An Exploration of Mental Health Literacy Among Parents of School-Aged Children

by

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Abstract

Mental health literacy (MHL) skills are critical for parents, as they are the most readily available to recognize symptoms of mental health problems in their children and subsequently direct them to mental health services. Limited research has measured MHL, or factors associated with MHL among parents, and there is an increasing need to engage parents in learning about child mental health. This research evaluated parents' MHL skills for child attention-deficit hyperactivity disorder (ADHD) and anxiety, factors associated with their MHL, and their preferences for receiving information about each disorder. Parents of children ages 4-12 were recruited from family resource centres and community agencies to complete an online survey. They read one vignette depicting a child with ADHD or anxiety, were asked to identify the problem the child in the vignette was experiencing, and rated the helpfulness of potential help-seeking/treatment strategies. They also completed standardized measures of parental self-efficacy and parenting stress, and indicated their preferences for receiving information about child ADHD and anxiety. Results showed mild-to-moderate MHL for ADHD and anxiety, and no difference between these conditions in an ANCOVA adjusting for gender, mental health experience, and parenting experience. Stronger MHL was associated with female gender, having personal/friend/family experiences with mental health problems, and stronger parental self-efficacy. Parents demonstrated interest in receiving more information about child ADHD/anxiety and primarily indicated interest in receiving information through a health provider or in written format. Results will inform the development of an accessible MHL intervention for parents, to empower them in better recognizing and managing common child mental health problems.

Keywords: mental health literacy, child mental health, anxiety, ADHD, information preferences, knowledge mobilization, parental self-efficacy, parenting stress

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Preface

Mental health literacy (MHL) is defined as "knowledge and beliefs about mental disorders which aid their recognition, management, or prevention" (Jorm, et al., 1997a). This area of research was embarked upon by Jorm and his colleagues (1997a) in response to perceived academic and societal prioritization of knowledge of physical health problems (Jorm, 2015). Jorm (2012) proposed that MHL is comprised of five core components: 1) knowledge of how to prevent mental health problems; 2) recognition of symptoms of mental health problems; 3) knowledge of help-seeking and treatment options for mental health problems; 4) knowledge of effective self-help strategies for milder mental health problems; and 5) first aid skills to support others who are developing a mental health problem or are in a mental health crisis. Though each of these MHL skills may contribute to effective management of mental health problems, research monitoring public MHL has been concentrated toward two aspects that are arguably the most critical to seeking professional treatment: 1) the ability to recognize when a mental health problem is developing (or has developed); and 2) knowledge about the helpfulness of interventions (as well as help-seeking preferences) (Reavley & Jorm, 2011; Reavley, Morgan, & Jorm, 2014).

Promotion of these MHL skills in the public carries multiple benefits, including improving social attitudes and behaviours toward individuals with mental health problems, institutional investment in resources that is commensurate with the negative impact of mental health problems, and effective management of mental health problems by patients and their caregivers (Jorm, 2012). Encouragingly, some research has demonstrated slow but positive improvements in the general public's perceptions (i.e., reduction of stigma) and knowledge of

mental health problems (i.e., symptoms, terminology, treatment options) over the past few decades (Goldney, Dunn, Grande, Crabb, & Taylor, 2009; Reavley & Jorm, 2011). However, other research has observed that attitudes toward seeking help through dedicated mental health services (e.g., psychotherapy) have become increasingly negative over the past few decades (Currin, Hayslip, & Temple, 2011), potentially due to the medicalization of mental health problems through anti-stigma campaigns and marketing of biological therapies (Mackenzie, Erickson, Deane, & Wright, 2014). It has also been argued that more work is needed to increase the relevance of available mental health information to different subsets of the population, as well as forge a closer link between positive mental health knowledge/beliefs and action (e.g., health and education policy) (Jorm, 2012, 2015), which may result in increased public confidence in the reputation and accessibility of mental health services.

Given their influence on and proximity to their children, parents are uniquely positioned for their MHL skills to impact their child's wellbeing and affect societal action toward mental health in future generations. However, research exploring parents' MHL, including their rates of MHL, factors associated with their MHL, as well as their unique information needs and barriers to receiving information, has been sparse (Mendenhall & Frauenholtz, 2015). Key aspects of MHL could manifest in several parenting behaviours that impact a child's ability to cope with mental health problems. For example, a parent proficient in recognizing symptoms of mental health problems might perceive changes in their child's affect and/or behaviour, as well as the impact of these changes on the family (Teagle, 2002). Informed knowledge of help-seeking and treatment options can be seen in parents who are open to receiving information and support for their child from a range of mental health experts (i.e., psychologists, psychiatrists, counsellors) and recognize multiple avenues for treatment (Frauenholtz, Conrad-Hiebner, & Mendenhall,

2015; Jorm, Morgan, & Wright, 2008). Further research exploring MHL skills among parents is warranted, given the potential for parents' responsiveness to mental health problems to significantly impact the long-term quality of life outcomes of their children (McGorry, Purcell, & Hickie, 2007; Sandler, Ingram, Wolchik, Tein, & Winslow, 2015).

The overarching aims of this thesis were to: a) evaluate the strength of two key components of MHL among parents (recognition of symptoms; knowledge/beliefs of help-seeking and treatment options); b) further our understanding of the personal and parenting-related factors that are associated with stronger MHL among parents; and c) outline parents' preferred methods for receiving information that educates them about child mental health problems and builds capacity for their MHL skills. The results of this research will set the stage for the development of an accessible MHL intervention in future research that enhances parents' responses to symptoms of mental health problems in their children through improved problem recognition skills and more informed beliefs regarding effective treatment and coping strategies.

Background

The origin of the construct of MHL is rooted in health literacy research. The term "health literacy" has often been defined as "the personal, cognitive and social skills which determine the ability of individuals to gain access to, understand, and use information to promote and maintain good health" (Nutbeam, 2000). Examples of health literacy skills include knowledge and practice of a healthy diet, taking preventative action for cardiovascular diseases, learning first aid skills, and knowing where to access credible health information on the Internet (Jorm, 2000). In general, individuals with lower health literacy tend to be less knowledgeable about the management of health problems, report lower health status, and are less likely to seek preventive health care for their problems (Committee on Health Literacy, 2004). It has also been proposed

that adopting a social-environmental approach to health literacy is necessary to strengthen intervention efforts by increasing their relevance and impact on diverse subsets of the population (Ross, Culbert, Gasper, & Kimmey, 2009). From this perspective, health literacy is a product of one's individual skills, as well as external social or economic forces that are beyond one's control and may limit one's ability to make optimal health-related decisions.

In the past, the health care field has adopted a paternalistic approach to medical decision-making, whereby professionals would take primary control and encourage patients to consent to professional opinion (Charles, Gafni, & Whelan, 1997). In recent years, the shared decision-making medical model – whereby patients are encouraged to arm themselves with information and are educated about multiple treatment options to select an informed preference – has gained attention out of respect for patient autonomy and advancements in availability of health information (Elwyn et al., 2012; Godolphin, 2009). While shared health decision-making possesses its own set of challenges (e.g., training practitioners in more effective communication of health information), and some practitioners have expressed skepticism regarding the value of placing more health decision-making power in the hands of patients, this development has nonetheless sparked increased interest in optimizing patient-practitioner transactions (M. J. Barry & Edgman-Levitan, 2012; Elwyn et al., 2012; Godolphin, 2009).

In light of this shift in the medical landscape toward patient autonomy and responsibility, the importance of public health literacy skills has increased in the modern era. As an example of its widespread prevalence and impact, estimates of poor health literacy costs (e.g., misdirected or misunderstood health care services and decisions) for the United States health care industry range from tens to hundreds of billions of dollars annually (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011; Haun et al., 2015; Howard, Gazmararian, & Parker, 2005; Ross et al.,

2009). Although Canadians have demonstrated higher rates of health literacy compared to those in the United States (Canadian Council on Learning, 2007), poor health literacy nonetheless leads to billions in expenses for the Canadian health care sector each year (Eichler, Wieser, & Brügger, 2009).

Research in this area has underscored the importance of health literacy and enabled more favourable economic and social policies geared toward health education (Baker, 2006). This economic and social support has been attained through the presentation of short-term, targetable goals identified in the course of health literacy research (Paasche-Orlow & Wolf, 2010); for instance, focusing on increasing health literacy among a particular socioeconomic or cultural background, knowledge of common symptoms, or awareness of effective self-care strategies. Further, health literacy research has increased our understanding of the need to examine the complexity of tasks required of patients and families within health care settings, the accessibility of providers, and the preparedness of health professionals to effectively engage with patients (Paasche-Orlow & Wolf, 2010). Perhaps the greatest benefit of health literacy research is that it highlights how unnecessarily complex health care procedures exacerbate the impact of educational and income disparities on informed health decision-making among disadvantaged populations (Paasche-Orlow & Wolf, 2010). Overall, these outcomes of health literacy research have demonstrated the importance of strengthening health education and health communication skills in facilitating greater empowerment in health decision-making (Nutbeam, 2008).

Mental Health Literacy Research

Past research involving the construct of health literacy has seldom prioritized monitoring the public's knowledge of mental health problems (Jorm, 2012, 2015). Seeking a marriage between the mental health and health literacy fields, Jorm and colleagues (1997a) emphasized

public MHL as a neglected area for research and intervention. Since the dawn of this field of research, the literature base monitoring rates of MHL among the general public has grown extensively, now containing data from individuals occupying different backgrounds and experiences across the globe (e.g., Angermeyer & Matschinger, 2005; Furnham & Hamid, 2014; Jorm et al., 2005; Lauber, Nordt, Falcato, & Rössler, 2003; Magliano, Fiorillo, De Rosa, Malangone, & Maj, 2004; Marcus, Westra, & Mobilizing Minds Research Group, 2012; Marie, Forsyth, & Miles, 2004). These investigations have focused primarily on two components outlined in Jorm's (2012) conceptual model of MHL: the public's ability to recognize when a mental health problem is developing (or has developed) and knowledge and beliefs about the helpfulness of interventions (as well as help-seeking preferences) (Reavley & Jorm, 2011; Reavley et al., 2014).

Recognition of symptoms of mental health problems. Early recognition and subsequent treatment of symptoms of mental health problems can minimise their impact on social, educational, and vocational functioning (Frauenholtz et al., 2015; McGorry et al., 2007; Patel, Flisher, Hetrick, & McGorry, 2007). Furthermore, the use of accurate diagnostic labels to describe clusters of symptoms is conducive to more effective communication with health professionals. Research has shown that general practitioners are more likely to detect a mental health problem if the patient effectively conceptualizes their symptoms as such (Haller, Sanci, Sawyer, & Patton, 2009; Spiker & Hammer, 2019). Recognition ability is also important in that it bolsters confidence in one's ability to support others who are struggling with mental health problems, and in turn, their likelihood of doing so (Bond, Jorm, Kitchener, & Reavley, 2015; Mason, Hart, Rossetto, & Jorm, 2015).

The extent of one's ability to recognize symptoms is often dependent on the type of mental health problem in question. For example, a study of British adults using vignettes depicting eight child and adult anxiety disorders found great variation in disorder recognition (Furnham & Lousley, 2013). Participants' recognition of obsessive-compulsive disorder (OCD) was high (64.7%); however, it was poor for other disorders, including separation anxiety disorder (6%), generalized anxiety disorder (GAD) (2.8%) and panic disorder (1.3%). Some research has shown that ease of recognition of depression tends to be greater when compared to other mental health problems (Marcus et al., 2012; Pescosolido et al., 2008; Reavley & Jorm, 2011; Wright et al., 2005; Wright & Jorm, 2009). For instance, one investigation found correct recognition among Canadian adults to be approximately 80% for depression, and 50-60% for anxiety and schizophrenia (Marcus et al., 2012). Findings from an Australian national survey found correct recognition for depression among approximately three-quarters of participants, and correct recognition of post-traumatic stress disorder and schizophrenia among approximately one-third of participants (Reavley & Jorm, 2011). A study of American adults found that 58% correctly identified child depression, while 41% correctly identified child ADHD (Pescosolido et al., 2008). These findings suggest that the public is somewhat or moderately effective at recognizing the symptoms of mental health problems, although individual factors such as higher level of education are associated with stronger skills in this area (Reavley et al., 2014). Some researchers have concluded that the public's ability to recognize the symptoms of some mental health problems has improved over time, likely due to increased programs aimed at raising awareness and reducing stigma towards mental health problems over the past few decades (Goldney et al., 2009; Jorm, 2012).

Knowledge and beliefs about treatment. An inability to recognize symptoms of a mental health problem will often delay help-seeking, and this recognition is often the first step toward consideration of seeking professional help (Altweck, Marshall, Ferenczi, & Lefringhausen, 2015; Gulliver, Griffiths, & Christensen, 2010; Mason et al., 2015). Unfortunately, the public's motivation for seeking professional help is its own challenge. Some estimates show that only about one-third of those with mental health problems seek treatment (Kessler et al., 2005; Mackenzie, Reynolds, Cairney, Streiner, & Sareen, 2011). Common deterrents for seeking help include financial constraints, limited knowledge about treatment options, privacy concerns, discomfort with emotional vulnerability, skepticism of the benefits of treatment, transportation challenges, and stigma (societal, cultural, and/or internalized) (Chaudoir, Earnshaw, & Andel, 2013; Clement et al., 2015; Eisenberg, Downs, Golberstein, & Zivin, 2009; Furnham & Telford, 2012; Gulliver et al., 2010; Hunt & Eisenberg, 2010; Jagdeo, Cox, Stein, & Sareen, 2009; Komiya, Good, & Sherrod, 2000; ten Have et al., 2009).

It is also common for informal sources of help (e.g., friends, family) to be perceived more positively than help from mental health professionals (Cotton, Wright, Harris, Jorm, & Mcgorry, 2006; Jorm et al., 2005; Jorm & Wright, 2007). For instance, one national Canadian study revealed that Canadian young adults ages 18-24, particularly young men, reported being more interested in managing mental health problems on their own or with the support of friends or family, than accessing professional mental health services (Marcus et al., 2012). While seeking social support from family and friends is often beneficial, this can present a concern if it occurs in place of seeking professional help for more serious mental health problems. Informal sources of help may not possess the experience to support those with serious mental health problems, potentially leading to further harm (Jorm, 2012). Relatedly, it is common for the public to place

more confidence in general professional help (i.e., family doctor) over the aid of mental health professionals (Jorm & Wright, 2007), or to feel that accessing professional mental health services can be harmful (Jorm, 2012). For example, an investigation across six European countries revealed that approximately one-third of surveyed adults believed that professional mental health care is worse than or equal to receiving no help at all for mental health problems (ten Have et al., 2009). Some Canadian and Australian research has also demonstrated that, when people do feel open to accessing mental health services, they are less likely to view psychologists (who are regulated professionals) as potentially helpful compared to counsellors, who are not necessarily regulated (Jorm & Wright, 2007; Wang et al., 2007). Finally, it has been consistently documented in the literature that psychotropic medications are perceived as a largely negative and potentially harmful avenue for treatment (Dahlberg, Waern, & Runeson, 2008; Jorm et al., 1997a; Jorm et al., 2005; Kovess-Masféty et al., 2007), although some evidence suggests that negative views toward these medications have abated in recent years (Angermeyer & Matschinger, 2004; Mackenzie et al., 2014).

Overall, small positive developments in the public's ability to recognize and understand mental health problems have been observed in the research over time (Goldney et al., 2009; Reavley & Jorm, 2011) but there remains room for improvement (Furnham & Lousley, 2013; Jorm, 2012). Further, there is particular challenge in improving the public's motivation for and confidence in the benefits of accessing dedicated mental health services (Currin et al., 2011; Mackenzie et al., 2014). There is also a need to more directly concentrate research efforts toward subsets of the population with unique information needs and barriers to strengthening their MHL skills, and/or groups whose MHL skills stand to have a substantive impact on societal mental health, such as parents of young children.

Parental Mental Health Literacy: Overview

Mental health problems present a significant burden on children's development of social and academic skills, as well as impose on them adverse social consequences in the form of isolation, stigma, and discrimination. The World Health Organization (WHO, 2017) identifies mental health problems as the leading cause of disability among children and adolescents worldwide. Current international estimates of mental disorder prevalence among children and adolescents range from 10-20%, with half of these disorders developing by age 14 (WHO, 2017). In Manitoba, the Manitoba Centre for Health Policy (2016) found that from 2009-2013, 14% of children in Manitoba ages 6-19 received a diagnosis for at least one mental health problem. Common childhood mental health problems such as anxiety and mood disorders, as well as ADHD, also rose in prevalence in Manitoba from the period of 2005-2009 (anxiety/mood disorders, 6.2%; ADHD, 5.5%) to the period of 2009-2013 (anxiety/mood disorders, 7.3%; ADHD, 6.8%). Furthermore, this report highlighted that children with mental health problems used more health care services, social services, and were more involved with the justice system than those with no disorders, suggesting increased resource strains on these systems as prevalence rates have risen.

Unfortunately, resources devoted to the mental health needs of children have long been disproportionate to the global burden of mental health problems in this population (Kieling et al., 2011). Results from a review of mental health services and a survey of the public and mental health providers were included in a recent report for the government of Manitoba (Virgo Planning and Evaluation Consulting, 2018). The researchers determined that resources allocated for the betterment of mental health services have only marginally improved since the de-institutionalization movement, leading to treatment barriers for individuals and families

including unaffordable costs for care, extensive wait times, and limited capacity for direct therapeutic intervention. An investigation of global epidemiological data and institutional resources similarly identified significant gaps in terms of funding, labour shortage, training accessibility, services, and policy pertaining to child mental health (Belfer, 2008). Globally, it was found that financing of child mental health services was rarely identifiable in national budgets, or stemmed largely from temporary or vulnerable sources of funding. These findings highlight the importance of increased efforts for the early identification and intervention of mental health problems in children in order to promote positive immediate and long-term quality of life outcomes. By way of their proximity to their children, parents are the most readily available to recognize early symptoms of mental health problems in their child, and serve as gatekeepers for their child's access to treatment (Frauenholtz et al., 2015; Jorm & Wright, 2007; Mendenhall & Frauenholtz, 2015).

In order to effectively recognize symptoms of mental health problems in their children and determine a need for treatment, parents must be attuned to their children's behaviours. The term parental reflective functioning has been used to describe parents' ability to reflect on their own and their child's behaviours as being representative of their internal thoughts, feelings, and experiences (Fonagy, Gergely, Jurist, & Target, 2002; Katznelson, 2014; Slade, 2005). These mental states and their links to behaviour are thus given meaning and organization, which can be communicated implicitly or explicitly to the child to foster a collaborative and intimate parent-child relationship (Fonagy et al., 2002). This has consistently been shown to have a strong impact on the development of a secure attachment between parent and child, as well as various other important developmental outcomes (Katznelson, 2014; Slade, Grienenberger, Bernbach, Levy, & Locker, 2005). A recent narrative review of 47 investigations determined that stronger

parental reflective functioning was associated with child attachment security, adequate caregiving, and better outcomes for the child's own reflective functioning, while the children of those with lower parental reflective functioning often experienced anxiety disorders, emotion regulation problems, and/or negative externalizing behaviors (Camoirano, 2017). Overall, the parent's role as a mediator, reflector, interpreter, and moderator of their child's mental state is evident (Slade, 2005). Attentive, empathic, and nurturing responses by parents to their child's mental states promotes healthy development, helps protect against long-term health consequences, and aids in establishing foundational social-emotional health (Ordway, Webb, Sadler, & Slade, 2015).

Thus, parents' understanding of the relationship between their child's thoughts and behaviours, in tandem with attentive and supportive parenting strategies, is conducive to the prevention and management of mental health problems in their child (Barber, Stolz, Olsen, Collins, & Burchinal, 2005; Flouri, Midouhas, Joshi, & Tzavidis, 2014; Frauenholtz et al., 2015). Because parents are typically the most familiar with the unique personal characteristics of their children, and are responsible for their care, their ability to recognize mental health problems in their children and seek appropriate treatment is critical (Frauenholtz et al., 2015). In addition, parents' MHL skills may bear direct consequences on the strength of the child's own MHL. For instance, some research has shown that children's ability to correctly recognize mental health problems depicted in vignettes is positively associated with their parents' ability to recognize the same problems in vignettes (Wright & Jorm, 2009; Wright, Jorm, Harris, & McGorry, 2007). Such findings suggest that parental MHL may serve a role in children's development as individuals with the capacity for personally understanding and seeking treatment for mental health problems. The importance of parental MHL is further elevated for parents of children who

are not already involved in the mental health care system, as children often rely on their parents as their primary source of support for mental health problems (Jorm & Wright, 2007). In these situations, parents with stronger MHL skills are more likely to provide the necessary support to effectively manage the child's mental health problems, or to initiate or recognize when there is a need for additional professional help. Overall, the critical role of parental MHL in child mental health outcomes prompts a need for ongoing evaluations and interventions in this area (Frauenholtz et al., 2015; Jorm, Wright, & Morgan, 2007; Mendenhall & Frauenholtz, 2015).

Parental Mental Health Literacy: Research Findings

Unfortunately, there is a notable research data gap for rates of MHL among parents specifically. Some limited findings have demonstrated similar results to those found among the general public (i.e., limited recognition skills, unfavourable perceptions of mental health services or a preference for other sources of help), although more work is needed to extend this small literature base and determine parents' skills in these areas.

Recognition of symptoms of mental health problems. A survey by Frauenholtz and colleagues (2015) in the United States found that child mental health care providers believed parents generally have reasonable skills for recognizing symptoms of various mental health problems (66.7%) and the potential negative outcomes of mental health problems (54%). However, providers also cited these recognition skills as inconsistent and having room for improvement. Direct data from parents generally aligns with the beliefs of mental health professionals in the research presented above. One investigation found that many parents held strong feelings of uncertainty regarding their ability to recognize mental health problems in their children (Moses, 2009). Relatedly, another investigation evaluated parents' ability to recognize mental health problems in their children, finding that only 39% of parents of children with a

psychiatric diagnosis recognized a mental health problem in their child, while only 31.7% were able to identify how their child's mental health problem had impacted the family (Teagle, 2002). Research by Mendenhall and Frauenholtz (2015) found that parents of children with mood disorders obtained mid-range (i.e., mild-to-moderate) scores on a measure of their knowledge of mood disorders, with a mean score of 56.5% and no participants obtaining a score greater than 66%. Such findings are noteworthy because recognition ability among parents is positively associated with a perceived need to access services for their child (Frauenholtz et al., 2015; Teagle, 2002).

Knowledge and beliefs about treatment. Mendenhall and Frauenholtz's (2015) investigation additionally found that most parents scored above the mid-range in terms of knowledge of treatment for mood disorders, although their average level of knowledge was still moderate (M = 3.71/5). Mendenhall, Fristad, and Early (2009) previously found a similar degree of knowledge about treatment of mood disorders among parents (M = 3.68-3.74/5), with slight improvements compared to waitlist controls after completing a short family psychoeducation program (M = 4/5). With respect to help-seeking beliefs among parents, favouring advice from informal sources of help such as family and friends over professional opinion is common (Jorm & Wright, 2007; Mendenhall & Frauenholtz, 2015; Wright et al., 2007). Skepticism of a unique value of mental health professionals presents a significant barrier for parents to access mental health services for their children, or for effective cooperation within and use of those services to occur (Murry, Heflinger, Suiter, & Brody, 2011; Reardon et al., 2017; Sayal et al., 2010). In Frauenholtz and colleagues' (2015) survey of mental health providers, participants confirmed that many parents rely heavily on informal sources of support for information about children's mental health, and that parents' degree of MHL impacts their cooperation with recommended

treatment plans for their children. The majority of providers also indicated that parents would particularly benefit from increased knowledge about treatment other than medications (i.e., psychosocial treatments) (75.3%), and available services and resources (72.9%).

Another common belief that parents hold about mental health services is that there is a likelihood of being ignored or dismissed by mental health professionals, as well as a fear of feeling blamed for their child's mental health problems (Boydell et al., 2006; Cohen, Calderon, Salinas, SenGupta, & Reiter, 2012; dosReis, Barksdale, Sherman, Maloney, & Charach, 2010; Murry et al., 2011; Sayal et al., 2010). Some of this apprehension is likely guided by negative experiences with the mental health care system, while some is likely the result of insufficient dissemination of accurate and accessible information about these services to the public. These problems jointly present a significant barrier for parents in accessing mental health services for their child (Mukolo & Heflinger, 2011; Sayal, Mills, White, Merrell, & Tymms, 2014; Shivram et al., 2009).

Parental Mental Health Literacy: Potential Associated Factors

The outlined research findings on rates of parental MHL, while limited and in need of expansion, serve as the impetus for mental health professionals and researchers to engage parents in capacity-building for their MHL skills through increased exposure to evidence-based information on the symptomatology, prognosis, and treatment of mental health problems (Frauenholtz et al., 2015; Mendenhall et al., 2009). It has been argued that interventions to increase MHL must account for the unique experiences associated with the target populations and mental health problems of focus (Wang & Lai, 2008). Thus, it is worth investigating the socio-demographic and experiential factors that may present barriers to parents' capacity for strengthening their MHL skills. However, data regarding factors associated with MHL among

parents is still emerging in the literature. Mendenhall and Frauenholtz (2015) evaluated potential factors associated with MHL among parents of children with mood disorders, finding that stronger MHL was associated with being female and White, as well as having higher education, older children, and personal experiences with a mood disorder or mental health services. Expansion of their early work is needed. Outlined below are several potential, yet relatively unexplored, factors that are relevant to the parenting context and warrant exploration for the purposes of highlighting barriers parents face in strengthening their MHL skills.

Parental self-efficacy and stress. Parenting is a rewarding albeit demanding experience, and these demands may impact parents' ability to devote time and resources to learning about child mental health problems. Self-efficacy is defined by renowned psychologist Albert Bandura (1994) as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (p. 71). Bandura (1997) asserts that individuals high in parental self-efficacy are able to more effectively guide their children through their development without serious problems, while those low in parental self-efficacy may struggle to meet these demands. Research has demonstrated that stronger parental self-efficacy is linked to raising a child in a healthy, happy, and nurturing developmental environment (Coleman & Karraker, 1998; Gilmore & Cuskelly, 2009; Jones & Prinz, 2005). High parental self-efficacy is also positively associated with adaptive parenting behaviours such as responsiveness to child needs, non-punitive parenting, and active parent-child interactions (Coleman & Karraker, 1998). These behaviours appear highly relevant to a parent's capacity for seeking out and internalizing information about child mental health problems and treatment.

Daily parenting stressors are universal and shared by families across different contexts (e.g., both high and low socioeconomic statuses); thus, they are particularly important in

understanding the qualitative nature of parenting processes (Crnic & Low, 2002), such as responsiveness to child mental health problems. These daily stressors may possess little significance on their own, but their cumulative impact over time can precipitate more notable consequences on the parent-child relationship (Crnic & Greenberg, 1990). Indeed, a substantial body of research has demonstrated a negative relationship between parenting stress and child adaptive functioning (T. D. Barry, Dunlap, Cotten, Lochman, & Wells, 2005; Bayer, Sanson, & Hemphill, 2006; Deater-Deckard, 2004, 2005; Rodriguez, 2010). Furthermore, the parent-child dynamic is often bi-directional, such that the parent and child reciprocally influence each others' experience of stress (Deater-Deckard, 2004). Thus, paradoxically, the increased burden and stress generated by child mental health problems could limit parents' capacity to seek out and internalize knowledge of these problems even when doing so is most vital. Overall, high stress levels among parents are associated with reduced parent and family functioning, less optimal parent-child interactions, and impairments in child development (Crnic & Greenberg, 1990) – problems which may negatively impact parents' capacity for developing effective MHL skills.

To date, little to no research has been conducted to evaluate the effects of parental self-efficacy and stress on MHL. These potential relationships warrant further investigation due to potential implications for parents' ability to strengthen their MHL skills and put these skills into practice to protect the wellbeing of their children. For instance, a parent's stress with their child or family situation may limit their capacity for being engaged enough to recognize negative changes in the child's typical mood and behaviour. In contrast, positive parental self-efficacy may increase parents' confidence in holding responsibility for knowledge about child mental health problems and corresponding courses of action for treatment.

Parenting experience. To effectively respond to the physical and emotional needs of their children, parents must develop both breadth and depth of knowledge about child health, ranging from awareness of developmental norms to subtle communicative gestures of problems in their children (National Academies of Sciences, Engineering [NASEM], 2016). While such knowledge can to some degree be obtained vicariously or through study and experience with child health, first-hand experience as a new parent and with different child temperaments brings its own revelations regarding child care strategies and necessary changes in the parent's lifestyle (Leerkes & Burney, 2007; Schmied, Myors, Wills, & Cooke, 2002). Therefore, one's degree of parenting experience can be conceptualized at least in part as a function of the age and number of their children.

Little research has directly evaluated the impact of parenting experience on MHL, although some literature points to a tendency for increased parenting experience to naturally confer knowledge of child functioning related to and including mental health. Mendenhall and Frauenholtz (2015) found older child age to be associated with higher levels of parental knowledge of mood disorders. The researchers concluded that, as children with mental health problems age, parents' naturally occurring increased exposure with their child's mental health problem improves their knowledge of it as well. It is also possible that, as children age, improvements in their language development allow them to better express the experience of mental health problems and their associated needs, thereby increasing parents' awareness of the child's condition and potential need for professional treatment (Egger & Emde, 2011).

Parent age. Previous research has demonstrated an inverse relationship between age and general health literacy (Baker, Gazmararian, Sudano, & Patterson, 2000; Kaphingst, Goodman, MacMillan, Carpenter, & Griffey, 2014). However, it appears that a significant portion of the

variance in this relationship can be explained by cognitive decline in older adults (Kaphingst et al., 2014). Thus, the relationship between age and health literacy among other age categories is less clear. A small body of research has evaluated the impact of one's age on different components of MHL. For example, when comparing different age groups on their ability to correctly recognize depression and schizophrenia, one investigation found that correct recognition of these problems decreased with age (Farrer, Leach, Griffiths, Christensen, & Jorm, 2008). Conversely, participants' reported likelihood of relying on informal sources of help (i.e., friends and family) for depression and schizophrenia was greater for younger age groups. Similarly, another study found that young adults preferred to manage mental health problems on their own and were more likely to prefer seeking out informal sources of help (Marcus et al., 2012). An analysis of Canadian national epidemiological data found that, for seven out of eight analyzed anxiety and mood disorders, mental health service use was most likely among middle-aged adults (Mackenzie et al., 2011). These collective findings suggest that age may be associated with changes in different aspects of MHL, but the literature in this area is too limited to form specific hypotheses regarding these potential relationships. It is plausible that a parent's age may relate to their MHL skills in some form, but further research is necessary to examine the nature of this relationship.

Parent gender. Higher rates of MHL have consistently been observed in women compared to men in previous research (Cotton et al., 2006; Dey, Wang, Jorm, & Mohler-Kuo, 2015; Mendenhall & Frauenholtz, 2015; Pescosolido et al., 2008; Rossetto, Jorm, & Reavley, 2014; Swami, 2012). These findings are likely in part due to the fact that women are more likely than men to access mental health services (Jagdeo et al., 2009; Mackenzie et al., 2011), and thus may be more knowledgeable of common symptoms and treatment practices (Pescosolido,

Gardner, & Lubell, 1998). Gender role socialization that prompts women to adopt caregiving responsibilities for those with health problems may also contribute to these gender differences in MHL among the general public (Mendenhall & Frauenholtz, 2015). The limited research examining the gender divide in MHL between parents specifically appears to reflect these notions. Mendenhall and Frauenholtz (2015) found female caregivers to be more knowledgeable about mental health treatments than male caregivers, although no significant difference was observed between males and females in terms of general knowledge about mood disorders. Relatedly, the results of another investigation indicated that mothers were more open to seeking mental health services for their children than fathers (Turner & Mohan, 2015). The results of these investigations may suggest a need for MHL interventions to engage with fathers more effectively, but additional research solidifying these preliminary findings would be valuable.

Parent level of education. Research suggests that higher levels of education are associated with greater MHL (Fisher & Goldney, 2002; Frauenholtz et al., 2015; Mendenhall & Frauenholtz, 2015; Reavley et al., 2014). It is likely that more informed beliefs about health problems are facilitated by exposure to the breadth of information inherent to higher academic study (Furnham & Sjokvist, 2017; Furnham & Telford, 2012). Higher levels of education among parents may additionally precipitate a greater propensity for identifying and integrating new information relevant to their child's mental wellbeing. Overall, it appears likely that level of education would play a role in MHL among parents, though this potential relationship has not been thoroughly explored among this population.

Parent mental health experiences. Some research has demonstrated that parents' personal experiences with mental health problems are associated with increased MHL (Mendenhall & Frauenholtz, 2015; Teagle, 2002; Turner & Mohan, 2015; Verhulst & Van der

Ende, 1997). Mendenhall and Frauenholtz (2015) found that increased lifetime diagnoses of mental health problems among parents was predictive of increased knowledge about mood disorders (i.e., attributions about mood disorders, symptom knowledge, course of illness, and treatment). Another investigation revealed that parents who had previously attended psychotherapy reported more positive attitudes towards it than parents who had never attended (Turner & Mohan, 2015). Attitudes toward psychotherapy significantly predicted parents' intentions to seek services for their child in the future, suggesting a positive relationship between these two circumstances. Naturally, one's experiences with certain mental health problems in their family or close friend circle may also engender a different perspective on those problems compared to individuals with less experience (Douma, Dekker, & Koot, 2006; Sandhu, Arora, Brasch, & Streiner, 2019; Zwaanswijk, Verhaak, Bensing, van der Ende, & Verhulst, 2003). Like personal experiences with mental health problems, these experiences may also influence the likelihood of a parent recognizing the symptoms of a mental health problem or seeking support from services for their children. These findings suggest that parents with previous experiences with mental health problems may be more likely to have stronger MHL skills, although additional research is warranted.

Informing Parents about Child Mental Health

In addition to understanding factors associated with MHL among parents, increased understanding of the optimal channels through which parents can be informed about child mental health problems and treatment would improve efforts to strengthen their MHL skills.

Knowledge dissemination. Numerous resources have been developed in a variety of formats to educate the public about mental health problems. For example, the Internet is a major source of information for mental health problems; however, multiple investigations have

concluded that the quality of these resources tends to be poor (Jorm, 2012). One study evaluated 26 websites addressing child anxiety disorders on the extent to which they addressed questions that parents consider important, the quality of presented information, and the reading level (Reynolds, Walker, Walsh, & Mobilizing Minds Research Group, 2015). The websites provided adequate information on treatment options, but lacked information about pharmacological treatments, the duration of treatments, post-treatment outcomes and procedures, and the benefits and risks of various treatments. Most websites were of moderate quality and had more difficult reading levels than recommended for the general public. A five-year follow-up revealed that only six websites had been updated since the original analysis (Reynolds et al., 2015). Thus, while there is a plethora of educational resources designed to educate the public on child mental health problems, these resources – whether due to suboptimal delivery format or user-unfriendly content – are often not easily digestible by their target demographics, such as parents.

Mental health literacy interventions. In addition to educational resources, more direct interventions on MHL have been developed and evaluated in the literature. Perhaps the most prominent example is Mental Health First Aid, a popular training course – first developed in Australia – that educates members of the public in providing support to an individual who is developing a mental health problem, or is in a mental health crisis, until professional help is obtained, or the crisis resolved (Jorm, 2012; Kitchener & Jorm, 2008). Since its inception, Mental Health First Aid has been adapted to the cultures and health care systems of at least 15 other countries, including Canada and the United States (Jorm & Kitchener, 2011). A recent systematic review and meta-analysis of Mental Health First Aid's effectiveness found small to moderate positive effects on MHL, stigma, and helping behaviours toward mental health problems up to six months post-intervention (Morgan, Ross, & Reavley, 2018). Effects of the

program after 12 months were unclear. Overall, there is promising evidence that MHL can be intervened in and improved within communities and cultures over time (Bond et al., 2015; Haller et al., 2009; Jorm, 2012; Jorm, Christensen, & Griffiths, 2006; Jorm, Kitchener, Fischer, & Cvetkovski, 2010; Mackinnon, Griffiths, & Christensen, 2008; ten Have et al., 2009), but efforts are still underway to develop MHL interventions that more directly resonate with critical subsets of the population, such as parents, who may have unique information needs and barriers to integrating this information into their lives (Jorm, 2012).

Parents' information preferences for child mental health. In order to effectively strengthen MHL skills among parents specifically, it is necessary to engage them through tools that are brief, accessible, and accommodating of their preferences for how to receive information about child mental health (Cardamone-Breen et al., 2018; Yap et al., 2017). One study compared parents and adolescents on their knowledge, perceptions, and preferred information sources for ADHD, and revealed that parents used a wider range of information sources (e.g., doctor, newspaper, Internet), while adolescents relied more exclusively on social network members, teachers, and school resources (Bussing et al., 2012). However, additional research is needed to further clarify the best modalities through which to reach parents and foster their engagement in strengthening their MHL skills.

Present Study

As outlined above, extensive research has explored MHL among the general public, but there are several research gaps pertaining to MHL among parents. Limited research has evaluated rates of MHL among parents to determine the strength of their skills in recognizing child mental health problems and accessing appropriate treatment. Furthermore, specific factors associated with MHL among parents have scarcely been explored in the literature. Finally, there

is a need to highlight parents' information preferences for learning about child mental health in order to identify best practices for transferring contemporary research knowledge to them.

In light of these discussed gaps in the literature, there were three primary objectives of the present study. The first objective was to evaluate the strength of MHL among parents of school-aged children in terms of their ability to recognize child ADHD and anxiety and identify effective courses of action for help-seeking and treatment. ADHD involves a pervasive pattern consisting of: 1) inattention, and/or 2) hyperactivity and impulsivity, that interferes with child development or life functioning (American Psychiatric Association [APA], 2013). Clinical anxiety involves excessive worry or fear that impairs life functioning (APA, 2013). Children may experience various forms of anxiety, but the focus here was on general anxiety about everyday events (i.e., GAD). ADHD and anxiety were selected as a focus for this research due to their heightened prevalence rates among children relative to other mental health problems (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015). The second objective of this research was to test the hypothesis that each of the following variables would be associated with greater MHL: Higher parental self-efficacy, lower parenting stress, female gender, higher education, increased parenting experience, and increased personal or close friend/family-related experiences with mental health problems. Parents' age was also explored as a potential factor associated with MHL; a directional hypothesis was not specified for the relationship between these factors due to mixed findings in the literature (e.g., Farrer et al., 2008; Mackenzie et al., 2011; Marcus et al., 2012). The third objective was to better understand parents' information preferences, namely, their preferred amount and sources of information for learning about child mental health problems. In addition to filling gaps in the literature, meeting these objectives may aid in the development of MHL interventions that are effective, relevant, and accessible for parents.

Method

Design and Participants

Parents with at least one child ages 4-12 (n = 128) residing in Manitoba, Canada were recruited for participation in this research. An additional 20 parents provided demographic information but did not complete primary outcome measures; their data was excluded from this research. The requirement for parents to have at least one child ages 4-12 was determined in consideration of the tendency for children to become more independent and emotionally distant from their parents in their adolescence (Alsaker, 1996; Bongers, Koot, van der Ende, & Verhulst, 2003). Furthermore, symptoms of ADHD, such as excessive motor activity, are difficult to distinguish from normative behaviour before age four, and standard diagnostic criteria requires that symptoms be present by age 12 (APA, 2013). Relatedly, while the potential age of onset for anxiety varies more across the lifespan, its burden on life functioning tends to be more severe for children who develop symptoms earlier in life (APA, 2013). Thus, child ages 4-12 was deemed to be an appropriate time for parents to enact their MHL skills and establish a proactive and supportive relationship toward mental health problems that their child may be developing or has developed. An a priori power analysis was conducted using G*Power 3.1 to determine that a sample size of n = 128 parents would be required for a standard alpha level ($\alpha = .05$), a medium effect size ($f = .25$), and to achieve high statistical power ($1 - \beta = .8$) for the necessary analyses.

Recruitment

To increase diversity of social and cultural status in the sample, participants were recruited from locations with high concentrations of parent participation or attendance, including family resource centres and community agencies situated in both rural and urban communities and centered on a variety of cultural sub-groups (e.g., Indigenous, Jewish). Cooperating

institutions advertised the study to their user bases via email, paper/electronic flyer, newsletters, and/or social media posts, notifying parents of an opportunity to participate in an online survey about their knowledge of child health problems. The advertisement provided a link to the informed consent form (Appendix A) and online survey using the Qualtrics platform.

Procedure

The online survey (Appendix B) began with items assessing demographic characteristics and other background information. MHL was evaluated using vignettes (see Appendix C) depicting children experiencing common and age-appropriate mental health problems. When accessing the survey, parents were randomly assigned by a Qualtrics algorithm to read one vignette depicting either ADHD or anxiety. For each vignette, parents responded to follow-up items that gauged their ability to recognize and identify effective treatments and help-seeking behaviours for the mental health problem depicted in the vignette. The vignettes and follow-up items were adapted from Reavley and colleagues' (2014) Mental Health Literacy Scales. Parents also completed four follow-up items to this adapted measure to gauge their preferences for receiving information about the depicted mental health problem and provided a self-evaluation of their MHL. Following these evaluations, parents completed standardized measures of parental self-efficacy and parenting stress. The median survey completion time was 18.05 minutes. Participants received $5 in compensation for their participation in this research and were entered into a raffle for an additional chance to win one of two $50 Amazon gift cards.

Measures

Demographics and background information. After providing informed consent, participants provided several pieces of demographic and background information. They provided their age, gender, level of education, the age of their oldest child, their number of children, and

their experiences with mental health problems in order to explore the relationship between these factors and MHL. Experiences with mental health problems was measured dichotomously and determined if participants responded 'yes' to at least one of three questions asking whether they have: 1) personally experienced a mental health problem; 2) had a close friend or family member experience a mental health problem; and 3) accessed mental health services. Other collected background information included occupation status, marital status, ethnicity, and immigration status. The relationships between these variables and parents' MHL were not examined due to limited theoretical basis for exploring the relationship (e.g., occupation status) and/or anticipated issues with low variance in responses (e.g., non-White ethnic status). This information was nonetheless collected to provide a more descriptive overview of the sample and inform interpretation and generalizability of the results.

Mental Health Literacy Scales (Reavley et al., 2014) (adapted). MHL was evaluated using a vignette-based approach. Specifically, the MHL scales created by Reavley et al. (2014) – which focus on depictions of adults with mental health problems – were adapted to instead depict children experiencing one common and age-appropriate mental health problem (ADHD, anxiety). Similar to Reavley and colleagues' (2014) research, both adapted vignettes were written to satisfy the diagnostic criteria according to the *Diagnostic and Statistical Manual of Mental Disorders, fifth edition* (APA, 2013). Both vignettes depicted an 8-year-old boy named John who is entering the third grade. While some investigations using the scales have depicted an individual named either John or Jenny (Reavley et al., 2014), others have exclusively used the male vignette due to difficulties ensuring equal distribution of the male and female versions (Morgan, Jorm, & Reavley, 2013). Furthermore, previous iterations of the scales were found to elicit minimal differences in responses between randomized male and female versions of the

vignettes (Jorm et al., 1997b). John's age of eight was selected to represent the median of the age range of children that parents needed for inclusion in this research. In the vignettes, John experiences diagnosable symptoms of either ADHD or GAD. Because of his health problem, John experiences challenges both in terms of his school performance relative to his classmates, as well as in his ability to socialize with other children. The adapted vignettes were designed for equal accessibility with respect to reading ability (with each attaining Flesch-Kincaid reading levels of grade 7.0) and length (ADHD, 85 words; anxiety, 96 words).

After reading the vignette, participants provided answers to the follow-up questions asked by Reavley and colleagues (2014). These questions asked participants what, if anything, they believed was wrong with the child described in the vignette, as well as a series of questions about the likely helpfulness of several interventions and coping strategies (rated as helpful, unhelpful/harmful, neither, or depends). Some of these interventions and coping strategies included: a general practitioner or family doctor; a pharmacist; a social worker; a psychologist; help from close family; a naturopath or an herbalist; religious support; antidepressants; and undergoing electroconvulsive therapy (see Appendix B for a full list). Small additions and modifications were made to some items with respect to cultural inclusivity (e.g., the inclusion of Imams and Elders as potential sources of religious support), clarity (e.g., adding Prozac as an example of an antidepressant), and fit with the health problems depicted in the vignettes (e.g., modifying a relaxation and meditation-based item to include mindfulness therapy). Reavley and colleagues (2014) also evaluated beliefs about long-term outcomes, knowledge about causes and risk factors, beliefs related to stigma and discrimination, and contact with individuals with the condition depicted in the vignette, but these items were eliminated due to time and energy concerns regarding the parent sample.

A composite MHL score was calculated for each vignette based on parents' ability to recognize the health problem being described (1 point), as well as their beliefs about the helpfulness/harmfulness of different interventions and coping strategies for the problem (1 point for each correct identification of a helpful or harmful response to the depicted problem), for a maximum potential total of 20 points for both vignettes. Correct responses for Reavley and colleagues' (2014) research were determined by selecting the most commonly chosen answers for helpfulness/harmfulness from a previous group of surveyed health professionals. For the present study, this consensus process was not replicable for the adapted vignettes, due to limitations in professional and financial resources. However, a panel of child mental health experts, namely, the thesis committee members, was consulted to ensure that calculation of participants' MHL scores was based on responses endorsing evidence-based treatment and help-seeking strategies.

Reavley and colleagues' (2014) Mental Health Literacy Scales are a revised version of scales that have been used in seminal MHL research (Jorm et al., 1997a; Morgan et al., 2013; Reavley & Jorm, 2011) since the field's emergence. The scales have demonstrated good construct validity in past research (Reavley et al., 2014; Wei, McGrath, Hayden, & Kutcher, 2015), and were deemed to be the best fit for the present study due to the ease and flexibility of adapting the vignettes to depict child mental health problems using similar follow-up evaluation criteria. Some items in the adapted measure were not used to calculate participants' MHL score (e.g., interest in seeking help via natural remedies, certain medications or religious support) but were retained for descriptive purposes. A Kuder-Richardson 20 analysis (Kuder & Richardson, 1937) – a measure of internal consistency permitted for use with dichotomous data – revealed strong reliability coefficients for the adapted vignettes and response items used in the calculation

of participants' MHL scores (ADHD, α = .88; anxiety, α = .89). Notably, participants' MHL scores were strongly correlated with more positive views toward help-seeking (r = .67), and moderately correlated with female sex (r = .37), but poorly correlated with level of education (r = .08). These variables have consistently shown to be associated with MHL in past research. The measure's poor association with education was likely attributable in no small part to low variance in the sample's education levels (i.e., highly educated), as will be discussed shortly. Therefore, convergent and construct validity for the adapted MHL measure in this research appeared to be moderate. Parents also provided a self-evaluation of their own MHL skills to supplement the composite MHL score. Two items were created to have parents indicate on a five-point scale how familiar they consider themselves with: a) the symptoms of child mental health problems; and b) the types of help and treatment available for mental health problems.

Information preferences. Two items were also created to have parents indicate their information preferences for the mental health problem depicted in the vignette. Specifically, participants indicated the amount of information (ranging from none to a small pamphlet to multiple pages of information) they would prefer to receive about different treatment options (i.e., medication, psychotherapy, self-help strategies) for ADHD or anxiety, as well as the extent to which they would prefer to receive this information in several formats (e.g., a website, discussion with a health care provider).

Parenting Sense of Competence Scale (PSOC; Gibaud-Wallston & Wandersman, 1978; Johnston & Mash, 1989). The 17-item PSOC was employed as a measure of parental self-efficacy, and its factors were evaluated as potential predictors of MHL. The PSOC is the most widely used measure of parental self-efficacy (Jones & Prinz, 2005). While the measure was created by Gibaud-Wallston and Wandersman (1978), it was provided an interpretable factor

solution by Johnston and Mash (1989, as cited in Gilmore & Cuskelly, 2009). Originally defined by Johnston and Mash (1989) as having a two-factor solution (Satisfaction and Efficacy), this research utilized Gilmore and Cuskelly's (2009) improved three-factor solution for the PSOC that accounts for a greater proportion of the variance, provides a separate factor structure for mothers and fathers, and provides normative data from a more equal sampling of mothers and fathers, as well as parents of children of a wider age range.

Under this model, the three factors comprising the PSOC are: Satisfaction; Efficacy; and Interest. Satisfaction involves "the quality of affect associated with parenting or the degree of satisfaction associated with the parenting role" (Johnston & Mash, 1989, p. 251). This factor is comprised of items such as "*A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one*" and "*Considering how long I've been a parent, I feel thoroughly familiar with this role.*" Previous research has demonstrated a relationship between lower parenting satisfaction and negative child internalizing and externalizing behaviours, as well as with maladaptive parenting styles such as over-reactive and passive parenting (Ohan, Leung, & Johnston, 2000; Rogers & Matthews, 2004). Efficacy involves "the degree to which a parent feels competent and confident in handling child problems" (Johnston & Mash, 1989, p. 251). This factor is comprised of items such as "*I meet my own personal expectations for expertise in caring for my child*" and "*Being a good parent is a reward in itself.*" Stronger Efficacy is associated with more positive parent-child dynamics such as lower child emotional reactivity and greater tolerance of difficult child behaviours (Coleman & Karraker, 2000; Teti & Gelfand, 1991). The final factor, interest, reflects the parent's level of engagement in the parenting role (Gilmore & Cuskelly, 2009) and is comprised of items such as "*My talents and interests are in other areas, not in being a parent.*" This construct has important implications for efforts to

improve parent-child interactions, as parents with low interest in their role are less likely to respond to an intervention, independent of its degree of effectiveness (Gilmore & Cuskelly, 2009).

The PSOC has demonstrated good levels of internal consistency reliability (α = .75-.88) in a number of evaluative studies (Gilmore & Cuskelly, 2009; Johnston & Mash, 1989; Lovejoy, Verda, & Hays, 1997; Ohan et al., 2000; Rogers & Matthews, 2004). Due to issues involving low factor loadings, Gilmore and Cuskelly (2009) recommend removing items 1, 5, and 7 from the PSOC. Thus, these items were removed in the present research, for a total of 14 items comprising the PSOC. In the revised model, Gilmore and Cuskelly (2009) found internal consistency to be acceptable (mothers, α = .75; fathers, α = .79). Internal consistency was similar in the present research, (mothers, α = .78; fathers, α = .73).

Parenting Daily Hassles Scale (PDH; Crnic & Greenberg, 1990). The 20-item PDH has been widely used as a measure of parenting stress resulting from everyday parenting experiences and parent-child interactions (Chen & Luster, 2002; Coplan, Bowker, & Cooper, 2003; Crnic & Greenberg, 1990; Fearon et al., 2014). Each item in the PDH presents a common stressor experienced by parents (e.g., difficulties in finding privacy, children not doing what they are asked). Parents rate the frequency of the stressor's occurrence on a 4-point scale (rarely, sometimes, a lot, or constantly), as well as how hassled they feel by that stressor on a 5-point scale (from *no hassle* = 1 to *big hassle* = 5).

The PDH is a highly reliable measure of parenting stress (Crnic & Greenberg, 1990). Two scores are initially computed for the PDH: the total Frequency scale score, which reflects the sum of the frequency ratings for each item (α = .81), and the total Intensity scale score, which reflects the sum of the hassle ratings for each item (α = .9). These two scales are also highly

correlated, r = .78. Crnic and Greenberg (1990) additionally conducted a factor analysis that resulted in two subscales derived from ratings on the Intensity scale: Parenting Tasks and Challenging Behaviour. The scores on these subscales can indicate whether a parent's stressors are due to difficulties associated with meeting the ordinary needs of their children (Parenting Tasks), or due to perceived difficult behaviour in their children (Challenging Behaviour). Together, these two factors account for 86% of the variance in the PDH, and are typically the focus of statistical analyses, because they produce the most meaningful findings (Crnic & Greenberg, 1990). In the present research, participants' scores on the Parenting Tasks and Challenging Behaviour subscales were analyzed to determine the extent to which these two stress factors are predictive of parents' MHL. Internal consistency reliability for these subscales was strong in the present research: Parenting Tasks, α = .88; Challenging Behaviours, α = .86.

Analysis

Descriptive analyses were first performed on data collected from the survey's demographic and background information to provide an overview of the sample and inform interpretation and generalizability of the results. Next, to evaluate the strength of MHL among parents, a one-way between-subjects analysis of covariance (ANCOVA) was conducted to evaluate mean differences in participant responses between ADHD and anxiety in terms of composite MHL scores, while adjusting for parenting experience (number of children and age of their oldest child). These variables were included as covariates in consideration of the natural exposure to mental health information that parents might receive through parenting experience (Ciampa et al., 2012). A Pearson correlational analysis was performed to identify additional covariates to include in the ANCOVA. Significant moderate correlations were found between MHL and gender (r = .37) and mental health experience (r = .38). Thus, these variables were

also included as covariates. Significant but small correlations were found for the following variables: Parenting efficacy (r = .24); parenting interest (r = .19); parenting task stress (r = -.24). These variables were not included in the model as covariates due to their small effects. The ANCOVA results were supplemented by descriptive analyses exploring parents' help-seeking and treatment beliefs, as well as their self-evaluations of their MHL skills. An additional Pearson correlation analysis was also performed to determine the degree of parity between parents' self-rated MHL and their total MHL scores. To test the hypothesis regarding the significance of the potential predictors of parental MHL, a linear multiple regression analysis was performed to determine the impact of parental self-efficacy, parenting stress, age, gender, level of education, and mental health experience on MHL, as well as the strength of this impact. As the MHL score was primarily derived from parents' perceptions surrounding treatments and help-seeking strategies, a logistic regression analysis was also performed to determine factors associated with correct recognition of the problems depicted in the vignettes. Finally, descriptive analyses aided in determining the amount of information parents prefer to receive about ADHD and anxiety, as well as their preferred sources of information. The results of all analyses were evaluated using a significance level of α = .05 and were completed using SPSS version 21.

Results

Sample Characteristics

Table 1 provides a full list of demographics and sample characteristics. The sample was generally comprised of younger parents (M = 35.17, SD = 6.11) and was largely female (71.9%), with 23.4% identifying as male, and 3.1% identifying as a non-binary gender. The mean age of participants' oldest child was 8.83 (SD = 4.6) and they had an average of 2.28 (SD = .99) children. The sample was well-educated, with 83.6% having attained some form of post-

secondary education, and 53.9% having attained a bachelor's or graduate degree. In terms of occupation status, 65.6% of the sample worked full or part-time, while 34.4% were stay-at-home parents, unemployed, or on disability. The majority of the sample (88.3%) was married or in a common-law relationship. Seventy seven percent of the sample identified as White. A total of 15.6% of parents reported that one of their children ages 4-12 had previously experienced a mental health problem, with 8.6% specifying their child's experiences with anxiety, and a few specifying their child's experiences with ADHD, depression, and/or autism spectrum disorder. A total of 14.8% indicated that their child had previously accessed mental health services. Relatedly, 40.6% of parents indicated that they had personally experienced a mental health problem in the past, while 37.5% had personally accessed mental health services. Over half of the sample (62.5%) indicated that they had known a close friend or family member who had experienced mental health problems.

Table 2 provides a list of primary outcome scores. Parents received similar MHL scores (total scores/20) regardless of whether they responded to the child ADHD (M = 12.67, SD = 4.28) or anxiety (M = 11.64, SD = 4.2) vignette. The sample collectively demonstrated moderate parental self-efficacy (M = 56.4/84, SD = 9.7, which was slightly lower but similar to results found in Gilmore and Cuskelly's (2009) development study using the same factor structure for the Parenting Sense of Competence Scale (M = 60.77/84, SD = 9.09). The sample also demonstrated low-to-moderate parenting stress in terms of frequency (M = 42.59/80, SD = 11.16) and intensity (M = 44.67/100, SD = 17.65) of stressors, as well as specifically for parenting tasks (M = 17.6/40, SD = 7.39) and challenging behaviours (M = 16.52/35, SD = 6.44). Parenting stress levels generally were slightly higher but similar to those found in Crnic and Greenberg's (1990) original development study of the Parenting Daily Hassles Scale: frequency

(*M* = 37.3/80, *SD* = 6.9); intensity (*M* = 41.8/100, *SD* = 12.2); parenting tasks (*M* = 16.5/40, *SD* = 5.8); challenging behaviours (*M* = 16.6/35, *SD* = 5.33).

Evaluation of Parental MHL Skills

For the ADHD vignette, 51.6% of parents correctly identified the child depicted in the vignette as having ADHD, 14.1% repeated or rephrased the symptoms depicted in the vignette, 10.9% did not directly answer the question (e.g., speculating about other life factors), 7.1% identified another illness or label (e.g., depression) 7.1% did not know, and 6.3% felt that nothing was wrong. For the anxiety vignette, 56.3% of parents correctly identified the child depicted in the anxiety vignette as having anxiety, while 14.1% did not know, 10.9% did not directly answer the question (e.g., providing recommendations to the parents), 7.8% repeated or rephrased the symptoms depicted in the vignette, 6.3% felt that nothing was wrong, and 3.1% identified another illness or label (e.g., OCD).

The sample held generally positive views toward seeking help from health professionals. More parents indicated it would be helpful to seek aid from a general practitioner (ADHD, 70.3%; anxiety, 62.5%) or counsellor (ADHD, 69.8%, anxiety, 82.8%), compared to a psychologist (ADHD, 59.4%; anxiety, 64.1%) or psychiatrist (ADHD, 45.3%, anxiety, 42.2%). However, only 51.6% of those responding to the ADHD vignette, and 40.6% of those responding to the anxiety vignette, believed that it would be unhelpful or harmful for the parents of the depicted child to attempt to manage his health problem on their own.

A notable portion of parents labelled medications as unhelpful or harmful and/or were hesitant to label medications as helpful (i.e., indicating that medications are neither helpful nor harmful, that it depends, or that they were uncertain). For instance, parents responding to the ADHD vignette were divided as to whether psychostimulants (e.g., Ritalin) would be helpful

(23.4%) unhelpful/harmful (20.3%), that it depends (39.1%), or that they were uncertain (17.2%). Responses were less favourable for antidepressants and benzodiazepines as potential strategies for the anxiety vignette: Antidepressants (helpful, 7.8%; unhelpful/harmful, 25%; depends/neither, 48.4%; uncertain, 18.8%); benzodiazepines (helpful, 7.8%; unhelpful/harmful, 57.8%; depends/neither, 25%; uncertain, 9.4%).

Parents more definitively believed in the helpfulness of receiving education about the problem from an expert (ADHD, 90.6%, anxiety, 79.7%), as well as self-help strategies such as having the child engage in increased physical activity (ADHD, 73.4%, anxiety, 79.7%) or a relaxation or mindfulness course (ADHD, 76.6%, anxiety, 84.4%), and doing personal research/reading about the problem the child is experiencing (ADHD, 82.8%, anxiety, 84.4%).

Self-rated MHL. Parents were also asked to provide a self-rating on a scale of 1 to 5 of their general familiarity with the symptoms of child mental health problems (M = 2.81/5, SD = 1.22), as well as with treatment (M = 2.67/5, SD = 1.23). For familiarity with symptoms of child mental health problems, 40.9% indicated they were *not familiar* or *slightly familiar*, 26.8% indicated they were *moderately familiar*, and 32.3% indicated they were *very familiar* or *extremely familiar*. For familiarity with child mental health treatment, 46.5% indicated they were *not familiar* or *slightly familiar*, 26.8% indicated they were *moderately familiar*, and 26.8% indicated they were *very familiar* or *extremely familiar*. An additional Pearson correlation analysis revealed a significant mild-to-moderate correlation between parents' total MHL scores and their self-rated familiarity with symptoms of child mental health problems, r = .19, p < .05. This trend was not significant when examining parents' self-rated familiarity with child mental health treatment and their MHL scores, r = .15, p = .09. This suggests a small degree of parity between their objective and self-perceived levels of MHL.

Comparison of MHL for ADHD and anxiety. Prior to comparing the total MHL scores for the child ADHD and anxiety vignettes, it was first necessary to evaluate the statistical assumptions involved in the interpretation of ANCOVA results. There was homogeneity of regression slopes, as there was no significant interaction between the covariates and participant group. There was homogeneity of variances, as determined by Levene's test of homogeneity of variance, $p = .46$. Standardized residuals for MHL scores for the overall model and both groups separately were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$) and visual inspection of Q-Q plots. Finally, the assumption of homoscedasticity was met, as determined by inspection of standardized residuals plotted against the predicted values for each case. Missing data for this analysis was limited to three missing cases for the anxiety vignette group and thus determined to be random and a minimal loss.

Mean MHL scores after adjusting for the inclusion of covariates in the model remained mild-to-moderate: ADHD, $M = 12.71$, $SE = .46$, 95% CI = 11.8, 13.62; anxiety, $M = 11.66$, $SE = .47$, 95% CI = 10.74, 12.59. Table 3 displays the results of the ANCOVA. When adjusting for number of children, age of oldest child, gender, and personal/close friend/family-related experiences with mental health problems, parents' MHL scores did not significantly differ based on whether they responded to the child ADHD or anxiety vignette, $F(1, 119) = 2.54$, $p = .11$, $\eta_p^2 = .02$.

Factors Associated with Parental MHL

Total MHL score. The statistical assumptions necessary for interpreting multiple regression analyses were considered prior to evaluating factors associated with parents' MHL skills. The assumption of independence of residuals was met, as determined by a Durbin-Watson statistic of 2.06. The evaluated predictor variables were linearly related to the MHL score

variables, as assessed by partial regression plots and plots of studentized residuals against the predicted values for each case. The assumption was met for homoscedasticity of the variances of the dependent variable, as determined by visual inspection of a plot of the studentized residuals against the unstandardized predicted values. There were no significant problems with multicollinearity, as observed by VIF and tolerance values within acceptable ranges. There were also no problems with studentized deleted residuals greater or less than three standard deviations, leverage values, or values for Cook's distance above 1. Finally, the assumption of normality was met, as determined by inspection of a P-P plot and histogram of the standardized residuals. Missing data for this analysis was negligible: n = 125-128 for each variable entered in the model, with the exception of the PDH scale variables (n = 115), which still involved minimal loss.

Table 4 displays the results of the multiple regression analysis evaluating predictors of MHL. The entered set of variables significantly predicted MHL, $F(11, 102) = 5.42$, $p < .001$, adj. $R^2 = .3$, $f^2 = .58$. This suggests that the regression model accounted for approximately one-third of the variance in parents' MHL scores, with a large effect. Three predictors provided significant individual contributions to the variance in parents' MHL: Gender, $\beta = .32$, $t = 3.52$, $p < .01$; mental health experience (whether personal or related to a close friend/family member), $\beta = .33$, $t = 3.79$, $p < .001$; and efficacy (one of three subscales from the PSOC scale), $\beta = .24$, $t = 3.03$, $p < .01$.

Recognition of symptoms. Prior to evaluating factors associated with recognition of the mental health problems depicted in the vignettes, testing of the statistical assumptions necessary for logistic regression analysis first revealed no issues with multicollinearity between predictors, as determined by observation of VIF and tolerance values within acceptable ranges. Three outliers (standardized residuals) were observed but kept in the analysis. Finally, linearity of the

continuous variables with respect to the logit of the recognition variable was assessed via the Box-Tidwell procedure; this statistical assumption was met, $p > .05$.

Table 5 presents the results of the logistic regression analysis, which suggests that the included set of variables collectively predicted approximately one-third of the variance in parents' ability to recognize the problem depicted in the vignette, $\chi^2(16) = 36.05$, $p = .01$, Nagelkerke $R^2 = .36$. However, no significant unique contributions were observed for most of the variables, with the exception of parenting interest, which was associated with a greater likelihood of correctly recognizing the problem, $B = -.35$, $W = 5.45$, $p < .05$, Exp(B) = .7, CI = .52, .95.

Parents' Information Preferences for Child ADHD and Anxiety

Tables 6 and 7 display parents' preferences for how much information to receive about treatment for child ADHD and anxiety, respectively. Parents indicated interest in receiving more information about both child ADHD and anxiety, with most preferring to receive a lot (2 pages) or a great deal (3-6 pages) of detailed information regarding medication treatment (ADHD, 72.6; anxiety, 64.1%), psychological treatment (ADHD, 74.2%; anxiety, 61.3%), combined treatment (ADHD, 73.4; anxiety, 64.1%), and self-help approaches (ADHD, 61.9; anxiety, 57.4%). Fewer parents preferred to receive this information in the form of a brief pamphlet or 1-page fact sheet. Tables 8 and 9 present parents' preferences surrounding methods of receiving information on treatment for child ADHD and anxiety, respectively. The percentages of parents that rated different methods of information delivery as very or extremely preferred were as follows: information received through discussion with a health provider (ADHD, 79.7%; anxiety, 70.3%); through an information sheet or booklet (ADHD, 65.6%; anxiety, 60.3%); through a recommended Internet website (ADHD, 42.2%; anxiety, 40.6%); through an Internet-based

discussion or support group (ADHD, 33.3%, anxiety, 28.1%); and through a recommended mobile phone application (ADHD, 17.7%, anxiety, 25%).

Discussion

Implications

This research provides three principle knowledge contributions to the extant literature involving parental MHL, as well implications for future intervention-based efforts to strengthen parents' MHL skills. First, this sample of parents demonstrated moderate strength in terms of their MHL skills for recognizing child mental health problems and identifying effective help-seeking and treatment strategies, and relatively equal strength for these skills between child ADHD and anxiety. This finding bolsters the small literature base regarding parents' MHL skills. Second, there is a dearth of research exploring factors associated with parental MHL, and this study identifies female gender, mental health experience, and parental self-efficacy to be associated with stronger MHL skills in parents. Third, the results suggest an interest among parents in receiving more information about child mental health, particularly via a health care provider or in written format compared to web or phone-based methods. Finally, as a result of these knowledge contributions, these findings have value in informing the development of interventions that are relevant, accessible, and effective for strengthening parents' MHL skills. Each of these implications is discussed in further detail below.

Parental MHL skills. The first objective of this research was to evaluate the strength of parents' MHL skills, including their ability to recognize the problem that the child depicted in their assigned vignette (i.e., ADHD or anxiety) was experiencing, as well as their help-seeking beliefs and preferences for the depicted problem. Comparing the strength of parents' MHL skills between those responding to the ADHD and anxiety vignettes revealed no difference between

these groups when adjusting for parenting experience (i.e., number of children and age of oldest child), gender, and personal/close friend/family-based experience with mental health problems. Although some research has revealed differences in the public's knowledge and beliefs surrounding different mental health problems (Furnham & Lousley, 2013; Marcus et al., 2012; Pescosolido et al., 2008; Wright et al., 2005; Wright & Jorm, 2009), this subject appears to be relatively unexplored among parents. Additional research beyond the present study may facilitate greater understanding about which conditions parents are less knowledgeable.

Notably, parents' recognition rates for child ADHD and anxiety were also similar, albeit somewhat low, with only just over half correctly identifying the depicted child's problem. This finding is notable but expected. While little research has evaluated recognition ability among parents, past investigations have found that many parents have low confidence in their recognition ability (Moses, 2009) and difficulty recognizing mental health problems in their own children (Teagle, 2002). Approximately one half of the sample indicated that it would be harmful for the parents of the depicted child to try to manage his health problem on their own, suggesting that at least half of the sample perceived a need for external help. At least some portion of those who did not rate this decision as harmful likely viewed seeking external help as potentially helpful. The sample did generally express positive views toward seeking help from professionals, particularly general practitioners and counsellors, although only just over half rated psychologists as helpful, and just under half rated psychiatrists as helpful. These findings align with past research suggesting that parent skepticism of mental health services is common and a significant barrier to treatment for their children (e.g., Murry et al., 2011; Reardon et al., 2017; Sayal et al., 2010), and that general practitioners and counsellors are generally viewed as more helpful than other mental health professionals (Jorm & Wright, 2007; Wang et al., 2007).Views

regarding the use of medication to treat the depicted child's health problem were less favourable, wherein most parents were hesitant to label medications as helpful, including for medications that, despite being controversial for use with children, are at times used to treat ADHD and anxiety (psychostimulants, antidepressants, and benzodiazepines). This finding aligns closely with past research demonstrating that parents commonly perceive psychotropic medications as over-prescribed to children, less preferable to psychosocial interventions, and potentially beneficial but at a high risk of danger to the child (dosReis et al., 2003; Hamrin, McCarthy, & Tyson, 2010; Stevens et al., 2009). General self-help strategies such as having the child engage in physical activity, relaxation or mindfulness, and receiving education about the health problem were more consistently rated as helpful. In contrast with psychopharmacological interventions, it is likely that the potential consequences of these approaches were viewed as minimal.

Lastly, parents provided self-ratings of their knowledge of symptoms of child mental health problems (M = 2.81/5) and treatment (M = 2.67/5). These mean ratings suggested mild-to-moderate confidence in their knowledge of child mental health problems, and somewhat aligned with the mean MHL scores (ADHD, M = 12.67/20; anxiety, M = 11.64/20) that emerged for the more objective vignette questionnaire (i.e., 55-60% out of the possible total score, mild-to-moderate significant correlation between MHL score and self-rated familiarity with symptoms). These results are slightly lower, albeit similar, to findings from Mendenhall and Frauenholtz's (2015) sample of parents of children with mood disorders. Parents in their sample demonstrated mild-to-moderate knowledge of mood disorders (M = 56.5%) and moderate knowledge of treatment (M = 3.71/5). Notably, however, these researchers did not use the vignette-based measure employed in this research; these differences in scores may well be attributable to differences in methods of measurement. In Reavley and colleagues' (2014) development of the

original vignette-based measure depicting adults with various mental health problems, they found MHL scores to be stronger (*M* = 65.8%-76.7%) for the six mental health problems they depicted. While closer to the approach used in the present research, Reavley and colleagues (2014) surveyed the general public, employed unique scoring criteria for each vignette, and consulted with a different panel of mental health experts for their scoring criteria. Thus, their results are not directly comparable to those of the present research. Overall, however, the combined ANCOVA and descriptive results, along with these tentative comparisons with past research, collectively suggest that the parents comprising this sample possessed mild-to-moderate MHL skills. Yet, the sample's self-ratings of their MHL skills suggest some awareness of their limited familiarity and a desire or willingness to strengthen their skills due to generally positive attitudes toward seeking and receiving help from experts.

Factors associated with parental MHL. The second objective of this research was to determine factors that are associated with stronger MHL skills in parents. Perhaps most surprising was that parents' level of education was not related to their MHL score on the vignette measure, as past research has demonstrated that increased education is associated with greater MHL (Fisher & Goldney, 2002; Frauenholtz et al., 2015; Mendenhall & Frauenholtz, 2015; Reavley et al., 2014). However, as mentioned, it has also been shown that the relationship between education and MHL may be complicated and vary depending on the component of MHL and type of mental health problem in question (Pescosolido et al., 2008). Also, as previously noted, the sample in this research was highly educated, with 83.6% having attained some form of post-secondary education. Additional research involving a parent sample with more variation in education levels would likely reveal a relationship between higher education and stronger MHL skills, similar to past research demonstrating this relationship among the

general population. Disparate research findings also suggested that parents' age would relate to their MHL skills in some form. Unfortunately, the results showed no relationship between these variables and did not provide further clarity as to whether younger or older parents possess stronger MHL skills.

Parenting experience (i.e., number of children and age of oldest child) was also unrelated to MHL, conflicting with findings from some early research (Mendenhall & Frauenholtz, 2015). Another unanticipated finding was the lack of relationship between parenting stress (both frequency and intensity) and MHL, as presumably parents who are more stressed face more time constraints for learning about child health problems and more scrupulous decision-making. However, this hypothesis did not account for individual factors such as stress tolerance capacity. Scores on two of the PSOC subscales (parenting satisfaction, parenting interest) unexpectedly were also unrelated to parents' MHL scores. Regarding parenting satisfaction, it is conceivable that this construct may form a nonlinear relationship with MHL depending on individual characteristics (e.g., anxious perfectionism resulting in effective learning but difficulty achieving satisfaction in one's parenting skills). In terms of parenting interest, presumably parents who are more engaged in the parenting role are more likely to stay informed of how to protect against potential threats to the mental and physical health of their children. Therefore, the nonsignificant relationship between parenting interest and MHL in this research is surprising. One plausible integrative explanation for the nonsignificant relationship between MHL and each of these parenting constructs (i.e., parenting experience, stress, satisfaction, and interest) is that these factors may impact awareness and responsiveness to child mental health problems in one's immediate environment, but not necessarily base knowledge as measured in this research.

Factors that were associated with stronger MHL included having stronger parental self-efficacy, female gender, and having personal/close friend/family-based experiences with mental health problems. Greater parenting interest was associated with better recognition of the problems depicted in the vignettes, but not total MHL score. It is possible that those more invested in their parenting were more likely to provide a careful identification of the depicted problem, whereas other parents provided their responses more quickly or with less thought (e.g., ~10% of parents did not directly answer the question). Interestingly, unlike other parenting factors for which the results did not demonstrate a relationship with MHL (i.e., parenting experience, stress, satisfaction, and interest), parental self-efficacy is a construct more reflective of a parent's internal self-concept, which may be the most easily-addressed factor in efforts directed toward strengthening parental MHL skills. Although the link between parental self-efficacy and various adaptive parenting behaviours (e.g., responsiveness to child needs, non-punitive parenting, and active parent-child interactions) has been demonstrated previously (Coleman & Karraker, 1998; Gilmore & Cuskelly, 2009; Jones & Prinz, 2005), this research appears to be the first to explore and identify a relationship between stronger parental MHL skills and higher parental self-efficacy. Finally, the relationships found in this research between greater MHL and female gender (Cotton et al., 2006; Dey et al., 2015; Pescosolido et al., 2008; Rossetto et al., 2014; Swami, 2012), and to a lesser extent having personal or relational experiences with mental health problems (Douma et al., 2006; Sandhu et al., 2019; Verhulst & Van der Ende, 1997; Zwaanswijk et al., 2003), have been documented previously, although only recently confirmed in one parent sample (Mendenhall & Frauenholtz, 2015). Overall, these collective findings highlight subsets of parents (i.e., those with low confidence in their parenting

skills, men, and those with little or no mental health experience) whose experiences should be addressed in MHL intervention efforts aiming to be effective and relevant to many parents.

Information preferences for education about child ADHD and anxiety. The third and final objective of this research was to provide a glimpse into parents' degree of interest in receiving information about child mental health problems, as well as preferences surrounding how to receive this information. The majority of parents indicated interest in receiving a large amount of information about both child ADHD and anxiety, including information concerning medication treatment, psychological treatment, combined treatment, and self-help approaches. Differences in preferences for receiving more information on each of these treatment approaches were marginal, although slightly less participants indicated they would like to receive a lot or a great deal of more information about self-help approaches.

Many more participants indicated a strong preference for receiving this information via a health care provider (70-80%) or in written format (60-66%), rather than via the Internet (28-42%) or a mobile phone application (17-25%). The size of the gap between these findings was somewhat surprising, as the mean age of the parent sample (M = 35.17 years) was fairly young and presumably technologically adept. Past research has demonstrated that, while preference for receiving health information via contact with a professional is common, adults in their 20s and 30s – particularly educated women, of which this sample was primarily comprised – frequently seek health information via the Internet, often even before consulting with a health care provider (Hesse et al., 2005; Jacobs, Amuta, & Jeon, 2017; Percheski & Hargittai, 2011; Plantin & Daneback, 2009; Weaver et al., 2010; Ybarra & Suman, 2008). As discussed above, the sample was also well-educated; it is possible that several parents in the sample were therefore more scrupulous of the relevance and reliability of health information located on the Internet. Parents

in the sample may also have been skeptical of health information that is not directly provided by health professionals (e.g., a written pamphlet). Limitations involving comprehensiveness and reliability of informational websites for child mental health have indeed been demonstrated in past research (Reynolds et al., 2015).

Implications for knowledge mobilization. Beyond its contributions to the extant literature, this research presents an opportunity for its findings to be integrated with researchers' and practitioners' ongoing efforts to strengthen public MHL through collaborative and community-based initiatives. Knowledge mobilization (KMb) is defined as:

The reciprocal and complementary flow and uptake of research knowledge between researchers, knowledge brokers and knowledge users—both within and beyond academia—in such a way that may benefit users and create positive impacts within Canada and/or internationally, and, ultimately, has the potential to enhance the profile, reach and impact of social sciences and humanities research. (Social Sciences and Humanities Research Council, 2019, para. 32).

KMb efforts are desirable because they communicate research findings using methods tailored to the needs of the population(s) standing to benefit from the information (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Ungar et al., 2015). Thus, products of KMb may materialize in a variety of formats, including technical reports, instructional videos, or publicly accessible web-based resources. With the completion of this research, an immediate KMb goal is to promote transparency regarding its implications and directions for future research. Interested participants will be provided a lay summary of the project via email or mailed packages, depending on preference. Furthermore, depending on recruitment sites' level of interest, offers

will be extended to provide short and easily-digestible presentations of the findings. During this process, an opportunity may present itself to gather more detailed community feedback on best strategies for reaching parents and disseminating information on child mental health.

Few accessible and evidence-based resources exist to support parents in their important role in child mental health (Yap et al., 2017). The long-term utility of the present research is to inform the development of a KMb initiative in the form of a short, accessible, and impactful MHL intervention resource for parents. This resource will likely be web-based and multimedia (i.e., text, images, video, audio) in nature, depending on results from follow-up research and feasibility at the time of the resource's development. Follow-up research will aid in more closely discerning parents' aversion toward receiving information about child mental health via technological means (e.g., web-based) in the present research, as well as highlighting methods for increasing the appeal of these more easily-accessible knowledge transfer methods. Recent evidence suggests that single-session web-based parenting support resources can effectively engage parents in informed, supportive, and proactive behaviours towards child mental health in the long-term (Cardamone-Breen et al., 2018; Morgan et al., 2017; Yap et al., 2017). Such web-based resources are the ideal vehicle for mobilizing evidence-based information about child mental health to parents, due to their anonymity, accessibility, and cost-effectiveness (Fernando et al., 2018; Yap et al., 2017).

The resource's content will be comprised of research findings about common child mental health problems – such as ADHD and anxiety – presented in user-friendly language and format. Parents will learn about these problems from the perspectives of prevention, symptom recognition, help-seeking and treatment, self-help (or help from the parent), and mental health first aid skills to support the child. Findings from the present research regarding factors

associated with parental MHL will also inform the development of this resource. For instance, a vital step in the resource's development will be to ensure via focus group and pilot research that the resource's content is engaging and digestible for fathers, as well as those with little exposure to mental health problems and treatment. The resource will also be designed to address parental self-efficacy concerns in users regarding their capacity for effectively responding to mental health problems in their children.

Limitations

One limitation to the present research stems from the problem that methods for measuring MHL in the extant literature have been disparate, making it challenging to identify an optimal method for measuring MHL. Hundreds of original measures have been developed to measure perceptions and knowledge of mental health problems and help-seeking attitudes, only to be unused in future research (Kutcher, Wei, & Coniglio, 2016; Wei et al., 2015). Thus, increased efforts are needed to standardize and validate measurement of this construct. Notably, the vignette approach and measure adapted for this research has been used in seminal MHL research (e.g., Jorm et al., 1997a; Morgan et al., 2013; Reavley & Jorm, 2011) and is perhaps one the most commonly used methods of measuring MHL since the field's emergence. Furthermore, evidence does exist to support a link between increased recognition and help-seeking knowledge (the constructs that are the focus of the vignette measure) in the community and real-world outcomes such as improved mental health, increased detection of mental health problems by professionals, and reductions in mental health stigma (Haller et al., 2009; Jorm et al., 2006, 2010; Mackinnon et al., 2008; ten Have et al., 2009). Unfortunately, however, there is limited evidence supporting improvements in scores on the vignette measure as being associated with such outcomes (Jorm, 2012), as well as limitations involving the measure's applicability, due to

its narrow focus on select components of MHL (Kutcher et al., 2016). As such, the utility of the adapted measure in this research is to provide a glimpse of parents' MHL skills in two key domains, rather than conduct a full-scale assessment.

Furthermore, scoring for participants' responses to the adapted vignettes would ideally be based on consensus from a large-scale survey of child mental health experts, similar to Reavley and colleagues' (2014) investigation, rather than the smaller panel of experts that was consulted for this research. However, supplementing data from this measure with participants' self-rated familiarity with symptoms of child mental health problems and treatment aided in compensating for the smaller panel of experts from which consensus was obtained. Participants' self-rated mild-to-moderate familiarity with child mental health problems aligned with the moderate composite MHL scores obtained from the vignette measure. In addition, it was determined that this measure had good internal consistency within the context of this research.

Another limitation stems from the fact that there are undoubtedly multiple factors associated with parental MHL that were not be measured in this research and/or were not analyzed as potential predictors due to homogenous sample characteristics. For example, ethnicity was measured as a demographic variable, but not included in the regression model as a potential predictor of parental MHL. Producing a simultaneously diverse and adequately sized sample for a valid evaluation of ethnicity as a predictor was not anticipated, and did not occur, despite some success in receiving support from diverse community organizations to help advertise the survey. It is also worth noting that the construct of MHL represents a Western scientific conceptualization of responsiveness to mental health problems (Jorm, 2012), and thus individuals from various cultural backgrounds may conceptualize mental health in a different – but not necessarily incorrect – manner (Furnham & Hamid, 2014), which may have placed those

occupying non-Western cultural backgrounds at an unfair advantage for this evaluation of MHL. Additional research is needed to study the perspectives and experiences of broader cultural subsets of parents, as the sample in the present research was largely White. A related limitation is that the education level of the sample was high (with the majority having obtained a postsecondary degree) and relatively homogenous in this respect. Other factors – such as the other three components of MHL outlined in Jorm's (Jorm, 2012) model – were omitted due to concerns involving survey length and obtaining adequate sample size. Thus, the intended utility of this research was to produce a regression model that provides initial data and engenders discussion about parents' characteristics that may inform initiatives to strengthen their MHL.

Lastly, as this research was not conducted in a controlled environment, participants may have been distracted by uncontrollable stimuli during their completion of the online survey, such as family or accessing external information to inform their survey responses. This limitation is inherent to nearly all research conducted online and in non-laboratory settings; however, it may have been further pronounced among this sample of parents of school-aged children, who likely manage multiple daily demands and distractions.

Conclusion

Mental health problems are highly prevalent and debilitating among young children, and if left untreated, can severely impair their social, educational, and vocational functioning, and lead to general poor quality of life outcomes (Frauenholtz et al., 2015; McGorry et al., 2007; Patel et al., 2007; Sandler et al., 2015; WHO, 2017). Strong MHL skills – such as the ability to recognize mental health problems and knowledge of effective treatment strategies – are highly relevant to parents' role of protecting the wellbeing of their children. Parents are the most readily available to recognize symptoms of mental health problems in their children and serve as

gatekeepers for their children's access to mental health services (Frauenholtz et al., 2015; Jorm & Wright, 2007; Mendenhall & Frauenholtz, 2015). Thus, this research sought to evaluate the strength of MHL skills among parents of school-aged children, factors associated with their MHL, and their preferences for receiving information about child mental health.

The results provide several knowledge contributions to the extant literature. First, research evaluating the strength of MHL among parents has been limited. This investigation found moderate strength in a community sample of parents' capacity for reducing the long-term negative consequences of mental health problems in their children, and relatively equal strength for understanding the symptoms and treatment of child ADHD and anxiety. Second, this investigation aids in filling a research gap by highlighting factors that appear to be associated with stronger MHL skills in parents, including female gender, personal/close friend/family-based experiences with mental health problems, and greater parental self-efficacy. These factors explained approximately one-third of the variance in parents' MHL scores with a large effect; there is value in additional research examining how these factors can be integrated into efforts to improve MHL, as well as research illuminating other sociodemographic and experiential factors that undoubtedly impact parental MHL. Finally, the sample of parents in this research indicated interest in receiving more information about child mental health, but with a surprising inclination – given the younger mean age of the sample – toward receiving information via health care provider or written format over web or phone application-based methods. Further research that highlights best strategies for increasing the appeal of these more easily accessible knowledge transfer modalities would be beneficial.

Overall, the findings in this research may bear important implications for future endeavors in educating parents about child mental health problems, including plans for the

development of our own resource that is guided by a recent trend in the literature pointing toward the promise of single-session web-based MHL interventions (Cardamone-Breen et al., 2018; Morgan et al., 2017; Yap et al., 2017). Informing and developing such initiatives enhances parents' understanding and responsiveness to mental health problems, and directs more parents and their children to mental health services – key developments that serve to foster improved mental health and MHL outcomes in the generations to come.

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Table 1

Sample Characteristics

	N	*M*	*SD*	*Min*	*Max*
Age	126	35.17	6.11	23	53
Gender	126				
Male	30 (23.8%)				
Female	92 (73%)				
Non-binary	4 (3.2%)				
Education	128				
Less than High School	1 (.8%)				
High School	20 (15.6%)				
Certificate/Diploma	24 (18.8%)				
2-year University	14 (10.9%)				
Bachelors	52 (40.6%)				
Master's/Doctorate	17 (13.3%)				
Ethnicity					
Arab	1 (.8%)				
Black	3 (2.3%)				
Filipino	3 (2.3%)				
First Nations	8 (6.3%)				
Latin American	2 (1.6%)				
Métis	6 (4.7%)				
White	99 (77.3%)				
Other"	6 (4.7%)				
Marital Status	128				
Single	8 (6.3%)				
Common Law	17 (13.3%)				
Married	96 (75%)				
Separated	6 (4.7%)				
Divorced	1 (.8%)				
Occupation Status	128				
Full-time	70 (54.7%)				
Part-time	14 (10.9%)				
Stay-at-home Parent	31 (24.2%)				
Unemployed	12 (9.4%)				
Disability	1 (.8%)				

Table 1 (continued)

	N	*M*	*SD*	*Min*	*Max*
Number of Children	127	2.28	.99	1	5
Number of Children (Ages 4-12)	127	1.64	.81	1	5
Age of Oldest Child	126	8.83	4.6	4	27

Table 2

Primary Outcome Scores

	N	*M*	*SD*	*Min*	*Max*
MHL Score					
ADHD (/20)	64	12.67	4.28	2	20
Anxiety (/20)	64	11.64	4.2	1	17
Total (/20)	128	12.16	4.26	1	20
Parenting Sense of Competence					
Satisfaction (/48)	125	30.84/48	8.34	9	38
Efficacy (/36)	125	25.55/36	4.46	10	35
Interest (/12)	125	8.98/12	2.67	2	12
Total (/84)	125	56.39/84	9.7	19	83
Parenting Daily Hassles					
Frequency (/80)	116	42.59	11.16	24	80
Intensity (/100)	115	44.67	17.65	20	96
Parenting Tasks (/40)	115	17.6	7.39	8	38
Challenging Behaviours (/35)	115	16.52	6.44	7	35
Self-rated familiarity with child mental health symptoms (/5)	127	2.81/5	1.22	1	5
Self-rated familiarity with child mental health treatment (/5)	127	2.67/5	1.23	1	5

Table 3

ANCOVA Results: Differences in MHL Scores

Variable	*MS*	*F*	η_p^2
Vignette group (ADHD/anxiety)	33.66	2.54	.02
Number of children (covariate)	18.37	1.39	.01
Age of oldest child (covariate)	31.88	2.41	.02
Gender (covariate)	196.02	14.8*	.11
Mental health experience (covariate)	208.19	15.72*	.12

*$p < .001$.
Note. Significance was evaluated using $\alpha = .05$. $R^2 = .29$, adj. $R^2 = .26$

Table 4

Multiple Regression Results: Predictors of Parental MHL

Predictor	*B*	SE_B	β	*t*	95% Confidence Interval for *B* Lower Bound	95% Confidence Interval for *B* Upper Bound
Age	0.1	.08	.02	.13	-.15	.17
Gender	2.85	.81	.32	3.52*	1.24	4.46
Level of education	.22	.29	.07	.75	-.36	.81
Number of children	.38	.38	.09	.99	-.38	1.14
Age of oldest child	.13	.1	.14	1.29	-.07	.33
Mental health experience	2.9	.77	.33	3.79**	1.39	4.42
Parenting satisfaction	-.08	.07	-.16	-1.12	-.22	.06
Parenting efficacy	.24	.08	.25	3.03*	.08	.39
Parenting interest	.01	.21	.01	0.6	-.4	.43
Parenting task hassles	-.18	1	-.31	-1.83	-.37	.02
Challenging behaviour hassles	.08	.1	.13	.8	-.12	.29

*$p < .01$. **$p < .001$.

Note. Significance was evaluated using $\alpha = .05$. Model summary: $F(11, 102) = 5.42$, $p < .001$, adj. $R^2 = .3$, $f^2 = .58$.

Table 5

Logistic Regression Results: Predictors for Correctly Recognizing Health Problem in Vignette

Predictor	*B*	SE_B	*Wald*	*df*	Exp(*B*)	95% Confidence Interval for EXP (*B*) Lower	Upper
Age	.06	.05	1.45	1	1.07	.96	1.18
Gender[a]			5.7	2			
Education[b]			2.21	5			
Mental health experience	.83	.51	2.7	1	2.3	.85	6.21
Parenting satisfaction	.01	.05	.07	1	1.01	.92	1.11
Parenting efficacy	-.07	.05	1.56	1	.94	.84	1.04
Parenting interest	-.35	.15	5.45*	1	.7	.52	.95
Parenting task hassles	.03	.07	.24	1	1.03	.91	1.18
Challenging behaviour hassles	-.05	.07	.46	1	.95	.83	1.1

* $p < .05$.

[a, b] Reference categories for dummy coded variables; full list of categories not displayed due to insignificant findings for all categories.

Note. Significance was evaluated using $\alpha = .05$. Model summary: $\chi^2(16) = 36.05$, $p < .01$, Nagelkerke $R^2 = .36$.

Table 6

Preferred Amount of Information to Receive about Treatment for Child ADHD

Treatment Type	None	Minimal (a brief pamphlet)	Moderate (1-page fact sheet)	A lot (2 pages of detailed info)	A great deal (3-6 pages of detailed info)
Psychological Treatment (*n* = 62)	1 (1.61%)	5 (8.06%)	10 (16.13%)	17 (27.42%)	29 (46.78%)
Medication Treatment (*n* = 62)	3 (4.84%)	5 (8.06%)	9 (14.52%)	15 (24.19%)	30 (48.39%)
Combined Treatment (*n* = 64)	3 (4.69%)	6 (9.38%)	8 (12.5%)	16 (25%)	31 (48.44%)
Self-help Approaches (*n* = 63)	2 (3.17%)	10 (15.87%)	12 (19.05%)	12 (19.05%)	27 (42.86%)

Table 7

Preferred Amount of Information to Receive about Treatment for Child Anxiety

Treatment Type	None	Minimal (a brief pamphlet)	Moderate (1-page fact sheet)	A lot (2 pages of detailed info)	A great deal (3-6 pages of detailed info)
Psychological Treatment (*n* = 62)	0 (0%)	4 (6.45%)	20 (32.26%)	13 (20.97%)	25 (40.32%)
Medication Treatment (*n* = 64)	0 (0%)	9 (14.06%)	14 (21.88%)	16 (25%)	25 (39.06%)
Combined Treatment (*n* = 64)	1 (1.56%)	6 (9.38%)	15 (23.44%)	16 (25%)	25 (39.06%)
Self-help Approaches (*n* = 61)	3 (4.92%)	5 (8.2%)	18 (29.51%)	14 (22.95%)	21 (34.43%)

Table 8

Preferences for Methods of Receiving Information on Child ADHD

Information Format	Not Preferred	Somewhat Preferred	Moderately Preferred	Very Preferred	Extremely Preferred
Written (e.g., sheet/booklet) (*n* = 64)	2 (3.13%)	7 (10.93%)	13 (20.31%)	21 (32.81%)	21 (32.81%)
Discussion w/ health provider (*n* = 64)	1 (1.56%)	4 (6.25%)	8 (12.5%)	24 (37.5%)	27 (42.19%)
Internet website (*n* = 64)	3 (4.69%)	11 (17.19%)	23 (35.94%)	15 (23.44%)	12 (18.75%)
Internet discussion or support group (*n* = 63)	14 (22.22%)	19 (30.16%)	9 (14.29%)	15 (23.81%)	6 (9.52%)
Phone application (*n* = 62)	17 (29.03%)	12 (19.35%)	21 (33.87%)	6 (9.68%)	5 (8.06%)

Table 9

Preferences for Methods of Receiving Information on Child Anxiety

Information Format	Not Preferred	Somewhat Preferred	Moderately Preferred	Very Preferred	Extremely Preferred
Written (e.g., sheet/booklet) (*n* = 63)	2 (3.17%)	10 (15.87%)	13 (20.63%)	23 (36.51%)	15 (23.81%)
Discussion w/ health provider (*n* = 64)	2 (3.13%)	2 (3.13%)	15 (23.44%)	28 (43.75%)	17 (26.56%)
Internet website (*n* = 64)	7 (10.94%)	13 (20.31%)	18 (28.13%)	18 (28.13%)	8 (12.5%)
Internet discussion or support group (*n* = 64)	14 (21.88%)	13 (20.31%)	19 (29.69%)	10 (15.63%)	8 (12.5%)
Phone application (*n* = 60)	17 (28.33%)	12 (20%)	16 (26.67%)	13 (21.67%)	2 (3.33%)

Appendix A

Informed Consent Form

UNIVERSITY OF MANITOBA

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Title of Research: Exploring Child Health Beliefs and Knowledge Among Parents of School-Aged Children

Principal Investigators: Dylan Davidson, B.A.A. (Hons.)
Research Supervisor: Dr. Kristin Reynolds, Ph.D.
Committee Members: Dr. Jennifer Theule, Ph.D., Dr. Steven Feldgaier, Ph.D.

This consent form, a copy of which can be downloaded and/or printed for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about, who is involved in the research, and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Purpose of the Study:
The purpose of this study is to explore parents' beliefs and knowledge about child health, as well as personal and parenting-related experiences that might impact these beliefs and knowledge.

Study Procedures:
As a participant in this study, you will complete a survey. The total time required for participating in this study (including reading/signing this form and the survey) is expected to take 25-30 minutes. You may complete the survey online, or in-person via paper or tablet. Surveys completed in-person can be returned to the researcher who approached you. Questions covered in the survey include: demographic information (i.e., gender, age, education, occupational status, marital status, racial/ethnic background, number and ages of children); general (non-detailed) health experiences of you and your child; some questions about your mental health experiences; and your parenting experiences.

Potential Risks and Benefits of the Research:

The survey will ask you questions about child health (including a few questions about your own children, but mostly about child health in general), as well as some of the challenges you may have faced as a parent. Some people may find thinking about these topics uncomfortable. At the end of the survey, a list of adult and child psychological resources will be included that you may keep if you found the survey distressing or would like this information for your own records.

The immediate benefit of this research is to increase our understanding of parents' knowledge and beliefs about child health, as well as parenting experiences related to this knowledge and beliefs. The long-term benefit of this research is that the results will help develop a free and easily-accessible educational platform for parents regarding child health.

Participant Payment:

If you choose to participate, you will receive $5 as compensation for your time, and be entered into a raffle to receive one of two $50 Amazon gift cards. Following completion of the survey, your name and contact information will be inputted on a separate form so that you may receive your $5 compensation by mail. This information will not be linked to the information that was collected from you during the survey. If you are drawn as a winner of the raffle, you will receive your gift card by email (electronically) or by mail, depending on your identified preference when contacted. Your name and contact information will be kept on a password-protected computer in a locked laboratory and destroyed once the winners of the raffle have received their prize.

Voluntary Participation:

Participation in this research is voluntary and your decision to participate or not participate will NOT influence your involvement with the services or facility through which you are being contacted.

Freedom to Withdraw:

It is your choice whether or not to participate in this study. Participation is voluntary and you may withdraw at any time with no penalty. If you decide to withdraw from participation in this research, all data collected from you will be destroyed. If you wish to withdraw from participating in the survey and are completing the survey online, please click through to the end of the survey and indicate that you would like your data to be discarded. If you wish to withdraw from participating in the survey and are completing the survey in-person, please inform the researcher that you would like your data to be destroyed, and they will ensure that it is inserted in a confidential shredder. Please note that if you have already submitted your data (whether online or in-person), your data cannot be destroyed, as it will identified by number and no longer associated with your name.

Confidentiality:

Information gathered in this research study may be published or presented in public forums; However, your individual identifying information will not be used or revealed. As a participant in this research, you will not include your first or last name in the survey, and will be identified by number. Information collected from the survey will only be presented in aggregate form. All data

will be kept on a password protected computer in Dr. Reynolds' locked Health Information Exchange Laboratory. If applicable, hard copy survey data and our copy of any hard copy informed consent forms will be kept in a locked cabinet in the locked Health Information Exchange Laboratory. All data and materials will be kept until this research has been published (up to 7 years maximum/January 2026) following which it will be destroyed.

Questions or Concerns:

If you have any questions about this study, please do not hesitate to contact the Principal Investigator, Dylan Davidson, at davids29@myumanitoba.ca. You may also contact the research supervisor, Dr. Kristin Reynolds, at Kristin.Reynolds@Umanitoba.ca.

For questions about your rights as a research participant, you may contact The University of Manitoba Psychology/Sociology Research Ethics Board Office at (204) 474-7122.

Do not sign this consent form unless you have had a chance to ask questions and have received satisfactory answers to all of your questions.

Statement of Consent:

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

I understand that information regarding my personal identity will be kept confidential, but that confidentiality is not guaranteed. By signing this consent form, I have not waived any of the legal rights that I have as a participant in a research study.

I,_____(print name), have read the above information and hereby consent to participate in this study.

_____ _____

Participant's Signature Date (day/month/year)

IF YOU ARE HAVING THOUGHTS OF HARMING YOURSELF OR OTHERS, OR ARE IN CRISIS:

- WRHA CRISIS RESPONSE CENTRE at 817 Bannatyne Avenue or WRHA Mobile Crisis Service at 204-940-1781 (24 hours/7 days a week)
- KLINIC COMMUNITY HEALTH CENTRE CRISIS LINE (24 hours/7 days a week) at 204- 786-8686
- MANITOBA SUICIDE LINE (24 hours/7 days a week) at 1-877-435-7170
- MACDONALD YOUTH SERVICES: YOUTH MOBILE CRISIS TEAM: (204) 949-4777

FOR CHILDREN TO CALL:

- KIDS HELP PHONE: 1-800-668-6868

MENTAL HEALTH RESOURCES:

GENERAL/ADULT MENTAL HEALTH:

- ANXIETY DISORDERS ASSOCIATION OF MANITOBA: Suite 100 – 4 Fort Street; Phone: 204-925-0600
- MOOD DISORDERS ASSOCIATION OF MANITOBA: Suite 100 – 4 Fort Street; Phone: 204-786-0987
- KLINIC COMMUNITY HEALTH: 870 Portage Avenue; Phone: (204) 784-4090
- CANADIAN MENTAL HEALTH ASSOCIATION: 930 Portage Ave; Phone: 204-982-6100
- MPS – Find a psychologist online: http://members.mps.ca/
- MANITOBA PARENT ZONE / TRIPLE P (POSITIVE PARENTING PROGRAM): Phone: 1-877-945-4777

CHILD MENTAL HEALTH FOCUS:

- WRHA CHILD AND ADOLESCENT CONSULTATION: 204-787-7469
- MANITOBA ADOLESCENT TREATMENT CENTRE: 120 Tecumseh Street; Phone: 204-477-6391

Appendix B

Study Questionnaire

Background Information:

Today's Date: _____

Your Age: _____

Your Gender: _____

Highest Level of Education: ( ) Less than high school ( ) High school ( ) Certificate/diploma ( ) 2-year university ( ) Bachelor's ( ) Master's/Doctorate

Current Occupation Status: ( ) Full-time ( ) Part-time ( ) Stay-at-home parent ( ) Retired ( ) Unemployed ( ) On disability

If currently employed, please list current occupation: _____

Marital status: ( ) Single ( ) Common law ( ) Married ( ) Widowed ( ) Separated ( ) Divorced

Race/Ethnicity:

( ) Aboriginal/Indigenous ( ) Arab/West Asian ( ) Black

( ) Filipino ( ) Japanese ( ) Korean

( ) Latin American ( ) South Asian

( ) South East Asian ( ) White (Caucasian)

Other: _____

Please describe your immigration status:

( ) Non-immigrant ( ) Immigrant ( ) Non-Permanent Resident

If you are an immigrant to Canada, how many years have you lived here? _____

How many children do you have in total? _____

What is the age of your oldest child? _____

How many children do you have from ages 4-12? _____

Please list the age and gender of each child you have ages 4-12:

	Age	Gender
1.		
2.		
3.		
4.		
5.		

Have any of these children ages 4-12 ever experienced mental health problems?

( ) Yes ( ) No

If Yes, please list: _____

_____

Have any of these children ages 4-12 ever accessed mental health services?

( ) Yes ( ) No

If Yes, please list: _____

_____

Has anyone close to you (e.g., family, a close friend) ever experienced mental health problems?

( ) Yes ( ) No

Have you ever personally experienced mental health problems?

( ) Yes ( ) No

Have you ever accessed mental health services for yourself?

( ) Yes ( ) No

Please carefully read the short story involving the child depicted below, ensuring that you have a firm grasp of the child's experiences before moving on to the questions below:

[PARTICIPANT READS VIGNETTE]

1. What, if anything, would you say is wrong with John?

_____

2. If you noticed something wrong with John, what led you to that decision?

_____

3. If John's parents were to seek help from any of the following people, is it likely to be helpful, harmful or neither for him? *(Tick one response for each line)*

	Helpful	Unhelpful /Harmful	Neither	Depends	Don't Know
a. A typical family GP or doctor	☐	☐	☐	☐	☐
b. A typical chemist (pharmacist)	☐	☐	☐	☐	☐
c. A counsellor	☐	☐	☐	☐	☐
d. A social worker	☐	☐	☐	☐	☐
e. Telephone counselling service, e.g. Manitoba Parent Line	☐	☐	☐	☐	☐
f. A psychiatrist	☐	☐	☐	☐	☐
g. A psychologist	☐	☐	☐	☐	☐
h. Help from his close family	☐	☐	☐	☐	☐
i. Help from some close friends of the parents	☐	☐	☐	☐	☐
j. A naturopath or an herbalist	☐	☐	☐	☐	☐
k. The clergy, a minister, a priest, an Imam, an Elder, etc.	☐	☐	☐	☐	☐
l. John's parents trying to deal with his problems on their own	☐	☐	☐	☐	☐
l. An educational aide	☐	☐	☐	☐	☐
m. A resource teacher	☐	☐	☐	☐	☐

4. If John were to take one of the following medicines, is it likely to be helpful, harmful or neither for him? *(Tick one response for each line)*

	Helpful	Unhelpful /Harmful	Neither	Depends	Don't Know
a. Vitamins and minerals, tonics or herbal medicines (e.g., lavender oil)	☐	☐	☐	☐	☐
b. Pain relievers (e.g., Tylenol)	☐	☐	☐	☐	☐
c. Antidepressants (e.g., Prozac)	☐	☐	☐	☐	☐
d. Antibiotics (e.g., Penicillin)	☐	☐	☐	☐	☐
e. Sedatives/hypnotics/sleeping pills (e.g., Lunesta)	☐	☐	☐	☐	☐
f. Antipsychotics (e.g., Seroquel)	☐	☐	☐	☐	☐
g. Tranquilizers/Benzodiazepines/Anxiolytics (e.g., Valium)	☐	☐	☐	☐	☐
h. Psychostimulants (e.g., Ritalin)	☐	☐	☐	☐	☐

5. If John parents were to undertake any of the following for him/her, is it likely to be helpful, harmful or neither for him? *(Tick one response for each line)*

	Helpful	Unhelpful /Harmful	Neither	Depends	Don't Know
a. Becoming more physically active	☐	☐	☐	☐	☐
b. Reading about children with similar problems and how they have dealt with them	☐	☐	☐	☐	☐
c. Courses on relaxation, stress management, meditation, yoga, or mindfulness therapy	☐	☐	☐	☐	☐
d. Psychotherapy	☐	☐	☐	☐	☐
e. Cognitive behaviour therapy	☐	☐	☐	☐	☐
f. Exposure or behaviour therapy	☐	☐	☐	☐	☐
g. Hypnosis	☐	☐	☐	☐	☐
h. Admission to a psychiatric ward of a hospital	☐	☐	☐	☐	☐
i. Electroconvulsive therapy (ECT)	☐	☐	☐	☐	☐
j. Arrange for John to be educated about his problem	☐	☐	☐	☐	☐
k. Social skills training	☐	☐	☐	☐	☐
l. A special diet or avoiding certain foods	☐	☐	☐	☐	☐
m. Consulting a website that gives information about his problem	☐	☐	☐	☐	☐
n. Receiving information about his problem from a health educator or expert	☐	☐	☐	☐	☐
o. Consulting a book that gives information about his health problem	☐	☐	☐	☐	☐

When answering the next questions, please think about John's problem as it was described in the story. Please consider how much information you would need or would like if your child was experiencing a problem similar to John's.

6. Please select the amount of information you would prefer for the following forms of treatment.

	None (1)	**Minimal (a brief pamphlet) (2)**	**Moderate (1-page fact sheet) (3)**	**A lot (2 pages of detailed information) (4)**	**A great deal (3-6 pages of detailed information) (5)**	**Unsure/Prefer not to answer (6)**
Information about medication treatment	1	2	3	4	5	6
Information about psychological treatment	1	2	3	4	5	6
Information about the combination of medication treatment and psychological treatment	1	2	3	4	5	6
Information about self-help approaches (such as self-help books or internet-based self-help programs)	1	2	3	4	5	6

7. There are a number of ways to find information about help for this problem. Please select how you would prefer to get this information.

	Not preferred (1)	**Somewhat preferred (2)**	**Moderately preferred (3)**	**Very preferred (4)**	**Extremely preferred (5)**	**Unsure/Prefer not to answer (6)**
Information in written form (information sheet or booklet that you could take with you)	1	2	3	4	5	6
Information received through discussion with a health-care provider	1	2	3	4	5	6
Information on a recommended Internet website which could be accessed and printed from home	1	2	3	4	5	6
Information from an Internet discussion/support group or website	1	2	3	4	5	6
Information on a recommended mobile phone application	1	2	3	4	5	6

8. How familiar would you consider yourself with the symptoms of child mental health problems?

( ) Not at all familiar ( ) Somewhat unfamiliar ( ) Neutral ( ) Somewhat familiar ( ) Very familiar

9. How familiar would you consider yourself with the types of help and treatment available for child mental health problems?

( ) Not at all familiar ( ) Somewhat unfamiliar ( ) Neutral ( ) Somewhat familiar ( ) Very familiar

Parenting Sense of Competence Scale

Please rate the extent to which you agree or disagree with each of the following statements.

Strongly Disagree	Somewhat Disagree	Disagree	Agree	Somewhat Agree	Strongly Agree
1	2	3	4	5	6

1. Even though being a parent could be rewarding, I am frustrated now while my child is at his / her present age. 1 2 3 4 5 6

2. I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot. 1 2 3 4 5 6

3. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated. 1 2 3 4 5 6

4. I would make a fine model for a new parent to follow in order to learn what they would need to know in order to be a good parent. 1 2 3 4 5 6

5. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one. 1 2 3 4 5 6

6. Sometimes I feel like I'm not getting anything done. 1 2 3 4 5 6

7. I meet by own personal expectations for expertise in caring for my child. 1 2 3 4 5 6

8. If anyone can find the answer to what is troubling my child, I am the one. 1 2 3 4 5 6

9. My talents and interests are in other areas, not being a parent. 1 2 3 4 5 6

10. Considering how long I've been a parent, I feel thoroughly familiar with this role. 1 2 3 4 5 6

11. If being a parent of a child were only more interesting, I would be motivated to do a better job as a parent. 1 2 3 4 5 6

12. I honestly believe I have all the skills necessary to be a good parent to my child. 1 2 3 4 5 6

13. Being a parent makes me tense and anxious. 1 2 3 4 5 6

14. Being a good parent is a reward in itself. 1 2 3 4 5 6

Parenting Daily Hassles Scale

The statements below describe a lot of events that routinely occur in families with young children. These events sometimes make life difficult. Please read each item and circle how often it happens to you (rarely, sometimes, a lot, or constantly) and then circle how much of a 'hassle' you feel that it has been for you FOR THE PAST 6 MONTHS. If you have more than one child, these events can include any or all of your children.

Event	How often it happens	Hassle (low to high)
1. Continually cleaning up messes of toys or food	Rarely Sometimes A lot Constantly	1 2 3 4 5
2. Being nagged, whined at, complained to	Rarely Sometimes A lot Constantly	1 2 3 4 5
3. Meal-time difficulties with picky eaters, complaining, etc.	Rarely Sometimes A lot Constantly	1 2 3 4 5
4. The kids won't listen or do what they are asked without being nagged	Rarely Sometimes A lot Constantly	1 2 3 4 5
5. Baby-sitters are hard to find	Rarely Sometimes A lot Constantly	1 2 3 4 5
6. The kids' schedules (like pre-school or other activities) interfere with meeting your own household needs	Rarely Sometimes A lot Constantly	1 2 3 4 5
7. Sibling arguments or fights require a 'referee'	Rarely Sometimes A lot Constantly	1 2 3 4 5
8. The kids demand that you entertain or play with them	Rarely Sometimes A lot Constantly	1 2 3 4 5
9. The kids resist or struggle with you over bed-time	Rarely Sometimes A lot Constantly	1 2 3 4 5
10. The kids are constantly underfoot, interfering with other chores	Rarely Sometimes A lot Constantly	1 2 3 4 5
11. The need to keep a constant eye on where the kids are and what they are doing	Rarely Sometimes A lot Constantly	1 2 3 4 5
12. The kids interrupt adult conversations or interactions	Rarely Sometimes A lot Constantly	1 2 3 4 5
13. Having to change your plans because of unprecedented child needs	Rarely Sometimes A lot Constantly	1 2 3 4 5
14. The kids get dirty several times a day require changes of clothing	Rarely Sometimes A lot Constantly	1 2 3 4 5
15. Difficulties in getting privacy (e.g., in the bathroom)	Rarely Sometimes A lot Constantly	1 2 3 4 5
16. The kids are hard to manage in public (grocery store, shopping centre, restaurant)	Rarely Sometimes A lot Constantly	1 2 3 4 5
17. Difficulties in getting kids ready for outing and leaving on time	Rarely Sometimes A lot Constantly	1 2 3 4 5
18. Difficulties in leaving kids for a night out or at school or day care	Rarely Sometimes A lot Constantly	1 2 3 4 5
19. The kids have difficulties with friends (e.g., fighting, trouble, getting along, or no friends available)	Rarely Sometimes A lot Constantly	1 2 3 4 5
20. Having to run extra errands to meet the kids' needs	Rarely Sometimes A lot Constantly	1 2 3 4 5

Appendix C

Vignettes

NOTE: Participants received ONE of the following vignettes.

Generalized Anxiety Disorder (GAD) (Anxiety)

John is an 8-year old boy entering the third grade. For a few years, John's parents have been concerned with his constant worrying. He worries about his parents' health, his school grades, what other children think of him, and even small details such as what he will be having for dinner. His parents have tried to help him to relax, but John continues to worry. As a result, he has trouble sleeping, is regularly exhausted, and has trouble concentrating. John's worrying is getting in the way of his school grades and his ability to make friends.

Attention-Deficit Hyperactivity Disorder (ADHD)

John is an 8-year old boy entering the third grade. For a few years, John's parents have been concerned with his difficulty sitting still and following instructions. He is very talkative, interrupts, and does not listen to others. He can be forgetful, is easily distracted, and rarely plays or speaks quietly. His parents have tried to help him relax, but John will still often scream or run around. John's behaviour is getting in the way of his school grades and his ability to make friends.