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Protective Factors and the Role of Gender in Childhood Mental Health: Application of the interRAI Assessment Protocol

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PROTECTIVE FACTORS AND THE ROLE OF GENDER IN CHILDHOOD MENTAL HEALTH: APPLICATION OF THE INTERRAI ASSESSMENT PROTOCOL

by

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Abstract

The present study examined how a child's mental health is impacted by protective factors and his/her gender. Resiliency research has been growing in recent years as researchers recognize the value of focusing on strengths in individuals. Previous research has shown that certain protective factors help buffer against the negative effects of mental health disorders differently for males and females. The present study sought to explore this further. The participants were children and youth with severe mental health and behavioural challenges and were drawn from a tertiary care facility and other mental health organizations. The results revealed that the children and youth had few strong protective factors to help them overcome their challenges. Gender findings were inconclusive. These findings suggest that it is vital to conduct more research on protective factors and how they can be used to help, especially considering that children with severe challenges seem to lack effective protective tools.

Key words: children, mental health, resiliency, protective factors, gender, interRAI, ChYMH

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Introduction

Mental health disorders have a negative impact not only on family and work life but on society as a whole through its influence on the overall economy, impacting productivity losses and health costs (Public Health Agency of Canada, 2012). Approximately 1.2 million children (10-20% of all youth) are affected by a mental disorder or illness in Canada (Canadian Mental Health Association, n.d.), reinforcing the seriousness of mental health disorders. The second highest hospital care expenditure in Canada is mental illness in youth and children (Canadian Mental Health Association, n.d.). Despite this, only one out of five children who need mental health services in Canada actually receives them (Canadian Mental Health Association, n.d.). Children are not getting the help they need at a young age. This is problematic, as detecting illnesses early can reduce adverse effects. It was estimated almost two decades ago that individuals with mental disorders cost the Canadian government over $14.2 billion in 1998 (Public Health Agency of Canada, 2012), a statistic which climbed almost fourfold to $51 billion in 2008 (Centre for Addiction and Mental Health, 2008). Fortunately, most mental disorders can be treated effectively. Further, since the onset of mental health concerns mostly occurs in either childhood or adolescence (Public Health Agency of Canada, 2012), it is essential to study the ways in which mental health disorders can be prevented or their effects reduced by increasing the protective factors in a child's life.

This study addresses the ways in which resilience can be a critical factor in children's lives by buffering them against the negative effects of mental disorders. This paper first defines the term resilience and its history, noting the development of the concept and the changes informed by research that have occurred over the years. Protective factors are then summarized and their role in resilience is examined. Gender

differences are considered as they apply to both mental health and resilience in children. The population of participants included in this study is presented. The hypotheses are stated and the methodology used to explore the research questions is described. Finally, the results are presented and a discussion follows.

Literature Review

Resilience

Researchers have debated the definition of resilience over the years. This debate stems in part from the challenges regarding how to measure the construct. The dictionary definition of resilience means "to bounce back" from difficult life events (Garmezy, 1993; Jordan, 2013). However, research in mental health contexts defines resilience more expansively, suggesting that youth who adjust well, despite negative life events, are considered resilient (Tiet et al., 1998). Resilience was once conceptualized as a limited and specific construct in which the focus was on the individual and how personal factors could be developed to protect a person from adverse life events. As research developed, researchers acknowledged that the concept was larger than once thought and the concept was broadened to account for not only the individual but also the social context within which they resided. Currently, resilience is considered a complex phenomenon that examines both risk and protective factors in an individual in the context of their environment. However, it is noteworthy that individuals can only reveal their resilience when faced with negative life events and/or stressors (Rutter, 1985; Ungar, 2012). Without significant stress, it is not possible to observe if an individual is able to return to positive levels of functioning despite the adversity they are facing.

Early resilience research. Resilience was principally addressed by Garmezy, Masten, and Rutter (e.g., Garmezy & Masten, 1986; Rutter, 1985). This work in the

1960s acknowledged that, despite children being exposed to adverse life events, some were able to function within normal limits. Rutter (1985) noted that since the beginning of the twentieth century it was accepted that life experiences influenced a child's mental health, but it was unknown how these mechanisms operated. In the 1970s, children who were able to mitigate the impact of stress and negative life events were referred to as "invulnerable" children (Garmezy, 1993; Rutter, 1985). However this term was not suitable for at least two reasons. Firstly, it is an accepted belief that resistance to stress depends not only on the circumstances that a person is in, but also interacts in meaningful ways with personal characteristics (Rutter, 1985). Secondly, the word "invulnerable" suggested that these children cannot 'feel' any negative effects (Garmezy, 1993). This was not accurate, as children were only *resistant* to negative effects. Hence, the word "invulnerable" was traded for "resilience" to describe, albeit loosely, how individuals are resistant to stress and negative effects in their lives (Masten & Garmezy, 1985, as cited in Rutter, 1985).

Four waves of resilience research. Masten, Monn, and Supkoff (2011) noted that there were four waves in research development regarding resilience for children. The first wave reflected researcher's attempts to define and measure the elusive concept of "resilience" and to find the factors associated with it (i.e., what either decreases or increases resilience). The subsequent waves focused on what Masten et al. called "explanatory processes" (p. 103), with the second wave focusing on the processes that comprise resilience. The third wave focused on if, and how, resilience can be promoted in individuals and by what means. The fourth wave focused on "how it [resilience] works across levels of human function... from the molecular level of cells to the macro level of societies." (2011, p. 103, words in brackets added).

Rutter (1985; 1987) was significantly involved in the first wave and focused on examining the concept of resilience. While Rutter proposed that most children who faced stressful life experiences did not develop mental health disorders, he was unable to provide an explanation regarding why. In the beginning, he asked questions such as: What is resilience? What increases resilience and why/how? How does stress affect the body? Are individual differences between children due purely to genetics? While he was unsuccessful in answering these questions, he did theorize that psychological distress was a model whereby the sum of accumulated stress is more than the sum of positive buffers (Rutter, 1985). Rutter's work also led to discussions regarding both vulnerable factors that increase a person's propensity to experience stress when negative life events occur and factors which protect an individual when those same negative life events appear. These buffering factors were called protective factors, a research advance which proved critical to the conceptualization of resilience.

As Rutter studied resilience and protective factors, he viewed resilience as being a process as opposed to an outcome (Rutter, 1987). Rutter was very influential in the second wave in the research development of resilience, which was focused on understanding how resilience occurs and the processes involved. Rutter conceptualized resilience as an interplay between factors that create childhood vulnerability to stress, and factors that protect a child from stressors. Both types of factors indicate how a child responds to a given situation. For example, a child with a supportive family may view a difficult situation as a challenge, but also as something that he or she may be able to successfully address with the assistance of the family. A child with a non-supportive family may view the same situation as stressful and subsequently experience psychological distress. For this reason, Rutter suggested examining resilience as a process

or a mechanism rather than focusing on the variables involved since there can be an interplay between the variables being protective and causing vulnerability.

As previously noted, Masten and Garmezy studied resilience with a focus on the practical applications of resilience within the child population (Garmezy, 1993; Masten, Best, & Garmezy, 1990). Masten, Best, and Garmezy (1990) were particularly interested in how resilience could be applied to high-risk children and trauma. Children were studied in highly adverse situations within two conditions. The children who possessed social competency or positive relationships with an adult were able to function without experiencing distress despite their circumstances. This led to questions about the process of resilience. How did resilience allow individuals to adapt to adversity? Without addressing this fundamental question, there could be no possibility of developing interventions to facilitate resilience.

Garmezy (1993), similar to Rutter (1985), believed that there is a balance between factors that protect some children while increasing the risk in others, which results in resilience when there are more protective than risk factors. Garmezy (1993) also focused on identifying resilience within an individual. He proposed that even if an individual possessed certain protective factors in his or her life (i.e., social support, competence, etc.), researchers need to be cautious in assuming that he or she is necessarily resilient. While resilience was, by this time, considered a broad concept that encompassed many aspects of a person's life, there remained individual differences in how a person could develop resilience depending on their life circumstances and experiences. Overall, Garmezy (1993) focused on what constituted protective factors. While it was known that there were different kinds of protective factors, little was known about specific protective factors and how they affected individuals. This knowledge could subsequently be used to

apply to the 'real world', most notably in community settings and schools to help children develop resilience.

By 1995, Rutter (1995) was examining how resilience in the context of risk could be used to reduce the effects of stressful events for children. Similar to Garmezy (1993), Rutter (1995) noted that there were meaningful individual differences regarding responses to stress, but how they fit within the large general umbrella of resilience remained unknown.

By the mid-1990s Rutter was aware of the challenges in studying resilience, which he referred to as "crucial methodological issues" (1995, p. 76). Rutter was clear regarding the importance of properly defining "resilience", especially since it was considered such an elusive concept to measure. Resilient people can be resistant to stress, but not completely avoidant of it. However, researchers were uncertain about how to identify resilient individuals. If an individual is only modestly resistant to stressors, are they still considered "resilient"? Questions such as this reflected the challenges in measuring the concept. Additionally, although individuals can be resistant to certain stressors, they may be unable to positively respond to other stressors (Rutter, 1995). Rutter acknowledged that resilience was not a concept that occurred 'in the moment', but rather developed over a period of time as a function of life experiences and/or circumstances.

In the mid 1990s, the focus on resilience research shifted from studying risk factors to studying protective factors and the mechanisms that could be promoted in children (Rutter, 1995). For example, Tiet et al. (1998) conducted a study to identify specific factors of resilience to aid in understanding how protective mechanisms develop in individuals. Some of the specific factors were parental monitoring, higher IQ, ambition

for education, positive family functioning, and a greater number of adults in the household. More of the protective factors are outlined in a following section within this review. The realization that studying protective factors may further understanding regarding resilience resulted in the momentum for additional studies involving protective factors.

In the 2000s, the concept of resilience was emerging as more complex than earlier imagined. This progress resulted in collaboration by the pioneering researchers (such as Rutter, Garmezy, and Masten) such that interventions and practical applications could be developed (Masten & Gewirtz, 2006). Researchers conducted studies in more well-defined fields with specific populations (i.e., bullied children, children affected by war, children traumatized in foster care, etc.) which has made some of the findings difficult to generalize (e.g., Betancourt & Khan, 2008; Bowes et al., 2010). The overall focus, however, was to target higher-risk children and to develop prevention strategies.

Currently, the focus of most resilience research has moved from risk to resilience itself, to positive strategies for intervention (i.e., prevention) instead of negatively emerging outcomes (i.e., the pathology) (Rutter, 2012). Research focusing on the development of psychopathology was deemed less helpful than on promoting factors related to resistance to negative effects.

Defining and measuring the concept remains a challenge (Davydov, Stewart, Ritchie, & Chaudieu, 2010). However, current debates have yet to resolve whether resilience should be viewed as a process or an outcome (Southwick, Litz, Charney, & Friedman, 2011). Resilience as an outcome in the presence of stress is described as "symptom-free functioning" (Southwick et al., 2011, p. xi). This reflects the resistance to stress, recovering from symptoms, and having the ability to function despite facing

adversity such as indicated in mental health disorders or trauma. Resilience was also defined as a process, functioning as a mediator to the response to stressors. Southwick et al. (2011) in describing resilience as a process suggested that it referred to "cognitive, emotional reactions, and behaviours that are adaptive in response to stress and trauma" (p. xi). Protective factors in this case, such as social supports or coping mechanisms, aid in helping the individual to resist the negative effects of stress as a process.

Considering protective factors is important to the study of resilience as they can be used to increase resilience in children and other individuals. Protective factors are acceptable predictors of resilience and are able to be measured (Naglieri, LaBuffe & Ross, 2013), which makes them useful in the study of resilience.

Protective Factors

Protective factors can lead up to and predict resilient outcomes. The Public Health Agency of Canada (2012) noted that research needs to explore known or suspected protective factors to better service the needs of the population. According to Rutter (1987), protective factors are only protective when they serve the function of decreasing a person's susceptibility to life stressors. The factor or characteristic itself has nothing to do with whether it is protective or not (Rutter, 1987). For example, parental bonds can be a protective factor and increase a child's resilience. However, if the parental bond is a source of stress it will not function as a "protective" factor but as a vulnerability factor that can increase a child's susceptibility to adversity (Stadler, Feifel, Rohrmann, Vermeiren, and Poustka, 2010). For this reason, Rutter (1995) suggested focusing on the protective mechanisms as opposed to the factors themselves. Instead of focusing on family support i.e., 'the factor', it is more useful to focus on what constitutes family support for children that contributes to resilience.

Numerous researchers suggest there are three main categories of protective factors: 1) personal dispositions and/or personality features (e.g., self-esteem, competence, and optimism); 2) family factors/attributes (e.g., family cohesion, family environment, family support); and 3) external/social support/resources (e.g., friend support, many people from which to ask help) (Betancourt & Khan, 2008; Garmezy, 1993; Hjemdal, Vogel, Solem, Hagen, & Stiles, 2011; Rutter, 1987). In the 1980s, the focus of protection was on family support and social support because relationships, especially parental relationships, significantly influence a child (Rutter, 1985, 1987). Tiet et al. (1998) were among the first researchers to examine specific protective factors. They measured the level of adverse life events, identifying 11 predictors including good parental marital relationship, maternal psychopathology, closer parental monitoring, higher family functioning, higher IQ, and higher educational aspiration. Children who had more highly structured family environments and rated higher on a measure of family functioning were more resilient. The researchers proposed that these "resource factors" (i.e., protective factors) could be predictors of higher resilience in children and could subsequently be used in clinical settings.

Some of the more specific protective factors that increase resilience include high levels of parental support (Bowes, Maughan, Caspi, Moffitt, & Arseneault, 2010; Stadler et al., 2010), competence/the ability to problem solve (Miller, 2001; Stadler et al., 2010), and social support/peer ties (Bowes et al., 2010; Stadler et al., 2010). Family support is of particular relevance for younger children who rely on their parents to a greater extent as compared to adolescents (Bowes et al., 2010). Bowes et al. (2010) examined how protective factors under the "family factors" category, primarily family support, affect the emotional and behavioural resilience in bullied children. In the study, positive home

environments ("family environment"), warmth from siblings, and maternal warmth were the most important factors increasing a child's resilience to bullying. The twin who received more maternal warmth compared to their sibling displayed fewer behavioural problems and hence increased resilience. The researchers noted that warmth in family relationships is important for child adjustment in the face of stressors such as bullying. Positive parenting plays a specific protective role for adolescents (Masten et al., 1999) in reflecting a positive home environment, supervision/structure in the child's life, and emotional support. Resilient children are also characterized as being competent in specific areas and able to draw on resources to enable them to manage challenges (Masten et al., 1999). Masten et al. (1999) also found that individuals with higher IQs also were found to have higher levels of resilience and more able to adapt to adversity.

Research in the protective factor literature has studied all three categories of protective factors concurrently, and various specific factors within the categories, to examine how they affect individuals. Within the three categories (personal dispositions/personality features, family factors, and social resources/support), researchers focused on specific sub-factors depending on what fits best for their sample. For example, Betancourt and Khan (2008) studied children from war-torn countries to develop intervention strategies specifically for those affected by armed conflict and other war-related trauma. The protective factors they examined were community support, peer support, meaning making abilities, coping skills, caregiver health, relationships with the parents/guardians, and family resources. These specific factors impact children from war-torn countries, while other protective factors such as IQ level and easy-going temperament may not be as important when prioritizing needs. Betancourt and Khan found that a supportive relationship with an adult who cared about the child increased the

ability to return to levels of functioning. The researchers also discussed the importance of "disentangling" (2008, p. 325) family support from other types of family functioning. They acknowledged that research usually combined all aspects of family protective factors under one label ("family support") when it could be more useful to separate them into distinct factors, given that home environment may not influence a child the way caregiver mental health would. It is less helpful to state that "family support" helps protect children from negative effects without explaining specifically which types of family support protect children and in what capacity.

Protective factors have been found to buffer against negative mental health effects caused by life stressors. Reivich, Gillham, Chaplin, and Seligman (2013) noted that the effects of internalizing disorders such as anxiety and depression can be reduced by possessing problem-solving skills and "accurate cognitive styles" (p. 201). When adolescents were taught problem-solving skills, optimism, and efficient emotion regulation, the negative effects of depression and anxiety were reduced. Stadler et al. (2010) studied peer-victimization and resulting mental health problems to examine whether negative effects caused by bullying could be reduced by certain factors. They found that parental and school support (i.e., supportive teachers and a good school environment) negatively correlated with maladjustment. Children who had adequate parental and school support were able to adapt more efficiently after being bullied in school, resulting in reduced mental health problems such as anxiety and depression. In another study, personal disposition, social support, and family cohesion were shown to buffer against the negative effects of mental illness (Hjemdal et al., 2011). The researchers explored the relationship between resilience factors (i.e., protective factors) and symptoms of the children's mental illnesses. They used five subscales to measure

protective factors: family cohesion, personal competence, social resources, social competence, and structured style. The researchers measured the participant's depression, anxiety, and obsessive-compulsive symptoms. Perceived family cohesion, personal dispositions, and social support were shown to be significantly related to levels of distress resulting from mental illnesses. Generally, children with perceived family cohesion, personal dispositions, and social support displayed lower levels of reported symptoms. However, the categories that the researchers used were not specific and descriptions of the scales were not provided. "Personal dispositions" could mean a number of things, but the possible meanings were not mentioned.

In conclusion, despite the presence of three broad categories of protective factors, the research is varied in identifying specific protective factors and their effect on buffering stressors in children. Additionally, gender effects have been considered in the literature and have resulted in considerable attention and controversy.

Gender

In the mental health field, research has shown differences between males and females. Females tend to present with more internalizing disorders such as anxiety and depression, while males experience more externalizing/behavioural-type disorders (Mouzon & Rosenfield, 2013; Wareham & Paquette Boots, 2011). Vincent, Grisso, Terry, and Banks (2008, as cited in Wareham & Paquette Boots, 2011) estimated that females are twice as likely as males to have severe levels of anxiety, depression, suicidal ideation, irritability, and anger. Generally, females experience more mental health problems than males, however when young males do have mental health problems they act out and reveal externalizing symptoms more so than females, resulting in behavioural problems (Wareham & Paquette Boots, 2011).

Gender has been shown to be related to protective factors as well. Research has shown that parental support and social resources buffer negative effects caused by stressors more efficiently for females (Hjemdal et al., 2011; Stadler et al., 2010; Tiet et al., 1998). For males, possessing personal competence in a given area along with the ability to access resources results in a buffering of negative effects (Hjemdal et al., 2011). Betancourt and Khan (2008) found in their study on war-affected children that girls not only reported higher levels of social support than boys but were also protected from the negative effects of war trauma when they had a source of social support. This was not true for the boys they studied. Hjemdal et al. (2011) also found gender differences in their study, where girls reported higher scores in family cohesion and social resources and boys reported higher scores on personal competence. The researchers proposed that the findings reflected that boys view intrapersonal resources (such as competence and mastery) as a greater resource than girls, while girls see social resources as a greater resource than boys. The researchers' overall score of resilience for the participants had no gender effects, which could indicate that males and females do not differ when it comes to developing overall resilience. Stadler et al. (2010) similarly found that family support was a more effective buffer against the negative effects of peer-victimization for females as opposed to males. Stadler et al. (2010) additionally found that school support was equally effective for both boys and girls, although this may be due to the nature of the items in the scales, which could be perceived as a source of social support (i.e., teacher support) or an intrapersonal resource (i.e., "I like school").

There have been reported conflicting views in the literature of protective factors and resilience in terms of gender effects (Tiet et al., 1998). Some studies reported no gender differences in protective factors (e.g., Collin-Vézina, Coleman, Milne, Sell, &

Daigneault, 2011) while others reported some gender differences (Tiet et al., 1998).

Bowes et al.'s (2010) results conflicted with typical gender findings, reporting that boys

rather than girls displayed higher resilience when they reported a positive home

atmosphere and maternal warmth, contrary to what other researchers had found.

However, the researchers studied behavioural resilience, which may explain their

findings considering that boys tend to experience externalizing, behavioural-type

disorders more than girls.

Due to the conflicts in the literature with regards to gender and its impact on

protective factors, it is vital to study gender differences for the purpose of applying the

research to clinical settings. As Rutter (2012) acknowledged, conducting studies for

practical application is what research in resiliency should be focusing on.

Population - Children with Mental Health and Behavioural Challenges

The population of this study was drawn from a number of settings. While most of

the participants were recruited from a tertiary care facility, all of the participants,

regardless of the setting from where they were recruited, are characterized by varying

degrees of mental health, emotional, or behavioural challenges.

Children and adolescents with mental health disorders most often experience

depression, attention deficit hyperactivity disorder, suicidal ideation, eating disorders,

conduct disorder, or anxiety (Kinark Foundation, n.d.). As previously noted, mental

health issues have been linked to challenges in numerous areas of a youth's life, including

school performance, conflicts with family members, social withdrawal, substance abuse,

conflict with friends and peers, bullying, and problems with the law (e.g., stealing,

running away, etc.; Kinark Foundation, n.d.). Mental illness seems to be related to the

highest leading cause of suicide in adolescents. Developmental, mental health, and

behavioural problems in children have also been found to result in a poorer quality of life and often a dysfunctional lifestyle (Kinark Foundation, n.d.).

Children and adolescents in residential care are individuals with the most complex mental, behavioural, and developmental challenges. Children in residential care facilities require tertiary care, where children with high-level needs receive targeted treatment plans (Collin-Vézina et al., 2011). Collin-Vézina et al. (2011) conducted a study to examine six Canadian residential care facilities to examine the types of issues that the children are facing in their home lives. Staggeringly, 98% of the youth reported neglect, 60% reported physical abuse, 38% reported sexual abuse, and 68% reported emotional abuse. The researchers found these numbers to be much higher than reflected in the general population of Canada, especially the incidence of sexual abuse. Girls reported more sexual abuse (63%) than boys (17%), but otherwise there were no significant effects of gender in the other types of maltreatment. Some of the other issues that the residential care children faced were anger, anxiety, depression, dissociation, and post-traumatic stress. The children who reported higher levels of abuse typically experienced higher levels of mental health problems such as anxiety and depression. The children who reported the most varied types of abuse (emotional, physical, sexual, etc.) had the least amount of resilience. This research exemplified how children and adolescents in residential care facilities face complex challenges and subsequently must be approached differently than the rest of the population when developing treatment plans.

Research Question and Hypotheses

Considering the current literature on protective factors and gender effects, the present research explored how protective factors can mediate the effects of mental health challenges in both boys and girls. The research question relates to differential effects of

gender on various types of protective factors in predicting overall mental health outcomes by nature (i.e., depression, anxiety) and degree (i.e., severity).

Previous research has shown that there are differences between males and females when examining gender and mental health (Betancourt & Khan, 2008; Hjemdal et al., 2011; Mouzon & Rosenfield, 2013; Stadler et al., 2010; Tiet et al., 1998; Wareham & Paquette Boots, 2011) in an effort to develop gender-informed intervention strategies. The type of protective factor characterized a child's gender, which affects their mental health status. As there is limited research examining this relationship, it is the next step in considering gender informed research and mental health. Additionally, this research addressed specific protective factors (i.e., attachment, parenting style, a friend the child can talk to, mastery in school, etc.) in the three categories (i.e., personal dispositions and/or personality features, family factors/attributes, and external/social support/resources) and explored how they are linked to the complex challenges in children.

In this study, resilience was studied by examining protective factors and the severity of mental health problems. If an individual has protective mechanisms that act as a buffer against the negative effects of their mental, developmental, and/or behavioural challenges, then that individual is suggested to have resilience. Resilience will be defined as a process as opposed to an outcome.

Hypotheses

There were three hypotheses:

1. There will be a relationship between "protective factors", "gender", and "mental health" (type and degree). Whether or not the type of protective factor that a child has

affects their mental health outcome and severity based on their gender will be explored.

2. Female participants will display less severe mental health symptoms (such as anxiety and depression) when they have strong protective factors in the family factors category and social resources category (such as familial ties and a close social relationship).

3. Male participants will display less severe mental health symptoms (such as conduct disorder) when they have strong protective factors in the personal dispositions and personality features category. Jordan (2013) noted that girls have shown to need relationships to foster growth between individuals to adjust and adapt to life stressors, while the same was not reported for boys who would rather have intrapersonal resources such as mastery (Hjemdal et al., 2011).

Method

Participants

The participants were drawn from a tertiary care facility and other mental health organizations, in which the children and adolescents presented with a variety of difficulties that include behavioural, psychological, and/or emotional challenges. Additionally, some of the children and adolescents reported having a variety of addictions.

In total, there were 1745 ChYMH (Child and Youth Mental Health; Stewart et al., In Press) assessments completed with children ages four to 19 years of age with mental health, developmental, and behavioural challenges. However, after eliminating ChYMH-DD assessments for children with developmental delays (DD), characterized as having an IQ of less than 70, and the Rapid Screeners that provided a quick summary of mental

health needs, this number was reduced to 1083. To account for some of the participants

who completed multiple assessments, the sample was further reduced by eliminating

multiple assessments on the same child/youth. After including only initial assessments,

the total number of entries was 622. Finally, participants who were younger than four or

older than 18 years at the time they completed the assessment were excluded, resulting in

a final total sample of 615 (408 male, 207 female) between the ages of four and 18 (M =

11.77 years, SD = 3.40) (see Tables 1, 2, and 3). The children were both in-patients (n =

146) and out-patients (n = 469) (see Table 4). The majority of the children and youth

(66%) were between the ages of nine and 15 (n = 404), with the next highest (18%) being

within the age range of four to eight range (n = 111). The fewest number of children were

between the ages of 16 and 18 (n = 100, 16% of the entire sample of children and youth).

Measures

The present research was conducted primarily through the use of data from a

tertiary care facility in south-western Ontario using data provided through the interRAI.

interRAI is a comprehensive assessment system (Stewart, Currie, Arbeau, Leschied, &

Kerry, In Press). interRAI has data from 50 different members in over 40 countries. It is

standardized, multi-disciplinary, and has instruments that can be tailored for the specific

needs of children. interRAI contains a variety of assessment instruments. However the

present research relied solely on scales within the ChYMH (Child and Youth Mental

Health) instrument. The ChYMH is a 99-item assessment tool which complements the

diagnosis by providing a summary of needs of the child (Stewart, Currie, Arbeau,

Leschied, & Kerry, In Press).

All data used was secondary data without identifiable information. Data collected

from patients was stored on the interRAI Canada secure server at the University of

Waterloo. Each participant was assigned generated study-specific participant numbers that were randomly selected. No personal identifiers were collected and stored on the server. De-identified data was provided to the lead interRAI developer on a quarterly basis and no one else. The data was stored on a stand-alone computer (e.g., no access to the internet and no usable USB ports) and was password protected in a lead researcher's (Dr. Stewart's) locked laboratory. The data that were used for this study were date-stamped (e.g., data utilized was collected from November of 2012 to October of 2014).

There are several specific sections and scales from the ChYMH from which data for the present study was based. Those scales from the ChYMH used for this study are summarized in the following section.

Gender and Age. The demographic section provides data on gender and age.

Mental State Indicators

Aggressive Behaviour Scale. This scale includes items related to *verbal abuse; physical abuse; socially inappropriate behaviour;* and *resists care.* These items were scored as follows: 0 = *not present* (i.e., behaviour is not present), 1 = *present but not exhibited in the last 3 days,* 2 = *exhibited on 1-2 of last 3 days,* 3 = *exhibited daily in last 3 days, 1-2 episodes*, 4 = *exhibited daily in last 3 days, 3 or more episodes or continuously.* Total scale scores range from 0 to 16, with high scores indicating higher levels of aggressive behaviour.

Anhedonia Scale. This scale includes items such as *lack of interest in social interaction, lack of motivation; anhedonia;* and *withdrawal from activities of interest.* These items were scored as 0 = *not present* (i.e., behaviour is not present), 1 = *present but not exhibited in the last 3 days,* 2 = *exhibited on 1-2 of last 3 days,* 3 = *exhibited daily in last 3 days, 1-2 episodes*, 4 = *exhibited daily in last 3 days, 3 or more episodes or*

continuously. Total scale scores range from 0 to 16. High scores indicate higher levels of anhedonia.

Anxiety Scale. This scale includes items such as *repetitive anxious complaints/concerns (non-health-related); unrealistic fears; obsessive thoughts; compulsive behaviour; intrusive thoughts or flashbacks; episodes of panic; nightmares;* and *hypervigilance.* These items were scored as 0 = *not present* (i.e., behaviour is not present), 1 = *present but not exhibited in the last 3 days,* 2 = *exhibited on 1-2 of last 3 days,* 3 = *exhibited daily in last 3 days, 1-2 episodes*, 4 = *exhibited daily in last 3 days, 3 or more episodes or continuously.* Total scale scores range from 0 to 32. High scores indicate more symptoms of anxiety.

Distractibility/Hyperactivity Scale. This scale has items concerning distractibility and hyperactivity, including *impulsive; easily distracted; hyperactivity;* and *disorganization.* These items were scored as 0 = *not present* (behaviour is not present), 1 = *present but not exhibited in the last 3 days,* 2 = *exhibited on 1-2 of last 3 days,* 3 = *exhibited daily in last 3 days, 1-2 episodes*, 4 = *exhibited daily in last 3 days, 3 or more episodes or continuously.* Total scale scores range from 0 to 16. High scores indicate higher levels of hyperactivity/distractibility.

Disruptive Behaviour Scale. This scale includes items such as *socially inappropriate or disruptive behaviour; destructive behaviour towards property;* and *outburst of anger.* These items are scored as 0 = *not present* (behaviour is not present), 1 = *present but not exhibited in the last 3 days,* 2 = *exhibited on 1-2 of last 3 days,* 3 = *exhibited daily in last 3 days, 1-2 episodes*, 4 = *exhibited daily in last 3 days, 3 or more episodes or continuously..* Another item in the school, *child/youth removed due to disruptive behaviour,* is scored as 0 = *no* and 1 = *yes*, however this item is weighted such

that 0 = 0 and 1 = 4 so that "it is counted as equivalent with the other items" (Dr. Shannon Stewart, interRAI fellow, personal communication, December 15, 2014). Total scores range from 0 to 16. Higher scores indicate greater frequency and diversity of disruptive behaviours.

Depressive Severity Index. This scale includes items regarding depression indicators, including *sad, painted, or worried facial expressions; crying, tearfulness; made negative statements; self deprecation; expressions of guilt or shame; expressions of hopelessness; irritability; lack of motivation;* and *withdrawal from activities of interest.* These items were scored as 0 = *not present* (behaviour is not present), 1 = *present but not exhibited in the last 3 days,* 2 = *exhibited on 1-2 of last 3 days,* 3 = *exhibited daily in last 3 days, 1-2 episodes*, 4 = *exhibited daily in last 3 days, 3 or more episodes or continuously.* Total scale scores range from 0 to 36. Higher scores indicate more severe depressive symptoms.

Mania Scale. This scale has items regarding mania indicators, including *inflated self-worth; irritability; pressured speech or racing thoughts; labile affect; hypersexuality;* and *sleep problems related to hypomania or mania.* These items were scored as 0 = *not present* (behaviour is not present), 1 = *present but not exhibited in the last 3 days,* 2 = *exhibited on 1-2 of last 3 days,* 3 = *exhibited daily in last 3 days, 1-2 episodes*, 4 = *exhibited daily in last 3 days, 3 or more episodes or continuously.* Total scale scores range from 0 to 24. Higher scores indicate more manic symptoms.

Protective Factors

Communication Scale. This scale includes two items. The first item, *making self understood* is scored as 0 = *understood,* 1 = *usually understood,* 2 = *often understood*, 3 = *sometimes understood*, and 4 = *rarely or never understood*. The second item, *ability to*

understand others, is scored as 0 = *understands*, 1 = *usually understands*, 2 = *often understands*, 3 = *sometimes understands*, and 4 = *rarely or never understands*. All of the items were reverse scored. Total scale scores range from 0 to 8, with lower scores indicating poorer communication.

  Cognitive Performance Scale. This scale includes items such as: *cognitive skills for daily decision making* (scored 0 = *independent [decisions consistent, reasonable, and safe]*, 1 = *modified independence [some difficulty in new situations only]*, 2 = *minimally dependent [in specific recurring situation, cues/supervision necessary]*, 3 = *moderately dependent [cues/supervision required at all times]*, 4 = *severely dependent [never or rarely makes decisions]*, 5 = *no discernible consciousness, coma); short term memory* (scored 0 = *yes, memory OK*, 1 = *memory problem); procedural memory* (scored 0 = *yes, memory OK*, 1 = *memory problem); making self understood* (scored 0 = *understood*, 1 = *usually understood*, 2 = *often understood*, 3 = *sometimes understood*, 4 = *rarely or never understood); ability to understand others* (scored 0 = *understands*, 1 = *usually understands*, 2 = *often understands*, 3 = *sometimes understands*, 4 = *rarely or never understands*) ; and *overall academic ability - capacity* (scored 0 = *exceptionally higher ability*, 1 = *typical ability*, 2 = *exceptionally lower ability*, and 3 = *minimal or no evidence of ability*). All of the items were reverse scored. Total scale scores range from 0 to 17, with lower scores indicating a greater cognitive deficit.

  Strengths (Individual) Scale. This scale covers items that are individual strengths of the child or youth, including *notable talent; good school performance in last 6 months;* and *consistent positive outlook.* These items are scored with 1 = *yes [the child does have this present in his/her life]*, and 0 = *no [the child does not have this present in his/her life].* There is an additional items included in this scale, *adaptability to change in*

routine or environment, which is scored as 0 = *adapts without difficulty,* 1 = *adapts with some difficulty,* and 2 = *has difficulty adapting to even minor change.* This last item was reverse scored. Total scale scores range from 0 to 5 where lower scores reflect lower levels of individual strengths.

Strengths (Relational) Scale. This scale covers items that are relational strengths of the child or youth, including *reports having a confidant; school engagement; strong and supportive relationship with family; strong and supportive relationship with friends/peers; child/youth has at least one friend with who visits/plays with regularly;* and *social inclusion by peers*. These items are scored with 1 = *yes*, and 0 = *no [the child does not have this present in his/her life]*. Total scale scores could range from 0 to 6 where lower scores reflect lower levels of relational strengths.

Parenting Strengths Scale. This scale includes items such as *communicate effectively with child/youth; assists child/youth with the regulation of emotions; uses appropriate disciplinary practices; demonstrates warmth and support; appropriate supervision and monitoring;* and *appropriate limit setting or expectations*. These items are scored with 0 = *most of the time*, 1 = *occasionally*, and 2 = *rarely or never*. All items were reverse scored. Total scale scores range from 0 to 12 with lower scores indicating lower levels of parenting strengths.

Reliability and Validity of the interRAI

In terms of the reliability and validity of the ChYMH items, ChYMH scales, and interRAI, Stewart, Currie, Arbeau, Leschied, and Kerry (In Press) reported that while reliability and validity analyses are currently ongoing, the development and creation of the ChYMH were extensive and thorough, using input from clinicians from over nine countries over a three year process. The development included efforts from not only

individuals but also teams of researchers and clinicians who examined the literature on childhood mental health to generate appropriate scales and items to adequately measure all aspects of mental, behavioural, and developmental challenges in children.

Analyses

Independent samples t-tests were used to examine gender with mental state indicators, and gender with protective factors. Linear regressions were conducted to examine the relationship between protective factors and mental state indicators. A multiple regressions analysis was used to examine the relationship between all three factors, whereby males and females were split. A linear regression was then used to examine which protective factors contribute to the greatest extent with each mental health indicator, according to gender.

Ethical Considerations

There were a number of ethical issues that are part of using the interRAI data.

Firstly, the integrity of research with interRAI is reflected in the fact that no one outside of the interRAI organization is allowed to work with the data without prior approval. Hence, the data is protected.

Second is the concern for storage. interRAI's data will be stored for many years. The primary facility that manages this data minimizes risk by not allowing the data to leave the physical property where the data is stored (i.e., on a flash drive). Individuals who wish to see the data (and have permission to do so) are allowed access to it only under the supervision of a statistical consultant.

The third issue is the fact that the child, the child's parent/guardian, and others involved in the child's life (in-patient workers, grandparents, other service workers, additional family members, etc.) complete the assessment. If there is a risk that a parent

will not accurately report aspects of the child's life, such as where there may be a history of maltreatment, other clinicians who are knowledgeable of the child's life are asked to verify certain entries. However, should the children or their family choose not to complete the assessment, they are not penalized and are allowed to access the resources within the organization.

Fourth, is the potential emotional demands the assessment can take on the child. Some of the questions asked in the assessment could make the child nervous, frightened, or ashamed depending on their circumstances. Clinicians are available at the time of completion should the child/youth experience distress and require support.

Results

The first research question explored the potential relationship between "gender", "mental health" (type and degree) and "protective factors". It was hypothesized that, based on previous research, there would be a relationship between the three factors and that gender would be an influencing factor in the type of mental health challenges he/she would experience, as well as which protective factors will be most helpful with his/her mental health challenges.

The second and third hypotheses examined the role of gender. It was hypothesized that males would report more protective factors in the personal dispositions and personality features category, with female participants reflecting more protective factors in the family and social resources categories.

Separate analyses were not generated for each factor in the scales in order to avoid Type I error. Only those scales of relevance to the current study were used for the analyses.

It should be noted that The Parenting Strengths Index (PSI) was excluded from analysis in this study due to what were considered anomalies in the direction of the results reflected in the means for both males and females (see Table 6).

Analyses Examining Mental Health Indicators and Gender

Independent samples t-tests were generated to determine if there were differences in mental health indicators between males and females. The mental health factors that were examined included anhedonia indicators (using the anhedonia scale), aggression indicators (using the aggressive behaviour scale), anxiety indicators (using the anxiety scale), distraction and hyperactivity indicators (using the distraction and hyperactivity scale), disruption indicators (using the disruptive behaviour scale), depression indicators (using the depressive severity index scale), and mania indicators (using the mania scale).

Results indicated that there were higher levels of reported aggressive behavioural indicators for males ($M = 4.54$, $SD = 3.930$) than females ($M = 3.29$, $SD = 3.699$), which was statistically significant ($M = 1.242$, $t(613) = 3.778$, $p < .001$). There were higher levels of reported distraction and hyperactivity indicators for males ($M = 10.03$, $SD = 4.739$) than females ($M = 8.39$, $SD = 5.253$), which was statistically significant ($M = 1.641$, $t(378.52) = 3.780$, $p < .001$). There were higher levels of reported disruptive behaviour indicators for males ($M = 3.36$, $SD = 2.340$) than females ($M = 2.83$, $SD = 2.275$), which was statistically significant ($M = .534$, $t(613) = 2.701$, $p = .007$). The remaining factors were non-significant. Table 5 summarizes the means, standard deviations, t-statistics, and p-values for gender and the mental health indicators.

Analyses for Protective Factors and Gender

Independent samples t-tests were conducted to determine if there were differences in protective factors between males and females. The protective factors that were

examined included communication skills (using the communication scale), individual

strengths (using the strengths [individual] scale), relational strengths (using the strengths

[relational] scale), cognitive performance skills (using the cognitive performance scale),

and parenting strengths (using the parenting strengths scale). There were higher levels of

reported communication skills from males (M = 1.45, SD = 1.618) than females (M =

1.09, SD = 1.363), a statistically significant difference (M = .364, t(481.380) = 2.935, p =

.003). There were higher levels of reported individual strengths for males (M = 2.80, SD =

1.273) than females (M = 2.52, SD = 1.329), a statistically significant difference (M =

.282, t(613) = 2.559, p = .011). There were higher levels of reported relational strengths

for males (M = 2.69, SD = 1.832) than females (M = 2.36, SD = 1.778), a statistically

significant difference (M = .334, t(613) = 2.237, p = .026). There were higher levels of

reported cognitive performance from males (M = 3.96, SD = 2.901) than females (M =

2.97, SD = 2.771), a statistically significant difference (M = .987, t(613) = 4.049, p <

.001). Table 6 provides a summary of means, standard deviations, t-statistics, and p-

values for gender and protective factors.

Linear Regression Examining Mental Health and Protective Factors

Finally, to complete the hypotheses testing, multiple linear regressions were

conducted to examine the relationship between mental health indicators and protective

factors. Participants were split into males and females before analyses were conducted.

Analyses examining males and a series of protective factors. The following

analyses summarize the investigation regarding males and their reporting on various

protective factors.

A multiple regression for males was generated to test the prediction of anhedonia

with communication skills, individual strengths, relational strengths, cognitive

performance skills, and parenting strengths. These variables statistically significantly predicted anhedonia, $(F(5, 402) = 7.322, p < .001$, adj. $R^2 = .072)$. Communication skills, individual strengths, and relational strengths added statistically significantly to the prediction, $(p < .05)$. Regression coefficients and standard errors are found in Table 7.

A multiple regression for males was generated to examine the prediction of aggressive behaviour with communication skills, individual strengths, relational strengths, cognitive performance skills, and parenting strengths. These variables statistically significantly predicted aggressive behaviour, $(F(5, 402) = 14.337, p < .001$, adj. $R^2 = .141)$. Individual strengths and cognitive performance skills added statistically significantly to the prediction, $(p < .05)$. Regression coefficients and standard errors are found in Table 8.

A multiple regression for males was generated to examine the prediction relating anxiety symptoms with communication skills, individual strengths, relational strengths, cognitive performance skills, and parenting strengths. These variables statistically significantly predicted anxiety, $(F(5, 402) = 12.760, p < .001$, adj. $R^2 = .126)$. Individual strengths and cognitive performance skills added statistically significantly to the prediction, $(p < .05)$. Regression coefficients and standard errors are found in Table 9.

A multiple regression for males examined the prediction of distraction/hyperactivity with communication skills, individual strengths, relational strengths, cognitive performance skills, and parenting strengths. These variables statistically significantly predicted distraction and hyperactivity, $(F(5, 402) = 19.157, p < .001$, adj. $R^2 = .182)$. Communication skills, individual strengths, and cognitive performance added statistically significantly to the prediction, $(p < .05)$. Regression coefficients and standard errors are found in Table 10.

A multiple regression for males examined the prediction of disruptive behaviour with communication skills, individual strengths, relational strengths, cognitive performance skills, and parenting strengths. These variables statistically significantly predicted disruptive behaviour, ($F(5, 402) = 17.635$, $p < .001$, adj. $R^2 = .170$). Individual strengths and cognitive performance skills added statistically significantly to the prediction, ($p < .05$). Regression coefficients and standard errors are found in Table 11.

A multiple regression for males examined the prediction of depressive symptoms from communication skills, individual strengths, relational strengths, cognitive performance skills, and parenting strengths. These variables statistically significantly predicted depressive symptoms, ($F(5, 402) = 10.872$, $p < .001$, adj. $R^2 = .108$). Individual strengths added statistically significantly to the prediction, ($p < .05$). Regression coefficients and standard errors are found in Table 12.

A multiple regression for males was run to predict mania from communication skills, individual strengths, relational strengths, cognitive performance skills, and parenting strengths. These variables statistically significantly predicted mania, ($F(5, 402) = 13.679$, $p < .001$, adj. $R^2 = .135$). Communication skills, individual strengths, and cognitive performance added statistically significantly to the prediction, ($p < .05$). Regression coefficients and standard errors are found in Table 13.

Analyses examining females and a series of protective factors. The following analyses summarize the investigation regarding females and their reporting on various protective factors.

A multiple regression for females examined the prediction of aggressive behaviour with communication skills, individual strengths, relational strengths, cognitive performance skills, and parenting strengths. These variables statistically significantly

predicted aggressive behaviour, $(F(5, 201) = 12.012, p < .001,$ adj. $R^2 = .211)$.

Communication skills, individual strengths, relational strengths, and cognitive

performance skills added statistically significantly to the prediction, $(p < .05)$. Regression

coefficients and standard errors are found in Table 14.

A multiple regression for females examined the prediction of anxiety symptoms

with communication skills, individual strengths, relational strengths, cognitive

performance skills, and parenting strengths. These variables statistically significantly

predicted anxiety, $(F(5, 201) = 3.712, p = .003,$ adj. $R^2 = .062)$. Individual strengths

added statistically significantly to the prediction, $(p < .05)$. Regression coefficients and

standard errors are found in Table 15.

A multiple regression for females examined the prediction of

distraction/hyperactivity from communication skills, individual strengths, relational

strengths, cognitive performance skills, and parenting strengths. These variables

statistically significantly predicted distraction and hyperactivity, $(F(5, 201) = 14.625, p <$

.001, adj. $R^2 = .249)$. Communication skills, individual strengths, and cognitive

performance added statistically significantly to the prediction, $(p < .05)$. Regression

coefficients and standard errors are found in Table 16.

A multiple regression for females examined the prediction of disruptive behaviour

with communication skills, individual strengths, relational strengths, cognitive

performance skills, and parenting strengths. These variables statistically significantly

predicted disruptive behaviour, $(F(5, 201) = 9.546, p < .001,$ adj. $R^2 = .172)$. Individual

strengths and cognitive performance skills added statistically significantly to the

prediction, $(p < .05)$. Regression coefficients and standard errors are found in Table 17.

A multiple regression for females examined the prediction of depressive symptoms with communication skills, individual strengths, relational strengths, cognitive performance skills, and parenting strengths. These variables statistically significantly predicted depressive symptoms, ($F(5, 201) = 4.850$, $p < .001$, adj. $R^2 = .085$). Individual strengths added statistically significantly to the prediction, ($p < .05$). Regression coefficients and standard errors are found in Table 18.

A multiple regression for females examined the prediction of mania with communication skills, individual strengths, relational strengths, cognitive performance skills, and parenting strengths. These variables statistically significantly predicted mania, ($F(5, 201) = 12.951$, $p < .001$, adj. $R^2 = .225$). Individual strengths and cognitive performance added statistically significantly to the prediction, ($p < .05$). Regression coefficients and standard errors are found in Table 19.

The multiple regression run to predict anhedonia from the protective factors for females was non-significant, $F(5, 201) = 1.628$, $p = .154$.

In summary, males reported experiencing higher levels of certain mental health indicators than females. For example, compared to females, males reported more aggressive behaviour, distraction and hyperactivity, and disruptive behaviour. However, males also reported having more protective factors than females, more specifically communication skills, individual strengths, relational strengths, and cognitive performance. Additionally for males, protective factors significantly predicted anhedonia, aggressive behaviour, anxiety indicators, distraction/hyperactivity, disruptive behaviour, depression indicators, and mania. For females, protective factors significantly predicted aggressive behaviour, anxiety indicators, distraction/hyperactivity, disruptive behaviour,

depression indicators, and mania, however not anhedonia. Specific protective factors contributed significantly to the prediction of each mental health factor (see Tables 7-19).

Discussion

Mental health challenges significantly affect society at both the micro-level of individuals and families to macro level effects impacting the economy and cultural institutions such as schools. An increasingly useful way to combat this challenge posed by risks to child and youth mental health is to build upon resiliency factors in our children. Addressing this challenge requires an examination of protective factors. This includes consideration of the differential impact of gender in interaction with protective factors that will be most beneficial in aiding with mental health challenges. This was the focus of the current research, which addressed which protective factors are influenced by gender and what the impact is on certain mental health indicators. This discussion will present the findings in the context of previous literature, implications for practice, relevance to future research, limitations of the current design, and summary/future directions.

Relevance to Hypotheses and Previous Research

The three hypotheses that were investigated suggested:

1. There will be a relationship between "protective factors", "gender", and "mental health" (type and degree). Whether or not the type of protective factor that a child has affects their mental health outcome and severity based on their gender will be explored.

2. Female participants will display less severe mental health symptoms (such as anxiety and depression) when they have strong protective factors in the family factors

category and social resources category (such as familial ties and a close social

relationship).

3. Male participants will display less severe mental health symptoms (such as conduct

    disorder) when they have strong protective factors in the personal dispositions and

    personality features category.

   With regards to the first hypothesis, there was a relationship between gender,

protective factors, and mental health indicators. Males reported experiencing significantly

higher levels of certain mental health indicators than females. Consistent with predictions,

males reported significantly higher levels of aggressive behaviour,

distractibility/hyperactivity, and disruptive behaviour. While not achieving statistically

significant levels, consistent with predictions, females tended to report experiencing

higher levels of anhedonia and depression.

   These findings are consistent with previous literature which found that females

experience internalizing disorders while males experience externalizing disorders.

(Mouzon & Rosenfield, 2013; Wareham & Paquette Boots, 2011). Inconsistent with

predictions, males tended to report higher levels of anxiety than females, although these

findings did not achieve statistical significance. Males also reported having significantly

more protective factors than females, with higher levels of communication skills, more

individual strengths, and higher levels of cognitive performance. This is consistent with

previous research, which has indicated that males use personal disposition factors and

resources to a greater extent than females (Hjemdal et al., 2011). However, males also

reported higher levels of relational strengths, which is inconsistent with previous research

which found that females rely more heavily on relationships to adapt to life stressors

(Jordan, 2013), while males depend on intrapersonal resources such as mastery and competence (Hjemdal et al., 2011).

The second and third hypotheses reflected results indicating that for males and females, individual strengths, cognitive performance, and communication skills contributed in predicting certain mental health indicators. For males, communication skills, individual strengths, and cognitive performance skills contributed to the prediction of aggressive behaviour, distraction/hyperactivity, and mania. Communication skills, individual strengths, and cognitive performance are protective factors in the personal dispositions/personality features category, which is consistent with previous findings (Hjemdal et al., 2011). Hjemdal et al. (2011) found that males who possessed personal competence in a given area, along with the ability to access resources, were more successfully able to resist the negative effects of their mental health challenges. However, in the current study, communication skills, individual strengths, and cognitive performance skills were more predominant in predicting mental health indicators such as aggressive behaviour and distraction/hyperactivity for females, as opposed to relational strengths. Relational strengths only significantly predicted aggressive behaviour for females. This is inconsistent with previous research, where females were found more likely than males to be buffered from the effects of negative stressors when protective factors included social resources and support (Betancourt and Khan, 2008; Hjemdal et al., 2011; Stadler et al., 2010). However, some previous research has found inconsistent findings related to gender, more consistent with the results from the current study (Bowes et al., 2010; Collin-Vézina, Coleman, Milne, Sell, & Daigneault, 2011; Tiet et al., 1998). Bowes et al. (2010) found that males displayed higher levels of resilience than females when they reported strong family support. There is also research reported by Collin-

Vézina, Coleman, Milne, Sell, & Daigneault (2011) suggesting that gender does not play a role in differentiating protective factors.

Implications for Practice

The findings of this study are relevant to practice in the area of resiliency in child and youth mental health. Protective factors help to increase resiliency in children. However, it can be seen from this study that children from a tertiary care facility have few protective factors. When examining the statistical means for the protective factors in the current study, it is clear that this sample of children and youth or their parents/caregivers are not reporting particularly high levels of protective factors overall. The majority of means did not reach the midpoint on the relevant scales. For example, the means for both males and females for the communication scale were 1.45 for males and 1.09 for females on a scale ranging from 0 to 8. This reflects that both males and females are in the lower quadrant of the scale, reflecting poor communication skills. The means for the relational strengths scale were 2.69 for males and 2.36 for females on a scale ranging from 0 to 6, again reflecting that both males and females are below the midpoint of the scale, a result which indicates poor relational strengths (e.g., having a strong and supportive relationship with family, having someone such as a friend to talk to, etc.). These lower scores should not be surprising given the nature of the sample, being drawn from child and youth mental health centres and in particular a tertiary care facility. This sample reflects children who are already in the mental health system and who have been identified early-on as at-risk. Clinicians can use the knowledge that these children have deficits in communication skills, relational skills, and other strength-based skills to develop targeted treatment plans to increase their potential in these areas. Clinicians can offer individual counselling, group work, or workshops. For example, the Child and Parent Resource

Institute in London, Ontario offers a workshop entitled "the Leaky Brakes" clinic (CPRI, 2010), which teaches both parents and children emotion regulation skills and how to communicate feelings and needs more effectively. By helping children develop the skills they need to recover from, or decrease the effects of, their negative mental health states, clinicians are providing these children the ability to self-regulate in the future when challenges arise. Another way to build resiliency in children is systemically through their parents. Parents model behaviour for children, help them develop coping skills, and support self regulation. In London, Ontario, Madame Vanier Children's Services offer intensive family services such as Focused Family Therapy, which teaches parents how to help their children with a variety of skills (Vanier Children's Services, 2015). By focusing on the strengths of the child and not solely the pathology, clinicians are helping the child grow and expand on their developing skills instead of being exclusively problem focused, thus empowering children and their parents.

It remains unclear whether gender is linked to the nature and degree of protective factors that contribute to buffering the negative mental health effects and stressors for individuals. However, based on the present study, there may be important gender differences. Females appeared to experience higher levels of anhedonia and depression, while males reported higher levels of disruptive behaviour, aggression, and distraction/hyperactivity. Anxiety and depression have been slowly increasing in children over the past half century, with children five to eight times more anxious than they were 50 years ago (Gray, 2011). Females continue to be more likely to experience anxiety than males, however males are increasingly experiencing anxiety as well (Gray, 2011). It is important for clinicians to think critically about the reasons behind these trends. For example, is school becoming more difficult and stressful? Are the effects of social media

and the internet increasing narcissism and isolation in our children thus suppressing their social skills? These are but a few of the issues which may be impacting children's mental health currently. As a result, it is important for mental health practitioners to examine how exactly they are impacting children and how clinicians work toward increasing a child's resilience and building protective factors.

It is interesting to note which protective factors significantly contributed to the prediction of certain mental health indicators in the current study. Clinicians could use this information to understand which protective factors may be most beneficial in enhancing support to buffer the effects of which mental health disorders. For example the regression analyses reflected individual strengths and cognitive performance skills contributed to the prediction of aggressive behaviour in males. It could be that males with stronger individual strengths such as emotion regulation, optimism, a notable skill (i.e., mastery/competency in something) and/or with the ability to perform cognitive tasks (such as making daily decisions, remembering, and communicating thoughts clearly) may be more able to work counter the effects of their aggression. However, individual strengths were the only protective factor that contributed to the prediction of depression indicators in males. Therefore, increasing communication skills and/or cognitive performance skills may not be as beneficial to aid in the management of depression as would increasing individual strengths.

Relevance to Future Research

Resiliency research has significantly progressed and evolved over the past 50 years, beginning with Rutter, Garmezy, and Masten's observations of children who seemed to "bounce back" and adjust well despite difficult life events and mental health disorders. At first, these children were described as "invulnerable". However, this term

erroneously suggested that children were not affected by their difficult circumstances. Hence, the term "resilience" was used instead. The years that followed led to a shift in resilience research from a focus on the pathology of children and youth to an examination of their strengths and skills. Protective factors were introduced into the research on resiliency, and it was discovered that protective factors were useful predictors of resiliency in children. Subsequently, research began to focus on protective factors and how they can be supported and increased in children and youth.

An examination of the research on protective factors reflects that the populations which were studied were specific, and the protective factors examined were chosen specifically for the samples. Betancourt and Khan (2008) studied children from war-torn countries, which made it understandable why they did not examine protective factors such as high IQs, safe and stable home environments, or having an 'easy-going' temperament. The current study was similar in that the population was specific, which can be a limiting factor relative to generalizability. The largest number of protective factors practically possible in this study was chosen such that a broad understanding of protective factors could be developed. However this intention was limited by the nature of the sample. The current study did examine protective factors from each of the three main categories with the intention that this would provide a better understanding of protective factors and how they influence children's mental health. This included: personal dispositions and/or personality features (e.g., competence, optimism), family factors/attributes (e.g., family environment, family support), and external/social support/resources (e.g., friend support, many people from which to ask help) (Betancourt & Khan, 2008; Garmezy, 1993; Hjemdal et al., 2011; Rutter, 1987).

Additionally, research has shown that there are differences between males and females when it comes to the development and utilization of effective protective factors and mental health (Betancourt and Khan, 2008; Hjemdal et al., 2011; Jordan, 2013; Mouzon & Rosenfield, 2013; Stadler et al., 2010; Tiet et al., 1998; Wareham & Paquette Boots, 2011), thus gender was included in the current study. If indeed there is a difference regarding how males and females differentially develop and utilize protective factors, this knowledge would be critical for clinicians in formulating gender responsive plans to help increase resiliency.

Future research should also examine protective factors within a broader non-clinical sample. It would be useful to have a base rate on which to compare the development of protective factors within clinical samples. Additionally, it would be prudent to examine how age influences protective factors. It may be that the older a child becomes, the more they rely on their peers and close friends for support as well as their own developing competency in certain skills (i.e., being able to advocate for oneself), while younger children may rely more on their parents to help support them through difficult times. This also may be influenced by gender.

Finally, certain protective factors contributed to predictions of certain mental health indicators (e.g., aggressive behaviour). These findings need to be further explored. For example, do individual strengths contribute to the prediction of depression in males? Future studies could apply these findings to real-life settings and examine if increasing these specific protective factors influence the nature and/or degree of development, in certain mental health disorders. This is a useful and practical application of resiliency research and would be most beneficial to children and youth populations.

Limitations of the Current Design

As previously stated, the sample employed in the current study was unique. The sample consisted of children and youth from a tertiary care facility as well as child and youth mental health facilities. These children and youth reported varying degrees of mental health challenges. A tertiary care facility exclusively works with children and youth who have already attempted other non-residential options. This limits the generalizability of the sample, as it may not be representative of the general child and youth mental health population. Additionally, the sample was not randomly selected. The children and their parents signed consent forms to complete the interRAI making this a convenience sample. The ChYMH is a self-report measure as well, which may contribute to reliability and validity errors if the participants attempted to engage in desirable responding.

Because these children came from a tertiary care facility and other mental health organizations, it is important to note the lower than expected means of the mental health measures. For example, on a scale ranging from 0 to 32 measuring anxiety indicators, the means were 7.70 for males and 7.18 for females. These means are below the midpoint of the scale. This same fact was identified in other mental health scales as well.

The interRAI, the assessment system on which this research is based, has considerable data on which to support the reliability and validity of the ChYMH suite (Stewart, Currie, Arbeau, Leschied, & Kerry, In Press). However it should be noted that the ChYMH tool is not yet complete and it is currently undergoing changes. Further reliability and validity studies are forthcoming. The subscales are also currently being further explored, the results of which will have relevance to the current study that includes The Parenting Strengths Index (PSI). The PSI was not included for analysis in

this study due to what were considered anomalies in the direction of the results reflected in the means for both males and females.

The protective factors were factored together in a scale format such that all of the individual items were grouped together (e.g., relational strengths included strong relationship with family and a strong relationship with peers). It may be more useful to separate each item in the scales and analyse this data separately in providing greater specificity on which items related to certain protective factors are related to which mental health indicators.

Summary and Future Directions

Despite the limitations stated above, critical information emerged from this study. It was found that protective factors do relate to certain mental health indicators, and that these factors influence certain mental health challenges to varying degrees. Additionally, gender differences help differentiate which protective factors buffer the negative effects of mental health disorders or negative life events. However, the role of gender remains unclear relative to protective factors, and it is strongly recommended that future researchers examine this relationship further.

The data from this study is meaningful, not only for resiliency research as a whole, but also for its practical applications. For example, these results will inform future researchers on the strength of prediction in looking into resiliency and its effects on children and youth. Additionally, clinicians can use this information in their own practice. For example, to help with disruptive behaviour in males, clinicians can work on building individual strengths such as optimism and emotion regulation, or they can develop cognitive performance skills that assist in problem solving.

Much of psychology has focused on pathology. Resiliency research provides the opportunity to focus on developing positive attributes and building on critical strengths. What is inspiring about resiliency research is that it holds the potential to empower individuals to manage their mental health challenges when they arise.

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Table 1

Descriptive Statistics of Gender, Age at Assessment, and Patient Type

	Gender	Age_at_Assessment	Patient_Type
N Total	615	615	615
Missing	0	0	0
Mean		11.77	
Median	1.00	12	
Mode	1	10	
St. Deviation	0.473	3.399	
Range	1	14	
Min	1	4	
Max	2	18	

Table 2

Frequencies and Percents of Gender

	Frequency	Percent
1	408	66.3
2	207	33.7
Total	615	100

Table 3

Frequencies and Percents of Age at Time of Assessment

	Frequency	Percent
4	3	0.5
5	13	2.1
6	29	4.7
7	33	5.4
8	33	5.4
9	51	8.3
10	63	10.2
11	78	12.7
12	52	8.5
13	55	8.9
14	51	8.3
15	54	8.8
16	44	7.2
17	32	5.2
18	24	3.9
Total	615	100

Table 4

Frequencies and Percent of Patient Type

	Frequency	Percent
In	146	23.7
Out	469	76.3
Total	615	100

Table 5

Means, Standard Deviations, T-statistics, and P-values of Gender and Mental Health

Indicators

Mental Health Factor	Gender	M	SD	t	Sig.
Anhedonia	Male	3.48	4.106	-.218	.828
	Female	3.56	3.933		
Aggression	Male	4.54	3.930	3.776	.000*
	Female	3.29	3.699		
Anxiety	Male	7.70	5.755	1.072	.284
	Female	7.18	5.451		
Distraction/Hyper	Male	10.03	4.739	3.780	.000*
	Female	8.39	5.253		
Disruptive Behaviour	Male	3.36	2.340	2.701	.007*
	Female	2.83	2.275		
Depressive Severity Index	Male	11.89	7.410	-1.754	.080
	Female	13.00	7.535		
Mania	Male	9.59	5.487	1.526	.128
	Female	8.86	5.635		

*significant at p < .05

Table 6

Means, Standard Deviations, T-statistics, and P-values of Gender and Protective Factors

Protective Factor	Gender	M	SD	t	Sig.
Communication	Male	1.45	1.618	2.935	.003*
	Female	1.09	1.363		
Individual Strengths	Male	2.80	1.273	2.559	.011*
	Female	2.52	1.329		
Relational Strengths	Male	2.69	1.732	2.237	.026*
	Female	2.36	1.778		
Cognitive Performance	Male	3.96	2.901	4.049	.000*
	Female	2.97	2.771		
Parenting Strengths	Male	-1.35	13.896	1.268	.206
	Female	-3.36	20.533		

*significant at p < .05

Table 7

Summary of Multiple Regression Analysis - Anhedonia and Protective Factors for Males

Variable	B	SE_B	Beta
Intercept	1.296	.510	
Communication_scale	.580	.217	.228*
Strengths_indv_scale	.387	.177	.120*
Strengths_rela_scale	.373	.129	.157*
Cognitive_performance_scale	-.184	.125	-.130
Parenting_strengths_scale	.011	.014	.036

Note. * $p < .05$; B = unstandardized regression coefficient; SE_B = Standard error of the coefficient; Beta = standardized coefficient

Table 8

Summary of Multiple Regression Analysis - Aggressive Behaviour and Protective Factors for Males

Variable	B	SE_B	Beta
Intercept	.992	.470	
Communication_scale	-.376	.200	-.155
Strengths_indv_scale	.718	.163	.232*
Strengths_rela_scale	.182	.119	.080
Cognitive_performance_scale	.405	.115	.299*
Parenting_strengths_scale	.009	.013	.033

Note. * $p < .05$; B = unstandardized regression coefficient; SE_B = Standard error of the coefficient; Beta = standardized coefficient

Table 9

Summary of Multiple Regression Analysis - Anxiety and Protective Factors for Males

Variable	B	SE_B	Beta
Intercept	3.100	.693	
Communication_scale	-.418	.295	-.117
Strengths_indv_scale	1.267	.240	.280*
Strengths_rela_scale	-.265	.176	-.080
Cognitive_performance_scale	.597	.170	.301*
Parenting_strengths_scale	-.007	.019	-.017

Note. * $p < .05$; B = unstandardized regression coefficient; SE_B = Standard error of the coefficient; Beta = standardized coefficient

Table 10

Summary of Multiple Regression Analysis - Distraction/Hyperactivity and Protective Factors for Males

Variable	*B*	*SE_B*	*Beta*
Intercept	5.662	.552	
Communication_scale	-.923	.235	-.315*
Strengths_indv_scale	.770	.191	.207*
Strengths_rela_scale	.087	.140	.032
Cognitive_performance_scale	.845	.135	.517*
Parenting_strengths_scale	.018	.015	.053

Note. * $p < .05$; *B* = unstandardized regression coefficient; SE_B = Standard error of the coefficient; Beta = standardized coefficient

Table 11

Summary of Multiple Regression Analysis - Disruptive Behaviour and Protective Factors for Males

Variable	*B*	*SE_B*	*Beta*
Intercept	1.088	.275	
Communication_scale	-.204	.117	-.141
Strengths_indv_scale	.579	.095	.315*
Strengths_rela_scale	.050	.070	.037
Cognitive_performance_scale	.210	.067	.260*
Parenting_strengths_scale	.012	.008	.074

Note. * $p < .05$; B = unstandardized regression coefficient; SE_B = Standard error of the coefficient; Beta = standardized coefficient

Table 12

Summary of Multiple Regression Analysis - Depressive Severity Index and Protective Factors for Males

Variable	B	SE_B	Beta
Intercept	6.155	.902	
Communication_scale	-.242	.384	-.053
Strengths_indv_scale	1.922	.313	.330*
Strengths_rela_scale	-.054	.229	-.013
Cognitive_performance_scale	.220	.221	.086
Parenting_strengths_scale	.015	.025	.027

Note. * $p < .05$; B = unstandardized regression coefficient; SE_B = Standard error of the coefficient; Beta = standardized coefficient

Table 13

Summary of Multiple Regression Analysis - Mania and Protective Factors for Males

Variable	*B*	*SE$_B$*	*Beta*
Intercept	4.717	.658	
Communication_scale	-7.26	.280	-.214*
Strengths_indv_scale	1.219	.228	.283*
Strengths_rela_scale	.104	.167	.033
Cognitive_performance_scale	.561	.161	.297*
Parenting_strengths_scale	-.006	.018	-.016

Note. * $p < .05$; *B* = unstandardized regression coefficient; SE$_B$ = Standard error of the coefficient; Beta = standardized coefficient

Table 14

Summary of Multiple Regression Analysis - Aggressive Behaviour and Protective Factors for Females

Variable	*B*	*SE*$_B$	*Beta*
Intercept	.183	.514	
Communication_scale	-.873	.322	-.322*
Strengths_indv_scale	.560	.200	.201*
Strengths_rela_scale	.357	.149	.172*
Cognitive_performance_scale	.594	.165	.445*
Parenting_strengths_scale	-.013	.011	-.071

Note. * $p < .05$; B = unstandardized regression coefficient; SE$_B$ = Standard error of the coefficient; Beta = standardized coefficient

Table 15

Summary of Multiple Regression Analysis - Anxiety and Protective Factors for Females

Variable	*B*	*SE_B*	*Beta*
Intercept	4.565	.826	
Communication_scale	-.031	.518	-.008
Strengths_indv_scale	.609	.322	.148
Strengths_rela_scale	-.038	.240	-.012
Cognitive_performance_scale	.426	.265	.217
Parenting_strengths_scale	.019	.018	.070

Note. * $p < .05$; *B* = unstandardized regression coefficient; SE_B = Standard error of the coefficient; Beta = standardized coefficient

Table 16

Summary of Multiple Regression Analysis - Distraction/Hyperactivity and Protective Factors for Females

Variable	*B*	*SE*_B	*Beta*
Intercept	4.164	.713	
Communication_scale	-1.290	.447	-.334*
Strengths_indv_scale	.781	.278	.197*
Strengths_rela_scale	.076	.207	.026
Cognitive_performance_scale	1.203	.228	.635*
Parenting_strengths_scale	.027	.016	.106

Note. * $p < .05$; *B* = unstandardized regression coefficient; SE$_B$ = Standard error of the coefficient; Beta = standardized coefficient

Table 17

Summary of Multiple Regression Analysis - Disruptive Behaviour and Protective Factors for Females

Variable	*B*	*SE_B*	*Beta*
Intercept	1.204	.324	
Communication_scale	-.498	.203	-.298*
Strengths_indv_scale	.210	.126	.123
Strengths_rela_scale	.160	.094	.125
Cognitive_performance_scale	.425	.104	.518*
Parenting_strengths_scale	.002	.007	.015

Note. * $p < .05$; B = unstandardized regression coefficient; SE_B = Standard error of the coefficient; Beta = standardized coefficient

Table 18

Summary of Multiple Regression Analysis - Depressive Severity Index and Protective Factors for Females

Variable	*B*	*SE$_B$*	*Beta*
Intercept	8.236	1.128	
Communication_scale	-.614	.707	-.111
Strengths_indv_scale	1.504	.439	.264*
Strengths_rela_scale	.281	.327	.066
Cognitive_performance_scale	.324	.361	.119
Parenting_strengths_scale	-.007	.025	-.019

Note. * $p < .05$; *B* = unstandardized regression coefficient; SE$_B$ = Standard error of the coefficient; Beta = standardized coefficient

Table 19

Summary of Multiple Regression Analysis - Mania and Protective Factors for Females

Variable	*B*	*SE$_B$*	*Beta*
Intercept	4.113	.776	
Communication_scale	-.538	.487	-.130
Strengths_indv_scale	1.085	.302	.256*
Strengths_rela_scale	.009	.225	.003
Cognitive_performance_scale	.901	.249	.443*
Parenting_strengths_scale	.027	.017	.099

Note. * $p < .05$; *B* = unstandardized regression coefficient; SE$_B$ = Standard error of the coefficient; Beta = standardized coefficient

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