathology, as well as diverse explanations regarding the etiology of mental disorders. The degree of support for each model suggests there are many factors contributing to child psychopathology, and no single model can completely explain the occurrence of a mental disorder.

Despite an estimated 1.2 million Canadian children and youth being affected by a mental disorder less than 20% receive appropriate treatment (Mental Health Commission of Canada, 2019; Merikangas et al., 2009; Youth Mental Health Stats in Canada, 2019). There are a variety of barriers to accessing mental health services in Canada, including: (a) not knowing where to get help; (b) long wait times; (c) shortage of accessible mental health professionals; (d) lack of mental health service integration and government oversight; (e) cultural and language barriers; (f) concerns about stigma; (g) biases due to geography or demographics (e.g., rural, or indigenous populations); and (f) cost of services (Moroz et al., 2020). Another reason Canadian children may fail to receive appropriate treatment is because individuals working with them may lack the mental health literacy required to identify the early signs or symptoms of various disorders (Whitley et al., 2013). Mental disorders among Canadian children and youth are ongoing and worsening. Early recognition and intervention may help to alter this negative trajectory. This could be accomplished by increasing the mental health literacy of those working

with school-age children and youth.

The purpose of this study was to measure teachers' MHL regarding some of the most common childhood mental disorders: anxiety, depression, attention deficit hyperactivity disorder, and ODD (Whitley et al., 2013). Therefore, teachers' knowledge and recognition of the most common internalizing and externalizing disorders were evaluated. Furthermore, teachers' reasons for referring students for additional mental health support were collected to determine if students with internalizing and externalizing disorders are given an equal opportunity for support. Evaluating teachers' MHL and referral practice has implications for their training and practice.

Chapter 2: Literature Review

Mental health literacy (MHL) was developed from the concept of health literacy. Health literacy was defined as the ability to obtain, understand, and use information to promote and maintain good physical health (Nutbeam et al., 1993). Recently, researchers have defined health literacy as: "The degree to which individuals can obtain, process, understand, and communicate about health-related information needed to make informed health decisions" (Berkman et al., 2010, p. 16). Researchers have demonstrated the importance of health literacy by linking low health literacy to a variety of negative outcomes, such as higher rate of chronic illness, higher health care related costs, lower use of preventative health related services, worse self-management of chronic diseases, and early death (Baker et al., 2007; Berkman et al., 2011; Bostock & Steptoe, 2012).

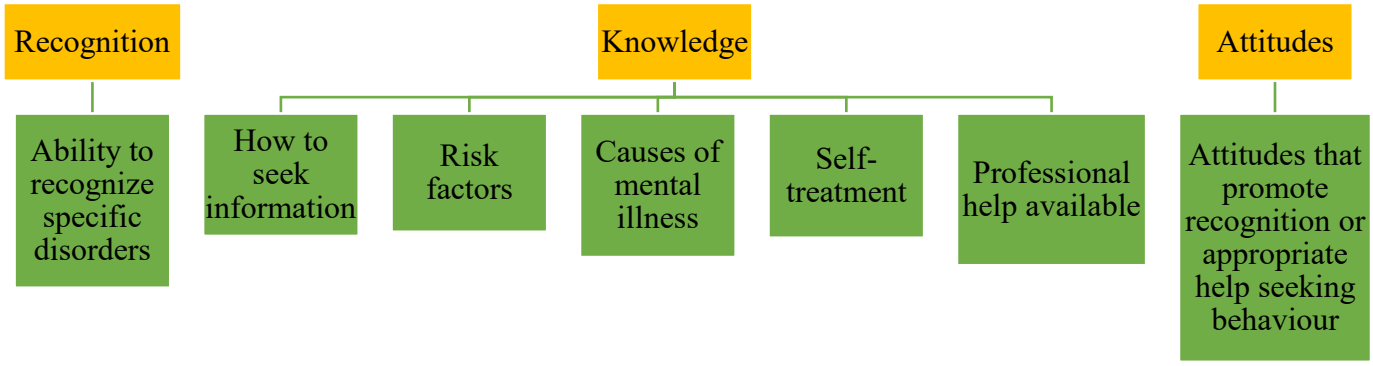
In the 1990s, MHL was often neglected as an area of research. Due to the need to look beyond physical health, Jorm and colleagues (1997) coined the term "mental health literacy" to refer to "knowledge and beliefs about mental disorders which aid their recognition, management, or prevention." (p. 182). MHL includes: (a) the ability to recognize specific mental disorders; (b) knowledge of how to seek mental health information; (c) knowledge of risk factors, causes, self-treatments, and professional help available for mental disorders; and (d) attitudes that promote the recognition of mental disorders and promote appropriate help seeking behaviours (Jorm et al., 1997).

The definition of MHL has also evolved over time. The original definition by Jorm and colleagues (1997) failed to indicate what knowledge and beliefs represent good MHL. Therefore, Bourget and Chenier (2007) attempted to redefine MHL in a much broader sense by including the range of cognitive and social skills that facilitate mental health promotion. This also included

the capacity of an individual to consider and act upon social, as well as individual, determinants of mental health. More recently, O'Conner, Casey, and Clough (2014) summarized the components of MHL (see Figure 1). Kutcher and colleagues (2015) further updated the definition of MHL to include four components: (a) understanding how to optimize and maintain good mental health, (b) understanding mental disorders and their treatments, (c) decreasing stigma, and (d) enhancing help-seeking efficacy.

Figure 1

Mental Health Literacy Framework



The Importance of Mental Health Literacy

Mental disorders are a global problem, with around 450 million people currently experiencing difficulties with a mental disorder, making it one of the leading causes of disability worldwide (Centre for Addiction and Mental Health, 2022; Venekataraman et al., 2019). Mental disorders are common in developing and developed countries, impacting individuals regardless of age, gender, socioeconomic status, culture, and community type (i.e. urban or rural). Given the widespread prevalence of mental disorders, it is imperative for individuals' mental health literacy to be improved to increase awareness, knowledge, and recognition, and to reduce stigma

associated with mental disorders. With the rise of social media platforms, there has been a surge in social media initiatives to promote positive mental health. For example, Bell Media has a popular mental health awareness campaign called #BellLetsTalk, wherein they contribute proceeds from the use of the hashtag in text messages or on social media to mental health organizations.

Although mental health awareness campaigns are important in attempting to improve people's understanding of mental disorders and encouraging them to access appropriate services, these campaigns are likely not sufficient in accomplishing this on their own. There is a need to improve the MHL of individuals to ensure that they gain the skills needed to better recognize and manage their own mental health, as well as the mental health of others. Researchers have previously found that the general population tends to display poor MHL particularly in terms of recognizing symptoms of a mental disorder (Furnham & Swami, 2018). Furthermore, the general population tends to emphasize self-help over traditional medical treatments. Due to the large number of children being impacted by mental disorders, and the resulting economic burden, it is crucial to evaluate the MHL of the individuals working with children. By improving the MHL of individuals working with children, the recognition rate of specific disorders can potentially be improved. Furthermore, improving MHL can enhance the knowledge and attitude needed to promote help seeking behaviours among children. Overall, improving the MHL of individuals can result in a variety of benefits: (a) early recognition of mental disorders, (b) early intervention and help-seeking behaviours, and (c) reduced stigma around mental illness.

Early recognition. Early recognition is defined as identifying individuals who are at risk of developing a mental disorder or identifying those for whom the symptoms of a mental disorder have not yet become chronic (Lee et al., 2019). Despite the high prevalence of mental

disorders, only a minority of individuals receive appropriate treatment. For individuals who eventually receive treatment, median delays can range from 1 to 14 years for mood disorders, 3 to 30 years for anxiety disorders, and 6 to 18 years for substance use disorders (Wang et al., 2007). The longer the delay in mental disorder treatment, the poorer the associated treatment outcomes (Jorm, 2012). Difficulty in recognizing symptoms of mental disorders has been shown to be related to the delay or failure of youths to access professional help (Gulliver et al., 2010). Furthermore, youths perceive social support and encouragement from others as beneficial in the help seeking process, with friends and family being preferred sources of support (Gulliver et al., 2010; Rickwood et al., 2007).

Given the problems with recognizing symptoms of mental disorders and the reliance on others for support, adults working with young individuals are important gatekeepers to mental health services. Due to the early onset of many mental disorders, children and adolescents are often experiencing mental disorders at a time when their knowledge and experience are underdeveloped. Therefore, when a child has a mental disorder, those in close contact with them will be the first to recognize the symptoms. However, an individual's ability to recognize a child's symptoms, and knowledge of if, and when, to seek help, is dependent on their MHL. Lack of knowledge, which is an important component of MHL, is perceived as a barrier to parents accessing services for their child's mental health (Hansen et al., 2021). If a parent or teacher has low MHL, the child's symptoms may go unnoticed, and they may not receive appropriate support or treatment. Early recognition also has benefits for children and adolescents who are experiencing a mental disorder. For example, researchers have demonstrated that young individuals who recognize a disorder tend to have better help-seeking and treatment preferences (Wright et al., 2007). Furthermore, a young individual's ability to recognize disorder is also

associated with the ability of adults around them to recognize a disorder correctly (Wright and Jorm, 2009). Therefore, improving the MHL of teachers, parents, and children/adolescents is likely to help increase the early recognition of different mental disorders.

Early intervention. Early intervention is a term often used to describe services that are available to support infants or toddlers with developmental delays or disabilities (Morin, n.d.). However, in the context of the current study, early intervention refers to providing support and strategies to an individual when the early warning signs or symptoms of a mental disorder are identified (Mental Health First Aid, 2021). The purpose of early intervention is to prevent the symptoms of a mental disorder from getting worse over time. Early intervention and early recognition are interconnected because you must first recognize the symptoms before intervening with them. MHL is not only important for early recognition of mental disorders, but also for the early intervention among school-aged children. Researchers have demonstrated that individuals with mental disorders often delay seeking appropriate help and remain untreated (Jung et al., 2016). Early intervention is essential because targeting problem behaviours related to school-aged children's mental disorders could prevent long-term consequences. Interventions designed to improve MHL may encourage young individuals to recognize their own symptoms of mental disorders and seek early treatment. For example, researchers have demonstrated that although the rate of mental disorder recognition among children is relatively low, those who can accurately recognize a disorder expressed that they are three to four times more likely to engage in a helping action, such as telling an adult (Olsson & Kennedy, 2010). Individuals with higher MHL who can recognize mental disorders are also more likely to identify appropriate treatment options (Jung et al., 2016). In contrast, individuals with lower MHL may believe in early termination of mental health treatment and are more likely to engage in inappropriate coping strategies (Jung et

al., 2016). High MHL is also important for individuals who do not currently have a mental disorder, because it can promote early intervention for future problems. Therefore, MHL likely plays a role in appropriate help seeking behaviours. By having adequate knowledge about early symptoms and appropriate treatment resources, individuals can promote early intervention by helping others who may be experiencing symptoms of a mental disorder.

Stigma reduction. Stigma can be described as the beliefs or responses individuals have towards someone with a mental disorder, including stereotypes (i.e., negative beliefs), prejudice (i.e., agreement with negative beliefs or having negative emotional reaction), and discrimination (i.e., behavioural response to prejudice; Corrigan & Watson, 2002). Stigmatizing beliefs regarding mental disorders are a major barrier to youths' help seeking behaviours (Rose et al., 2007; Schomerus & Angermeyer, 2008). Improving MHL is important because people tend to hold stigmatizing beliefs about individuals with mental disorders, which can contribute to social isolation, distress, and long-term consequences such as difficulty finding jobs (Crisp et al., 2000). Stigmatizing beliefs, such as attributing mental disorders to a personal weakness, have been shown to be associated with lower intention to seek help from a doctor, and fewer positive beliefs about other professionals, such as counsellors and psychologists (Yap et al., 2011). Researchers have also found greater knowledge about mental disorders to be related to lower agreement with stigmatizing beliefs and a more positive attitude towards professional support (Jung et al., 2016). By improving MHL, the consequences of stigma associated with mental disorders may be reduced.

Role of Teachers in Supporting Students' Mental Health

Teachers are considered the frontline workers in child and youth mental health because students spend one third of their day and two thirds of their year at school. Teachers are

generally aware that there are an increasing number of children and youth with concerns over their mental health. However, they may lack the knowledge of available resources and confidence in their skills to support students with these needs (Weston et al., 2018). Teachers have reported feeling stressed and clueless regarding how to handle children with mental disorders, which may contribute to teacher burnout, depression, and attrition rates of 40-50% (Ball et al., 2016; Gallant & Riley, 2014; Kidger et al., 2010; Kidger et al., 2016). Assessing the MHL of teachers would help determine whether teachers have adequate skills to support students with mental disorders, or whether this responsibility would be better placed on other professionals in the schools. There are five critical features supporting the implementation of a MHL initiative with teachers: (a) the readiness of the system, (b) the readiness of individuals, (c) social and organizational support, (d) collaborative professional learning, and (e) a teacher-driven pedagogy for resiliency (Weston et al., 2018).

As teachers' roles expand within schools, MHL becomes an important part of their education within the school system. Most teachers view lack of adequate training in dealing with children's mental health as a barrier to supporting students, and the majority reported receiving no training in MHL (Whitley et al., 2018). Despite the lack of training, teachers are highly involved in mental health interventions (40.8%), and they may be the sole provider of mental health intervention, particularly at the universal level (Franklin et al., 2012). Therefore, teachers play an important role in supporting children's mental health, not only by recognizing early signs of disorders, but also by participating in interventions.

There are a variety of methods to identifying children in need of support for their mental health, which include teacher referral, parent referral, self-referral, and universal mental health screening (Eklund et al., 2009). Mental health screening is the assessment of students to

determine whether they are at risk of developing a serious mental health problem (Center for School Mental Health, 2018). Although universal mental health screening plays an important role within the school system because it promotes early identification and intervention of children, it is not always applied in a school district. School staff may decide not to use universal mental health screening due to a variety of factors such as: (a) limited financial resources, (b) unawareness that screening exists, (c) limited access to emotional or behavioural health screeners, (d) competing demands on time, (e) already high reporting requirements on the school staff, and (f) not having the support system in place to help students who may be identified (Bruhn et al., 2014; Eklund et al., 2009). Due to the limitations associated with universal screening, teachers' ability to recognize the early signs of mental disorders in their students remains an acceptable alternative to universal mental health screening. However, to recognize early signs of mental disorders and refer students for additional support, teachers need to possess adequate mental health literacy.

Mental Health Literacy of Teachers

When evaluating the MHL of teachers, their knowledge, attitudes, and recognition must be assessed, because these are essential components of MHL. By evaluating teachers' MHL, researchers can provide insight into ways to improve teacher training. Furthermore, evaluating teachers' reasons for referring a student for additional support will aid in identifying whether teachers make appropriate decisions once they recognize the symptoms of a mental disorder.

Teacher Knowledge, Beliefs, and Attitudes

Researchers have found teachers to have positive attitudes towards mental health promotion, but they also express a need to further develop their abilities in this area (Alradaan, 2012; Askell-Williams & Cefai, 2014; Graham et al., 2011). Most teachers experience some

difficulty in managing their role, and the expectations placed on them within the school system (Graham et al., 2011). Yet, they remain committed to improving their mental health knowledge and participating in mental health education programs. Teachers also report a variety of barriers that undermine their positive attitude towards mental health promotion and impact the implementation of the mental health promotion process (Alradaan, 2012). These barriers include:

a) Personal barriers, such as negative attitudes, lack of awareness about their role and responsibility, and inadequate training/knowledge to recognize the early signs of mental disorders;
b) interpersonal barriers, such as lack of partnership between parents and teachers, resistance among administrators, and lack of partnerships between specialists and teachers;
c) socio-cultural barriers, such as school culture, social stigma, inappropriate media representations, and cultural/religious beliefs about dealing with mental health; and
d) structural-organizational barriers, such as concern about workload and time limits, absence of educational policies regarding teachers' responsibility for promoting mental health, lack of information/resources, and inadequate funding.

Although teachers hold a positive attitude towards mental health promotion, they may lack the knowledge required to support students who are experiencing mental disorders. Teachers' support and knowledge of mental disorders may vary by region, as one study indicated that Maltese teachers generally scored lower in terms of knowledge, resources, and parental support than Australian teachers (Askell-Williams & Cefai, 2014). Even in the United States, teachers have displayed limited knowledge regarding mental health, and they lack the confidence in their ability to manage the students in their classroom (Walter et al., 2006). Increasing

teachers' knowledge may help them feel more confident in managing students with mental disorders because teachers view lack of information as a major barrier to supporting students' mental health in their schools (Walter et al., 2006). When examining teachers' knowledge of mental disorders, researchers have mainly focused on comparing externalizing and internalizing disorders, with some researchers suggesting that incidental exposure acts as a main source of teachers' knowledge (Bryer & Signorini, 2011). Incidental exposure includes personal experiences of friends and family, community media, and school-based practicum.

Teachers tend to hold a variety of beliefs about mental disorders. Researchers have found that teachers' views about mental disorders may differ based on their level of experience, the type of disorder, and the grade they teach. For example, in-service teachers tend to view disruptive behaviours as the greatest mental health problem in schools, and disruptive behaviour management as one of the most important topics for in-service training (Al-Obaidi et al., 2013; Walter et al., 2006). However, pre-service teachers tend to believe students who display behaviours associated with depression need the most support (Whitley & Gooderham, 2016). Furthermore, pre-service teachers tend to express lower efficacy in teaching students with externalizing problems than internalizing problems (Whitley & Gooderham, 2016). There is also some variation in teachers' views when describing common signs and symptoms of mental disorders. Some teachers commonly described crying and avoidance as signs of anxiety, and attributed behaviours associated with depression to difficulties in homelife or to substance use or abuse (Neil & Smith, 2017; Whitley & Gooderham, 2016). Finally, teachers' views on mental disorders may vary based on the grade they teach. For example, middle school teachers rated vignettes as more concerning than elementary teachers, especially vignettes about male students

with externalizing symptoms. In addition, elementary teachers tend to provide more classroom-based support in comparison to middle and high school teachers (Green et al., 2018).

Teachers tend to take on the primary responsibility of implementing classroom-based interventions, especially for disruptive behaviours (Reinke et al., 2011). However, they may lack the experience and training to support students' mental health in the classroom (Dinan & Salyers, 2015; Reinke et al., 2011). Not only do educators and professionals working with teachers need to improve teachers' knowledge of mental disorders and confidence when working with students, they also need to consider their knowledge of externalizing versus internalizing disorders. Although internalizing disorders such as depression and anxiety are highly prevalent among children, students with internalizing problems may go undetected because they do not display obvious behavioural difficulties within the classroom. Overall, evaluating teachers' knowledge of mental disorders provides researchers with insight into areas where teacher training programs can be improved.

Teacher Recognition of Mental Disorders

Researchers have revealed mixed results when evaluating teachers' ability to recognize different mental disorders. Some researchers have found that teachers can recognize mental disorders such as anxiety or attention deficit/hyperactivity disorder (ADHD), as well as rate their severity (Loades & Mastroyannopoulou, 2010; Neil & Smith, 2017). Others have found teachers to have difficulty recognizing common indicators of social-emotional problems and supporting the academic learning of students with mental health problems (Ireland, 2017). Teachers have particular difficulty differentiating between symptoms bordering the clinical and non-clinical ranges (Headley & Campbell, 2011; Headley & Campbell, 2013; Neil & Smith, 2017). Some

teachers even view externalizing behaviours such as violence, aggression, and acting out behaviours as an indication of excessive anxiety (Headley & Campbell, 2013).

Teacher recognition based on the type of disorder. Teachers' ability to accurately recognize mental disorders can also vary by the type of disorder. Teachers may be better at recognizing externalizing problems than internalizing problems (Dwyer et al., 2006; Loades & Mastroyannopoulou, 2010). For example, one study resulted in teachers correctly identifying 50% and 40.7% of students who reported at-risk levels of depression and anxiety, respectively (Cunningham & Suldo, 2014). This percentage of correct identification is problematic because many students experiencing at-risk levels of depression or anxiety may go unnoticed and not receive the support they need. Teachers also prefer to identify signs of social difficulties in children than signs of excessive anxiety, which is likely because social difficulties are more easily identified than symptoms of internalizing disorders such as anxiety (Headley & Campbell, 2011).

Factors affecting teachers' recognition. Certain contextual factors and teacher characteristics also impact teachers' ability to recognize different mental disorders. For example, core subject teachers, particularly for language arts and mathematics, tend to be more accurate at identifying students' anxiety and depression than teachers of other subjects (Gelley, 2014; Storey, 2016). Factors such as fewer years of teaching experience predict higher sensitivity rates, whereas teachers' self-efficacy, teaching social studies, being male, and having fewer years of professional experience predicted specificity rates (Storey, 2016). Students' gender may also play a role in teachers' recognition of mental disorders. For example, researchers have shown teachers to be significantly more accurate in recognizing problems that described boys with symptoms of oppositional defiant disorder (ODD) and girls with seasonal affective disorder

(SAD) than vice versa (Loades & Mastroyannopoulou, 2010). Teachers may also be more concerned about female students experiencing internalizing symptoms (e.g., depression) than male students with externalizing symptoms (e.g., ODD, ADHD; Green et al., 2018).

Teachers' role and level of confidence in recognizing mental health problems. There is also some confusion as to whose responsibility it is to recognize early signs and symptoms of mental disorders. Teachers are expected to recognize symptoms of mental disorders because they spend a large amount of time with their students. Despite this expectation, only one-fifth of the U.S. teaching standard documents outline expectations for teachers to be able to identify and explain the signs of children's mental disorders (Ball et al., 2016). The lack of clarity surrounding teachers' responsibility may create some confusion as to whether they should be looking out for early signs of mental disorders. This is problematic because teachers play an important role in early identification of mental disorders, as they are often the first to witness the symptoms of a mental disorder in children.

Teachers lack the confidence in recognizing early signs of mental disorders with some researchers indicating that only 59.9% of teachers and administrators felt confident in recognizing signs of mental disorders (Moon et al., 2017). Furthermore, teachers felt more comfortable recognizing externalizing problems such as aggression towards other students, outburst in class, and inappropriate sexual behaviours, whereas they required some prompting to recognize internalizing problems such as sadness or withdrawal (Williams et al., 2007). This is likely related to the lack of training and comfort with labeling children when identifying those in need of additional support. Despite these challenges, teacher nomination shows some promise as a cost-efficient student screening method, and teacher assessment has been shown to be predictive of self-reported mental health problems (Dwyer et al., 2006; Honkanen et al., 2014).

Overall, teachers will continue to play an important role in supporting children's mental health. Therefore, it is important for teachers to possess adequate knowledge and hold positive beliefs regarding student's mental health. Due to the lack of mental health training, it is the responsibility of the professional organizations to make mental health training in teacher education mandatory. However, professionals working with teachers need to be supportive of teachers' workload and stress levels to ensure that they are not feeling overwhelmed when they are asked to recognizing and refer students. This will help ensure the success of mental health initiatives at schools.

Teacher Referral

Despite the relatively high prevalence rates of mental disorders among children and youth, only a small number of individuals in need of mental health care receive treatment for their symptoms (Canadian Mental Health Association, 2019; Waddell et al., 2014). Because majority of the children and youth who receive mental health support do so through their schools, teacher referral plays an important role in connecting children with appropriate mental health support (Husky et al., 2011). For example, the Canadian Mental Health Association (n.d.) described the typical referral process in schools: (1) teachers noticing the signs and symptoms of mental health problems parents may not have witnessed at home; (2) teachers may discuss the presenting problems with the student's parents and the school support team (e.g., other teachers, guidance counsellor, school coach, learning support facilitator, front office staff); (3) together, they can come up with a plan to support the student and connect the family with other resources available throughout the school district (e.g., school psychologist), or suggest a referral to the community resources (e.g., doctor, psychiatrist, or other professionals).

Factors affecting referral. Teachers have a variety of reasons for referring children to additional services, such as: (a) impact on learning, (b) atypical child behaviour, (c) repeated difficulties that fail to improve, (d) poor response to strategies, (e) teachers' need for support, and (f) information from parents (Hinchliffe & Campbell, 2016). Teachers' decision to refer a child may also be influenced by the severity of the disorder. Some researchers have revealed that teachers are more likely to refer students with moderate anxiety symptoms in comparison to students with severe anxiety disorder (Headley & Campbell, 2011). Other researchers have indicated that teachers may overlook children with internalizing problems who display good behaviours and may be more likely to refer students with obvious social difficulties (Molins & Clopton, 2002).

Teachers' gender can also impact their decision to refer students for additional support. For example, researchers have found that female teachers are more likely to refer children to the guidance counsellor compared to the male teachers (Headley & Campbell, 2011). Other researchers have also shown teacher characteristics, such as their gender, to be associated with the referral of adolescents experiencing depression and ODD (Green et al., 2022). Gender differences in referral, may be related to societal norms where it is more acceptable for females to display symptom of anxiety than males and males are more likely to conform to gender role standards of being tough and fearless (McLean & Hope, 2010). Therefore, gender role beliefs can impact teachers' willingness to refer students for additional support. For example, male teachers are likely to think that the stigma of being labeled may be greater than the cure (Headley & Campbell, 2011). Finally, teachers' personal experience and expectations can also influence their rate of referral. For example, researchers have found that teachers are more likely to

recommend special education services for children who do not align with their personal expectation of proper behaviour and academic functioning (Guest, 2015).

In addition to the factors related to teachers, student characteristics may also impact referral rates. For example, some researchers have found that male students and those with externalizing problems are most often referred to mental health services (Jones, 2017). There is also some variation in referral rates by ethnicity. Specifically, some researchers have found that African American male students were referred for special education evaluation at a higher rate than males of other ethnicities, and others have found white males as the most likely to be referred (Woodson, 2017).

Barriers to referral. When deciding whether to refer students for additional services, there are a variety of barriers preventing teachers from doing so. Teachers view parents as one of the most significant barriers to children receiving services because parental engagement and support in the school environment is critical to teachers' ability to refer students (Williams et al., 2007). Some parental barriers reported by teachers include lack of respect from parents, parents being unwilling to take teachers' advice, difficulty obtaining consent from parents, and lack of parental education. Teachers have also identified contextual barriers impacting their ability to refer children to external services, such as the student's living situation, lack of money or insurance, lack of resources, lack of communication within the household, lack of reliable transportation, and family concerns such as domestic violence or substance use (Williams et al., 2007). In addition to these barriers, challenges within the school system such as lack of resources, the bureaucratic structure of schools, and time constraints placed on the teachers may further reduce the likelihood of teachers to follow through with referrals (Williams et al., 2007). Other researchers have also identified a variety of barriers to teacher referral, such as: (a) lack of

training, (b) uncertainty about their roles, (c) lack of support/resources, (d) continuing stigmas/stereotypes related to mental health, and (e) lack of knowledge (Maclean et al., 2021; O'Farrell et al., 2023; Tyler, 2014).

Teachers' self-confidence. When it comes to referring a student for additional services, teachers are expected to identify the early signs and symptoms of internalizing problems, but they generally do not feel confident in identifying such problems (Papandrea & Winefield, 2011). Because teacher referral is one of the most common pathways for a child to receive mental health support, it is important for teachers to feel confident in recognizing and referring students with mental disorders. Teachers who work in schools with expanded school mental health services tend to feel more comfortable with students who have mental health problems, refer fewer students to the special education process, and are better able to manage students' social-emotional or behavioural problems themselves (Bruns et al., 2004). Furthermore, teachers feel more confident making a referral to the mental health professionals employed by the school districts than community-based services (Moon et al., 2017; Williams et al., 2007). This may be due to their familiarity with the professionals working within the schools, or having less knowledge of community-based services.

Evaluating Canadian Teachers' Mental Health Literacy

There are a variety of theories of child development. One such theory that helps explain child's development is the Bronfenbrenner's ecological systems theory. According to this theory, a child's development is best understood by looking beyond the child and their immediate environment, and by understanding the interactions between the different environments that comprise the child's world (Guy-Evans, 2020).

Although each child's world consists of multiple individuals and "systems," one who plays a particularly important role in supporting a child's daily functioning and development is their teacher. Teachers have prolonged contact with students during the school year, which allows them the opportunity to recognize early signs of mental disorders. Teachers play an important role within schools by identifying mental health problems and referring students for additional help because they possess an understanding of typical classroom behaviour and are exposed to a wide range of behaviours, which allows them to pinpoint behaviours that fall outside the norm (Headley & Campbell, 2013).

Teachers are some of the first adults to recognize mental health problems in children; therefore, they are in a vital position to refer students for additional help. Despite this, teachers may receive little or no education in mental health (Gowers et al., 2004). Research on Canadian teachers and administrators has demonstrated over 80% reporting concern over students' mental health and substance abuse, and over 90% reporting not having the required knowledge to address students' mental health (School Based Mental Health and Substance Abuse Consortium, 2013). Recent research using a newly created MHL measure found that Canadian classroom teachers, school administrators, and school support staff scored significantly lower than school-based mental health professionals (Wei et al., 2019). Other researchers evaluating MHL of Canadian teachers have also demonstrated a need for improving teacher MHL. For example, pre-service teachers attributed behaviours typical of depression to difficulties at home or substance use (Whitley & Gooderham, 2016). Teachers are expected to play an important role in supporting students' mental health due to the low ratio of mental health professionals to students within the schools. However, teachers are considered ill-equipped to manage the mental health of students in their classrooms, and teachers themselves have expressed a need for more assistance

in supporting the mental health of students (Froese-Germain & Riel, 2012; Short et al., 2009). Additionally, most Canadian teachers have received no professional development training to acquire the knowledge or skills to support student's mental health (Froese-Germain & Riel, 2012). Taken together, this further stresses the need to improve Canadian teachers' MHL.

Evaluating teachers' MHL has notable implications for teacher training and improving teachers' capacity to support students' mental health. Teachers' lack of education in mental health may also lead to inappropriate referral to other services (Cvinar, 2010). Teachers are generally interested in being involved in children's mental health services, and believe they have a duty to help identify and support students (Ford & Nikapota, 2000; Moon et al., 2017). Most teachers report a high level of concern for children's mental health and see a need for mental health training (Moon et al., 2017). However, school-based mental health professionals and administrators tend to display more concern about a child's mental health than teachers, suggesting that there is room for growth in fostering a shared responsibility in promoting children's mental health (Moon et al., 2017).

Teachers recognize the importance of identifying symptoms of mental disorders; however, they do not feel capable of doing so (Papandrea & Winefield, 2011; Walter et al., 2006; Rothi et al., 2008). Although teachers can recognize the signs and symptoms of common mental disorders, they tend to be more concerned about students with externalizing disorders than internalizing disorders (Loades & Mastroyannopoulou, 2010; Papandrea & Winefield, 2011; Walter et al., 2006). It is possible that teachers fail to identify students with internalizing problems because they do not display behavioural difficulties in the classroom and present as well-behaved (Molins & Clopton, 2002). Given the high prevalence of both internalizing and

externalizing disorders, it is essential for teachers to recognize both types of disorders equally so students experiencing internalizing problems can also be referred for additional support.

Interventions aimed towards improving teachers' knowledge and awareness of the signs and symptoms of common mental disorders have shown some promise (Deacon, 2015; Hussein & Vostanis, 2013). However, some researchers have indicated that training teachers may not necessarily improve their ability to recognize internalizing problems such as depression (Moor et al., 2007). Other researchers have found educational courses to have a positive effect on Canadian teachers' self-efficacy in teaching inclusive classrooms (Sharma & Sokal, 2015). For example, teachers' self-reported efficacy, concerns, and attitudes towards inclusion predicted their inclusive classroom practices (Sharma & Sokal 2016). Similarly, courses such as Mental Health First Aid have shown some promise in improving teachers' MHL in Canada (Massey et al., 2014) and countries such as Australia and the USA (Gryglewicz et al., 2018; Jorm et al., 2010; Kitchener & Jorm, 2008). However, the extent of research evaluating the effectiveness of such programs on Canadian teachers is limited.

The need to improve MHL has been acknowledged in Canada, with some researchers creating a curriculum designed to improve the MHL of students, teachers, and staff in educational institutions (Kutcher & Wei, 2018). This curriculum guide is currently in version three, and is designed as a self-study guide for teachers, as well as a curriculum for teachers to incorporate in their health focused classes. Previous research regarding the effectiveness of this curriculum displayed some growth in students' MHL (Kutcher et al., 2015) and teachers' MHL (Kutcher et al., 2013). Recently, there has been a push for schools and their staff to think of ways that mental health can be more effectively embedded within the school and system policies, practices, and services (Alberta Government, 2017). However, a review of Canadian teacher

training has revealed mental health to be at the bottom of the priority list, with teachers feeling under-prepared to support students' mental health (Atkin & Rodger, 2016; Rodger et al, 2014). These findings are similar to research findings regarding teachers in the USA (State et al., 2011). The need for better teacher training is further supported by research demonstrating that educational courses focusing on mental health have shown some promise. For example, pre-service Canadian teachers have reported having a greater understanding of children's mental health and better MHL to support the needs of their students after taking a course to increase their MHL (Atkin & Rodger, 2016; Woloshyn & Savage, 2018). Similarly, other researchers have recently revealed the potential for online mental health literacy courses to improve pre-service teachers' MHL in Canada (D'Agostino, 2019; Pandori-Chuckal, 2020).

Overall, a review of the literature suggests teachers tend to lack MHL. Even the general Canadian population underestimates the prevalence of mental disorders, has a poor understanding of different treatment options available, and confuses mental disorders with other types of problems (Bourget et al., 2007). The need to evaluate and improve Canadian teachers' MHL is further intensified by the lack of teacher training regarding mental health despite them communicating a need for such training. Despite the recent push for mental health initiatives, some teachers may resist the mental health training, as it can create confusion about their role and place additional demands on them (Rothi et al., 2008). Because there is some hesitancy from teachers regarding MHL training due to concern over increased demands placed on them, it could be important to evaluate whether teacher training programs would benefit from limiting training courses that specifically focus on disorders that teachers are most likely to come across in their classrooms (e.g., anxiety, depression, attention deficit hyperactivity disorder, and oppositional defiant disorder).

Generally, research on Canadian teachers' MHL is lacking, especially in comparison to countries such as Australia where the concept of MHL was originally created. Furthermore, researchers have not investigated whether knowledge contributes to teachers' ability to recognize mental disorders in the classrooms, and whether recognition would contribute to referral of children for additional mental health support. Therefore, there is a gap in the literature in terms of evaluating the relationship between these three components, especially within the same sample. Overall, because teachers play an important role in children's mental health, it is necessary to measure the MHL of teachers to ensure they possess adequate knowledge to identify common signs of mental disorders and refer students to appropriate services.

Theoretical Underpinning

Theory of Planned Behaviour

A variety of theories have attempted to explain human behaviour. Originally, Information Integration Theory (IIT) was used to describe how a person integrates information from a variety of sources to make an overall judgment (Anderson, 1971). This was extended into the idea of Theory of Reasoned Action (TRA), which attempted to predict how individuals would behave based on their pre-existing attitudes and behavioural intentions (Fishbein & Ajzen, 1975). Specifically, TRA stated a person's intention to perform a behaviour, along with the social norms surrounding the behaviour, and their attitudes, predicted whether a person would perform the behaviour. TRA was further extended into the Theory of Planned Behaviour (TPB). TPB extended upon the idea of TRA by including perceived behavioural control as a predictor of human behaviour (Ajzen, 1985). Overall, TPB posits that in addition to one's attitudes, subjective norms, and intention to perform a behaviour, perception of one's ability to perform a

behaviour (i.e., perceived behavioural control) is predictive of actual behaviour (Madden et al., 1992).

By evaluating and improving teachers' MHL, researchers can help teachers integrate new information into their existing knowledge and promote positive changes to their attitudes about mental health. This can help teachers feel more confident in their ability to help students with mental disorders, and as a result, have more positive beliefs about their ability to support students' mental health. Positive beliefs about their ability to help could impact their perceived behavioural control, and ultimately result in the desired behaviour (e.g., refer students for additional mental health support).

Attribution Theory

Another theory that could play a role in teachers' MHL is attribution theory. Attribution theory discusses how a person uses information to form explanations for events (Kelley and Michela, 1980). According to attribution theory, antecedents (such as information, beliefs, motivation) are connected to attributions (i.e., perceived causes), which leads to consequences (i.e., behaviour, affect, expectations). A variety of biases may influence attributions (Cherry, 2023). For example, an individual is more likely to blame external factors than one's personal characteristics when they are explaining their own behaviors. This is also known as the actor-observer bias. In contrast, an individual is more likely to attribute other people's behavior to internal factors instead of external factors, which is also known as the fundamental attribution error. Together, the attributions and the errors in attributions influences how a person views themselves and others as well as their motivation.

If teachers do not possess adequate MHL, they may attribute a child's behaviour to reasons other than their mental health, which may lead to inappropriate action (e.g., not referring

student for additional support) or inappropriate expectations (e.g., student is not capable of learning). Students with mental disorders may also experience academic problems (Bas, 2021; Pagerols et al., 2022). This connection can often occur both ways, in that mental disorders may impact a student's academic performance, and academic performance may contribute to the development of mental disorder symptoms (Houri, 2021). Teachers are primarily responsible for students' learning, and if they lack MHL, they may attribute students' academic troubles to other internal factors (e.g., student is not trying hard enough or is being lazy). Furthermore, teachers may also attribute their own behavior, such as not being able to identify a student with mental disorders, or not referring a student for support, to external factors outside of their control.

Self-efficacy Theory

Self-efficacy theory was developed by Albert Bandura, who described self-efficacy as a person's belief in their ability to succeed in a particular situation (Bandura, 1977). According to Bandura's theory, an individual develops their self-efficacy beliefs by interpreting information from four main sources: mastery experiences, vicarious experiences (i.e., social role models), social persuasion, and emotional/physiological states (Maddux & Stanley, 1986).

Researchers have found teachers to lack the confidence in their ability to recognize and help students with mental disorders (Moon et al., 2017; Walter et al., 2006; Weston et al., 2018). Furthermore, educational courses on MHL have had a positive effect on Canadian teachers' self-efficacy in teaching inclusive classrooms (Sharma & Sokal, 2015). Some researchers have demonstrated self-efficacy can also affect teacher behaviours in the classroom (Klassen et al., 2011). Together, these suggest that improving teacher MHL could potentially improve their self-efficacy to manage students with mental disorders, which may also facilitate teacher identification of such students. The concept of MHL also ties back into one of the four sources of

information; specifically, mastery experiences, as described by Bandura (1977). Bandura (1977) described mastery experiences as one of the most influential sources for self-efficacy, explaining practice is one of the best ways to improve one's mastery of a new skills or improve one's performance. Improving teacher MHL could therefore lead to better beliefs in one's ability, which in turn could impact their intention to perform a certain behaviour.

Self-Determination Theory

Self-determination theory describes an individual's basic needs for competence, relatedness, and autonomy as crucial to their psychological health, growth and well-being, intrinsic motivation, peak functioning, and self-actualization (Deci & Ryan, 2000; Ryan & Deci, 2002). Competence is described as an individual's ability and qualifications to effectively understand, deal with, and influence situations and tasks arising in their environment (Korthagen & Evelein, 2016). Relatedness is described as the desire to be connected to others, care for others, and have a sense of belonging (Korthagen & Evelein, 2016). Finally, autonomy is described as an individual's need to organize their experiences or behaviours and act according to their self-image (Korthagen & Evelien, 2016).

Researchers have found abovementioned components of self-determination theory to play an important role in teacher functioning (Evelein et al., 2008; Korthagen & Evelein, 2016; Liu & Sitoe, 2020; Reeve, 2020, Skinner & Edge, 2002). By improving teachers' MHL, researchers can help meet teachers' basic needs of competence and autonomy, which will in turn contribute to their motivation to help students with mental disorders, and help them perform at their optimal levels of functioning.

Current Study

To date, the existing ways of measuring MHL are lacking in numerous ways. First, MHL has predominantly been evaluated using vignettes, which can be problematic due to their ecological validity (e.g., Furnham et al., 2009; Jorm et al., 1997; Jorm et al., 2005; Magliano et al., 2004; Swami et al., 2010). Second, many MHL measures used by researchers have focused on exploring the MHL of post-secondary students, community samples, or mental health service users across countries such as USA, Australia, and the UK, which is not the intended target population for this study (Wei et al., 2015). Third, most MHL measures tend to primarily focus on mental health in general, or specific disorders such as depression and schizophrenia (Reavley et al., 2011, Gallagher & Watt, 2019; Marcus & Westra, 2012). Fourth, even when measures have been created to evaluate the MHL of Canadian educators, researchers have primarily focused on broad mental health related questions, or have few questions for each disorder, such as post-traumatic stress disorder, psychosis, obsessive compulsive disorder, and social anxiety (e.g., Wei et al., 2019).

To address some of the aforementioned gaps, researchers have recently emphasized the importance of creating questionnaires with sound psychometric properties to measure MHL (Dias et al., 2018). However, these questionnaires have also focused on measuring the MHL of students or young adults with questions that focus on mental health in general (e.g., questions on the importance of exercise, diet, or sleep), or questions specifically focusing on depression and schizophrenia. Overall, the previous measures have either been broad in nature, or they have focused on disorders that are likely not the most common disorders among children and adolescents. Previous measures have not focused on evaluating the knowledge, recognition, and referral of the most common internalizing and externalizing disorders in children and

adolescents, especially within the same sample. Therefore, the current study involved the creation of a measure to specifically evaluate the knowledge, recognition, and referral of teachers for some of the most relevant disorders seen in a school environment.

The purpose of this study was to measure teachers' MHL regarding some of the most common childhood mental disorders: anxiety, depression, attention deficit hyperactivity disorder, and ODD (Whitley et al., 2013). Therefore, teachers' knowledge and recognition of the most common internalizing (e.g., anxiety, depression) and externalizing (e.g., ADHD, ODD) disorders were evaluated. Furthermore, teachers' reasons for referring students for additional mental health support were collected to determine if students with internalizing and externalizing disorders are given an equal opportunity for support. Evaluating teachers' MHL and referral practice has implications for their training and practice. The primary purpose of the current study was to evaluate teachers' knowledge, recognition, and referral of common mental disorders present in children. Teachers were also asked follow up questions regarding their level of training and readiness to gain an understanding about what is currently informing their teaching practice. Specifically, the current study addressed the following research questions:

Knowledge

1a. Do teachers possess knowledge of common internalizing (i.e., anxiety and depression) and externalizing (i.e., ADHD and ODD) mental disorders among children and adolescents?

1b. Does teacher knowledge differ significantly based on the type of disorder?

1c. Do other variables (i.e., age, gender, level of experience, level of education, and formal training) impact teachers' knowledge of different disorders?

Recognition

2a. Can teachers recognize clinically significant symptoms of common internalizing (i.e., anxiety and depression) and externalizing (i.e., ADHD and ODD) disorders among children and adolescents?

2b. Does teacher recognition differ significantly based on the type of disorder?

2c. Do other variables (i.e., age, gender, level of experience, level of education, and formal training) impact teachers' recognition of different disorders?

2d. How confident are teachers about recognizing clinically significant symptoms of common internalizing (i.e., anxiety and depression) and externalizing (i.e., ADHD and ODD) disorders among children and adolescents?

Referral

3a. What is the likelihood of teachers referring students who are displaying symptoms of different mental disorders?

3b. Which of the disorders (i.e., anxiety, depression, ADHD, and ODD) are teachers most likely to refer students for additional support, and why?

3c. What aspects of a student's mental health presentation do teachers consider when deciding whether to refer them for additional support?

3d. What are the common reasons for teachers to not refer a student for additional mental health support?

Level of Training and Readiness

4a. What type of training have teachers received in terms of mental health?

4b. How ready do teachers feel to support students' mental health?

4c. What type of training would teachers find helpful in feeling more prepared to support students' mental health?

Chapter 2: Method

Research Design

To answer the research questions, a descriptive and correlational research design was used to evaluate teachers' knowledge, recognition, and referral of different mental disorders in the classroom. The data were collected cross sectionally (i.e., data from teachers were collected at a specific point in time) using an online survey with a combination of multiple choice, true and false, and open-ended questions.

Participants

A total of 100 in-service Canadian teachers were recruited from a variety of school districts across Canada. Sample demographics are provided in Table 1. There were two eligibility criteria. First, teachers needed to currently be practicing in Canada (or have practiced within the past year) and, second, they needed to teach within the preschool to grade 12 levels, inclusively. There were no exclusionary criteria and participants were not excluded based on any specific demographic characteristics.

Table 1

Demographics Information of Respondents

Variable	Categories	% of Respondents
Gender	Male	9
	Female	90
	Prefer not to say	1
Age	21-24	9
	25-34	49
	35-44	28
	45-54	12
	55-64	2
Ethnicity	European Origins	54
	Other North American Origins	15

	Mixed Origins	14
	Asian Origins	11
	North American Indigenous Origins	4
	Latin, Central and South American Origins	1
	African Origins	1
Years of Experience	1 year or less	15
	2-5 years	32
	6-10 years	21
	11-15 years	14
	16-20 years	10
	21 or more years	8
Highest Level of Education	Bachelor's degree	49
	Post bachelor's degree	33
	Master's degree	18
Level Taught	Preschool	4
	Elementary	63
	Middle	37
	Secondary	19
Education Stream	Regular/Inclusive Education	81
	Special Education	7
	Both Regular/Inclusive Education and Special Education	8
	Other (Private/Independent School or Indigenous Reserve)	4
Location	Alberta	15
	British Columbia	13
	Manitoba	11
	New Brunswick	1
	Ontario	58
	Saskatchewan	1
	Yukon, Northwest Territories, or Nunavut	1

Note. $N = 100$

The teacher demographics from the current study show some similarities with the demographics of the teacher population in Canada. For example, 74.5% of the teaching population in Canada identified as female and 24.2% identified as male (Statistics Canada, 2023). Canadian teachers by age group are as follows: 1.89% are less than 25 years of age,

18.55% are aged 25-34, 32.49% are aged 35-44, 32.48% are aged 45-54, 12.34% are aged 55-64, and 1.23% are over 65 years of age. In the current study, it is possible the high percentage of participants being in younger age groups is due to the higher likelihood of individuals in their 20s and 30s to use social media, which was the main source of recruitment in this study (Bush, 2023). The majority of teachers in the current study were white, which is consistent with the ethnicity distribution of the Canadian teacher population. Researchers have found 90% of the Canadian teacher population to be white (Sulz et al., 2023). The education level of the current sample of teachers was consistent with the minimum level of education required to become a teacher in Canada (i.e., bachelor's degree in education). Overall, the demographic characteristics of teachers in the current study were mainly comparable to those of Canadian teaching population. However, a review of the participant demographics in the current study reveals that the teacher gender within different grade levels is likely not representative of the Canadian teacher population given the smaller sample size. With regards to female teachers in the current study, 45.56% taught at the elementary level, 17.78% taught at the elementary/middle level, 16.67% taught at the middle level, 15.56% taught at the secondary level, 2.22% taught at the preschool/elementary level, 1.11% taught at the preschool/elementary/middle level, and 1.11% taught at the middle/secondary level. With regards to male teachers in the current study, 22.22% taught at the elementary level, 22.22% taught at the middle level, 22.22% taught at the secondary level, 11.11% taught at the preschool level, 11.11% taught at the elementary/middle level, and 11.11% taught at the middle/secondary level.

Sampling Procedures

A nonprobability sampling method with a combination of convenience and snowball sampling techniques were used to recruit the participants for this study. Participants volunteered

to participate in the study after reviewing the recruitment poster and were free to share the study with any of their colleagues. The recruitment poster included a variety of information deemed necessary for teachers to quickly judge whether they would like to participate in the study. Specifically, the recruitment poster included the following: purpose, things required from the participants, length of time needed to complete the survey, eligibility criteria, risks, benefits, primary researcher's information, and information regarding ethics approval. A copy of the recruitment poster is provided in Appendix A.

To recruit participants, the recruitment poster was shared on a variety of social media platforms (e.g., Reddit and Facebook). Social media platforms were used to collect the data for this study because social media is commonly used by a wide range of people, and it allowed an opportunity to recruit in-service teachers from a variety of provinces in Canada. To increase the chances that potential participants would come across the recruitment poster, the recruitment poster was also shared on relevant teacher groups found on different social media websites. To find relevant groups to share the study to, a variety of search terms were used such as Canadian teachers, teaching, teachers, education, and province specific terms (e.g., BC teachers, Alberta teachers etc.). Upon finding relevant groups within the aforementioned social media platforms, a request to join the group was sent to the group moderator with a brief explanation of the purpose of the request. Some requests to join the groups were denied because: (a) they did not allow participants to recruit participants for research; and (b) strict guidelines were used to determine who could join the group (e.g., needing an Ontario College of Teachers registration number).

After some requests were approved, the recruitment poster was shared in a variety of Facebook groups such as TpT Resources for Canadian Teachers, BC Teachers new curriculum sharing, Ontario teachers' resources and idea sharing, and Ontario primary teachers. The

participants were also recruited through Reddit forums (e.g., Canadian teachers). Some teacher-specific forums on Reddit did not allow the use of images (e.g., teachers, education), which reduced the number of places where the recruitment poster could be shared. In addition to these methods, the recruitment poster was also shared on the researcher's Facebook wall along with the hashtags such as #Canadianteachers #teachers #teacherslife #teachersfollowteachers to increase the chances of the poster being viewed by a teacher. Individuals who viewed the poster also had the opportunity to share the poster on their Facebook wall, leading to more possible exposure. Overall, the data were collected between November 2020 and February 2022. During this time, the recruitment poster was reposted to the social media platforms every few months to recruit new participants. Although other potential social media platforms such as LinkedIn, Twitter, and Instagram, were identified as possible sources for data collection, their use was later eliminated due to the lower likelihood of teacher-specific groups or individual teachers coming across the research study. To thank teachers for their participation, they were given the opportunity to enter a draw to win one of ten $20 gift cards for a store of their choice (e.g., Amazon, Indigo/Chapters, or Starbucks). The study was conducted in accordance with the research ethics guidelines.

Materials

Once the potential teachers reviewed the recruitment poster and decided to participate in the study, they accessed the survey by using the google form link provided on the poster. The survey consisted of a variety of components including a consent form, introductory questions (e.g., whether teachers would like to enter a draw), disorder-specific selected response knowledge questions, disorder-specific vignettes, open-ended questions regarding teachers'

referral of students with mental disorders, and demographic/background questions. The complete questionnaire is included in Appendix B.

Introductory questions. After the participants provided informed consent, they were presented with a few questions regarding their intention to participate in the draw or receive the results of the research upon completion of the study. In either case, they were required to provide their email address. Additionally, teachers were asked where they heard about the study (e.g., Facebook) and whether they had completed the questionnaire previously.

Knowledge questions. Before answering the knowledge questions, the participants were provided with a brief description of the section, and they were encouraged to select the "I don't know" option if they were unsure about their response. This was done to reduce guessing and possibly increase our ability to accurately assess teachers' knowledge of different mental disorders. Furthermore, they were informed that the questionnaire was not a test but merely an attempt to gather insight into their familiarity with different disorders. This was meant to encourage teachers to not focus on getting the question right or wrong and to simply do their best to complete the questionnaire as honestly as possible based on their current knowledge. Overall, the participants were required to answer 12-15 questions for each of the disorders (i.e., ADHD, ODD, Anxiety, and Depression). Teachers' knowledge of various disorders was assessed using a combination of multiple choice and true/false questions. The multiple-choice questions covered a variety of areas such as diagnostic features of the disorder, prevalence, development and course, risk or prognostic factors, culture or gender related issues, functional consequences of the disorder, and treatment strategies. The true/false questions were included to evaluate whether teachers agreed or disagreed with the common myths related to different mental disorders.

Given the lack of pre-existing measures to evaluate teachers' knowledge, recognition, and referral of the specific four mental disorders commonly found in school aged children, it was decided that the study would require the creation of a new measure that would help answer the research questions. To create the measure, information was collected from a variety of sources. Specific sections related to the four disorders were reviewed from the Diagnostic and Statistical Manual of Mental disorders (DSM-5) to create knowledge related multiple-choice questions. Special attention was paid to generate questions from a variety of areas such as common diagnostic features; associated features supporting diagnosis; prevalence; development and course of the disorder; risk and prognostic factors; culture or gender related diagnostic related issues; and functional consequences of the disorder. Furthermore, common treatment strategies were also included as another possible area for knowledge-based questions. The true/false knowledge-based questions were created by searching for common myths that people tend to hold for a variety of disorders. Finally, the referral-based questions were created based on previously known barriers to referral, but the decision was made to also use open ended questions to give teachers an opportunity to express their thoughts without being limited to pre-determined themes. The questionnaire was reviewed by the supervisor and members of the committee and feedback was used to make the necessary changes to the question format or the wording of individual items.

To finalize the measure, a think aloud procedure was conducted with two teachers who were recruited via social media. During the think aloud, the two teachers were asked to read through the survey out loud and were asked if they found anything to be confusing, whether the reading level was adequate, and if there was anything that they would change about the question or sentence. The teachers were also asked to provide feedback on the recruitment poster. The two

teachers included in the think aloud procedure were 25 years of age with at least one year of teaching experience and held a bachelor's degree in education. One of the teachers was from Edmonton, Alberta and taught elementary students, whereas the other teacher was from Winnipeg, Manitoba and taught students in Junior High or High School. The results from the think aloud procedure revealed that the teachers found the recruitment poster easy to read and well written with clear purpose, eligibility criteria, benefits, and potential risks. A review of the teacher feedback on the questionnaire revealed that some questions were relatively easy, and some questions had options that were too similar to one another. The participants also suggested minor changes to the wording of the questions and suggested other minor changes (e.g., underline "do not" in addition to using capitalized letters or add/delete irrelevant options in the demographics questions). Based on the results of the think aloud, the decision was made to delete items that were consistently considered too easy, and items were also reworded as necessary.

The knowledge component of the questionnaire included four subscales (i.e., ADHD, ODD, Depression, and Anxiety). The ADHD subscale consisted of 15 items ($\alpha = .34$), the ODD subscale consisted of 13 items ($\alpha = .53$), the depression subscale consisted of 15 items ($\alpha = .54$), and the anxiety subscale consisted of 12 items ($\alpha = .43$). Overall, the internal consistency of each scale ranged from low to moderate. The inter-item correlation matrix for each of the disorders is provided in Tables C1, C2, C3, and C4 in Appendix C. A review of the inter-item correlations indicated the items were not highly correlated with each other. However, this is expected because the items were designed to measure a variety of areas within each disorder (e.g., myths, treatment, or features of a disorder). Therefore, the small or slightly negative item-correlations suggest the items are not measuring the same construct. Furthermore, the items were designed to

be broad in nature, which may have also contributed to lower inter-item correlations. A few of the items within ADHD and depression have a somewhat higher negative correlation (e.g., -.288 and -.368), which could indicate that teachers are familiar with some aspects of these disorders but not others. A brief evaluation of the validity of the different scales revealed knowledge scores from the four disorders were positively correlated with one another. The correlations are provided in Table 2.

Table 2

Knowledge Score Correlations by Disorder

	ADHD	ODD	Depression	Anxiety
ADHD	1.00			
ODD	.34	1.00		
Depression	.38	.39	1.00	
Anxiety	.29	.41	.56	1.00

Note. Correlations are significant at the 0.01 level (2-tailed).

Recognition questions. At the start of the recognition section, teachers were again informed that this section was meant to gather insight into their teaching practice instead of being considered a "test." For each of the disorders, teachers were presented with a hypothetical scenario that provided a brief description of the symptoms that may negatively impact a student's functioning in the classroom. They were then asked how confident they felt about recognizing a student with the described symptoms, how likely they were to refer a student with the symptoms, and which mental disorder did they suspect that the student was experiencing. A combination of rating scale and multiple-choice questions were used. The teachers were presented with a total of two hypothetical scenarios for each of the disorders except for attention deficit hyperactivity disorder (ADHD). For ADHD, they were presented with a total of four hypothetical scenarios to ensure that the different categories of ADHD were accurately represented (i.e., Inattention and Hyperactivity/Impulsivity).

Referral questions. To evaluate teachers' referral practices, open ended questions were used to evaluate which disorders teachers were most likely to refer for additional support and their reasons for doing so. Teachers were also asked to list the things that they consider when deciding to refer a student for additional mental health support. To evaluate possible barriers to referral, teachers were provided a list of common barriers and were asked to select all the reasons that were relevant to their decision.

Level of training and readiness. Using "select all that apply" and rating scales, teachers were asked about the formal training they had received, their current readiness to support student's mental health, and the type of training they would find helpful in improving their ability to support student's mental health.

Demographics. To identify characteristics that could possibly contribute to teachers' knowledge, recognition, or referral, teachers were asked about their gender, age, ethnicity, province, years of experience, highest level of education, current education stream, and current level of students taught.

Procedure

All the participants completed the questionnaires online. During the data collection, it was determined that an unusually large number of participants were completing the study (i.e., hundreds of participants within hours or days). Upon closer inspection, it was determined that these large number of participants were likely to be "bots" (i.e., robots) designed to complete the study to have a chance to win the gift cards. An attempt was made to stop the bots from providing automated responses by including a simple math problem at the start of the study, which helped limit the responses. Because the automated responses continued despite the math problem, it was determined that a photo-based question that randomly switches the placement of

the photo would be more appropriate to help deter bots from completing the questionnaire. A photo-based question asking participants to select a specific animal was added to the questionnaire. Upon the completion of data collection, a strategic plan was created to identify bots within the data. To identify bots, responses to a variety of questions were reviewed. The following questions/criteria were used to determine bots:

a) Questionable time stamp (e.g., time stamp that was within seconds of one another)
b) Where did the participants hear about the study? (e.g., selecting a social media website which was not used to collect data)
c) Had they completed the study before? (e.g., if the participant selected yes)
d) Questionable long answer responses (e.g., nonsensical responses to the long answer questions, giving a yes or no response when the question did not require a yes or no answer, or receiving the exact same responses from multiple participants)
e) Location (e.g., if the participant selected outside of Canada)
f) Duplicate responses
g) Questionable email addresses (e.g., use of capital letters)
h) Use of email checkers such as GSuite tools, zero bounce, or bouncer
i) Use of Seon fraud prevention for checking email addresses

If the participant's responses were questionable based on multiple items listed above, they were marked as bots and deleted from the participant list. After rigorously reviewing the data, a total of 687 participants were deleted as they were determined to be bots. After the deletion of the bots, a total of 100 participants remained. Upon determining the final number of participants, a draw was conducted to determine the winners of the gift cards, which were then delivered to their emails.

Data Analysis

The data were analyzed using SPSS statistical software. Descriptive statistics such as frequency distribution, measures of central tendency, and measures of variability were used to summarize participant characteristics. Teachers' knowledge of different disorders was assessed based on the number of questions they answered correctly for each disorder. A repeated measures ANOVA was conducted to determine if teacher knowledge differed significantly based on the type of disorder. Post hoc tests were also conducted to determine which knowledge scores significantly differed from one another. Finally, a series of mixed ANOVA analysis were conducted to evaluate whether teachers' knowledge of different mental disorders varied based on the demographic variables such as age, gender, level of experience, level of education, and formal training. Interaction effects and post hoc simple effect analyses were also conducted to further interpret any differences in teachers' knowledge based on the demographic variables.

The accuracy of teachers' recognition of different mental disorders was calculated based on the number of hypothetical scenarios they answered correctly. A repeated measures ANOVA was conducted to determine if teachers' recognition differed significantly based on the type of disorder. Post hoc tests were also conducted to determine which recognition scores were significantly different from one another. Furthermore, a mixed ANOVA analysis was conducted to evaluate whether teachers' recognition of different mental disorders varied based on the other variables such as age, gender, level of experience, level of education, and formal training. Interaction effects and post hoc simple effect analyses were also conducted to further interpret any differences in teachers' recognition based on the demographic variables discussed above. Finally, teachers' level of confidence in recognizing a mental disorder in a student was summarized using descriptive statistics for each of the hypothetical scenarios.

In terms of referral, teachers' likelihood of referring a student for mental health support was summarized using descriptive statistics for each of the hypothetical scenarios. Teachers were also asked about the disorder that they were most likely to refer for additional support and their reasons for doing so using an open-ended question and their responses to this question were evaluated using a thematic analysis. Teachers' responses to other open-ended referral questions (e.g., things to consider before referring student for additional mental health support and common reasons for not referring students) were also analyzed using a thematic analysis. Thematic analysis is described as a method for "identifying, analysing, and reporting patterns (themes) within data" (Braun & Clark, 2006, p. 79). A theme is described as "something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set" (Braun & Clark, 2006, p. 82). A theme is developed based on the prevalence across the entire data set, as ideally, there would be multiple instances of a theme across the data set. Before generating specific themes, one must develop codes. A code is defined as "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldaña, 2016, p. 4). Inductive word-by-word approach was used to derive codes from the data. Teacher responses were reviewed and codes were generated by highlighting each word or sentence that were similar to one another. All initial codes were organized into a list and they were further reviewed and revised. After revising the codes, codes that represented similar concepts were grouped together to create themes and each theme. The themes were labeled and further reviewed and revised to ensure that they were unique and representative of the codes. Overall, for the thematic analysis, two independent coders used the following steps to create and

finalize the codes: a) summarize teacher responses, b) generate preliminary codes, c) revise codes, and d) combine relevant codes to generate final themes.

Finally, descriptive statistics were used to summarize teachers' formal training, level of readiness to support students' mental health, and type of training that teachers would find helpful in improving their ability to support student's mental health.

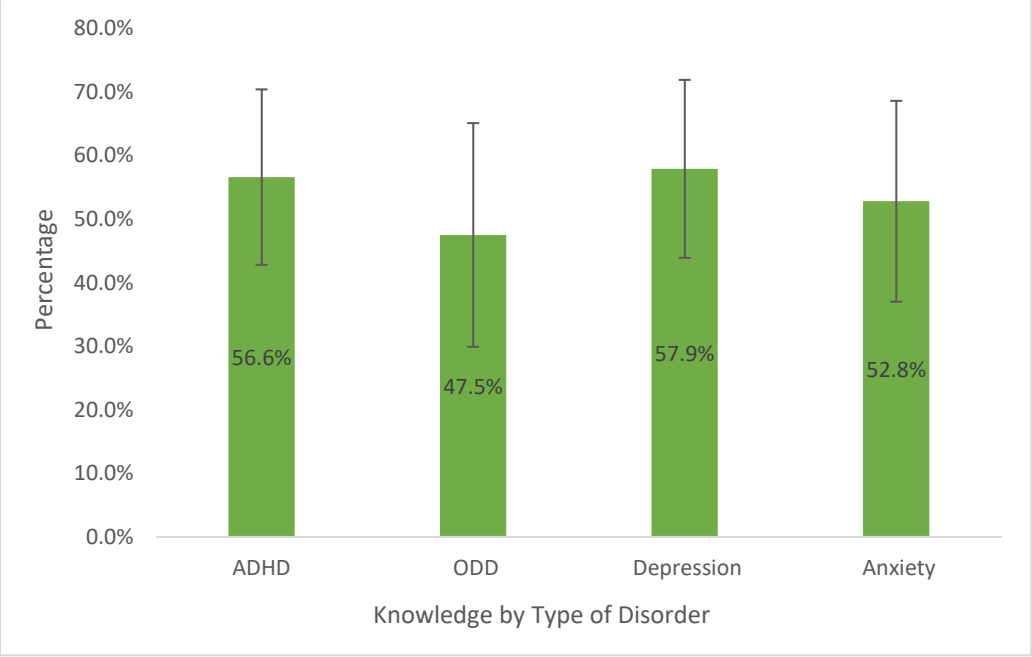
Chapter 3: Results

Knowledge of Different Mental Disorders

To evaluate teachers' level of knowledge of different mental disorders, their responses were marked as either correct (1) or incorrect (0) for each of the selected response questions asked of them. Given the variation in the number of items for each disorder (i.e., 15 for ADHD, 13 for ODD, 15 for Depression, and 12 for Anxiety), it was determined that percentages would better represent teacher performance instead of using mean. On average, the teachers performed as follows: ADHD (M = 56.6%, SD = 13.8%), ODD (M = 47.5%, SD = 17.6%), Depression (M = 57.9%, SD = 14.0%), and Anxiety (M = 52.8%, SD = 15.8%). A summary of scores is shown in Figure 2. The mode and median for the scores were identical for each of the disorders: ADHD (53.3%), ODD (53.8%), Depression (60%), and Anxiety (58.3%).

Figure 2

Teachers' Average Knowledge Scores in Percentage Based on the Type of Disorder



Difference in Knowledge Based on the Type of Disorder

A repeated measures ANOVA was performed to evaluate whether teachers' knowledge of different disorders significantly differed from one another. A p-value of 0.05 is generally the recommended value in the social sciences fields (e.g., psychology and sociology). Therefore, an alpha level of .05 was used for identifying statistical significance. All the ANOVA assumptions were tested before proceeding with the analysis. Skewness and kurtosis values were calculated to evaluate the normality of the data. For kurtosis and skewness, values close to zero generally indicate a normally distributed variable and values greater than or less than +1 or -1 generally indicate a variable that is nonnormally distributed (Gamst et al., 2008). All skewness and kurtosis values were within the acceptable range as shown in Table 2.

Table 2

Skewness and Kurtosis

	Skewness	Kurtosis
ADHD	0.02	-0.66
ODD	-0.58	0.40
Depression	-0.45	-0.26
Anxiety	-0.42	-0.54

In addition, a Kolmogorov-Smirnov test was used to test for checking normality. The results indicated that the normality assumption was violated as the values for all four disorders were statistically significant ($p < .001$). Normality tests such as the Kolmogorov-Smirnov or Shapiro-Wilk tests can be considered extremely sensitive to sample size variations. A review of the Q-Q plots also indicated that most values fell along a straight diagonal line. The Q-Q plots are presented in Figures D1, D2, D3, D4 of Appendix D. Furthermore, ANOVA is generally considered quite robust to violations of the normality assumption. Given that the skewness and kurtosis values were also within the normal range, the decision was made to proceed with the

data analysis. Therefore, common solutions to violations of normality (e.g., eliminating outliers, trimming the values of the most extreme scores, etc.) were not applied.

With regards to the assumption of homogeneity of variance, the Levene test for equality of variances was not significant, indicating that this assumption was not violated. Finally, when evaluating sphericity, the results from the Mauchly's Test of Sphericity was statistically significant, $W(5) = 0.878$, $p < 0.05$. This indicates that the assumption of sphericity was violated. *Huynh-Feldt* and *Greenhouse-Geisser* are commonly used methods of correction available when assumption of sphericity is violated. Generally, *Greenhouse-Geisser* is the preferred correction method when the epsilon estimate is below 0.75 and *Huynh-Feldt* correction method is preferred with epsilon estimates above 0.75. Therefore, the *Huynh-Feldt* correction method was used to evaluate the F ratio.

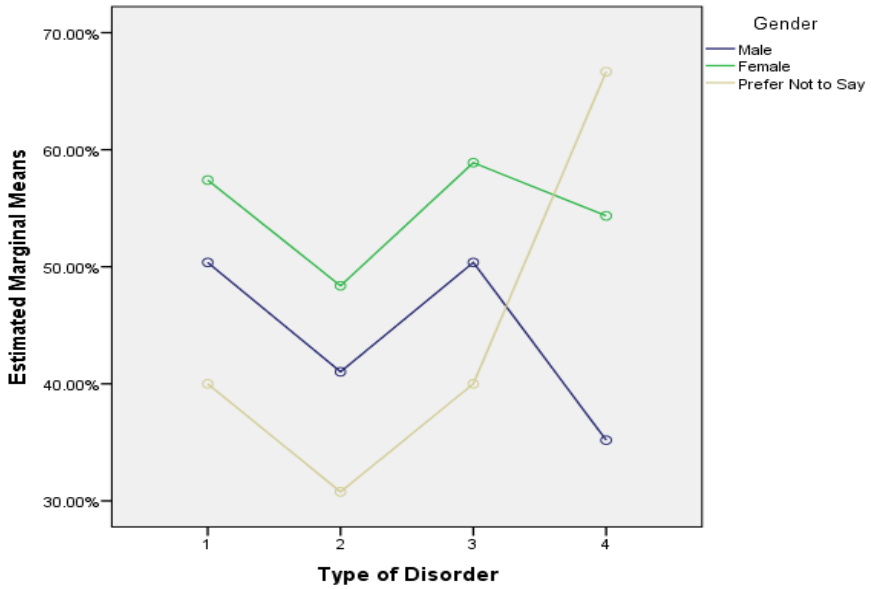
A repeated-measures ANOVA determined that mean percentage of knowledge scores differed significantly across different disorders $F(2.88, 285.24) = 14.98$, $p < .05$, within-subjects $\eta^2 = .13$. Pairwise comparisons using a Bonferroni correction to maintain an alpha level of .05 revealed that teacher knowledge differed significantly between the disorders measured. The pairwise comparison are provided in Table C5. Specifically, out of the six total comparisons, teacher knowledge differed significantly between ADHD and ODD ($p < .001$), ODD and Depression ($p < .001$), ODD and Anxiety ($p < .05$), and Depression and Anxiety ($p < .001$). Overall, the results indicated that teachers performed the best in terms of their knowledge of ADHD and Depression. In contrast, their knowledge of ODD and Anxiety was significantly worse. Overall, teachers' knowledge of ODD was the lowest out of all four disorders.

Effect of Other Variables on Teachers' Knowledge of Different Mental Disorders

Demographic variables such as age, gender, level of experience, level of education, and formal training were collected as part of the study. Mixed ANOVA analysis were conducted to evaluate whether any of these variables impacted teachers' knowledge of different mental disorders. The results from the mixed ANOVA indicated that the main effect of age, level of knowledge, level of education, and formal training were not significant. However, the main effect for gender $F(2, 97) = 4.11$, $p < .05$ was significant. This indicated that males and females significantly differed in their knowledge of different mental disorders. The review of the estimated marginal means indicated that females generally performed better than males in terms of their knowledge across all four disorders measured in the study (Figure 3). Although the figure below also includes the category "prefer not to say," only one participant selected this option as their choice.

Figure 3

Estimated Marginal Means for Knowledge of Different Disorders by Gender

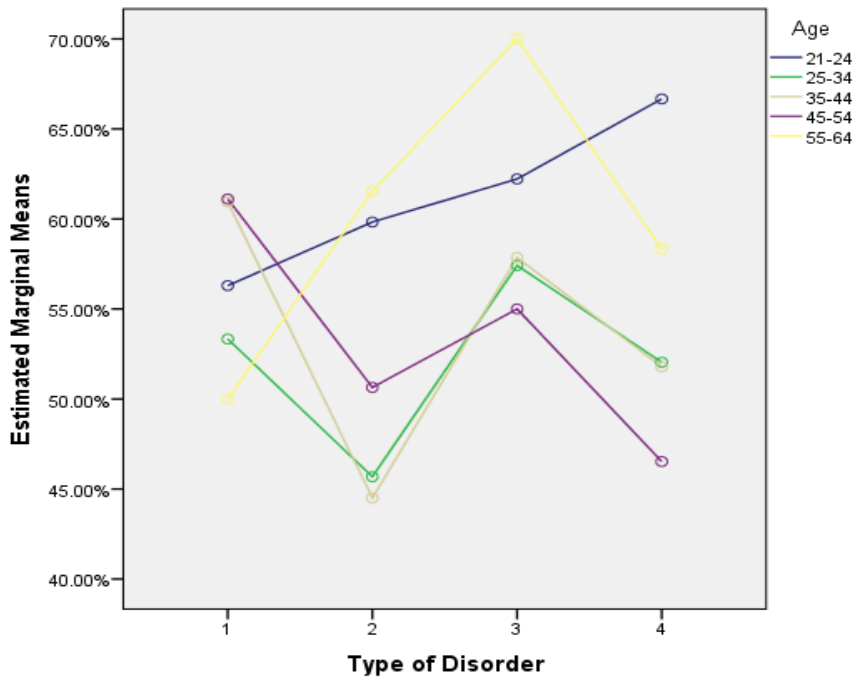


Note. 1 = ADHD, 2 = ODD, 3 = Depression, and 4 = Anxiety.

Upon testing for interaction effects for various demographic variables and the type of disorder, no significant effects were found for gender, level of experience, level of education, and formal training. However, there were significant interaction effects for knowledge scores based on the type of disorder and different age groups of the participants. Box's test of equality of covariance and Levene's test of equality of error variances were not significant. However, the Mauchly's Test of Sphericity was significant (p = .046), therefore, Huynh-Feldt correction was used to interpret the results. Overall, the interaction effect was significant for age and type of disorder $F(12, 285) = 2.24$, $p = .01$, $\eta^2 = .09$. The estimated marginal means are shown in Figure 4.

Figure 4

Estimated Marginal Means for Knowledge of Different Disorders by Age Group



Note. 1 = ADHD, 2 = ODD, 3 = Depression, and 4 = Anxiety.

Post hoc simple effect analysis was conducted to further interpret the significant interaction effect of age and type of disorder on knowledge scores. A review of the pairwise comparisons indicated a variety of significant effects. The simple main effects of age within the type of disorder are summarized in Table 3. The results indicated that there were simple main effects of age for ADHD, ODD, and Anxiety. In terms of ADHD, teachers within the 35-44 age group performed significantly better (60.95%) in terms of their knowledge in comparison to teachers within the 25-34 age group (53.33%). For ODD, teachers within the 21-24 age group performed significantly better (59.83%) in comparison to teachers within the 25-34 age group (45.68%) and teachers within the 35-44 age group (44.51%). For anxiety, teachers within the 21-24 age group performed significantly better (66.67%) in comparison to teachers within the 25-34 age group (52.04%), teachers within the 35-44 age group (51.79%), and teachers within the 45-54 age group (46.53%).

Table 3

Significant Pairwise Comparisons for Teachers' Knowledge (Age Within Type of Disorder)

Type of Disorder	Age	Mean Difference	Significance
ADHD	25-34 vs. 35-44	-7.62*	Yes (p = .02)
ODD	21-24 vs. 25-34	14.15*	Yes (p = .03)
	21-24 vs. 35-44	15.32*	Yes (p = .02)
Depression	All ranges	n/a	No
Anxiety	21-24 vs. 25-34	14.63**	Yes (p = .01)
	21-24 vs. 35-44	14.88**	Yes (p = .01)
	21-24 vs. 45-54	20.14***	Yes (p < .001)

Note. *p < .05; **p < .01; ***p < .001

The simple main effects of the type of disorder within age is summarized in Table 4. A review of the pairwise comparisons indicated a variety of significant effects. The results

indicated that there were simple main effects of the type of disorder within different age groups. Overall, there were no significant differences in teachers' knowledge for individuals within the 21-24 and 55-64 age groups. However, there were significant differences in teachers' knowledge of different disorders for the other three age groups (i.e., 25-34, 35-44, and 45-64). In terms of externalizing disorders, teachers within the 25-34 age group performed better in their knowledge of ADHD (53.33%) in comparison to their knowledge of ODD (45.68%). In terms of internalizing disorders, teachers performed better in their knowledge of depression (57.41%) in comparison to their knowledge of Anxiety (52.04%). Generally, for the 25-34 age group, teachers performed best in terms of their knowledge of depression or ADHD and worst in terms of their knowledge of ODD.

The differences in knowledge for ages 35-44 were similar to ages 25-34. In terms of externalizing disorders, teachers within the 35-44 age group performed better in terms of their knowledge of ADHD (60.95%) in comparison to their knowledge of ODD (44.51%). In terms of internalizing disorders, teachers performed better in terms of their knowledge of Depression (57.86%) in comparison to their knowledge of Anxiety (51.79%). Generally, for the 35-44 age group, teachers performed best in terms of their knowledge of ADHD and depression and worst in terms of their knowledge of ODD.

Finally, in terms of knowledge of externalizing disorders, the teachers in the 45-54 age group performed significantly better in terms of knowledge of ADHD (61.11%) in comparison to their knowledge of ODD (50.64%). In terms of internalizing disorders, the teachers performed better in terms of their knowledge of Depression (55%) in comparison to their knowledge of Anxiety (46.53%). Generally, teachers performed better in terms of knowledge of ADHD and the worst in terms of their knowledge of Anxiety.

Table 4

Significant Pairwise Comparisons for Teachers' Knowledge (Type of Disorder Within Age)

Age	Type of Disorder	Mean Difference	Significance
21-24	All disorders	n/a	No
25-34	ADHD vs. ODD	7.65***	Yes ($p < .001$)
	ODD vs. Depression	-11.73***	Yes ($p < .001$)
	ODD vs. Anxiety	-6.36*	Yes ($p = .02$)
	Depression vs. Anxiety	5.37***	Yes ($p < .001$)
35-44	ADHD vs. ODD	16.45***	Yes ($p < .001$)
	ADHD vs. Anxiety	9.17**	Yes ($p = .01$)
	ODD vs. Depression	- 13.35***	Yes ($p < .001$)
	ODD vs. Anxiety	-7.28*	Yes ($p = .04$)
	Depression vs. Anxiety	6.07*	Yes ($p = .02$)
45-54	ADHD vs. ODD	10.47*	Yes ($p = .04$)
	ADHD vs. Anxiety	14.58***	Yes ($p < .001$)
	Depression vs. Anxiety	8.47*	Yes ($p = .04$)
55-64	All disorders	n/a	No

Note. *p < .05; **p < .01; ***p < .001

Recognition of Different Mental Disorders

To evaluate teachers' ability to accurately recognize significant symptoms of different disorders, their responses to multiple choice questions were marked as correct or incorrect. The teachers' accuracy was assessed for the two scenarios for each of the following: ADHD (inattentive subtype), ADHD (hyperactivity/impulsivity subtype), ODD, Depression, and Anxiety. The percentage of teachers that answered the questions correctly are summarized in Table 5.

Table 5

Teachers' Recognition of Different Mental Disorders

Mental Disorder Category	Symptoms by Scenario	% of Respondents who Answered Correctly	Average Percentage Correct
ADHD - Inattentive	Scenario 1 • Careless mistakes • Difficulty remaining focused • Not listening • Getting sidetracked easily	82%	65.5%
	Scenario 2 • Difficulty organizing • Avoids sustained mental effort • Losing things • Forgetful in daily activities	49%	
ADHD - Hyperactivity/Impulsivity	Scenario 1 • Fidgeting • Leaving seat • Running around or climbing inappropriately • Unable to play or engage in leisure activities quietly	87%	79.5%
	Scenario 2 • Talking excessively • Blurting out answers • Difficulty waiting turn • Interrupting or intruding on others	72%	
ODD	Scenario 1 • Angry and resentful • Argues • Refuses to comply • Spiteful towards others	96%	73%

	Scenario 2 • Loses temper • Touchy or easily annoyed • Deliberately annoys others • Blames others	50%	
Depression	Scenario 1 • Significant weight loss or gain • Difficulty sleeping or sleeping too much • Difficulty thinking or concentrating • Behaviours such as pacing, tapping, rapid talking, and appearing restless	58%	76.5%
	Scenario 2 • Feels sad or hopeless • Reduced interest or pleasure • Feelings of worthlessness or guilt • Suicidal ideation	95%	
Anxiety	Scenario 1 • Difficulty concentrating or mind going blank • Irritability • Difficulty controlling excessive worries • Muscle tension	86%	78%
	Scenario 2 • Excessive worries • Restlessness/Feeling on edge • Difficulty falling or staying asleep • Easily Fatigued	70%	

Note. $N = 100$

Difference in Recognition Based on the Type of Disorder

The average score for teachers' recognition of different mental disorders are as follows: ADHD inattentive (M = 1.31), ADHD hyperactivity/impulsivity (M = 1.59), ODD (M = 1.46), Depression (M = 1.53), and Anxiety (M = 1.56). A repeated measures ANOVA was performed to evaluate whether teachers' recognition of different disorders significantly differed from one another. A p-value of 0.05 was used to analyze the results. In terms of assumptions of ANOVA, Skewness and Kurtosis values as well as Kolmogorov-Smirnov/Shapiro-Wilk tests were calculated to evaluate the normality of the data. Most skewness and kurtosis values were within the acceptable range (i.e., values close to zero). The Skewness and Kurtosis values are provided in Table 6.

Table 6

Skewness and Kurtosis

	Skewness	Kurtosis
ADHD-Inattentive	-0.50	-0.81
ADHD-Hyperactivity/Impulsivity	-1.25	0.50
ODD	-0.37	-0.89
Depression	-0.76	-0.40
Anxiety	-1.17	0.25

In addition, a Kolmogorov-Smirnov test was used to test for normality. The results indicated that the normality assumption was violated as the values for all disorders were statistically significant ($p < .001$). ANOVA is generally considered quite robust to violations of the normality assumptions. Given that most skewness and kurtosis values were within the normal range, the decision was made to proceed with the data analysis. With regards to the assumption of homogeneity of variance, the Levene test for equality of variances was not significant, therefore, indicating that this assumption was not violated. Finally, when evaluating sphericity,

the results from the Mauchly's Test of Sphericity were not statistically significant, $W(9) = 0.852$, $p = 0.08$.

A repeated-measures ANOVA determined that mean recognition scores differed significantly across different disorders $F(4, 396) = 4.47$, $p < .05$, within-subjects $\eta^2 = .04$. Pairwise comparisons using a Bonferroni correction to maintain an alpha level of .05 revealed that teacher recognition differed significantly between the disorders measured. The pairwise comparisons are presented in Table C6. Specifically, out of the ten total comparisons, teacher recognition differed significantly between ADHD-Inattentive and ADHD-Hyperactivity/Impulsivity ($p < .001$), ADHD-Inattentive and Depression ($p = 0.04$), ADHD-Inattentive and Anxiety ($p = 0.04$). Overall, the results indicated that teachers performed better in terms of their recognition of disorder such as Depression, Anxiety, and ADHD-Hyperactivity/Impulsivity in comparison to ADHD-Inattentive presentation.

Effect of Other Variables on Teachers' Recognition of Different Mental Disorders

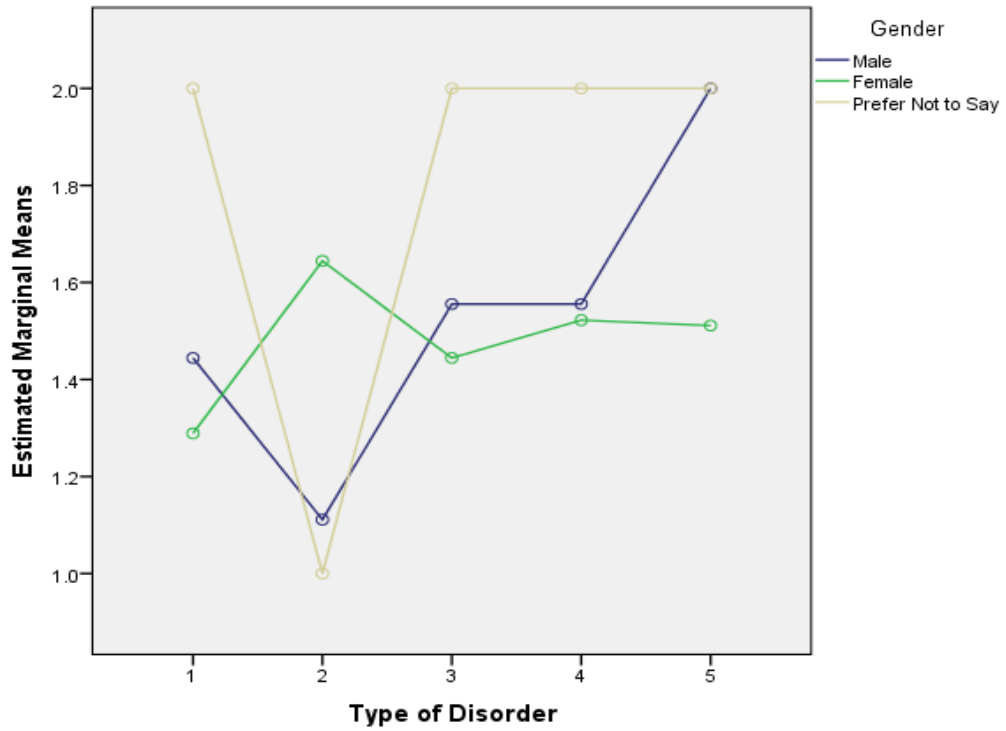
Mixed ANOVA analyses were conducted to evaluate whether any of the specific demographic variables (i.e., age, gender, level of experience, level of education, and formal training) impacted teachers' recognition of different mental disorders. The results from the mixed ANOVA indicated that the main effect of age, gender, level of knowledge, level of education, and formal training were not significant.

Upon testing for interaction effects for various demographic variables and the type of disorder, no significant effects were found for age, level of experience, level of education, and formal training. However, there were significant interaction effects for recognition scores based on the type of disorder and gender of the participants. The Mauchly's Test of Sphericity was significant ($p = .054$), therefore, Huynh-Feldt correction was used to interpret the results.

Overall, the interaction effect was significant for gender and type of disorder F (7.79, 377.69) = 2.57, p = .01, η^2 = .05. The results indicated that performance on recognition of different disorders differed between males and females based on the type of disorder they were asked to recognize. The estimated marginal means are shown in Figure 5.

Figure 5

Estimated Marginal Means for Recognition of Different Disorders by Gender



Note. 1 = ADHD Hyperactivity-Impulsivity, 2 = ADHD Inattention, 3 = ODD, 4 = Depression, 5 = Anxiety.

Post hoc simple effect analysis was conducted to further interpret the significant interaction effect of gender and the type of disorder on recognition scores. A review of the pairwise comparisons indicated a variety of significant effects. The simple main effects of gender within the type of disorder are summarized in Table 7. The results indicated that there were

simple main effects of gender for ADHD Hyperactivity/Impulsivity and Anxiety. Specifically, females performed better (M = 1.64) in terms of their recognition of symptoms of ADHD Hyperactivity/Impulsivity in comparison to males (M = 1.11). In terms of anxiety, males performed better (M = 2.00) than females (M = 1.51) in terms of their recognition of symptoms.

Table 7

Significant Pairwise Comparisons for Teachers' Recognition (Gender Within Type of Disorder)

Type of Disorder	Gender	Mean Difference	Significance
ADHD Inattentive	All categories	n/a	No
ADHD Hyperactivity/Impulsivity	Male vs. Female	-.53**	Yes (p = .01)
ODD	All categories	n/a	No
Depression	All categories	n/a	No
Anxiety	Male vs. Female	.49*	Yes (p = .03)

Note. *p < .05; **p < .01

The simple main effects of the type of disorder within gender is summarized in Table 8. A review of the pairwise comparisons indicated a variety of significant effects. The results indicated that there were simple main effects of the type of disorder within different gender. Overall, for male teachers, there was significant difference between their recognition of ADHD Hyperactivity/Impulsivity (M = 1.11) and ODD (M = 1.56). Furthermore, there was also a significant difference between their recognition of ADHD Hyperactivity/Impulsivity (M = 1.11) and Anxiety (M = 2.00). For female teachers, there were many more significant differences in their recognition of different disorders. Specifically, female teachers' recognition of ADHD Inattentive symptoms (M = 1.29) was significantly lower than their recognition of other disorders such as ADHD Hyperactivity/Impulsivity (M = 1.64), ODD (M = 1.44), Depression (M = 1.52), and Anxiety (M = 1.51). Furthermore, female teachers performed better in terms of their

recognition of ADHD Hyperactivity/Impulsivity (M = 1.64) in comparison to their recognition of ODD (M = 1.44).

Table 8

Significant Pairwise Comparisons for Teachers' Recognition (Type of Disorder within Gender)

Gender	Type of Disorder	Mean Difference	Significance
Male	ADHD Hyperactivity/Impulsivity vs. ODD	-.44*	Yes (p = 0.05)
	ADHD Hyperactivity/Impulsivity vs. Anxiety	-.89***	Yes (p < .001)
Female	ADHD Inattentive vs. ADHD Hyperactivity/Impulsivity	-.36***	Yes (p < .001)
	ADHD Inattentive vs. ODD	-.16*	Yes (p = .03)
	ADHD Inattentive vs. Depression	-.23***	Yes (p < .001)
	ADHD Inattentive vs. Anxiety	-.22*	Yes (p = .02)
	ADHD Hyperactivity/Impulsivity vs. ODD	.20**	Yes (p = .01)
Prefer Not to Say	All disorders	n/a	No

Note. *p < .05; **p < .01; ***p < .001

Level of Confidence in Recognizing Disorders

Teachers' level of confidence in recognizing clinical symptoms of different mental disorders in the classroom was measured using a Likert type scale (1 = Not at all Confident, 2 = Somewhat Confident, 3 = Very Confident, and 4 = Extremely Confident). For ease of interpretation of the results, the results for level of confidence were combined into two categories (i.e., Low Confidence = Not at all Confident + Somewhat Confident; High Confidence = Very Confident + Extremely Confident). The results are summarized in Table 9. Overall, the results indicated that teachers were least confident in their ability to recognize symptoms of anxiety. In comparison, teachers felt more confident in recognizing certain symptoms of ODD (e.g., argues, refuses to comply), ADHD-Hyperactivity/Impulsivity (e.g., fidgeting, leaving seat, running

around, talking excessively), and specific symptoms of Depression (e.g., feeling sad, hopeless, or worthless, loss of interest, and suicidal ideation). Because teachers were presented with two scenarios for each disorder, the confidence levels for each disorder were calculated by averaging the responses across both scenarios. These results are further summarized in Figure 6.

Table 9

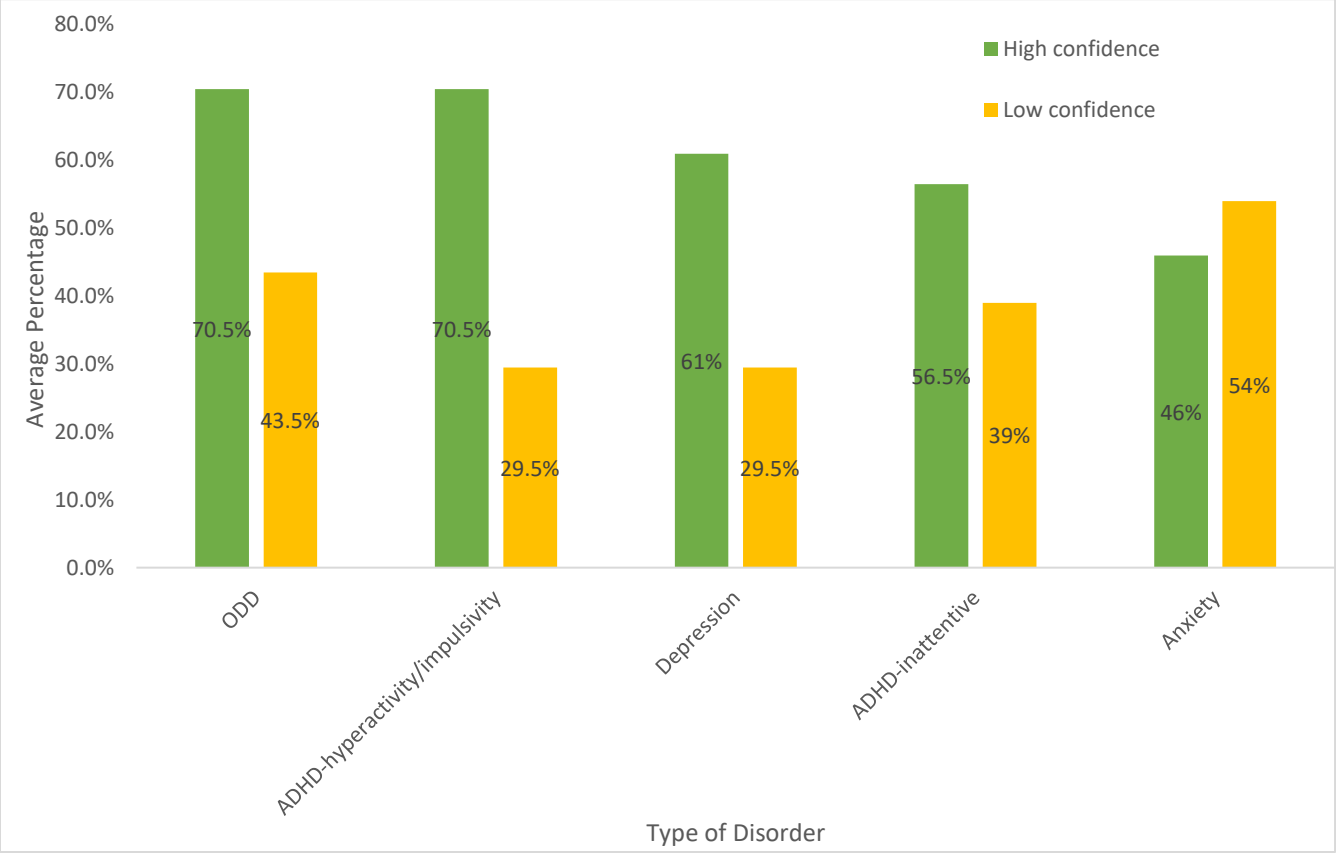
Teachers' Level of Confidence in Recognizing Different Mental Disorders in the Classroom

	Scenario	% of Respondents by Level of Confidence
ADHD-Inattentive	Scenario 1	Low Confidence = 39% High Confidence = 61%
	Scenario 2	Low Confidence = 48% High Confidence = 52%
ADHD-Hyperactivity/Impulsivity	Scenario 1	Low Confidence = 25% High Confidence = 75%
	Scenario 2	Low Confidence = 34% High Confidence = 66%
ODD	Scenario 1	Low Confidence = 18% High Confidence = 82%
	Scenario 2	Low Confidence = 41% High Confidence = 59%
Depression	Scenario 1	Low Confidence = 44% High Confidence = 56%
	Scenario 2	Low Confidence = 34% High Confidence = 66%
Anxiety	Scenario 1	Low Confidence = 53% High Confidence = 47%
	Scenario 2	Low Confidence = 55% High Confidence = 45%

Note. $N = 100$

Figure 6

Average Percentage of Teachers who felt High and Low Confidence in Recognizing Symptoms



Note. The percentages do not add up to 100% because the numbers were averaged across different scenarios.

Teachers' Likelihood of Referral for Different Mental Disorders

Teachers' likelihood of referral for different mental disorders in the classroom was measured using a rating scale (1 = Not at all Likely, 2 = Somewhat Likely, 3 = Very Likely, and 4 = Extremely Likely). For ease of interpretation of the results, the results for likelihood of referral were combined into two categories (i.e., Low Likelihood = Not at all Likely + Somewhat Likely; High Likelihood = Very Likely + Extremely Likely). The results are summarized in Table 10. Overall, the results indicated that teachers were most likely to refer students with

symptoms of depression followed by ODD, anxiety, ADHD hyperactivity/impulsivity, and ADHD inattentive. Average percentage of teachers with high and low likelihood to refer students with different mental disorders in the classroom is summarized in Figure 7.

Table 10

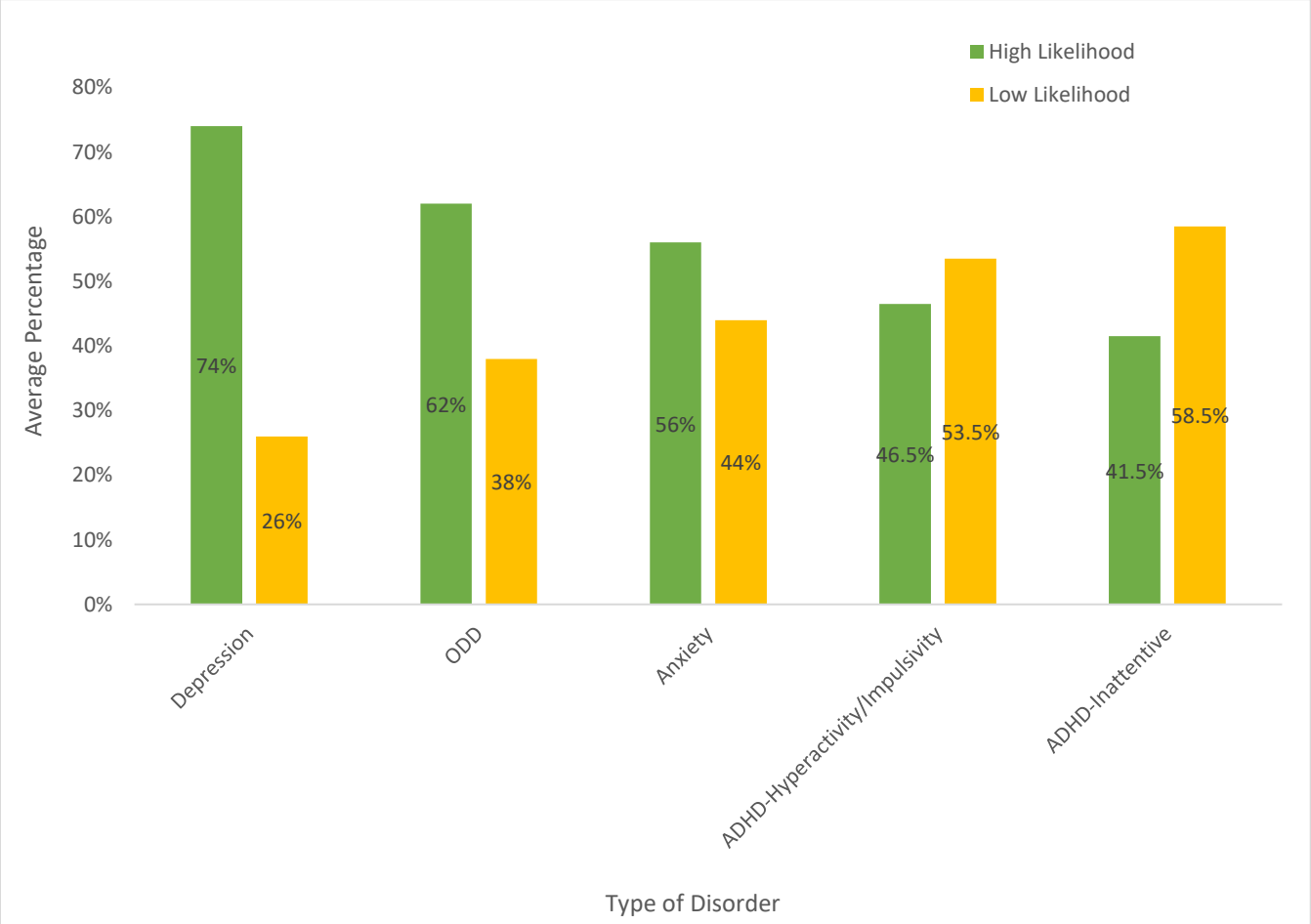
Teachers' Likelihood of Referral for Different Mental Disorders in the Classroom

	Scenario	% of Respondents by Level of Likelihood of Referral
ADHD-Inattentive	Scenario 1	Low Likelihood = 52% High Likelihood = 48%
	Scenario 2	Low Likelihood = 65% High Likelihood = 35%
ADHD-Hyperactivity/Impulsivity	Scenario 1	Low Likelihood = 43% High Likelihood = 57%
	Scenario 2	Low Likelihood = 64% High Likelihood = 36%
ODD	Scenario 1	Low Likelihood = 21% High Likelihood = 79%
	Scenario 2	Low Likelihood = 55% High Likelihood = 45%
Depression	Scenario 1	Low Likelihood = 37% High Likelihood = 63%
	Scenario 2	Low Likelihood = 15% High Likelihood = 85%
Anxiety	Scenario 1	Low Likelihood = 44% High Likelihood = 56%
	Scenario 2	Low Likelihood = 44% High Likelihood = 56%

Note. $N = 100$

Figure 7

Average Percentage of Teachers with High and Low Likelihood to Refer



Most Likely Disorders to be Referred and Common Reasons for Referral

Teachers' likelihood of referral for different mental disorders was evaluated using a rating scale. However, to have a better understanding of the type of reasons that contribute to their decision to refer one disorder over another, an open-ended question was also used. Specifically, teachers were asked which disorder (i.e., anxiety, depression, ADHD, and ODD) were they most likely to refer students for additional support and why? The top five disorders that were most commonly chosen by teachers for referral are presented in Table 11. Additional results are provided in Table C7, Appendix C.

Table 11

Disorders Most Commonly Referred by Teachers

Type of Disorder	% of Respondents
Depression	35
Anxiety and Depression	20
ODD	13
All of them	11
ADHD	8

Note. $N = 100$. Additional results are provided in Table C7, Appendix C.

Overall, the results indicated that teachers were more likely to refer internalizing disorders such as depression and anxiety for additional mental health support in comparison to externalizing disorders such as ADHD and ODD. Furthermore, only 11% of the teachers expressed that they would refer all of the disorders for additional support. A review of teachers' responses to the open-ended question indicated that they provided a variety of reasons for deciding to refer one disorder over another. The common themes for referring abovementioned disorders are summarized in Tables 12-16. The reasons for referring other combinations of disorders are provided in Table C12, Appendix C.

Table 12

Most Common Reasons for Referring Depression

Depression	
Codes/Themes (Frequency)	Sample Summary of Reasons
Risk to Student (19, 54.3%)	Possibility or risk of self-harm; wanting to involve a professional to screen for suicidal thoughts; most likely to be dangerous (suicide risk); more serious outcomes of suicide; risk of death; can be deadly; can escalate quickly to suicidal thoughts.
No Reason (7, 20%)	No reason provided; if I had to choose depression would be my highest concern; depends on the severity of symptoms or how obvious they are; if a child was exhibiting symptoms of severe depression, they would be given priority for the most intensive support available.

Impact on Student (5, 14.3%)	Quality of living; impaired ability to function and enjoy life; hard to engage student in classroom; negative impact on learning; taking a toll on other aspects of life.
Seriousness (3, 8.6%)	Most serious; very serious.
Confidence in Recognition (2, 5.7%)	Better trained to recognize due to personal diagnosis; most confident in identifying and saying what the right support is.
Personal Experience (2, 5.7%)	Most personal experience with.

Note. Total number of teachers who selected depression = 35. Additional results are provided in Table C8, Appendix C.

Table 13

Most Common Reasons for Referring Depression and Anxiety

Depression and Anxiety	
Codes/Themes (Frequency)	Sample Summary of Reasons
Impact on Student (6, 30%)	Major impact on student's mental health; most detrimental to student's health; lack of support can lead down dark paths; direct negative impact on student's functioning and quality of life; severe consequences without support; impact learning and well-being.
Confidence in Recognition (4, 20%)	Easier to pick up on specific behaviours; adolescent onset so as a high school teacher there's an increased likelihood of noticing and referring; easiest to recognize or notice.
Risk to Student (3, 15%)	Higher risk of self-harm; possibility of self-harm; more dangerous.
Lack of Knowledge/Ability to Help (2, 10%)	Least likely to be able to help as other two can be remediated through classroom management, structure, and relationships; feel less qualified to deal with them in the classroom.
Personal Experience (2, 10%)	Can relate to these due to personal experiences; symptoms or lack thereof are more known to me.

Require External Treatment/Support (2, 10%)	Need for additional support outside of classroom; better for the parents to take child to the doctor.
Confidence in Referral (2, 10%)	Feel most confident in referring.

Note. Total number of teachers who selected Anxiety and Depression = 20. Additional results are provided in Table C9, Appendix C.

Table 14

Most Common Reasons for Referring ODD

	ODD
Codes/Themes (Frequency)	Sample Summary of Reasons
Impact on Others (peers/teachers/classroom) (6, 46.2%)	Student can be argumentative with the teacher; disruptive to others around them.
Risk to Others (4, 30.8%)	Dangerous to others; creates unsafe environment; aggressive; violent towards teachers and support staff.
Impact on Student (3, 23.1%)	Most detrimental to student's learning; most disruptive to student's learning.
Confidence in Recognition (2, 15.4%)	Most visible as the student can be very argumentative with the teacher; most obvious, first identified.

Note. Total number of teachers who selected ODD = 13. Additional results are provided in Table C10, Appendix C.

Table 15

Most Common Reasons for Referring All of the Disorders

	All of the Disorders
Codes/Themes (Frequency)	Sample Summary of Reasons
No Reason (6, 54.5%)	All of them if I can recognize the symptoms; bring all cases to school team; all of the above.
Equal Opportunity for Treatment (3, 27.3%)	One disorder does not take precedence over another; every student needs to feel like they are supported.
Impact on Student (2, 18.3%)	Impact on social or academic performance; impact on child's functioning, happiness, sense of self, classroom performance.

Lack of Knowledge/Ability to Help (1, 9.1%)	Lack of training.
Impact on Others (Peers, teachers, classroom) (1, 9.1%)	Impact on child's relationship with others.

Note. Total number of teachers who selected All of the disorders = 11.

Table 16

Most Common Reasons for Referring ADHD

	ADHD
Codes/Themes (Frequency)	Sample Summary of Reasons
Impact on Student (2, 25%)	Inability to start and complete tasks; inability to focus and remain still.
Availability of Support and Strategies (2, 25%)	More support and strategies available; feeling that they can do more at school to help students with ADHD vs. lack of resources for other disorders.
Confidence in Recognition (2, 25%)	Feel the most confident in ability to recognize it; easiest to identify.
No Reason (2, 25%)	No reason provided, simply listed the disorder.
More prevalent (1, 12.5%)	Common in classrooms.

Note. Total number of teachers who selected ADHD = 8. Additional results are provided in Table C11, Appendix C.

Things to Consider Before Referring Students

To evaluate common things that teachers consider before deciding whether to refer a student for additional mental health support, they were asked to respond to an open-ended question. Their responses were then coded to determine common themes. The common themes in their responses are summarized in Table 17. Additional results are provided in Table C13, Appendix C.

Table 17

Things to Consider Before Referring a Student for Additional Mental Health Support

Themes (Frequency)	Sample Summary of Responses
Impact on Student (35%)	Disruption to student's learning; anything that is preventing the student from doing their best or being their best academically or socially; impact on quality of life; inability to accomplish goals; impact on social functioning; impact on student's academic, social or emotional functioning; academic success is at risk; challenge to their success or well-being; negative peer interactions; impact on school performance; impact on ability to learn in class, make relationships with their peers or pursue interests; effect on social emotional well-being; difficulty completing assignments or with numeracy/literacy; effects on day to day functioning; attendance issues; declining grades; effect on relationship with peers, teachers or other adults; not singling student out.
Family Factors (30%)	Parental support; parental approval; parental input; parental involvement; family support; family situation; will parents respond appropriately and allow the support; attitude of the parents; concerns about their life at home; family's likelihood to participate/cooperate; family being consistent at home.
Symptom Related Factors (19%)	frequency of behaviours/symptoms; severity of behaviours/symptoms; intensity and duration of symptoms; behaviour also occurring at home; behaviour that's excessive; sudden change in behaviour; severity (affecting academically or socially); changes in behaviour; has the issue escalated; behaviour outside of the norm; shift in symptoms from baseline; changes in functioning; current symptoms and data to support; symptoms.
Risk to Student (15%)	Risk to themselves; concern about safety or harm; self-harm; danger to self; student's safety; is student in danger; at risk of causing harm to themselves; if the child is in danger (e.g., suicide); risk to their own safety.
Specific Mental Symptoms (14%)	Sudden drop in interest at school, overall checked out, removing themselves from social situations; low

	mood/engagement; bizarre and dark sayings/drawings; withdrawal, isolation; negative self-talk, forgetfulness, lack of socializing, excessive mood swings; inability to start/complete tasks; is anxious frequently; ability to focus; worrisome, hyper emotional; inattentiveness.
Student Related Factors (14%)	Level of satisfaction the student has; student willingness; student's reaction; social skills; student's awareness; ability to cope; student's feelings; socioeconomic status; if they have been in care or if social workers are following them; student's demeanor; refer to someone who they'll feel comfortable with; what was tried as a coping mechanism and if their symptoms got worse; recent stressors in child's life.
Consulting with Others (12%)	Speaking with other staff (administration, in school student support people); start with school-based `teams then proceed to school psychologist if necessary; consult with the school team (e.g., social worker, resource teacher, other teachers, specialists, student services, student success team, school counsellors, special ed team, previous teacher, guidance staff); consulting with the family (report what is being seen in class).

Note. $N = 100$. Additional results are provided in Table C13, Appendix C.

Common Reasons for Not Referring Students

To evaluate common barriers to referral, teachers were provided with a variety of reasons that they may have for not referring the student for additional mental health support. Teachers were then asked to select all of the options that applied to them and were also given an "other" option if they had other reasons that were not already listed as one of the options. The results are summarized in Table 18. The results indicated that reasons such as lack of parent involvement, lack of knowledge of professional services available, lack of funding in schools, and lack of support from school staff were more commonly selected by teachers as reasons for not referring a student for additional mental health support. In contrast, reasons such as stigma associated with

mental health and lack of time were least selected as reasons for not referring a student. Reasons such as lack of knowledge of mental disorders and lack of teacher training fell somewhere in the middle. Finally, some teachers selected other as an option or responded that the reasons were not applicable to them (e.g., because they would never "not refer").

Table 18

Common Reasons for not Referring Students

Reasons for not Referring	% of Respondents
Lack of Parent Involvement	49
Lack of Knowledge of Professional Services Available	47
Lack of Funding in Schools	41
Lack of Support from School Staff	39
Lack of Knowledge of Mental Disorders	32
Lack of Teacher Training	27
Lack of Time	13
Not Applicable	10
Other	5
Stigma Associated with Mental Health	3

Note. $N = 100$

Level of Training and Readiness

To review teachers' level of training regarding mental health, they were asked to answer "select all that apply" question about the training opportunities they have received. Teacher responses are summarized in Table 19.

Table 19

Level of Teacher Training

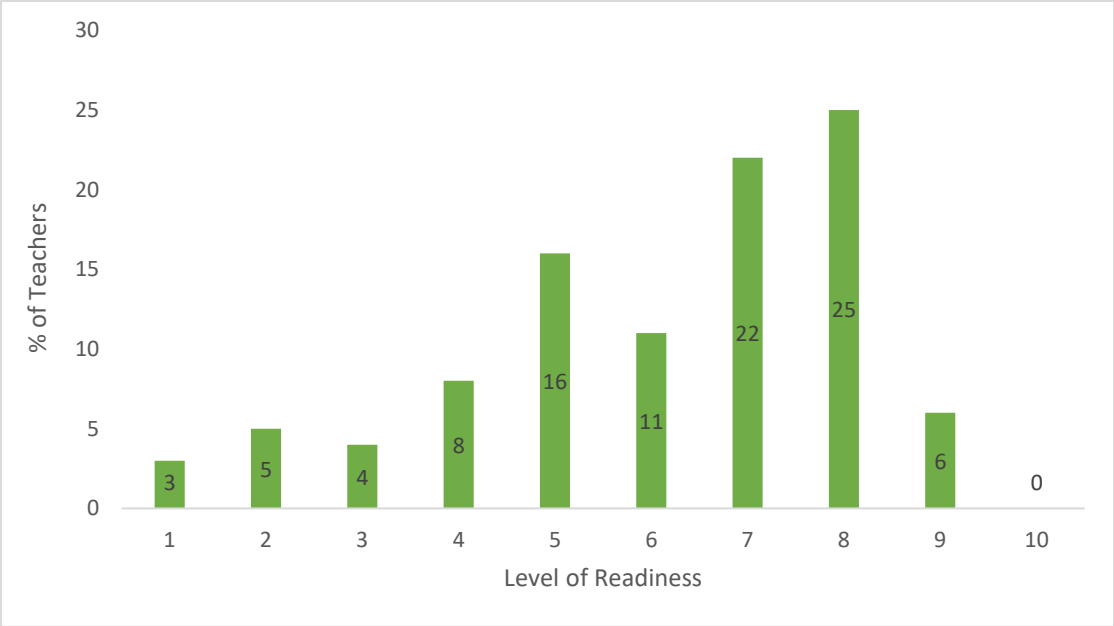
Type of Training	% of Respondents
In Service Professional Development	48
Undergraduate Courses	46
Conference Workshops	40
Practicum Experiences	30
No Formal Training	17
Graduate Courses	0

Note. $N = 100$

Teachers were also asked about their level of readiness to support students' mental health through their education using a rating scale (1 = Not at all ready to 10 = Extremely ready). Teachers' level of readiness is summarized in Figure 8. Overall, the results indicated that 36% of the teachers selected 5 or below for their level of readiness and another 47% of the teachers selected 7 or 8 as their level of readiness.

Figure 8

Level of Teacher Readiness



Note. 1 = Not at all ready and 10 = Extremely ready.

To gather information on the type of training teachers would find helpful in feeling prepared to support students' mental health, they were asked to respond to a "select all that apply" question. Teachers were given five different options (additional undergraduate courses, additional graduate courses, conference workshops, practicum experiences, professional development days). Furthermore, "other" option was used to provide teachers an opportunity to elaborate on their responses. Teachers' responses in the "other" category were coded into

additional categories. The responses in the "other" category and their codes are summarized in Table 20.

Table 20

Codes for Teachers Responses in "Other" Category

Codes	Teacher Responses
Support from others	"more support staff to help students," "having a qualified/specialized support staff," "more mental health professionals working in the school," "professionals more readily accessible in schools to work alongside us," "additional support in the classroom provided by teaching assistants who are experienced and have a solid background in supporting students with diverse mental health needs," "more resources in schools to give targeted support to students with mental health conditions, "having several students with these issues in my class prevented me from helping them as I wish I could have," "SERT and admin who understand mental health issues and are willing to support regularly," and "better access to professionals."
Informal Training or Resources	"list of informative websites that are credible" and "my own learning is ongoing."
Additional Practical Experiences	"classroom experience" and "more time in the profession"

Finally, responses such as "I don't find any of these to be very helpful as PD days are often not taught by someone with a lot of specific knowledge and the workshops are usually conducted just for special ed teachers rather than regular classroom teachers," "PD days that are actually meaningful not just reading through resources," "whole class lesson ideas or classroom strategies," "practical strategies to use in classroom," "more training on board policies," and "better training, modeling, and seeing strategies in action" were counted as "professional

development days" but they provide some insight into what the teachers find helpful or unhelpful about such opportunities. The final teacher responses are summarized in Table 21.

Table 21

Training to Help Teachers Feel More Prepared

Type of Training	% of Respondents
Professional Development Days	83
Conference Workshops	65
Additional Undergraduate Courses	29
Additional Graduate Courses	24
Practicum Experiences	24
Support from Others	10
Additional Practical Experiences	2
Informal Training or Resources	2

Note. $N = 100$.

Chapter 4: Discussion

Teachers play an important role within schools in identifying and referring students for a wide range of difficulties that affect learning and classroom functioning. Teachers spend a large amount of time with students, have an understanding of typical classroom behaviors, and are exposed to a variety of behaviors. This allows them to potentially identify behaviors that fall outside the norm. Furthermore, teachers typically display concern regarding their students' mental health, yet they may not receive the training necessary to have: (a) sufficient knowledge regarding mental disorders, (b) the skills to identify common signs of disorders, or (c) the ability to refer students for additional support (School Based Mental Health and Substance Abuse Consortium, 2013; Wei et al., 2019). Given the importance of identifying mental disorders early, and the lack of previous research focusing on all three mental health literacy components, the current study examined teachers' knowledge, recognition, and referral of the most common internalizing (anxiety and depression) and externalizing (ADHD and ODD) disorders.

Teacher Knowledge

Overall, teachers lacked the knowledge regarding some of the most common mental disorders in the classroom and their level of knowledge differed significantly depending on the disorder presented to them. Research evaluating Canadian teachers' mental health literacy of common classroom disorders is generally lacking. However, the results of the present study are consistent with some of the previous research indicating that teachers lack knowledge of mental disorders and they hold varying, incorrect beliefs about different disorders (Neil & Smith, 2017; Walter et al., 2006; Whitley & Gooderham, 2016).

When assessing a particular knowledge domain, one is considered to have mastery when they score around 80% or higher (Guskey & Anderman, 2013). Mastery can be defined as

comprehensive knowledge or skill in a particular subject or activity and is sometimes also referred to as competence or proficiency. The results from this study indicated that Canadian teachers do not exhibit mastery knowledge of different mental disorders. This is problematic, as teachers' limited knowledge may interfere with their ability to create supportive or inclusive classroom environments, which foster students' mental health and academic achievement.

The results also indicated that teacher knowledge differed significantly between disorders with teachers performing better in terms of their knowledge of ADHD and depression in comparison to their knowledge of ODD and anxiety. This indicates that there is a need to individualize teacher training programs based on their knowledge of different disorders. Although it was suspected that teachers would perform better in terms of their knowledge of externalizing disorders (e.g., ADHD and ODD) in comparison to internalizing disorders (e.g., depression and anxiety), this was not shown to be the case consistently. It is possible that teachers performed better in their knowledge of depression as it is one of the most common disorders with COVID-19 pandemic further triggering an increase in the prevalence of depression worldwide (World Health Organization, 2022b). Furthermore, teachers are likely to worry about the severe consequences that can often accompany depression (e.g., lack of sleep or appetite, suicidal ideation, self-harm). Together, these factors may have contributed to their raised awareness and knowledge. On the other hand, teachers scored much worse in their knowledge of disorder such as ODD. It is possible that teachers lack knowledge regarding ODD as it is a relatively newer diagnosis, which first came to existence in the third *Diagnostic and Statistical Manual of Mental Disorders* (Ghosh et al., 2017) Furthermore, they may lack insight into the causes of ODD, the common symptoms associated with ODD, and general options for treatment. Even for professionals, disorders such as ODD are referenced as one of the most

common misdiagnoses in children (Spiro, 2021). This is because symptoms such as disruptive behaviours are often associated with the diagnosis of ODD, but these behaviours can also be related to other disorders such as anxiety, ADHD, or a learning disorder. Therefore, teachers are likely to have a difficult time differentiating between the symptoms of ODD from other mental disorders. They may misunderstand the causes for these disruptive behaviours and hold misconceptions that negatively impacts their knowledge. Overall, professionals hoping to improve teacher MHL should ensure that teachers possess adequate and similar level of knowledge for different mental disorders so that children who are presenting with these disorders have equal opportunity to be identified.

Knowledge, Stigma, and Teacher-Student Relationship. Lack of knowledge can contribute to individuals having stigmatizing beliefs about mental disorders, which is often a barrier for individuals to engage in help seeking behaviours (Henderson et al., 2013; Tesfaye et al., 2021). If teachers lack knowledge of mental disorders and thus hold stigmatizing beliefs, they may: a) not fully understand the common features of mental disorders, b) not know how to access assessment and treatment services, and c) discriminate against students with mental disorders. This could contribute to delays in students getting the necessary care for their difficulties. Even within students, lack of knowledge and stigma associated with mental health is often a barrier for them to engage in help seeking behaviors (Rose et al., 2007; Schomerus & Angermeyer, 2008, Goodwill et al., 2020). This can contribute to students experiencing greater social isolation and having greater odds of suicide ideation, planning, or attempt (Crisp et al., 2000, U.S. Department of Education, 2021). If teachers also lack knowledge regarding mental disorders and hold stigmatizing beliefs, this will likely further contribute to these negative outcomes.

Among children and adolescents, lack of knowledge is often considered a common barrier to them accessing professional help for mental health (Radez et al., 2021). Therefore, teachers play an important role in flagging students who may require additional help. However, teachers' lack of knowledge may interfere with their ability to identify common signs of mental disorders, and thus reduce the likelihood of early identification and intervention. Furthermore, teachers' lack of knowledge or tendency to believe misconceptions may impact their relationship with their students, and their students' academic success. As Hamre and Pianta (2006) note, student-teacher relationships tend to develop through teacher beliefs, attitudes, behaviors, and student-teacher interactions. To form strong connections with students who struggle with their mental health, teachers would benefit from possessing adequate mental health knowledge, to ensure students feel a sense of safety and security in the classroom, and not feel judged or misunderstood by their teachers.

Knowledge Levels and Individual Differences. Results indicated significant interaction effects between age and type of disorder on knowledge scores for ADHD, ODD, and anxiety, with no significant effects for depression. Generally, younger teachers (aged 21-24) appeared to possess better knowledge of disorders such as ODD and anxiety, while teachers aged 35-44 performed better in terms of knowledge of ADHD. Previous researchers have also indicated that MHL may vary depending on age, with older individuals displaying poorer MHL than younger individuals in terms of correctly recognizing or identifying a disorder, beliefs about helpfulness of treating professionals, and causes of different mental disorders (Farrer et al., 2008; Piper et al., 2018). It is possible that teachers' knowledge and beliefs of mental disorders differ between age groups because there are different views held about mental health between generations. For example, researchers have found certain mental disorders to be more stigmatized by older

generations (e.g., Generation X); in addition, Generation X are more likely to hold a variety of misconceptions and not accept the existence of certain disorders, may believe one can "switch off" psychological problems, and may have misinformation on what treatments are effective (Baral et al., 2022). Other researchers have also demonstrated differences in mental health and help seeking behaviors as Generation Z were shown to be more likely to report their mental health as fair or poor than other generations and more likely to access treatment than other generations (American Psychological Association, 2018).

There are some differences in mental health literacy among different generations, which would also be present among teachers. It is possible that because younger teachers have better knowledge of mental health, they may hold fewer stigmatizing beliefs than teachers from older generations. Furthermore, they may have better mental health knowledge, as they are less removed from their educational and training programs, and are more aware and accepting of mental disorders. Younger teachers may also have better MHL as the rise of social media has made it easier for younger generations to access and openly discuss mental health related issues, which has contributed to increased awareness and normalization (Latha et al., 2020). Social media platforms have also made it easier for younger generations to engage with content, some of which may be related to mental health (Vaingankar et al., 2022). Social media movements, such as Bell Let's Talk or Bell Let's Talk in the Classroom are aimed at increasing mental health awareness and knowledge, and reducing stigma. These movements have been received somewhat positively by the public and have also shown to increase teacher confidence in providing mental health education (Linden et al., 2022; Vido, 2019). There are other mental health campaigns at the national level, which also exist to promote an individual's mental health or reduce stigma, such as Elephant in the Room Anti-Stigma Campaign and The Faces of Mental

Illness Campaign (Canadian Alliance on Mental Illness and Mental Health, n.d.; Mood Disorders Society of Canada, n.d.). Because younger individuals are more likely to use social media (Bush, 2023), it is possible that as a result of their social media use, they are more likely to come across campaigns aimed at increasing mental health knowledge and awareness.

Results also indicated that female teachers performed better than males in terms of their knowledge across all four disorders. However, both male and female participants displayed generally low mental health knowledge in the current study; therefore, teachers of all genders require support and intervention to improve their knowledge of different mental disorders. However, researchers and practitioners working on improving teachers' mental health knowledge and should ensure that all programs incorporate some opportunity to individualize training based on the teachers' gender. Previous research has shown similar deficits in men's mental health literacy, across countries. For example, researchers have found men to be: (a) less knowledgeable about mental health problems (Dogra et al., 2011), (b) be less likely to identify symptoms of depression and schizophrenia (Bener & Ghulom, 2011; Cotton et al., 2006; Stansbury et al., 2011), (c) be less likely to seek professional help for mental disorders (Seyfi et al., 2013), (d) be more likely to endorse the use of alcohol to cope (Wang et al., 2007; Cotton et al., 2006), (e) be less likely to endorse seeing a doctor, psychologist, or counsellor for the treatment of psychosis (Cotton et al., 2006), (f) be more likely to endorse antibiotics for dealing with psychosis (Cotton et al., 2006), and (g) be less likely to endorse psychological explanations for the causes of mental disorders and be less open to psychological interventions (Barry & Grilo, 2002). These gender differences in MHL are important to consider, as such factors may impact the willingness of male teachers to seek help for their students' mental health problems, which may impede the effectiveness of early intervention.

Overall, consideration of a variety of demographic variables will be beneficial to anyone intending to improve the mental health knowledge of others. Awareness of the differences in mental health knowledge depending on one's age or gender provides an opportunity to tailor programs aimed to improve knowledge.

Teacher Recognition

While teachers' knowledge of different mental disorders fell short of the 80% mastery criterion, their recognition was much closer. Teachers may have performed better on recognition questions than knowledge questions due to the use of vignettes. The knowledge-related questions likely required teachers to have a broader understanding of the different mental disorders as the questions covered a variety of areas. In contrast, the recognition question provided teachers with a list of symptoms that a student may be experiencing, and they were then asked to correctly identify the disorder. Overall, given the use of vignettes and resulting impact on ecological validity, it is possible that teachers' ability to recognize disorders within the classroom is lower than what was found.

Teachers' recognition accuracy varied between disorders. Overall, the results indicated that teachers performed significantly better in terms of their recognition of depression, anxiety, and ADHD-hyperactivity/impulsivity in comparison to their recognition of ADHD-inattentive subtype. This indicates that teachers' ability to accurately recognize symptoms of ADHD-inattentive subtype needs to be improved to ensure that these students have equal opportunity for support. This provides some insight into areas where teacher training with regards to their MHL needs some improvement.

Teachers' ability to accurately recognize symptoms of disorders also varied depending on the type of symptoms they were required to identify. This indicates that even within the same

disorder, specific symptoms were more recognizable. Some symptoms are more likely to be recognized by teachers, as they are more visible during their interactions with the student. For example, teachers displayed one of the highest recognition accuracy scores for symptoms related to ADHD-Hyperactivity/Impulsivity, which is characterized by symptoms that are more disruptive and visible in the classroom, and lowest in their recognition of some of the symptoms related to ADHD-Inattentive subtype. For example, a student who is often leaving their seat, running around or climbing inappropriately, unable to engage in activities quietly, talking excessively, blurting out answers, interrupting others, and not waiting their turn is likely to be more disruptive to their peers, teachers, and their own learning. This is line with previous researchers who found that teachers were better at recognizing externalizing problems than internalizing problems (Dwyer et al, 2006; Loades & Mastroyannopoulou, 2010). For other disorders such as ODD and Depression, there were also specific symptoms that teachers were unable to recognize accurately. Some of these symptoms are likely to be more difficult for teachers to recognize because symptoms such as difficulty sleeping, or weight loss/gain may be less noticeable in a school environment. It is also likely that teachers may not necessarily associate some of these symptoms with disorders such as depression. Overall, professionals hoping to improve teachers' recognition of different disorders should focus on raising teacher awareness of less visible or less disruptive symptoms to ensure that students displaying such symptoms do not miss out on the opportunity to receive appropriate intervention.

Recognition Levels and Individual Differences. The relationship between teachers' demographic variables and their recognition was also evaluated. Specifically, gender played a role in teachers' recognition scores. For example, female teachers performed better in their recognition of ADHD-Hyperactivity/Impulsivity symptoms, while male teachers performed

better in their recognition of anxiety symptoms. Even within each gender category (i.e., males vs females), there were significant differences in their recognition of different disorders. Research on the specific disorders included in the current study, and with Canadian teachers is limited, thus making it difficult to draw a comparison to previous literature. However, the gender differences found in the current study indicate that male and female teachers may benefit from more individualized training to improve their recognition of different disorders.

Other demographic variables, such as years of experience, did not appear to impact teachers' recognition scores. This contrasts with previous research where fewer years of professional experience were found to be related to teacher recognition (Storey, 2016).

Recognition Confidence. Despite a relatively high performance in recognition, teachers did not report a particularly high level of confidence in recognizing different symptoms of a disorder in the classroom; however, their confidence in recognizing externalizing symptoms was higher than for internalizing symptoms. This is consistent with previous research findings regarding teacher confidence in recognizing early signs of mental disorders (Moon et al., 2017). This is problematic because students experiencing internalizing symptoms may be less likely to be identified and as a result, they may not receive the necessary support.

Furthermore, the results suggest that teachers' recognition accuracy is related to their confidence in being able to recognize the symptoms in a classroom. When teachers scored higher in recognition, they were also more likely to report high levels of confidence in recognizing these symptoms within the classroom. Some of these results are explained by the difference in recognizing externalizing versus internalizing disorders. Externalizing symptoms are more visible to others, more accurately recognized, and therefore, teachers are more confident in their ability to recognize these in the classroom. Because teacher referral can often be a common route

for a student to receive mental health support, it is important that teachers feel confident in their ability to recognize common symptoms of mental disorders and they are able to recognize these symptoms with adequate accuracy.

Clinical and Non-Clinical Symptoms. Another important factor that may impact teachers' ability to accurately recognize a disorder involves how clinically severe the symptoms are. In the current study, we focused on the clinically significant symptoms of different disorders. Previous researchers have found teachers to have difficulty differentiating between symptoms that fall on the border of clinical versus non-clinical (Headley & Campbell, 2011; Headley & Campbell, 2013; Neil & Smith, 2017). This distinction between clinical and non-clinical may be an important consideration of mental health literacy. If teachers are not able to distinguish clinical from non-clinical symptoms, this will likely interfere with their ability to accurately recognize a disorder, and follow-up with a referral. Children with symptoms that fall on the border of clinical and non-clinical are more likely to be missed, which is problematic as these children would still benefit from a referral for additional support. Therefore, professionals looking to improve teachers' mental health literacy may consider focusing on helping teachers distinguish between clinical and non-clinical symptoms of a disorder.

Teachers spend a large amount of time with students, yet there is a lack of clarity surrounding teachers' role in students' mental health, which may create confusion as to whether they should be looking for signs of mental disorders and what symptoms they should be looking for. Combining this with lack of teacher training with regards to mental health, it is not surprising that teachers may not feel very confident in being able to recognize symptoms in the classroom.

Recognition Confidence and School Support. Improving teachers' mental health literacy may help teachers feel more confident in their abilities. Because teacher referral is often a common route for students to receive mental health support, it is important that teachers feel confident in their ability to recognize common symptoms of mental disorders. Professionals working with teachers would benefit from increasing teacher confidence in recognizing mental disorders. Previous researchers have found that teachers are more confident in their ability to recognize mental disorders when they work in schools with sufficient mental health services, and teachers feel more comfortable referring a student to mental health professionals who are employed by the school district, rather than for community-based services (Bruns et al., 2004; Moon et al., 2017; Williams et al., 2007).

Therefore, professionals working with teachers may benefit from improving mental health literacy through teacher training, but also by working closely with the teachers within the school districts. Although the current study explored teachers' recognition of different disorders on paper, it will be important to translate this into the classroom setting. Having teachers improve their mental health literacy skills through practical activities may play help transfer some of their skills to real life settings.

Teacher Referral

Once teachers possess adequate levels of knowledge and can recognize common symptoms of different mental disorders in the classroom, it is important to evaluate whether teachers follow-up on their concerns by referring students for additional support. Teachers' likelihood to refer students for additional support was generally low for those with symptoms of anxiety, ADHD-Hyperactivity/Impulsivity, and ADHD-Inattentive, and higher for those with symptoms of depression and ODD. Overall, teachers were most likely to refer a student with

symptoms of depression and least likely to refer a student with symptoms of ADHD-inattentive subtype. Teachers were more likely to endorse referring students for additional support when they displayed symptoms related to depression, due to the possibility of self-harm or suicide. This was because of teachers' concern with students' safety or the safety of others being threatened, and other related consequences.

Referral Differences Between Disorders. Teachers' likelihood to refer students for additional support appears to be related to their ability to accurately recognize symptoms. While it is important that teachers refer students with symptoms that have severe consequences for additional support (e.g., suicidal ideation), it is also important for teachers to recognize and refer students displaying symptoms related to other disorders. For example, individuals with ADHD are also likely to experience significant disruption to their functioning and could benefit from additional support. Individuals with ADHD may have a difficult time completing schoolwork, experience significant executive functioning deficits, and experience significant difficulties in terms of social skills (Flewelling, 2022; Storebø, 2019; Thorell & Wåhlstedt 2006). Together, the academic and social difficulties may result in these students experiencing symptoms of depression. As teenagers and adults, individuals with untreated ADHD are at a higher risk of experiencing substance abuse, risky sexual choices, eating disorders, car accidents, tardiness, poor performance at work, missing deadlines, gambling problems, difficulty with the law, and divorce (Fields, 2021). These consequences can have a major impact on their daily functioning, and may contribute to the development of additional mental health problems. Similarly, for anxiety, under-diagnosis and lack of treatment may also be related to negative consequences such as loss of productivity, higher risk of suicide, and lower quality of life (Kasper, 2006).The current results suggested that students who are experiencing depression are likely to receive the

support that they need, which would help reduce the potential immediate or long-term negative consequences experienced by these students. Similarly, for disorders such as ODD, teachers reported wanting to refer the student for additional support due to the impact on others around them (e.g., being argumentative, disrupting others, being dangerous to others, creating unsafe environment, being violent). This is in line with the previous finding that teachers may be better at recognizing and may also prioritize students with externalizing problems (e.g., Molins & Clopton, 2002). However, the difference in teacher referral is likely to place students experiencing other mental disorders at a disadvantage (e.g., students with symptoms of ADHD). Regardless of the disorder, all individuals should have equal opportunity for accessing support to help alleviate their symptoms given the long-term consequences of other untreated disorders.

Referral Differences Within Disorders. In addition to differences in referral between different disorders, it is also important to explore the differences in referral within each disorder. Because teachers were presented with multiple scenarios outlining various symptoms related to each disorder, their referral likelihood depending on the symptoms within each disorder could be determined. Teachers' likelihood to refer generally differed based on the symptoms. Within most disorders, teachers prioritized referring students with symptoms they viewed as more serious (e.g., safety concerns). Difference in teacher referral within the disorders also has implication for improving teacher training with regards to their MHL. If teachers prioritize referring students with symptoms that are viewed as more serious by them (e.g., suicidal ideation related to depression), they may miss students who are experiencing other symptoms of the same disorder (e.g., low mood related to depression). Although suicidal ideation is very common among individuals experiencing depression, not all individuals with depression experience suicidal

ideation (Cai et al., 2021). Overall, teachers should also be encouraged to refer students with symptoms that they view as less serious.

Reasons for Referral. Teachers' most common reasons to refer a student for additional support included the level of risk to student, impact on student, impact on others, confidence in recognition, and availability of support and strategies. This suggests teachers were generally aware of the reasons they should refer a student for additional support, as these disorders tend to impact on students' safety and learning, or the safety and learning of their peers. However, the importance placed on these reasons varied by disorder, which influenced teachers' likelihood of referral. These results are consistent with previous researchers who evaluated teachers' considerations prior to referring a student for additional help (Hinchliffe & Campbell, 2016). The results also align with what other professionals, such as psychologists, would consider when assessing the level of support a child or adolescent may require, and whether they meet diagnostic criteria for a specific disorder.

While teachers are aware of what they should consider before referring a student for additional support, they reported low levels of referral likelihood. This suggests a need for closer inspection of the common reasons preventing teachers from referring students. Identifying and eliminating the barriers to referral may also increase the chances of a student receiving the support they require. This, in turn, can also provide professionals with an opportunity to identify areas where teachers' mental health literacy could be improved.

Teachers reported some of the biggest barriers to referring students for additional support. These barriers were consistent with previous research, demonstrating that parental involvement and support in the school environment are critical to teachers' ability to refer students (William et al., 2007). The current results further highlight the importance of parents in

ensuring children get access to the support they need, as lack of parental involvement was reported as one of the largest barriers to referral. Therefore, parents may also lack the mental health literacy required to take initiative and collaborate with teachers. Parents' views on mental health may also act as a barrier, which may indirectly impact teachers' ability to support the students in the classroom. Mental health practitioners and researchers would benefit from incorporating parents when looking at ways to improve mental health literacy. In addition to the parents, lack of support from the school staff was reported as another major barrier to referral. If teachers take the initiative to refer a student, they may view their efforts as wasted if they lack the support required from school staff. For example, some schools may have additional staff such as a learning support facilitator or behavioural coach, who can support teachers with student related concerns. Getting this support from the staff may help teachers feel more confident that their concerns are being taken seriously. Therefore, improving the mental health literacy of the whole school system, including teachers, school staff, and parents is the best path to ensuring that students are supported with regards to their mental health.

The other barriers identified were related to teachers' training. For example, lacking the knowledge of professional services available and of mental disorders. This knowledge can be improved through teacher training at either the university level (e.g., courses focused on mental health) or in-practice (e.g., professional development opportunities specific to mental health). Despite the concern about the amount of responsibility being placed on teachers and the possibility of being overworked, only 13% of teachers reported lack of time as a reason for not referring students for additional support. Social desirability bias may be at play, as teachers may be worried about how they would be perceived if they reported not having enough time to focus

on children's mental health. However, the results indicate that teachers feel they have enough time to focus on students' mental health, but other barriers are preventing them from doing so.

Teacher Readiness and Training

When asked about their training, most teachers reported receiving some training via in-service professional development, undergraduate courses, and conference workshops. However, 17% of the teachers noted receiving no formal training related to mental health and a large percentage of teachers reported not feeling ready to support students' mental health upon completion of their educational programs. This likely also impacts their level of confidence in recognizing different disorders and their confidence in the accuracy of their referral.

Improving Teacher Training. Teachers were asked to provide feedback on things they would find helpful in feeling more prepared to support students' mental health. Most teachers would prefer to receive training via professional development days and workshops, while additional undergraduate or graduate courses and practicum experiences were selected by much fewer teachers. Teacher responses indicated that teachers would like to see an improvement in the way professional development days are conducted. Teachers emphasized the importance of (a) being trained by mental health specialists, (b) learning practical classroom strategies, (c) learning policies, and (d) having strategies modelled to them. Teachers noted they may not find professional development days to be helpful, as they seem to be taught by those without a lot of knowledge in area of mental health. Others noted they would like to have professional developmental days that are more "meaningful." Furthermore, teachers would benefit from specialized training in common problems among children and adolescents, rather than broad training on mental health, as learning broadly may not prepare teachers to support students in the classroom. In terms of learning practical strategies and modelling, teachers may benefit from

learning how to respond to students exhibiting anxious thoughts, having difficulty concentrating, or who are overly argumentative/upset. Perhaps professionals working with teachers on improving their mental health literacy would be better off focusing on providing training opportunities that include professional development days or workshops instead of courses.

By focusing on how to identify and support students with the most common disorders seen in the classroom, teachers would gain confidence in their ability to support them. This may also help teachers feel more prepared, capable, and comfortable while they wait to receive external support. Practical strategies such as behavioral or environmental modification for children with ADHD, or emotion-focused validation for children who are upset or worried are common components of treatment (DuPaul et al., 2011; Lafrance et al., 2020). Teaching and modelling these strategies at a systems-level for teachers would help them feel prepared to support students proactively rather than reactively. Therefore, professionals hoping to improve teacher mental health literacy would benefit from taking teachers' feedback into consideration and making sure the training being provided is meeting their needs.

Current Mental Health Literacy Training

With approximately 20 percent of children and youth in Canada likely to develop a mental illness in their lifetime, and approximately 70 percent of teachers indicating they have not received formal training in mental health education, teachers are unprepared to support students' mental health (Carr & Frank, 2019). Recently, there has been a focus on improving teachers' mental health literacy to ensure they feel better prepared to help students who report concerns over their mental health. For example, faculties of education from St. Francis Xavier University, Western University, and the University of British Columbia partnered with mentalhealthliteracy.org to create a resource for teachers called LEARN Mental Health Literacy

(The University of British Columbia, n.d.). This free online self-paced resource includes a variety of modules teachers can complete to improve their mental health literacy. Similarly, there are programs focused on improving students' mental health literacy. Mentalhealthliteracy.org also offers a YouTube channel with free videos. Alberta Health Services, in partnership with school authorities and organizations such as mentalhealthliteracy.org, have offered a variety of training opportunities for teachers and school staff (e.g., Go-To Educator Training), with different options for training available through mhlcurriculum.org. (Mental Health Literacy, n.d.). Ontario is also planning to launch mandatory resources for teachers and students on mental health literacy in Grades 7 and 8 and will update the Career Studies course in Grade 10 to include mandatory mental health literacy learning for students (Ontario, 2023). Similarly, Ontario curriculum for health and physical education tends to emphasize the importance of building mental health literacy (Ryan, 2020).

Over the past decade, there have been several initiatives focused on improving mental health. For example, the Canadian Healthy School Alliance created a set of standards for promoting healthy schools, and the Government of Canada recently announced they will invest $2.8 million to increase mental health literacy among coaches and sports leaders (Canadian Healthy Schools Alliance, 2021; Public Health Agency of Canada, 2022). Similarly, Teenmentalhealth.org created a mental health and high school curriculum guide aimed to improve teachers' and students' mental health literacy (Teen Mental Health, 2018). Others, such as Mental Health Commission of Canada, have also worked to promote school-based mental health in Canada (Mental Health Commission of Canada, 2013). School Mental Health ASSIST is a provincial implementation support team designed to help Ontario school boards promote student mental health by providing resources for educators, students, and parents. Through this

team, School Mental Health Ontario have created various mental health literacy lesson plans, as well as free online courses for educators. Alberta Government has also worked to create documents focused on supporting students' mental health such as "Working Together to Support Mental Health in Alberta Schools." (Alberta Government, 2017). The results from the current study can have important implications for refining existing and future training programs aimed at improving teacher mental health literacy.

Implications

Despite the variety of initiatives and organizations advocating for the improvement of mental health literacy, there remains a gap in teachers' knowledge of mental disorders. This may be associated with the optional nature of these programs. Although teachers are encouraged to access the online resources, they likely do not want to take time out of their day to complete the programs, especially if they are expected to use their own time. Therefore, making mental health literacy programs mandatory, and part of their workday, will likely help teachers improve their knowledge and recognition of different mental disorders. One step in this direction is Ontario's recent announcement to make such programs mandatory (Bowden, 2023).

Furthermore, there appears to be a lack of consistency in programs across the country. Each province has their own mental health initiative, which creates inconsistent training in mental health literacy for teachers across Canada. Many of these online resources also tend to be very broad in nature and, as stated, teachers would benefit from more specialized training. Another opportunity would be to incorporate additional training during teachers' university programs. The lack of mental health training during teachers' bachelor programs is well documented in a recent report produced by Physical and Health Education Canada (2014).

Because teachers found lack of support from parents and other school staff as barriers in their ability to refer students for additional support, researchers or professionals working with teachers would benefit from taking a systems-based approach to improving mental health literacy. They could do this by incorporating students, parents, and other school staff in training. This would ensure that individuals who are part of a students' system are working collaboratively to support their mental health. This would also aid in reducing role confusion or pressure on teachers to be solely in charge of recognizing and referring mental disorders.

Another important aspect of improving teachers' mental health literacy is practical training. Many teachers from the current study reported wanting additional professional development days to help them feel more prepared to handle students' mental health. However, there was concern raised regarding their current professional development days not being helpful. Therefore, some of the responsibility to improve teachers' mental health literacy falls on the psychologists or therapists who regularly work within the school system. Perhaps psychologists and therapists could incorporate regular professional development days focusing primarily on the skills teachers would find most helpful, such as: (a) providing information relevant to areas of mental health they are most likely to encounter, (b) focusing on practical strategies teachers could use in the classroom, (c) modeling strategies for teachers to see in action, and (d) sharing useful resources. These professional development days would give teachers an opportunity to not only learn skills from psychologists, but also from one another.

Funding Available to Support Students. Other barriers such as lack of funding in schools require a change at the government level or at the level of Ministry of Education. A recent Annual Ontario School Survey (AOSS) by the People for Education organization indicated that Canadian youth are struggling more with their mental health since the start of the

COVID-19 pandemic (People for Education, 2023). More youths reported having worse mental health, having higher emergency visits related to self-harm, and feeling more depressed about the future. Despite some of the concerns over students' mental health, the percentage of elementary and secondary schools with no access to psychologists has nearly doubled over the last 10 years with over 46% of schools having no access to mental health specialists. Even in large provinces such as Ontario, only 46% of the schools in the Greater Toronto Area had access to regularly scheduled mental health professionals in schools, and only 7-31% of schools in other areas of Ontario had access to mental health professionals. The lack of mental health professionals within the school system is also noted in other provinces. The lack of mental health professionals in the school system likely stems from the lack of funding to hire the required staff and the years of extensive training that is required to become a professional such as a psychologist. The lack of mental health specialists within schools likely makes it difficult for existing school psychologists to effectively cater to the mental health of the number of children who need their support. Although training teachers, parents, and other school staff is important, it is just as important to further increase the number of mental health specialists working within the schools. Together, this would ensure that one professional is not overworked and that multiple individuals can collaborate to identify and support students in need. Furthermore, training teachers, parents, and other staff in mental health literacy would help them all act as gatekeepers while a student waits to receive services from a person who specializes in identifying and treating various mental health conditions.

There is also a need to reduce the funding gap between physical and mental health sectors. Physical and mental health can often be interconnected and can impact an individual's daily functioning equally, yet funding for mental health care lags behind physical care

(Mahomed, 2020). Organizations such as the Centre for Addiction and Mental Health suspect that mental health care in Ontario is underfunded by approximately $1.5 billion, with only 7% of the health care dollars being allocated to mental health (Centre for Addiction and Mental Health, 2023).

Other Barriers to Implementation. In addition to lack of funding, there are likely other barriers to implementing ways to improve teacher mental health literacy (e.g., teachers' level of stress and burnout). Recent articles have reported high levels of stress and possible burnout among Canadian teachers, which has likely worsened since the COVID-19 pandemic (Carroll, 2018; Edwardson, 2022; Wilson, 2021). Similar trends were also found in the United States with teacher burnout increasing after the height of the COVID-19 pandemic (Rankin, 2022). These articles indicated several trends present among the teaching population: (a) taking more stress leaves, (b) taking early retirement, (c) just "going through the motions" of their job, (d) having higher mental health related claims, and (e) having higher likelihood to quit their profession.

Teacher stress and burnout is likely to negatively impact not only the teachers, but also their students. For example, teachers with high levels of stress and burnout may experience poorer health outcomes, increased absenteeism, and lower job satisfaction. In addition, their students may experience reduced motivation and achievement due to their teachers' disinterest towards their job, and report higher levels of stress (Laurie & Larson, 2020). Therefore, professionals should attend to teachers' mental health and help them reduce their levels of stress, develop resiliency, and learn skills to reduce the risk of worsening mental health.

Some of the recommendations provided here to improve teachers' mental health literacy are in line with reports by the Mental Health Commission of Canada (2013). These reports indicated: (a) a need for organizational conditions that support school mental health at the

provincial, district, and school/community level; (b) an adequate number of trained mental health professionals in schools; (c) greater investment in evidence-informed mental health initiatives; (d) systematic professional mental health learning for educators, parents, and students; and (e) increased coordination and sharing across provinces and territories.

Limitation and Future Directions

The current study has some limitations. Specifically, when generating the questionnaire, many of the questions were based on the information found in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5). This may be problematic because teachers are not likely to be familiar with the DSM-5. However, efforts were made to ensure that the questions did not include information considered too specialized or complicated for teachers. To balance the difficulty of the questions, true and false questions regarding common myths about mental disorders were also added. The combination of multiple-choice and true and false questions, with careful evaluation of the material helped minimize the possibility of the questions being too difficult for teachers to answer. Additionally, teacher think-aloud interviews were conducted with two teachers to evaluate whether any questions needed to be changed in terms of wording, awkward phrasing, level of difficulty, or repetition. Based on the think-aloud interviews, minor changes were made to the questionnaire, as both teachers found the questionnaire to be reasonable in terms of difficulty. Future researchers may consider conducting additional think aloud interviews to have a better understanding of how teachers perceived the questions.

Due to the removal of some items, the questionnaire did not have an equal number of questions for each disorder for the knowledge section, which may have negatively impacted the analysis and results, as teachers had fewer questions to answer for some disorders. This may have impacted their average score. Future researchers would benefit from ensuring that equal

number of questions are asked for each disorder. In addition, the current study was exploratory in nature; therefore, detailed psychometric properties of the questionnaire were not calculated. Future researchers may consider evaluating the psychometric properties of the questionnaire to further strengthen the measure.

In terms of measuring teachers' recognition of various mental disorders in the classroom, the current study likely lacked ecological validity. The use of vignette style questions may not translate to real-life situations. It is likely that teachers' recognition of different disorders would be lower in the classroom, given the large variety of things teachers must focus on in the classroom, such as teaching academic material and managing a large number of students. Ideally, teachers would be asked to recognize mental disorders in an environment that closely simulates a classroom; however, it would be an ethical challenge to establish an experiment in a classroom where students are displaying symptoms of different mental disorders. A compromise may be to generate videos of a pseudo-classroom where some students are displaying subtle symptoms of a disorder and have teachers recognize which students may need support. However, creating a video like this comes with its own difficulties. Although vignette-based questions have some challenges, they may still be the best way to measure teacher recognition at this time.

Advances in technology have allowed us to benefit from using online questionnaires and social media to collect data from a large number of individuals, at their convenience. However, using technology and social media also comes with challenges. During the current study, the use of social media and incentivizing individuals with a chance to win a gift card resulted in "bots" accessing the survey. This created significant issues, as there were over 700 participants who completed the study. Evaluating which responses came from a real participant, and which came from a "bot" was a difficult and time-consuming process. I attempted to stop this issue by adding

a math problem at the beginning of the questionnaire, but the "bots" were able to solve the math problem. After the math question was changed to a picture-based question, no additional bots completed the study. Future researchers would benefit from safeguarding their questionnaires from "bots" by creating these security questions at the start of the data collection.

While there may appear to be a limited sample size in each category (i.e., gender and age groups), they were likely representative of the teaching population in Canada. Statistics Canada (2014), indicated that teaching is a profession dominated by women, with 84% of teachers in elementary schools being women. Similarly, 91% of the teachers in this sample were women. In terms of age, Statistics Canada (2018) revealed that most teachers were within the ages of 25 and 59. Similarly, in the current sample, 91% of the teachers were within the 25-64 age range and only 9% were between the ages of 21-24. Therefore, the current sample is likely to be representative of the Canadian teaching population. However, when comparing teacher gender within different grade levels, given the small number of teachers in each category, the current sample is likely not representative of the Canadian teaching population.

Despite gathering data from a respectable number of participants, this was still a small portion of the overall Canadian teaching population. Ideally, the questionnaire would be completed by more teachers to have a better understanding of their mental health literacy and establish generalizability of results across the teaching population. Given the limited budget to offer additional incentives, the time sensitive nature of the study, and the challenges faced with "bots", participation was limited. Ideally, a questionnaire would be given to a larger number of teachers across the country. However, for that to occur, future researchers would need to spend extensive time developing a questionnaire that has sound psychometric properties and is adopted by governing bodies that evaluate teachers' mental health literacy. Alternatively, it may be

beneficial for future researchers to design a qualitative study to evaluate teacher knowledge, recognition, and referral of different mental disorders. The use of open-ended questions in the current study provided some insight into teachers' perspective that would not have been captured otherwise.

In addition to measuring teachers' mental health literacy, future researchers may also consider measuring and improving the mental health literacy of parents and other school staff. Parent involvement and support from school staff were seen as important barriers to referring a student for additional support. Therefore, eliminating common barriers to referral would play an important role in helping teachers feel more comfortable with the referral process. Future researchers may also benefit from further evaluating how demographic variables impact teacher mental health literacy and find ways to tailor teacher training based on these variables.

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Appendix A: Recruitment Poster

UNIVERSITY OF ALBERTA

ARE YOU A TEACHER CURRENTLY PRACTICING IN CANADA?

We want to hear from you!

Purpose:
- We would like to learn about teachers' knowledge, as well as their ability to recognize and refer students who are experiencing symptoms of mental disorders.

What will you need to do?
- Complete an online questionnaire including a series of multiple choice, true/false, and open-ended questions, followed by a few demographic questions.

How long will it take?
- The questionnaire should take no longer than one hour to complete.

Eligibility:
- Teachers currently practicing in Canada (or have practiced within the past year).
- Teachers of students in preschool to grade 12.

Risks:
- There are no known risks associated with this research.

Benefits:
- You will have an opportunity to enter a draw to win 1 of 10 **$20 gift cards** (to Amazon, Starbucks, or Indigo) as a token of appreciation for your time.
- The results will play an important role in improving teacher training and teacher-psychologist consultation. It will also indirectly support the mental health needs of students.

How do I participate?

- Please use the following link to complete the questionnaire:
  https://forms.gle/zyRPPRoxfGmaAPD87

If you have any questions, please feel free to contact the primary researcher:
Deepak Singh, M.Ed.
Doctoral Student in School and Clinical Child Psychology, University of Alberta
Email: dsingh1@ualberta.ca

For questions regarding participant rights and ethical conduct, contact the Research Ethics Office at the University of Alberta:
Phone # (780) 492-2615
Study ID: Pro 00099998, Title: Teachers' Knowledge, recognition, and referral of common mental disorders in schools

Appendix B: Questionnaire

Teachers' Knowledge, Recognition, and Referral of Common Mental Disorders in Schools

CONSENT FORM

Principal Investigator:
Deepak Singh, M.Ed.
Doctoral student in School and Clinical Child Psychology
University of Alberta
Email: dsingh1@ualberta.ca

Supervisor:
Dr. Damien Cormier, Ph.D., RPsych
Associate Professor and Director of Training
Department of Educational Psychology, University of Alberta
Email: dcormier@ualberta.ca

• I have read the recruitment poster concerning the study “Teachers’ knowledge, recognition and referral of common mental disorders in schools” and agree to participate in the study. All questions have been explained to my satisfaction. I am aware of the purpose and procedures of this study.

• I understand that my participation in this study is voluntary. I understand that my decision whether or not to participate does not affect my current or future relations with the University of Alberta, faculty members in the Department of Educational Psychology, or my employer. By completing this activity, I am voluntarily agreeing to participate.

• I understand that my participation involves an online survey lasting approximately one hour.

• I understand that I will have an opportunity to enter a draw to win 1 of 10 $20 gift cards (to Amazon, Starbucks, or Indigo). To be considered for the draw I will provide my email address at the start of the survey for the researcher to send me the gift card electronically. The approximate odds of winning are 1 in 15 based on an estimate of 150 participants. The odds of winning may be higher or lower depending on the number of participants the researcher is able to recruit.

• I understand that there may be no direct benefit to individual participants. However, as a current teacher, I may benefit from the results of the study by obtaining information on how teachers' knowledge, recognition, and referral practices may be improved. This could help the teachers be more aligned with other professionals such as school psychologists and work together to better recognize student's mental disorders as well as engage in better referral practices.

• I understand that if I choose to do so, I can provide my email address at the start of the survey so that the primary researcher can send me a brief summary of the results of the study.

• I understand that there are no known risks associated with this research study and that there are no costs to me for participating in the study.

• I understand that I can modify or withdraw my data until the final submission of my questionnaire. I understand that all measures to protect confidentiality will be taken with appropriate storage, access to data, and the use of pseudonyms.

• I understand that the researchers intend to present the findings of this study at a conference, publish, and to inform psychological and teaching practice.

• I am aware that I can contact the researcher, Deepak Singh by email dsingh1@ualberta.ca if I have any questions about this study.

• I understand that the plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta (Study ID: Pro 00099998). For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

* Indicates required question

1. By clicking on the Agree button below, I am indicating the following: I HAVE READ AND UNDERSTOOD THE CONSENT FORM AND I VOLUNTARILY AGREE TO PARTICIPATE IN THE STUDY. *

   Mark only one oval.

   - ◯ Agree
   - ◯ Disagree

Skill testing question

To discourage bots, please answer the skill testing question to proceed to the survey

2. Please select the panda from the following photos *

Mark only one oval.

Option 1

Option 2

Option 3

Option 4

Option 5

Option 6

Chance to win a gift card!

3. 1. Would you like to be entered into a draw to win 1 of 10 $20 gift cards? *

   Mark only one oval.

   - ◯ Yes
   - ◯ No

4. If YES, please provide your email

   _____

5. 2. Which of the following stores do you prefer for a gift card?

   Mark only one oval.

   - ◯ Amazon Canada
   - ◯ Starbucks
   - ◯ Indigo/Chapters

6. 3. Would you like to receive a brief summary of the results when the research is completed? *

   Mark only one oval.

   - ◯ Yes
   - ◯ No

7. If YES, please provide your email

   _____

8. 4. Where did you hear about the current study? *

Mark only one oval.

- Facebook
- Instagram
- LinkedIn
- Reddit
- Twitter
- Other: _____

9. 5. Have you completed this questionnaire before? *

Mark only one oval.

- Yes
- No

Knowledge of Common Mental Disorders

The following section will be used to better understand teachers' knowledge with regard to Attention Deficit Hyperactivity Disorder (ADHD). This is not a test; rather, the items will be used to gather insight into your familiarity with different disorders. Therefore, PLEASE SELECT the "I DON'T KNOW" option if you are unsure about your response rather than guessing.

Attention Deficit Hyperactivity Disorder (ADHD)

10. 1. The three domains of ADHD include inattention, hyperactivity, and _____. *

Mark only one oval.

- ◯ oppositional behaviours
- ◯ irrational behaviours
- ◯ antagonistic behaviours
- ◯ impulsive behaviours
- ◯ I don't know

11. 2. ADHD is classified as a: *

Mark only one oval.

- ◯ neurodevelopmental disorder
- ◯ disruptive disorder
- ◯ attention disorder
- ◯ personality disorder
- ◯ I don't know

12. 3. ADHD can be diagnosed through a: *

Mark only one oval.

- ◯ brain scan
- ◯ clinical interview
- ◯ genetic screener
- ◯ physical exam
- ◯ I don't know

13. 4. ADHD is most often identified during the: *

Mark only one oval.

- preschool years
- elementary school years
- middle school years
- secondary school years
- I don't know

14. 5. Current prevalence rates of ADHD suggest that: *

Mark only one oval.

- ADHD occurs equally in males and females
- ADHD occurs more frequently in females than males
- ADHD occurs more frequently in males than females
- ADHD DOES NOT occur in females
- I don't know

15. 6. _____ is considered a risk factor for ADHD. *

Mark only one oval.

- Having parents with ADHD
- Poor eating habits (e.g. too much sugar or refined foods)
- Excessive screen time (e.g. TV or video games)
- Lack of parental discipline
- I don't know

16. 7. Problems with functioning that are associated with ADHD include: *

Mark only one oval.

- academic difficulties in the classroom
- sluggish gross motor movements
- lower scores on intelligence tests
- all of the above
- I don't know

17. 8. Effective treatment for individuals with ADHD involves: *

Mark only one oval.

- improving their diets
- improving their social skills
- reducing their screen time
- all of the above
- I don't know

18. 9. ADHD is caused by: *

Mark only one oval.

- genetic factors
- environmental factors
- both genetic and environmental factors
- neither genetic nor environmental factors
- I don't know

19. 10. Effective strategy for managing a student with ADHD in the classroom include(s): *

Mark only one oval.

- using a token economy
- punishing unacceptable behaviour
- reducing screen time
- all of the above
- I don't know

20. 11. Some symptoms of ADHD among children include being lazy, irresponsible, and failing to cooperate. *

Mark only one oval.

- True
- False
- I don't know

21. 12. More than 90% of children with ADHD are hyperactive. *

Mark only one oval.

- True
- False
- I don't know

22. 13. Children with ADHD DO NOT outgrow their diagnosis. *

Mark only one oval.

- True
- False
- I don't know

23. 14. Children with ADHD are in control of their academic success. *

Mark only one oval.

- True
- False
- I don't know

24. 15. Bad parenting DOES NOT cause ADHD. *

Mark only one oval.

- True
- False
- I don't know

Knowledge of Common Mental Disorders continued

The following section will be used to better understand teachers' knowledge with regard to Oppositional Defiant Disorder (ODD). This is not a test; rather, the items will be used to gather insight into your familiarity with different disorders. Therefore, PLEASE SELECT the "I DON'T KNOW" option if you are unsure about your response rather than guessing.

Oppositional Defiant Disorder (ODD)

25. 1. ODD is associated with a higher risk for: *

Mark only one oval.

- unjustified aggression towards people
- suicide attempts
- property destruction
- stealing things
- I don't know

26. 2. Current prevalence rates of ODD in children suggest that: *

Mark only one oval.

- ODD occurs more frequently in females than males
- ODD occurs equally frequently in males and females
- ODD occurs more frequently in males than females
- ODD DOES NOT occur in females
- I don't know

27. 3. When do FIRST symptoms of ODD usually appear? *

Mark only one oval.

- preschool years
- elementary school years
- middle school years
- secondary school years
- I don't know

28. 4. Children and adolescents with ODD are at an increased risk of developing _____ as adults. *

Mark only one oval.

- ◯ tics
- ◯ depression
- ◯ obsessions
- ◯ narcissism
- ◯ I don't know

29. 5. Which parenting practice is NOT considered a risk factor for developing ODD? *

Mark only one oval.

- ◯ inconsistent parenting
- ◯ harsh parenting
- ◯ neglectful parenting
- ◯ overprotective parenting
- ◯ I don't know

30. 6. A helpful strategy for managing a student with ODD in the classroom is: *

Mark only one oval.

- ◯ teaching them relaxation skills
- ◯ providing a lot of unstructured time
- ◯ ignoring their disruptive behavior
- ◯ ensuring you are always the one in charge
- ◯ I don't know

31. 7. Children and adolescents with ODD experience frequent conflicts with: *

Mark only one oval.

- peers and parents
- parents and teachers
- teachers and peers
- parents, teachers, and peers
- I don't know

32. 8. ODD occurs in both children and adults. *

Mark only one oval.

- True
- False
- I don't know

33. 9. ODD and Conduct Disorder are NOT the same thing. *

Mark only one oval.

- True
- False
- I don't know

34. 10. ODD is sometimes a result of trauma. *

Mark only one oval.

- True
- False
- I don't know

35. 11. ODD is caused by bad parenting. *

Mark only one oval.

- True
- False
- I don't know

36. 12. Children with ODD love to argue. *

Mark only one oval.

- True
- False
- I don't know

37. 13. Having very clear consequences/punishments for students with ODD is the best treatment approach. *

Mark only one oval.

- True
- False
- I don't know

Knowledge of Common Mental Disorders continued

The following section will be used to better understand teachers' knowledge with regard to clinical depression. This is not a test; rather, the items will be used to gather insight into your familiarity with different disorders. Therefore, PLEASE SELECT the "I DON'T KNOW" option if you are unsure about your response rather than guessing.

Clinical Depression

38. 1. Clinical depression is usually associated with high: *

Mark only one oval.

- temper tantrums
- mortality
- physical pain
- perfectionism
- I don't know

39. 2. Current prevalence rates suggest that clinical depression: *

Mark only one oval.

- occurs more frequently in females than males
- occurs more frequently in males than females
- occurs equally in males and females
- DOES NOT occur in males
- I don't know

40. 3. The likelihood of clinical depression onset: *

Mark only one oval.

- increases during the elementary years
- increases during puberty
- decreases during puberty
- is not related to age
- I don't know

41. 4. Current treatment outcomes for clinical depression suggest that: *

Mark only one oval.

- ◯ males respond better to treatment than females
- ◯ females respond better to treatment than males
- ◯ males and females are equally likely to respond to treatment
- ◯ females DO NOT respond to treatment
- ◯ I don't know

42. 5. Which of the following is NOT a risk factor for developing clinical depression? *

Mark only one oval.

- ◯ parental depression
- ◯ parental divorce
- ◯ medical condition
- ◯ typical grief
- ◯ I don't know

43. 6. Risk of suicide attempts among individuals with clinical depression: *

Mark only one oval.

- ◯ are higher for males than females
- ◯ are higher for females than males
- ◯ are the same for males and females
- ◯ DOES NOT apply to females
- ◯ I don't know

44. 7. Children with clinical depression are UNLIKELY to: *

Mark only one oval.

- hear voices that are not there
- appear unfriendly towards others
- engage in reckless behaviors
- become silent and motionless
- I don't know

45. 8. An INEFFECTIVE treatment for clinical depression is: *

Mark only one oval.

- medication
- psychotherapy
- essential oils
- exercise
- I don't know

46. 9. Clinical depression is caused by a traumatic event. *

Mark only one oval.

- True
- False
- I don't know

47. 10. Clinical depression is NOT the same as being sad. *

Mark only one oval.

- True
- False
- I don't know

48. 11. Clinical depression is NOT a normal part of growing up. *

Mark only one oval.

- True
- False
- I don't know

49. 12. Individuals with clinical depression may NOT need to take medications for the rest of their life. *

Mark only one oval.

- True
- False
- I don't know

50. 13. Everyone with clinical depression cries a lot. *

Mark only one oval.

- True
- False
- I don't know

51. 14. Talking about depression makes it worse because it leads people to "dwell" on their problems. *

Mark only one oval.

- True
- False
- I don't know

52. 15. Clinical depression is easy to treat. *

Mark only one oval.

- True
- False
- I don't know

Knowledge of Common Mental disorders continued

The following section will be used to better understand teachers' knowledge with regard to clinical anxiety. This is not a test; rather, the items will be used to gather insight into your familiarity with different disorders. Therefore, PLEASE SELECT the "I DON'T KNOW" option if you are unsure about your response rather than guessing.

Clinical Anxiety

53. 1. _____ is NOT considered a physical symptom of clinical anxiety. *

Mark only one oval.

- Feeling nauseous
- Diarrhea
- Headache
- Ear infection
- I don't know

54. 2. Current prevalence rates suggest that clinical anxiety: *

Mark only one oval.

- occurs equally in males and females
- occurs more frequently in males than females
- occurs more frequently in females than males
- DOES NOT occur in males
- I don't know

55. 3. Children with clinical anxiety may present as: *

Mark only one oval.

- perfectionistic
- narcissistic
- impulsive
- compulsive
- I don't know

56. 4. Clinical anxiety in children is related to: *

Mark only one oval.

- parental overcontrol
- parental rejection
- both parental overcontrol and rejection
- neither parental overcontrol nor rejection
- I don't know

57. 5. Gender differences in clinical anxiety suggest that: *

Mark only one oval.

- ◯ females are more likely than males to experience substance use disorders
- ◯ males are more likely than females to experience substance use disorders
- ◯ there are no gender differences with regards to clinical anxiety
- ◯ females DO NOT experience substance use disorders
- ◯ I don't know

58. 6. Individuals with clinical anxiety tend to do things: *

Mark only one oval.

- ◯ quickly and inefficiently
- ◯ slowly and efficiently
- ◯ quickly and efficiently
- ◯ slowly and inefficiently
- ◯ I don't know

59. 7. An effective strategy for managing a student with clinical anxiety in the classroom includes: *

Mark only one oval.

- ◯ quick transitions between activities to avoid unnecessary stress
- ◯ frequent check-ins for understanding
- ◯ have them sit and work at the front of the class
- ◯ helping them avoid situations that make them feel stressed
- ◯ I don't know

60. 8. Medications for clinical anxiety are NOT addictive. *

Mark only one oval.

- True
- False
- I don't know

61. 9. If the student eats right, exercises, avoids caffeine, and lives a healthy lifestyle, their clinical anxiety will go away. *

Mark only one oval.

- True
- False
- I don't know

62. 10. A never-ending supply of compassionate reassurance from family or teachers and assistance in avoiding stress are INAPPROPRIATE ways to help children with clinical anxiety. *

Mark only one oval.

- True
- False
- I don't know

63. 11. Clinical anxiety usually gets better over time if the person just waits it out. *

Mark only one oval.

- True
- False
- I don't know

64. 12. Clinical anxiety is very common. *

Mark only one oval.

- True
- False
- I don't know

Recognition and Referral

The following sections will be used to better understand teachers' ability to recognize different mental health problems, as well as their referral practices. This is not a test; rather, the items will be used to gather insight into your teaching practices.

Instructions:

In the following sections you will be presented with a variety of hypothetical scenarios. Please read each hypothetical scenario before answering the three questions that follow. PLEASE SELECT the "I DON'T KNOW" option if you are unsure about your response instead of guessing.

1. Hypothetical Scenario:

A student in your classroom is experiencing the following symptoms that negatively impact their functioning:

- often makes careless mistakes in schoolwork or other activities
- often has difficulty remaining focused during lectures, conversations, or lengthy readings
- often does not seem to listen when spoken to directly
- often starts tasks but quickly loses focus and is easily sidetracked

65. A. How CONFIDENT are you that you would be able to recognize a student with these symptoms in your classroom? *

Mark only one oval.

- not at all confident
- somewhat confident
- very confident
- extremely confident

66. B. How LIKELY are you to refer a student with these symptoms for mental health support? *

Mark only one oval.

- not at all likely
- somewhat likely
- very likely
- extremely likely

67. C. Which of the following mental disorders do you think the student is likely to be experiencing? *

Mark only one oval.

- Anxiety
- Depression
- Attention Deficit Hyperactivity Disorder (ADHD)
- Oppositional Defiant Disorder (ODD)
- None of the above
- I don't know

2. Hypothetical Scenario:

A student in your classroom is experiencing the following symptoms that negatively impact their functioning:

- difficulty concentrating or mind going blank
- irritability
- difficulty controlling their excessive worries
- muscle tension

68. A. How CONFIDENT are you that you would be able to recognize a student with these symptoms in your classroom? *

Mark only one oval.

- not at all confident
- somewhat confident
- very confident
- extremely confident

69. B. How LIKELY are you to refer a student with these symptoms for mental health support? *

Mark only one oval.

- not at all likely
- somewhat likely
- very likely
- extremely likely

70. C. Which of the following mental disorders do you think the student is likely to be experiencing? *

Mark only one oval.

- ◯ Attention Deficit Hyperactivity Disorder (ADHD)
- ◯ Anxiety
- ◯ Depression
- ◯ Oppositional Defiant Disorder (ODD)
- ◯ None of the above
- ◯ I don't know

3. Hypothetical Scenario:

A student in your classroom is experiencing the following symptoms that negatively impact their functioning:

- is often angry and resentful
- often argues with teachers, adults or those in charge
- often refuses to comply with requests or with rules
- is spiteful towards others

71. A. How CONFIDENT are you that you would be able to recognize a student with these symptoms in your classroom? *

Mark only one oval.

- ◯ not at all confident
- ◯ somewhat confident
- ◯ very confident
- ◯ extremely confident

72. B. How LIKELY are you to refer a student with these symptoms for mental health support? *

Mark only one oval.

- not at all likely
- somewhat likely
- very likely
- extremely likely

73. C. Which of the following mental disorders do you think the student is likely to be experiencing? *

Mark only one oval.

- Oppositional Defiant Disorder (ODD)
- Anxiety
- Attention Deficit Hyperactivity Disorder (ADHD)
- Depression
- None of the above
- I don't know

4. Hypothetical Scenario:

A student in your classroom is experiencing the following symptoms that negatively impact their functioning:

- significant weight loss when not dieting or weight gain or changes in appetite
- often has difficulty sleeping or sleeping too much
- reduced ability to think or concentrate
- engaging in behaviors such as pacing around the room, tapping their toes or rapid talking and appearing restless.

74. A. How CONFIDENT are you that you would be able to recognize a student with these symptoms in your classroom? *

Mark only one oval.

- not at all confident
- somewhat confident
- very confident
- extremely confident

75. B. How LIKELY are you to refer a student with these symptoms for mental health support? *

Mark only one oval.

- not at all likely
- somewhat likely
- very likely
- extremely likely

76. C. Which of the following mental disorders do you think the student is likely to be experiencing? *

Mark only one oval.

- Attention Deficit Hyperactivity Disorder (ADHD)
- Anxiety
- Depression
- Oppositional Defiant Disorder (ODD)
- None of the above
- I don't know

5. Hypothetical Scenario:

A student in your classroom is experiencing the following symptoms that negatively impact their functioning:

- often has difficulty organizing tasks, activities, and materials
- often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort
- often loses things necessary for schoolwork
- often presents as forgetful in daily activities

77. A. How CONFIDENT are you that you would be able to recognize a student with these symptoms in your classroom? *

Mark only one oval.

- ◯ not at all confident
- ◯ somewhat confident
- ◯ very confident
- ◯ extremely confident

78. B. How LIKELY are you to refer a student with these symptoms for mental health support? *

Mark only one oval.

- ◯ not at all likely
- ◯ somewhat likely
- ◯ very likely
- ◯ extremely likely

79. C. Which of the following mental disorders do you think the student is likely to be experiencing? *

Mark only one oval.

- ◯ Depression
- ◯ Attention Deficit Hyperactivity Disorder (ADHD)
- ◯ Oppositional Defiant Disorder (ODD)
- ◯ Anxiety
- ◯ None of the above
- ◯ I don't know

6. Hypothetical Scenario:

A student in your classroom is experiencing the following symptoms that negatively impact their functioning:

- often loses temper
- is often touchy or easily annoyed
- often deliberately annoys others
- often blames others for his or her mistakes or misbehavior

80. A. How CONFIDENT are you that you would be able to recognize a student with these symptoms in your classroom? *

Mark only one oval.

- ◯ not at all confident
- ◯ somewhat confident
- ◯ very confident
- ◯ extremely confident

81. B. How LIKELY are you to refer a student with these symptoms for mental health support? *

Mark only one oval.

- not at all likely
- somewhat likely
- very likely
- extremely likely

82. C. Which of the following mental disorders do you think the student is likely to be experiencing? *

Mark only one oval.

- Attention Deficit Hyperactivity Disorder (ADHD)
- Depression
- Anxiety
- Oppositional Defiant Disorder (ODD)
- None of the above
- I don't know

7. Hypothetical Scenario:

A student in your classroom is experiencing the following symptoms that negatively impact their functioning:

- excessive worry or worries
- restlessness or feeling on edge
- difficulty falling or staying asleep, or restless, unsatisfying sleep
- being easily fatigued

83. A. How CONFIDENT are you that you would be able to recognize a student with these symptoms in your classroom? *

Mark only one oval.

- not at all confident
- somewhat confident
- very confident
- extremely confident

84. B. How LIKELY are you to refer a student with these symptoms for mental health support? *

Mark only one oval.

- not at all likely
- somewhat likely
- very likely
- extremely likely

85. C. Which of the following mental disorders do you think the student is likely to be experiencing? *

Mark only one oval.

- Anxiety
- Depression
- Oppositional Defiant Disorder (ODD)
- Attention Deficit Hyperactivity Disorder (ADHD)
- None of the above
- I don't know

8. Hypothetical Scenario:

A student in your classroom is experiencing the following symptoms that negatively impact their functioning:

- often fidgets with or taps hands/feet or squirms in seat
- often leaves seat in situations when remaining seated is expected
- often runs around or climbs things in situations where it is inappropriate
- often unable to play or engage in leisure activities quietly

86. A. How CONFIDENT are you that you would be able to recognize a student with these symptoms in your classroom? *

Mark only one oval.

- not at all confident
- somewhat confident
- very confident
- extremely confident

87. B. How LIKELY are you to refer a student with these symptoms for mental health support? *

Mark only one oval.

- not at all likely
- somewhat likely
- very likely
- extremely likely

88. C. Which of the following mental disorders do you think the student is likely to be experiencing? *

Mark only one oval.

- ◯ Oppositional Defiant Disorder (ODD)
- ◯ Anxiety
- ◯ Depression
- ◯ Attention Deficit Hyperactivity Disorder (ADHD)
- ◯ None of the above
- ◯ I don't know

9. Hypothetical Scenario:

A student in your classroom is experiencing the following symptoms that negatively impact their functioning:

- often feels sad or hopeless
- reduced interest or pleasure in almost all activities of the day
- feelings of worthlessness or excessive or inappropriate guilt
- recurrent thoughts of death or recurrent suicidal ideation

89. A. How CONFIDENT are you that you would be able to recognize a student with these symptoms in your classroom? *

Mark only one oval.

- ◯ not at all confident
- ◯ somewhat confident
- ◯ very confident
- ◯ extremely confident

90. B. How LIKELY are you to refer a student with these symptoms for mental health support? *

Mark only one oval.

- not at all likely
- somewhat likely
- very likely
- extremely likely

91. C. Which of the following mental disorders do you think the student is likely to be experiencing? *

Mark only one oval.

- Anxiety
- Depression
- Oppositional Defiant Disorder (ODD)
- Attention Deficit Hyperactivity Disorder (ADHD)
- None of the above
- I don't know

10. Hypothetical Scenario:

A student in your classroom is experiencing the following symptoms that negatively impact their functioning:

- often talks excessively
- often blurts out answers
- often has difficulty waiting for his or her turn
- often interrupts or intrudes on others

92. A. How CONFIDENT are you that you would be able to recognize a student with these symptoms in your classroom? *

Mark only one oval.

- not at all confident
- somewhat confident
- very confident
- extremely confident

93. B. How LIKELY are you to refer a student with these symptoms for mental health support? *

Mark only one oval.

- not at all likely
- somewhat likely
- very likely
- extremely likely

94. C. Which of the following mental disorders do you think the student is likely to be experiencing? *

Mark only one oval.

- Attention Deficit Hyperactivity Disorder (ADHD)
- Oppositional Defiant Disorder (ODD)
- Anxiety
- Depression
- None of the above
- I don't know

Broad Referral Questions:

95. 1. For which of the following disorders: Depression, Anxiety, Attention Deficit Hyperactivity Disorder (ADHD), and Oppositional Defiant Disorder (ODD) are you MOST likely to refer the student for mental health support? Briefly list the reasons why. *

96. 2. Have you ever referred a student for additional support due to concerns regarding their behavioral, social-emotional, cognitive, and/or academic functioning? *

Mark only one oval.

- Yes
- No

97. 3. List some things, if any, that you would consider when deciding whether to refer a student with mental health concerns for additional support. *

98. 4. If you chose NOT to refer a student with mental health concerns for additional support, under which of the following conditions did you make that decision: (Select all that apply) *

Check all that apply.

- [ ] Lack of knowledge of professional services available
- [ ] Lack of knowledge of mental disorders
- [ ] Lack of teacher training
- [ ] Lack of parental involvement
- [ ] Lack of funding in schools
- [ ] Lack of support from school staff
- [ ] Lack of time
- [ ] Stigma associated with mental health
- [ ] Other: _____

Demographics and Background:

For each question, please select the option(s) that applies to you.

99. 1. To which gender identity do you most identify with? *

Mark only one oval.

- ◯ Male
- ◯ Female
- ◯ Non-binary
- ◯ Prefer not to say

100. 2. What is your age in years? *

Mark only one oval.

- ◯ 21-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55-64
- ◯ 65 or older

101. 3. How many years of experience do you have as a teacher? *

Mark only one oval.

- ◯ 1 year or less
- ◯ 2-5 years
- ◯ 6-10 years
- ◯ 11-15 years
- ◯ 16-20 years
- ◯ 21 or more years

102. 4. What is the highest level of education you have completed? *

Mark only one oval.

- ◯ Bachelor's degree
- ◯ Post Bachelor's degree
- ◯ Master's degree
- ◯ Doctoral degree
- ◯ Other: _____

103. 5. Please specify your ethnicity (Select all that apply) *

Check all that apply.

- [ ] North American Indigenous origins
- [ ] Other North American origins
- [ ] European origins
- [ ] Caribbean origins
- [ ] Latin, Central and South American origins
- [ ] African origins
- [ ] Asian origins
- [ ] Oceania origins

104. 6. Which education stream do you teach in? (Select all that apply) *

Check all that apply.

- [ ] Regular/Inclusive education
- [ ] Special education
- [ ] Other: _____

105. 7. What level of students do you currently teach? (Select all that apply) *

Check all that apply.

- [ ] Preschool
- [ ] Elementary
- [ ] Middle
- [ ] Secondary

106. 8. What formal training have you received in mental health as a teacher? (Select all that apply) *

Check all that apply.

- [ ] Undergraduate courses
- [ ] Graduate courses
- [ ] Conference workshops
- [ ] Practicum experiences
- [ ] In-service professional development
- [ ] No formal training

107. 9. Through your education, how ready do you feel to support students' mental health? *

Mark only one oval.

Not at all ready

1
2
3
4
5
6
7
8
9
10

Extremely ready

108. 10. What would help prepare you to better support students' mental health in the classroom? (Select all that apply) *

Check all that apply.

- [ ] Additional undergraduate courses
- [ ] Additional graduate courses
- [ ] Conference workshops
- [ ] Practicum experiences
- [ ] Professional development days
- [ ] Other: _____

109. 11. What Canadian province or territories do you currently teach in? *

Mark only one oval.

- ◯ Alberta
- ◯ British Columbia
- ◯ Manitoba
- ◯ New Brunswick
- ◯ Newfoundland and Labrador
- ◯ Nova Scotia
- ◯ Ontario
- ◯ Prince Edward Island
- ◯ Quebec
- ◯ Saskatchewan
- ◯ Yukon, Northwest Territories, or Nunavut
- ◯ Outside of Canada

Appendix C: Additional Tables

Table C1

ADHD Knowledge Inter-Item Correlation Matrix

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
Q1	1.000														
Q2	.086	1.000													
Q3	.278	-.125	1.000												
Q4	.093	.004	.304	1.000											
Q5	.163	-.002	-.060	-.018	1.000										
Q6	.136	.254	.043	.021	-.009	1.000									
Q7	-.034	-.026	-.110	.074	.242	-.082	1.000								
Q8	.048	-.098	.067	.069	.089	-.029	-.014	1.000							
Q9	.212	.065	-.001	.083	-.042	.059	.183	-.179	1.000						
Q10	-.087	.041	-.028	.099	-.037	.074	-.034	.009	-.028	1.000					
Q11	-.047	-.041	.080	-.099	.171	.090	-.288	-.009	-.137	.004	1.000				
Q12	.094	.299	.101	.070	-.165	.230	-.049	.017	.007	-.027	.108	1.000			
Q13	-.090	.185	-.072	.107	-.168	.245	-.181	.038	.103	.150	-.025	.155	1.000		
Q14	-.027	.184	.119	.140	-.139	.385	-.133	-.132	-.126	.096	-.015	.233	.041	1.000	
Q15	-.030	.010	-.026	-.187	.090	.170	-.051	-.157	-.248	-.053	.172	.043	.050	.178	1.000

Table C2

ODD Knowledge Inter-Item Correlation Matrix

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Q1	1.000												
Q2	.230	1.000											
Q3	.161	.255	1.000										
Q4	.138	.017	.068	1.000									
Q5	.126	.109	-.005	.339	1.000								
Q6	.024	-.092	.029	.261	.207	1.000							
Q7	.021	.092	.323	.204	.071	.175	1.000						
Q8	-.117	.014	-.026	.117	.008	.135	.066	1.000					
Q9	.110	.183	.243	.082	.167	.087	.000	.357	1.000				
Q10	.049	-.059	.241	.141	.117	.119	.346	.140	.151	1.000			
Q11	.092	-.075	.011	-.017	-.159	.134	.169	.100	.140	.122	1.000		
Q12	-.125	-.083	-.075	.066	.073	.150	.061	-.005	.063	.012	.212	1.000	
Q13	.248	-.049	.035	-.057	-.131	.040	-.070	-.102	.070	-.146	.124	.048	1.000

Table C3

Depression Knowledge Inter-Item Correlation Matrix

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
Q1	1.000														
Q2	-.002	1.000													
Q3	-.040	.159	1.000												
Q4	.127	.018	-.006	1.000											
Q5	.172	.192	.150	.149	1.000										
Q6	-.088	.238	-.067	.120	-.028	1.000									
Q7	-.004	.302	.304	.079	.118	.004	1.000								
Q8	.129	.151	.008	.079	.180	.145	.220	1.000							
Q9	.113	.149	.150	.149	.197	.026	.159	.247	1.000						
Q10	.055	.096	-.069	-.059	-.009	.062	.182	.190	-.009	1.000					
Q11	.051	.114	.292	.114	.163	.077	.091	.185	-.022	-.053	1.000				
Q12	-.071	-.045	-.083	.058	-.057	.174	.013	.055	-.009	.092	-.056	1.000			
Q13	.089	-.045	.240	.055	.216	-.150	.199	.076	.032	-.033	.056	-.016	1.000		
Q14	-.040	.048	.213	-.019	-.022	-.007	.345	-.123	.101	.167	.053	.091	.198	1.000	
Q15	-.089	.045	-.123	.045	-.032	.401	-.009	.076	-.032	.033	-.056	.125	-.368	-.198	1.000

Table C4

Anxiety Knowledge Inter-Item Correlation Matrix

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Q1	1.000											
Q2	.102	1.000										
Q3	.207	.239	1.000									
Q4	-.058	.183	-.021	1.000								
Q5	.138	.386	.088	.262	1.000							
Q6	.004	.095	.027	.066	-.034	1.000						
Q7	-.133	.059	.220	-.060	.110	.047	1.000					
Q8	.176	.024	.016	-.164	.131	.022	-.044	1.000				
Q9	.073	-.105	.063	.196	.031	-.102	.070	.107	1.000			
Q10	.089	-.065	.116	-.084	.153	-.145	.042	.199	.020	1.000		
Q11	.093	.096	.107	.147	.032	.107	.030	.028	.289	.021	1.000	
Q12	-.038	.066	.005	.106	.135	.027	-.036	.016	.003	-.003	-.050	1.000

Table C5

Pairwise Comparisons for Difference in Knowledge by Disorder

Type of Disorder		Mean Difference	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
ADHD	ODD	9.062*	1.839	.000	4.111	14.013
	Depression	-1.333	1.548	1.000	-5.502	2.835
	Anxiety	3.850	1.782	.199	-.948	8.648
ODD	ADHD	-9.062*	1.839	.000	-14.013	-4.111
	Depression	-10.395*	1.770	.000	-15.160	-5.630
	Anxiety	-5.212*	1.829	.032	-10.135	-.288
Depression	ADHD	1.333	1.548	1.000	-2.835	5.502
	ODD	10.395*	1.770	.000	5.630	15.160
	Anxiety	5.183*	1.408	.002	1.394	8.973
Anxiety	ADHD	-3.850	1.782	.199	-8.648	.948
	ODD	5.212*	1.829	.032	.288	10.135
	Depression	-5.183*	1.408	.002	-8.973	-1.394

Note. Based on estimated marginal means. *The mean difference is significant at the .05 level. b. Adjustment for multiple comparisons: Bonferroni.

Table C6

Pairwise Comparisons for Difference in Recognition by Disorder

Type of Disorder		Mean Difference	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
ADHD-inattentive	ADHD-hyperactivity/impulsivity	-.280*	.077	.004	-.500	-.060
	ODD	-.150	.067	.279	-.343	.043
	Depression	-.220*	.075	.040	-.434	-.006
	Anxiety	-.250*	.086	.044	-.496	-.004
ADHD-hyperactivity/impulsivity	ADHD-inattentive	.280*	.077	.004	.060	.500
	ODD	.130	.069	.630	-.068	.328
	Depression	.060	.074	1.000	-.151	.271
	Anxiety	.030	.080	1.000	-.199	.259
ODD	ADHD-inattentive	.150	.067	.279	-.043	.343
	ADHD-hyperactivity/impulsivity	-.130	.069	.630	-.328	.068
	Depression	-.070	.067	1.000	-.263	.123
	Anxiety	-.100	.081	1.000	-.333	.133
Depression	ADHD-inattentive	.220*	.075	.040	.006	.434
	ADHD-hyperactivity/impulsivity	-.060	.074	1.000	-.271	.151
	ODD	.070	.067	1.000	-.123	.263
	Anxiety	-.030	.069	1.000	-.228	.168
Anxiety	ADHD-inattentive	.250*	.086	.044	.004	.496
	ADHD-hyperactivity/impulsivity	-.030	.080	1.000	-.259	.199
	ODD	.100	.081	1.000	-.133	.333
	Depression	.030	.069	1.000	-.168	.228

Note. Based on estimated marginal means. *The mean difference is significant at the .05 level. b.

Adjustment for multiple comparisons: Bonferroni.

Table C7

Disorders Most Commonly Referred by Teachers

Type of Disorder	% of Respondents
Depression	35
Anxiety and Depression	20
ODD	13
All of them	11
ADHD	8
Depression, Anxiety, and ODD	4
None of them	3
Anxiety	2
Depression and ODD	2
ADHD and ODD	1
ADHD and Anxiety	1

Note. $N = 100$

Table C8

Most Common Reasons for Referring Depression

Depression	
Codes/Themes (Frequency)	Sample Summary of Reasons
Risk to Student (19, 54.3%)	Possibility or risk of self-harm; wanting to involve a professional to screen for suicidal thoughts; most likely to be dangerous (suicide risk); more serious outcomes of suicide; risk of death; can be deadly; can escalate quickly to suicidal thoughts.
No Reason (7, 20%)	No reason provided; if I had to choose depression would be my highest concern; depends on the severity of symptoms or how obvious they are; if a child was exhibiting symptoms of severe depression, they would be given priority for the most intensive support available.
Impact on Student (5, 14.3%)	Quality of living; impaired ability to function and enjoy life; hard to engage student in classroom; negative impact on learning; taking a toll on other aspects of life.
Seriousness (3, 8.6%)	Most serious; very serious.
Confidence in Recognition (2, 5.7%)	Better trained to recognize due to personal diagnosis; most confident in identifying and saying what the right support is.
Personal Experience (2, 5.7%)	Most personal experience with.
Liability (1, 2.9%)	Worried about losing job or being held responsible if child is suicidal without intervention.
Urgent Need for Support (1, 2.9%)	Requires great support.
Limited Resources in School (1, 2.9%)	Limited resources need to “triage” students for support.
Requires External Treatment/Support (1, 2.9%)	To get the right treatment.
Lack of Knowledge/Ability to Help (1, 2.9%)	Least familiar in dealing with students with depression.

Easier to Treat (1, 2.9%)	More likely and easier to treat.
Hard to Get Diagnosis (1, 2.9%)	Hard to get diagnosis.
Prognosis (1, 2.9%)	Difficult to get out once too deep.

Note. Total number of teachers who selected depression = 35.

Table C9

Most Common Reasons for Referring Depression and Anxiety

Depression and Anxiety	
Codes/Themes (Frequency)	Sample Summary of Reasons
Impact on Student (6, 30%)	Major impact on student's mental health; most detrimental to student's health; lack of support can lead down dark paths; direct negative impact on student's functioning and quality of life; severe consequences without support; impact learning and well-being.
Confidence in Recognition (4, 20%)	Easier to pick up on specific behaviours; adolescent onset so as a high school teacher there's an increased likelihood of noticing and referring; easiest to recognize or notice.
Risk to Student (3, 15%)	Higher risk of self-harm; possibility of self-harm; more dangerous.
Lack of Knowledge/Ability to Help (2, 10%)	Least likely to be able to help as other two can be remediated through classroom management, structure, and relationships; feel less qualified to deal with them in the classroom.
Personal Experience (2, 10%)	Can relate to these due to personal experiences; symptoms or lack thereof are more known to me.
Require External Treatment/Support (2, 10%)	Need for additional support outside of classroom; better for the parents to take child to the doctor.
Confidence in Referral (2, 10%)	Feel most confident in referring.
Time Consuming to Treat (1, 5%)	Require more time to fix it.
Emotion Regulation (1, 5%)	Help regulate emotions.
Classified as a Mental Illness (1, 5%)	Of the list provided these are the ones I would group in the mental illness category.
Limited Resources in School (1, 5%)	Lack of support in schools for mental health, long wait time between referral and services in schools.
Need for Support (1, 5%)	Severe consequences without support.

Difficult to Support in Classroom (1, 5%)	Harder to use strategies to support in classroom.
Difficulty to Recognize (1, 5%)	Hidden disorders.
Seriousness (1, 5%)	Most serious.
No Reason (1, 5%)	Depression/anxiety would receive guidance referrals first (Irrelevant Response/Did not provide a specific reason)

Note. Total number of teachers who selected Anxiety and Depression = 20.

Table C10

Most Common Reasons for Referring ODD

ODD	
Codes/Themes (Frequency)	Sample Summary of Reasons
Impact on Others (peers/teachers/classroom) (6, 46.2%)	Student can be argumentative with the teacher; disruptive to others around them.
Risk to Others (4, 30.8%)	Dangerous to others; creates unsafe environment; aggressive; violent towards teachers and support staff.
Impact on Student (3, 23.1%)	Most detrimental to student's learning; most disruptive to student's learning.
Confidence in Recognition (2, 15.4%)	Most visible as the student can be very argumentative with the teacher; most obvious, first identified.
No Reason (2, 15.4%)	No reason provided.
Prognosis (1, 7.7%)	Irreversible with time.
Need for Support (1, 7.7%)	Harder to deal with without support.
Urgent Need for Support (1, 7.7%)	Resources needed ASAP.
Stigma (1, 7.7%)	Seen as the most negative.
Misconceptions (1, 7.7%)	Educators may believe this can be fixed with tough love but that is not the best strategy.

Note. Total number of teachers who selected ODD = 13.

Table C11

Most Common Reasons for Referring ADHD

ADHD	
Codes/Themes (Frequency)	Sample Summary of Reasons
Impact on Student (2, 25%)	Inability to start and complete tasks; inability to focus and remain still.
Availability of Support and Strategies (2, 25%)	More support and strategies available; feeling that they can do more at school to help students with ADHD vs. lack of resources for other disorders.
Confidence in Recognition (2, 25%)	Feel the most confident in ability to recognize it; easiest to identify.
No Reason (2, 25%)	No reason provided, simply listed the disorder.
More prevalent (1, 12.5%)	Common in classrooms.
Knowledge and Skills (1, 12.5%)	Learned the most about it.
Confidence in Referral (1, 12.5%	Able to articulate reasons for referral.
Teachers' Responsibility (1, 12.5%)	Responsibility for dealing with other disorders falls on the parents.
Personal Experience (1, 12.5%)	Personal experience of missed diagnosis and knowing the struggle of not getting help.
Impact on Others (Peers, teachers, classroom) (1, 12.5%)	Disruptive behaviours; negative peer/teacher interactions

Note. Total number of teachers who selected ADHD = 8.

Table C12

Most Common Reasons for Referring Other Disorders

Depression, Anxiety, and ODD	
Codes/Themes (Frequency)	Sample Summary of Reasons
Requires External Treatment/Support (2, 50%)	Need for professional support to learn techniques that will help them function better; less manageable in the classroom.
Risk to Student (1, 25%)	Danger to themselves.
Risk to Others (1, 25%)	Danger to others.
Limited Resources (1, 25%)	Lack of support.
Lack of Knowledge/Ability to Help (1, 25%)	Lack of training.
Confidence in Recognition (1, 25%)	Usually, could be flagged and parents may also be experiencing difficulties at home.
Prognosis (1, 25%)	Could get worse over time if left untreated.
Need for Support (1, 25%)	Depression, anxiety, and ODD because I did not know ADHD would require mental health support.
None of them	
Codes/Themes (Frequency)	Sample Summary of Reasons
Not Teacher Responsibility (1, 33.3%)	Not teacher responsibility to diagnose.
Depends on the Severity (1, 33.3%)	Referral depends on the severity.
Lack of Support at Schools (1, 33.3%)	None because there are no supports available at schools.
Anxiety	
Codes/Themes (Frequency)	Sample Summary of Reasons
Confidence in Recognition (1, 50%)	Most recognizable due to personal experience.
Personal Experience (1, 50%)	Most recognizable due to personal experience.
No Reason (1, 50%)	No reason provided.

Depression and ODD	
Codes/Themes (Frequency)	Sample Summary of Reasons
Lack of Knowledge/Ability to Help (1, 50%)	Have some strategies to try in class to help students with ADHD/Anxiety rather than with ODD and depression.
Requires External Treatment and Support (1, 50%)	Can escalate beyond classroom management.
ADHD and ODD	
Codes/Themes (Frequency)	Sample Summary of Reasons
Impact on others (peers, teachers, classroom) (1, 100%)	Disruptive to the whole class; make teaching difficult.
Confidence in Recognition (1, 100%)	Behaviours are more noticeable.
ADHD and Anxiety	
Codes/Themes (Frequency)	Sample Summary of Reasons
Knowledge and Skills (1, 100%)	Most experience with these disorders in the classroom.

Note. Total number of teachers who selected depression, anxiety, and ODD = 4; Total number of teachers who selected none of them = 3; Total number of teachers who selected anxiety = 2; Total number of teachers who selected depression and ODD = 2; Total number of teachers who selected ADHD and ODD = 1; Total number of ADHD and anxiety = 1.

Table C13

Things to Consider Before Referring a Student for Additional Mental Health Support

Codes/Themes (Frequency)	Sample Summary of Responses
Impact on Student (35%)	Disruption to student's learning; anything that is preventing the student from doing their best or being their best academically or socially; impact on quality of life; inability to accomplish goals; impact on social functioning; impact on student's academic, social or emotional functioning; academic success is at risk; challenge to their success or well-being; negative peer interactions; impact on school performance; impact on ability to learn in class, make relationships with their peers or pursue interests; effect on social emotional well-being; difficulty completing assignments or with numeracy/literacy; effects on day to day functioning; attendance issues; declining grades; effect on relationship with peers, teachers or other adults; not singling student out.
Family Factors (30%)	Parental support; parental approval; parental input; parental involvement; family support; family situation; will parents respond appropriately and allow the support; attitude of the parents; concerns about their life at home; family's likelihood to participate/cooperate; family being consistent at home.
Symptom Related Factors (19%)	frequency of behaviours/symptoms; severity of behaviours/symptoms; intensity and duration of symptoms; behaviour also occurring at home; behaviour that's excessive; sudden change in behaviour; severity (affecting academically or socially); changes in behaviour; has the issue escalated; behaviour outside of the norm; shift in symptoms from baseline; changes in functioning; current symptoms and data to support; symptoms.
Risk to Student (15%)	Risk to themselves; concern about safety or harm; self-harm; danger to self; student's safety; is student in danger; at risk of causing harm to themselves; if the child is in danger (e.g., suicide); risk to their own safety.
Specific Mental Symptoms (14%)	Sudden drop in interest at school, overall checked out, removing themselves from social situations; low

	mood/engagement; bizarre and dark sayings/drawings; withdrawal, isolation; negative self-talk, forgetfulness, lack of socializing, excessive mood swings; inability to start/complete tasks; is anxious frequently; ability to focus; worrisome, hyper emotional; inattentiveness.
Student Related Factors (14%)	Level of satisfaction the student has; student willingness; student's reaction; social skills; student's awareness; ability to cope; student's feelings; socioeconomic status; if they have been in care or if social workers are following them; student's demeanor; refer to someone who they'll feel comfortable with; what was tried as a coping mechanism and if their symptoms got worse; recent stressors in child's life.
Consulting with Others (12%)	Speaking with other staff (administration, in school student support people); start with school-based `teams then proceed to school psychologist if necessary; consult with the school team (e.g., social worker, resource teacher, other teachers, specialists, student services, student success team, school counsellors, special ed team, previous teacher, guidance staff); consulting with the family (report what is being seen in class).
Risk to Others (11%)	Harming other students physically; risk to others; aggression towards others; violent/aggressive; danger to others; safety of others; at risk of causing harm to others; threatening others; danger to student or adults.
Behavioural Symptoms Observation (11%)	Student rambling; need for attention, excessive blurting, no filter in terms of what is appropriate to say out loud; excessive outburst, consistent anger; observations over time; current behaviours; classroom behaviour; report classroom observations.
Impact on Others (9%)	Disruption to peers learning; challenge to well-being of others; disruptive behaviours; difficulty with peers and adults; classroom behaviour; disruptive to others; impeding the learning of others; continuously disrupting the class.
Self-Reported Concerns (9%)	Student voice; interaction with student; student expressing concern over their behaviour; listening to what they say; converse with student about symptoms and ask clarifying questions; student's expressed

	concern about their mental health; expressing a need for help; student's response when asked how they were doing.
Specific Physical Symptoms (8%)	Weight loss, physically looking ill, tired; poor hygiene, hair and skin pulling; excessive tiredness, physical health; lack of nutrition, cleanliness; not eating, lack of sleep; listlessness, physical symptoms.
Availability of Resources (7%)	Available programs; available resources/lack of resources; access to community mental health support; if the person listening to concerns is readily available & willing to talk about it; type of mental health support available; availability of resources at school; lack of resources at school.
Support for Student (7%)	Current support system; already receiving support from a therapist or social worker?; existing support; existing support or lack thereof; previous support; need for additional support; what does psychologist have to offer?
Ability to Help (5%)	Whether or not I as a teacher could help to avoid overwhelming the support services; anything I can do short term; plan for in class support; ability to support the student; need for additional support that the teacher is unable to provide in classroom.
No Reason Provided (4%)	No specific reason provided.
Support for Teacher (3%)	Administration support; Support from school; school support.
Medical Factors (3%)	Current medications; recommend basic physical exam from a doctor (e.g., getting eyes or ears checked for ADHD referrals), health risk.
Teacher-Student Relationship (3%)	How well teacher knows the student; length of time known the child; relationship with student.
Effectiveness of Classroom Strategies (1%)	Current strategies provided in class not effective.
Situation/Individual Dependent (1%)	Depends on the situation and individual.
Teacher Related Factors (1%)	Own instinct and experience.

Note. $N = 100$

Appendix D: Additional Figures

Figure D1

Normal Q-Q Plot for ADHD Knowledge

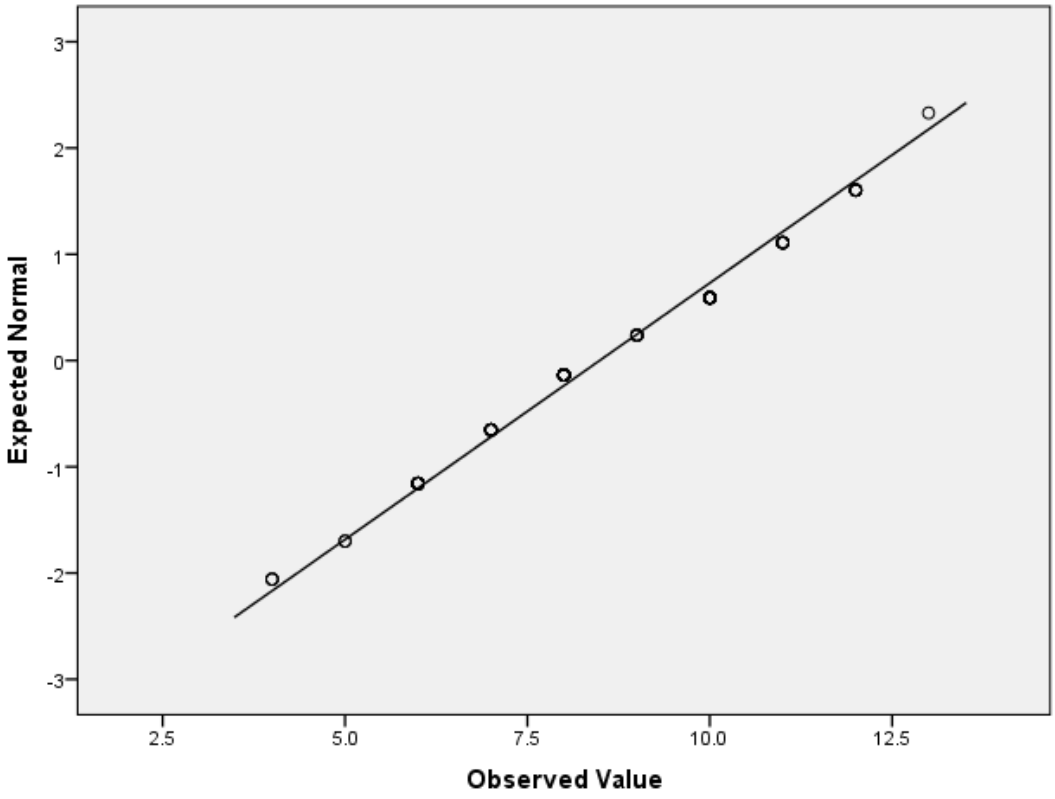

Figure D2

Normal Q-Q Plot for ODD Knowledge

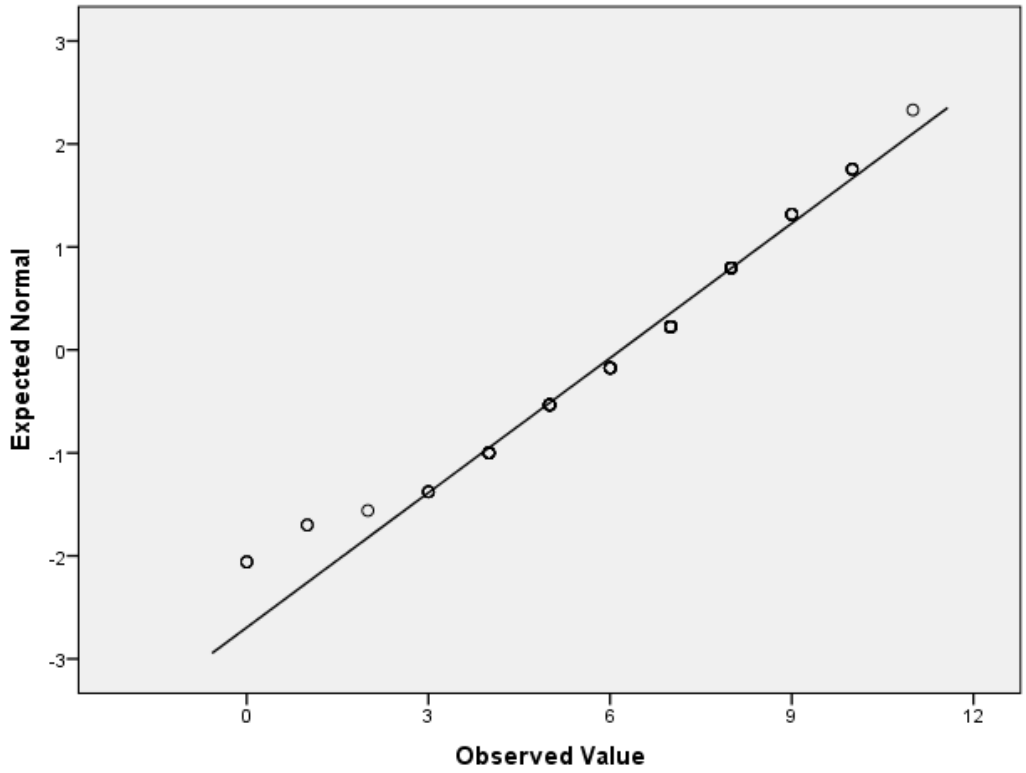

Figure D3

Normal Q-Q Plot for Depression Knowledge

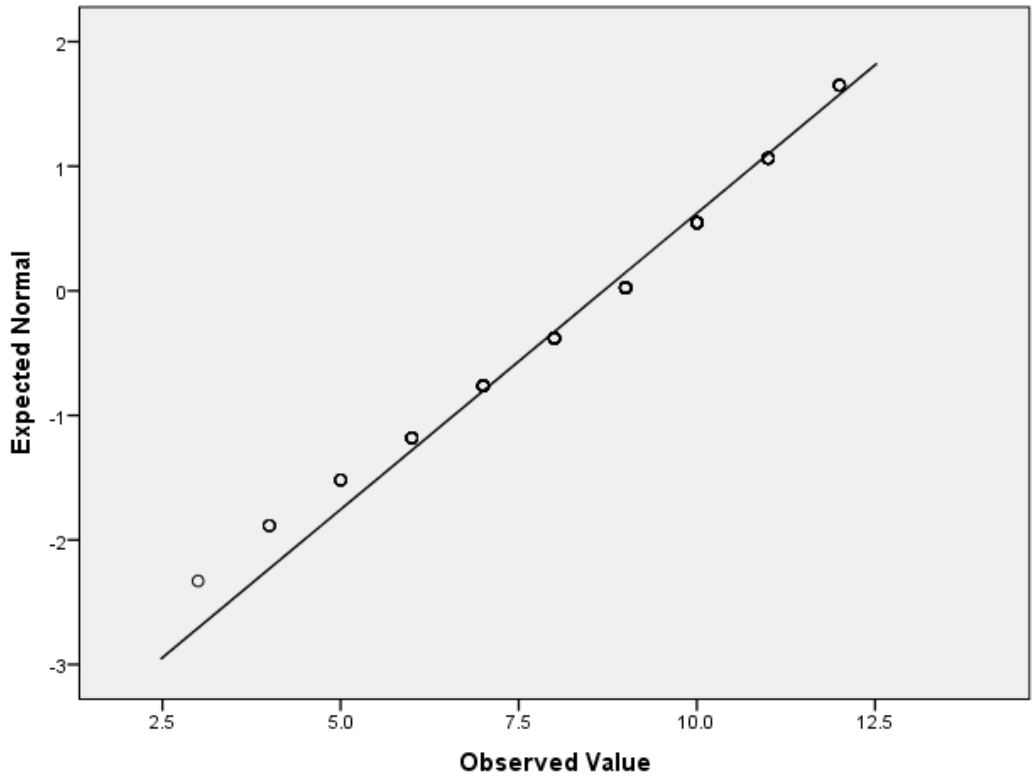

Figure D4

Normal Q-Q Plot for Anxiety Knowledge