

Electronic Thesis and Dissertation Repository

3-5-2019 9:00 AM


The Association Between Child and Youth Mental Health Service Urgency and Exposure to Childhood Interpersonal Trauma

Catherine Marshall
The University of Western Ontario

Supervisor
Dr. Shannon Stewart
The University of Western Ontario

Graduate Program in Education
A thesis submitted in partial fulfillment of the requirements for the degree in Master of Arts
© Catherine Marshall 2019

Follow this and additional works at: <https://ir.lib.uwo.ca/etd>

 Part of the [Analytical, Diagnostic and Therapeutic Techniques and Equipment Commons](#), [Child Psychology Commons](#), [Counseling Commons](#), [Counseling Psychology Commons](#), [Education Commons](#), [Mental and Social Health Commons](#), [Mental Disorders Commons](#), and the [Policy Design, Analysis, and Evaluation Commons](#)

Recommended Citation

Marshall, Catherine, "The Association Between Child and Youth Mental Health Service Urgency and Exposure to Childhood Interpersonal Trauma" (2019). *Electronic Thesis and Dissertation Repository*. 6046.
<https://ir.lib.uwo.ca/etd/6046>

This Dissertation/Thesis is brought to you for free and open access by Scholarship@Western. It has been accepted for inclusion in Electronic Thesis and Dissertation Repository by an authorized administrator of Scholarship@Western. For more information, please contact wlsadmin@uwo.ca.

Abstract

Children/youth with a history of maltreatment experience a variety of different developmental, psychiatric and health problems and ensuring there is streamline access to services is imperative to their recovery. Yet, there are few reports of standardized methods for directing and prioritizing risk for children seeking services. The current study, utilizing retrospective data collected from the interRAI Child and Youth Mental Health Screener (ChYMH-S), aimed to address this gap and explore the relationship between childhood maltreatment and mental health screening outcomes. A sample of 4-18-year-olds (N= 19,645) was studied to explore how differences in maltreatment history, gender, and legal guardianship impacted service prioritization. The findings suggest children/youth who are exposed to some form of interpersonal trauma are more likely to have mental health issues requiring urgent follow-up service. Findings also reveal that gender and legal guardianship impact service urgency. Discussion investigates implications to policy and clinical practice, along with suggestions for future research.

KEYWORDS: InterRAI, Child and Youth Mental Health- Screener, interpersonal trauma, childhood maltreatment, service urgency, prioritization

Acknowledgments

I would like to take the time to express my sincerest gratitude and appreciation to all of those who have helped make this thesis possible. First and foremost, I would like to thank my supervisor Dr. Shannon Stewart. Your unwavering support, patience, and guidance made this work successful. The invaluable motivation, encouragement, and clinical expertise allowed me to continue through and made the completion of this work possible. It really has been a pleasure and honour to have you as my mentor, and I am forever grateful for all of the opportunities you provided me with.

A very special thank you Dr. Alan Leschied. as my teacher, mentor and unofficial co-supervisor, I cannot put into words what your support has meant to me through the completion of this thesis. I am deeply indebted to you for your encouragement, time, and effort in reviewing this work. To Dr. Natalia Lapshina, thank you for dedicating your time to share your statistical expertise. I appreciated your advice and support throughout this process, as I may have got lost in the data without you.

I would also like to recognize my family and friends for their consistent encouragement, support, and faith in me. To my parents and sisters who have always guided and believed in me. Thank you for always being there. To my friends and partner, you were all there to help me through the difficult times, and I have been so grateful to have such supportive people in my life and throughout the completion of this work.

Table of Contents

Abstract i

Acknowledgments ii

Table of Contents iii

List of Tables vi

Introduction 1

Chapter 1: Literature Review 2

 Interpersonal Trauma 3

 Theoretical Model: Developmental Traumatology 3

 Mental Health Impact of Interpersonal Trauma on Development 5

 Prevalence of Substantiated Childhood Maltreatment 8

 Child and Youth Mental Health Service Utilization 10

 Current Child and Youth Mental Health Policy 10

 Navigating the Child and Youth Mental Health System 11

 Child and Youth Mental Health Waitlist Issue 16

 Assessing Mental Healthy Urgency and Priority Setting 18

 The Western Canadian Waiting List Project 19

 The Child and Adolescent Needs and Strengths - Mental Health 21

 Service Priority for Children and Youth with History of Maltreatment 24

Present Study 25

Chapter 2: Methods..... 26

 Design 26

 Participants..... 26

 Measure..... 27

 Procedure 28

 Data analyses 31

Chapter 3: Results 32

 Childhood Interpersonal Trauma 33

 Mental Health Service Urgency..... 34

 Mental Health Service Urgency by Interpersonal Trauma 35

 Legal Guardianship..... 35

 Mental Health Service Urgency and Maltreatment 36

 Mental Health Service Urgency and Gender 38

 Mental Health Service Urgency and Legal Guardianship 40

 Summary of Major Findings..... 42

Chapter 4: Discussion 43

 The Relevance of Results to Previous Research..... 44

 Policy Implications 54

Practical Implications..... 56

Clinical Implications..... 58

Limitations 59

Future Directions 61

Summary..... 63

References..... 65

Curriculum Vitae 77

List of Tables

Table 1. Distribution of Childhood Interpersonal Trauma Exposure by Age Group	34
Table 2. Distribution of Mental Health Service Urgency by Age	35
Table 3. Distribution of Legal Guardianship by Age	36

Introduction

Child and youth mental health disorders are a major global health concern. Internationally, extensive research has documented the patterns and prevalence of mental health problems with substantial amount of that literature focusing on children and youth. According to a global meta-analysis, the average prevalence rate for child/youth mental health disorders is approximately 13.4%, with anxiety disorders (6.5%), disruptive disorders (5.7%), hyperactivity disorders (3.5%), and depressive disorders (2.6%) being the most pervasive (Polanczyk Salum, Sugaya, Caye, & Rohde, 2015). In Canada, roughly one in five children and youth experience a mental health disorder that requires professional care, and depending on the type of mental illness, the severity may vary from mild to severe and can greatly interfere with an individual's cognitive processing abilities, social abilities, emotions and behaviour (Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005; Patel, Flisher, Hetrick, & McGorry, 2007). In approximately 70% of cases nationally, the onset of mental health issues occurs in childhood and/or adolescence (Government of Canada, 2006; Kessler et al., 2005). These high prevalence rates are extremely concerning considering poor mental health has serious long-term consequences into adulthood that is strongly related to future health and developmental concerns (Patel, et al., 2007).

When the onset of mental health disorders is prior to 25 years of age, there is a frequent pattern of remission and relapse over the life span (Mcluckie, Kutcher, Wei, & Weaver, 2014). However, with appropriate treatment and support most individuals with a mental illness will recover (DeBellis, 2001). The Mental Health Commission of Canada (MHCC) suggests that identifying children and youth at risk and intervening as early as possible improves life trajectories and reduces the prevalence of mental health problems and illnesses in adulthood (Noseworthy, McGurran, & Hadorn, 2003). Thus, it is important to ensure agencies across Canada can provide

appropriate, accessible, and evidence-based mental health services to children and youth to ensure their issues are mitigated and that improved well-being is established.

Literature Review

There has been substantial research focusing on the diagnosis and intervention for children and youth struggling with different mental health needs, and an extensive focus has been paid to the development of evidence-based specialized treatment programs. Yet, prevalence of psychological distress in childhood and adolescence far exceeds the capacity of specialized services to provide for them, with fewer than 25% of children in need actually receiving services (Waddell, Mcewan, Shepherd, Offord, & Hua, 2005). The high demand placed on mental health agencies results in waitlists that extend for long periods of time. Waitlist concerns continue to persist, with over 6,500 children and youth waiting longer than a year before being seen by a mental health professional according to The Children's Mental Health Ontario 2016 Report card (2016). This only exacerbates the issues faced by children, youth and their families and it can have detrimental effects on the youth's wellbeing (Brown, Parker, & Godding, 2002; Kowalewski, McLennan, & McGrath, 2011). This finding provides rationale for the necessity of further research to better understand and confront the waitlist problem facing children and youth with mental health needs.

The purpose of the current study was to address this gap in research and examine how child and youth mental health services manage waitlist concerns and how to best prioritize high-risk children and youth. The literature provides strong rationale for examining these issues and is thus discussed in the literature review. Presented first is the impact of early life trauma on mental health to identify those children/youth who are highest in need. Secondly, a theoretical model of maltreatment is presented to frame the research questions and the choice of variables in the present

study. The last section provides a review of the literature on improving service utilization. This includes a thorough examination of the current research on prioritizing mental health wait-lists.

Interpersonal Trauma

Trauma in childhood has many serious adverse consequences on both the victim and society (DeBells & Zisk, 2014; Van der Kolk, 2017). Childhood trauma, as defined by the Diagnostic and Statistical Manual of Mental Disorders V (DSM-V), reflects the exposure to actual or threatened death, serious injury, or sexual violence (American Psychiatric Association, 2013). In children, motor vehicle accidents, bullying, terrorism, exposure to war, child maltreatment (physical, sexual, and emotional abuse; neglect) and exposure to domestic violence are the most frequently cited forms of trauma experienced. The largest contributor to childhood trauma is family dysfunction, with about half of childhood onset mental health disorders, and one third of adult onset mental health disorders being preceded by some form of abuse, neglect, or family dysfunction (Green et al., 2010). In Canada, rates of substantiated child maltreatment nearly doubled from 1998 with 21.47 per 1000 children, to 2003 with 39.16 per 1000 children (Public Health Agency of Canada, 2010). This literature reflects that child maltreatment is a serious problem and has many consequences that can span various domains of functioning across the life span.

Theoretical Model: Developmental Traumatology

To better understand the needs of maltreated youth, the developmental traumatology model of maltreatment is utilized in the present review. Developmental Traumatology is the systemic investigation of psychiatric and psychobiological impact of chronic interpersonal violence (child maltreatment) on the developing child (DeBellis, 2001). This framework for understanding childhood maltreatment is based on the synthesis of relevant literature from developmental

psychopathology, developmental neuroscience, and stress and trauma research. The literature is still limited in this new area of study. However, the Developmental Traumatology model provides strong evidence to suggest childhood maltreatment has various adverse effects on the development and regulation of major biological stress response systems (Van der Kolk, 2017; DeBellis, 2001). These effects can influence brain development and functioning. This model posits that exposure to these forms of trauma serve to activate the body's biological stress response systems and can disrupt the body's ability to appropriately regulate its response to stress (DeBellis & Zisk 2014; DeBellis, 2001). The further detrimental impact of trauma on brain development, as well as social and cognitive functioning is reviewed below.

Posttraumatic Stress Disorder. According to the developmental traumatology framework of maltreatment, child abuse and neglect are the most extreme forms of family dysfunction and are related to various adverse life circumstances. Exposure to trauma in early life can result in distress, posttraumatic stress disorder (PTSD), and posttraumatic stress symptoms (PTSS) (Van der Kolk, 2017; DeBells & Zisk, 2014; Wisdom, 1999; Ford & Kidd, 1999). According to the DSM-V, PTSD is classified when first the person was exposed, either directly or indirectly, to witnessing a death, a threatened death, actual or threatened serious injury, or actual or threatened sexual violence (American Psychiatric Association, 2013). The classification identifies the presence of intrusive symptoms, persistent avoidance of stimuli associated with the trauma, negative alterations in cognitions and mood that are associated with the traumatic event, and alterations in arousal and reactivity that are associated with the traumatic event. Some specific symptoms associated with PTSD include the following: traumatic nightmares, flashbacks, marked physiological reactivity, markedly diminished interest in (pre-traumatic) significant activities, feeling alienated from others, and a persistent inability to experience positive emotions (American Psychiatric Association,

2013). Children and youth who go through trauma of an interpersonal nature (physical, sexual, and emotional abuse; neglect; exposure to domestic violence) have higher rates of PTSD and PTSS. When maltreatment occurs during development, chronic PTSD symptoms can present, leading to more compromised psychosocial and cognitive functioning.

Mental Health Impact of Interpersonal Trauma on Development

Many children exposed to maltreatment display a variety of internalizing and externalizing symptoms. Yet, there is a differential influence of age on a child's reactivity to maltreatment exposure, presenting as different behavioural impairments. The earlier onset on maltreatment and experience of multiple forms of maltreatment is related to more severe and long-lasting effects (DeBellis, 2001; Kaplow & Wisdom, 2007; Van der Kolk, 2017).

Internalizing Behaviour. Interpersonal trauma has been identified as a risk factor for various internalizing behaviours. Children and youth exposed to childhood or adolescent maltreatment are at a heightened risk for depression at all stages in life, as well as comorbid anxiety, and antisocial behaviour (Wisdom, DuMont, and Czaja, 2007; DeBells & Zisk, 2014). Furthermore, the likelihood of depression increases with the number of childhood exposures to interpersonal trauma (Felitti, et al., 1998).

Additionally, the age of the maltreated child or youth results in different internalizing behaviours. Those who suffer from physical and sexual abuse in the first 5 years of life were more likely to experience internalizing symptoms than those who suffered from abuse later than age 5. Specifically, for younger children (under 6 years) the typical reactions to trauma include distress during separation from caregiver, responding by crying or whimpering, shaking, expressions of fear, and excessive clinging (NIMH, 2001). Children may regress to behaviours typically seen at an earlier age such as bedwetting, thumb sucking, and fear of darkness. Children between 6 to 11

years old may show extreme withdrawal, irrational fears, flat affect, somatic complaints, depression, anxiety, guilt, and a lack of focus or attention (NIMH, 2001). Sleep problems and nightmares are also common at this age (Hoddas 2010). A maltreated child with internalizing or dissociative features may also present with self-injurious behaviours and substance abuse (Perrin et al, 2000).

The presentation of internalizing symptoms in adolescents exposed to childhood maltreatment are similar to those of adults (Hoddas 2010; NIMH, 2001). Specifically, adolescents often indicate engagement in avoidance and social withdrawal, emotional numbing, somatic complaints, low-self-esteem, academic decline, and expression of guilt and shame. In adolescence, there are higher rates of post-traumatic stress symptom such as flashbacks and nightmares, revenge fantasies, confusion, and sleep disturbances (Hoddas, 2010; NIMH, 2001).

Similarly, Evans, Hawton, and Rodham (2005) revealed through a systematic review that there is a clear link between maltreatment and suicidal phenomena occurring during childhood and adolescence. There appears to be a direct relationship between deliberate self-harm and physical abuse (Afifi et al., 2006; Child Welfare Information Gateway, 2015). Exposure to maltreatment is associated with an increased risk of adolescent suicide and suicidal behavior, and it is well established that rates of suicide and suicide-related behaviors increase with age (Felitti, et al., 1998; NIMH, 2001; Hoddas, 2010). Self-harm is a phenomenon that can exist in the early years, particularly when a child has a history of trauma or neglect. Self-harm has been witnessed in children as young as three years old (Evan et al., 2005).

Externalizing Behaviour. Many children exposed to maltreatment display a variety of externalizing symptoms. Yet, there is a differential influence of age on a child's reactivity to maltreatment exposure, presenting as different behavioural indicators (Crosson-Tower, 2010:

Hoddas, 2010). Younger children, age 6 to 11 may be irritable, have angry reactive outbursts, and exhibit a tendency towards fighting, and a refusal to attend school (Hoddas, 2010; NIMH, 2001). A child exposed to interpersonal trauma develops a hypersensitivity to stimulation in the face of an actual or perceived threat. The response to the threat will typically involve emotional disconnection or aggressive acting out. Due to the possible presence of externalizing symptoms of trauma, such as inattention, hyperactivity, and impulsivity, children exposed to interpersonal trauma may be incorrectly diagnosed with ADHD (Glod and Teicher, 1996).

Interpersonal trauma can impact brain development in ways that increase the risk of delinquent and aggressive behavior in adolescence (Child Welfare Information Gateway, 2015). Maltreated children often lack a future orientation, and without a future orientation, there is minimal motivation to try, and an inclination towards involvement in risky behaviours (Hodas, 2006) which can place maltreated children and youth at a greater risk of developing alcohol and substance abuse disorders in adolescence (Crosson-Tower, 2010; NIMH, 2001). Interpersonal trauma alters the normal stress responses that can increase the risk of anti-social behavior. This affects the youth's ability to regulate emotions and behavior such as fear, anger, and sexual impulses (Adams, 2010). Thus, these youth may engage in violence or aggression towards others in an attempt to regain control (Ko et al., 2008). Children who are physically abused are at an increased risk of demonstrating both reactive and instrumental aggression, and adolescents display the highest risk (NIMH, 2010). Overall, physical abuse appears to be the most consistent predictor of youth violence, patterned by an increased risk for children exposed to severe, compounded maltreatment (Maas, Herrenkohl, & Sousa, 2008). Furthermore, those with 4 or more adverse childhood experiences demonstrate difficulty controlling anger and are approximately 5 times more likely to be the perpetrator of domestic violence (Anda et al. 2006).

Cognitive Implications. Compared to children and youth who have not been exposed to maltreatment, those who have a history of maltreatment show greater deficits in language and academic achievement. Additionally, children exposed to domestic violence and abuse have lower measured IQs and poorer performance in visual attention, memory, language, and problem solving than those without maltreatment histories (DeBellis, Hooper, Spratt, & Woolley, 2009). As a consequence, these children have difficulty functioning adaptively within a variety of contexts. Furthermore, if not addressed, it can contribute to poor academic outcomes, including increased absenteeism and lower rates of high school completion (Suhrcke & de Paz Nieves, 2011). Maltreated children and youth often present with higher rates of absenteeism, disinterest in school, difficulty with compliance, and a lack of motivation (Felitti, et al., 1998; Child Welfare Information Gateway, 2015; Crosson-Tower, 2010).

Interpersonal Implications. The literature supporting the Developmental Traumatology Model has found that child maltreatment is more likely to be chronic and more severe than non-interpersonal forms of trauma. Such traumas are more difficult to treat and have a significant impact on the ability to form healthy relationships. The trauma is not only the maltreatment itself, but also the dysfunctional traumatic relationship the victim has with the perpetrator (DeBellis, 2001; Child Welfare Information Gateway, 2015). As such, children and youth exposed to maltreatment often find it challenging to navigate social situations and adapt to changing social contexts (Crosson-Tower, 2010).

Prevalence of Substantiated Childhood Maltreatment

There is a substantial amount of research examining the prevalence of child and youth physical and sexual abuse and domestic violence exposure. A study examining data from the 2012 Canadian Community Health Survey: Mental Health found that “32% of the adult population in

Canada has experienced child abuse (i.e., physical abuse, sexual abuse and/or exposure to intimate partner violence)” (Afifi MacMillan, Boyle, Taillieu, Cheung, & Sareen, 2014). In the Statistics Canada (2015) report on the data from the 2014 General Social Survey on Victimization (GSS), it was reported that approximately 30% of Canadians had experienced physical and/or sexual abuse by an adult before the age of 15, and 10% of Canadians reported witnessing violence by their parent or guardian as a child. A majority of those who reported witnessing domestic violence (70%), also indicated that they had been the victim of childhood physical and/or sexual abuse themselves. In Canada, findings from the Canadian 2009 General Social Survey (GSS) study that examined national level data on children's exposure to domestic violence, indicated that over half (52%) of all spousal violence victims with at least one child, reported their child either heard or saw [or both] a physical assault (Perreault, & Brennan, 2010). Additionally, the United States Department of Health and Human Services (2006) estimated that every year, 3 to 10 million children and youth are exposed to domestic violence and approximately 900,000 children are classified as maltreated by parents or caregivers.

The literature extant has indicated that children exposed to maltreatment in childhood are at a heightened risk for mental health problems. Furthermore, children and youth who have experienced interpersonal trauma, specifically in the form of physical, sexual, and emotional abuse (inclusive of exposure to domestic violence) have greater rates of psychiatric and medical service utilization than those without a history of maltreatment (DeBellis, 2001). Consequently, concern for the safety and well-being of these children is a high priority, particularly when accessing services (Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008). The alarming prevalence rates of childhood maltreatment and youth mental health issues implies a need for

further research examining which barriers impact the child and youth mental health waitlists, and factors that predict prioritization of care for children and youth seeking services.

Child and Youth Mental Health Service Utilization

Current Child and Youth Mental Health Policy

Timely access to appropriate mental health care is a major concern for many Canadian children, youth, and their families. There are high prevalence rates and many individual, systemic, and community-level barriers to service utilization. Further troubling the issue, Canada does not have a unifying policy framework for child and youth mental health (Canadian Institutes for Health Research, 2010). Moreover, the child and youth service delivery systems across Canada are fragmented and fail to meet the mental health needs of children and youth. It is evident that through assessment and intervention, clear standards and guidelines are necessary to improve appropriate, timely access to support, through assessment and intervention (Shanley, Reid, & Evans, 2008; Pepler & Bryant, 2011).

Ontario is one of only four of the provinces and territories to have policies or plans that directly address child and youth mental health (Canadian Institutes for Health Research, 2010). Child mental health issues are pervasive and pose a significant public health issue. There are detrimental consequences that can impact an individual's functioning across the lifespan and in a variety of contexts. Recognizing that all children and youth in Ontario deserve the opportunity to reach optimal levels of mental health, The Ontario Ministry of Child and Youth Services (MCYS) developed *A Shared Responsibility: The Ontario Policy Framework for Child and Youth Mental Health (2013)*. This framework provides strategic direction to service workers across sectors (mental health, general medical, juvenile justice, and child welfare) and it applies to all children and youth in Ontario, up to 18 years. The framework outlines the shared

responsibility of government, communities, service providers, and caregivers to improve the supports for child and youth mental health in Ontario.

While acknowledging the substantial advancement made in the last decade, the children's mental health system in Ontario has not effectively addressed the child and youth mental health challenge. Specifically, it is a costly, highly fragmented, and difficult system to navigate for families and children (Shanley, Reid, & Evans, 2008; Pepler & Bryant, 2011). The policy outlines four main goals for necessary improvement across child and youth serving sectors:

“(1) to promote optimal child and youth mental health and well-being through enhanced understanding of, and ability to respond to, child and youth mental health needs through the provision of evidence informed services and supports; (2) provide children, youth and families with access to a flexible continuum of timely and appropriate services and supports within their own cultural, environmental and community context; (3) provide community-based services that are coordinated, collaborative and integrated, creating a culture of shared responsibility; (4) and, be accountable and well-managed.” (MCYS, 2013 p. 6).

The policy calls for earlier mental health identification; enhanced collaboration across child- and youth-serving sectors, and with the adult mental health sector; and increased consistency in service provision. Children, youth and their families require a broad continuum of services and supports that can be flexible to their changing needs and through developmental, academic and sector transitions. Servicing the nearly 75% of Canadian children and youth with unmet mental health needs is a shared responsibility, and commitment toward facilitating this goal is required from all community service providers (Waddell et al., 2002).

Navigating the Child and Youth Mental Health System

As previously noted, there is great disparity between those in need of mental health service and those actually accessing assessment and treatment. Estimates based on the epidemiology study conducted by Wallden, Offord, Shepard, Hua, & McEwan, (2002) revealed that 14% of children (approximately 1.1 million) in Canada, experience clinically important mental disorders. Unfortunately, more than 75% of these children do not receive specialized treatment services (Waddell, McEwan, Shepherd, Offord, & Hua, 2005; Kowaleski, McLennan, & McGrath, 2011). This raises many questions about the barriers families face to service use and the characteristics of children and youth are less likely to receive service (Barwick, Urajnik, Sumner, Cohen, Reid, Engel, & Moore, 2013).

Farmer Burns, Phillips, Angold, and Costello (2003) conducted a longitudinal epidemiologic study to examine the entry points into the child and youth mental health service system. The sample consisted of 1,420 youth aged 9 to 13 years, and the study followed their movements through the education, general medicine, specialty mental health, juvenile justice, and child welfare sectors. Over half of the youth in the general population sample utilized a mental health service within their childhood or adolescence (57%), and roughly 45% of children and youth access services through more than one sector. Across all age groups, the education sector was found to be the most common point of entry, with approximately three-quarters of the youth services in this sector. Half were serviced in the specialty mental health sector, and a quarter were serviced in the general medical sector. Farmer et al. (2003) found that those who enter the mental health system through the education sector were the least likely to subsequently receive services, while youth entering through the specialty mental health sector were the most likely to receive subsequent service.

The youth surveyed sought out service for emotional, behavioural, and/or substance abuse problems. Comparing entry points with presenting issues revealed that 55% did not meet criteria for functional impairment at the time of service entry (Farmer et al., 2003). Of these youth, a majority of the mildly troubled youth entered through the education sector. It was further identified that youth with serious emotional disturbances were overrepresented at entrances through multiple sectors and the general medicine sector, and these cases were the least likely to enter through the education sector. Of the youth in the study who presented with psychiatric disturbances or functional impairment, half entered through the education sector and 15% through the specialized mental health sector (Farmer et al., 2003).

The analysis conducted by Farmer et al., (2003) sheds light on the typical pathways through mental health service sectors experienced by many children and youth with behavioural, emotional, or substance use problems. Though the child and youth mental service system provides numerous barriers, all children and youth naturally intersect with the education sector, which appears to be the main point of contact for those seeking service, especially individuals who do not have a psychiatric diagnosis. These findings support the significance of the education sectors as a mental health provider for children and youth in need. Given that the majority of youth entering the system through this sector present with less severe problems, it appears appropriate that these individuals were unlikely to use additional sectors. Controlling for age, problem severity, gender, and race, only a quarter of youth primarily entering through the education sector were subsequently serviced through the SMH sector. This may imply that for some youth, the links to subsequent MH service sectors are not being effectively made from the education sector. The mental health sector is not only the second most common point of entry, but youth entering through this sector are also the most likely to have functional impairment or a

psychiatric diagnosis. Youth entering from this sector are also most likely to simultaneously enter another sector or enter the SMH sector following entrance through another sector. This suggests that the SMH sector may function as a niche entry point for the severely impaired children and youth. It is crucial, given the literature, to facilitate better linkages between different service access points to ensure appropriate timely access to mental health services.

A large retrospective study conducted by Grudnikoff, Taneli, & Correll (2015) examined the characteristics and dispositions of youth referred for a psychiatric consultation to the emergency department of a large urban hospital in New York. Of the 551 youth referred to the emergency department for mental health concerns, 243 were referred by schools (44%). The findings from this study revealed that approximately 45% of the school referred youth had a prior history of mental illness. In order of prevalence, the commonly presented diagnoses were attention deficit/hyperactivity disorder (ADHD), disruptive behaviours, oppositional defiant disorder (ODD), conduct disorder, bipolar or mood disorder, autism spectrum disorder, and depressive disorders. The most common presenting complaint was suspected or actual suicidality, encompassing 44.9% of the visits. Other primary psychiatric requests include disruptive behaviour (21%) and homicidal/aggressive threats and behaviours (20.6%). Following the psychiatric evaluations, there were three possible outcomes; provide psycho-education and discharge without specific follow-up suggestions, discharge with recommendation or facilitated mental health follow-up, and admission to inpatient psychiatry. The findings revealed that discharge without specific instruction accounted for the majority of evaluation outcomes. These findings support the literature that approximately 18 to 40% of emergency department visits are inappropriate, as they often involve children and youth with low urgency who present with low severity of the presenting issues, low harm potential, and an absence of suicidality or psychosis

(Edelsohn, Braitman, Rabinovich et al., 2003; Soto, Fredrickson, Trivedi, et al., 2009). The literature suggests that the emergency department is not an ideal sector for addressing non-urgent mental health concerns. It is not an appropriate use of resources, and there is a shortage of appropriately trained emergency staff equipped to manage non-critical behavioural and emotionally disturbed children (Soto, et al., 2009).

The education sector plays an important role in the screening and identification of mental health issues in children and youth, yet the high rate of inappropriate referrals to emergency departments requires further investigation. Schools often utilize zero-tolerance policies for disruptive behaviour and teachers have difficulty managing disruptive children or youth in their class. There is an urgency to return to school, so youth expected to seek psychiatric assessment or intervention are attempting to navigate the flawed mental health system quickly to obtain support. This often necessitates that parents seek psychiatric evaluation through the emergency department. Furthermore, there is disparity in the threshold for distinguishing an emergency between schools and a hospital emergency department, resulting in the psychiatric referral of children and youth who do not require follow-up care. Soto et al., (2009) found that the increasing service utilization among paediatric emergency departments is not due to an increase in severe presentations (i.e., suicide attempts and psychotic disorders) but rather to an increase in non-urgent conditions that could be more appropriately managed by an outpatient mental health provider.

These studies underscore the need for interagency collaboration and coordination among all primary sectors of child and youth mental health services, general/family medicine, education, and specialty mental health. Child and youth mental health wait times are an ongoing issue in Canada, thus emergency physicians, school staff, mental health workers, and primary

care providers play a critical role in appropriately identifying, referring, and treating mental health problems in children and adolescents. The need for evidence-based research to advocate for improved support and services is evident through the literature. Utilizing a standardized, reliable means of allocating priority for assessment and treatment is an important step towards improved delivery of appropriate timely child and youth mental health service across Canada.

Child and Youth Mental Health Waitlist Issue

Many children, youth and families who do seek service are subjected to considerable wait times at many child and youth mental health serving agencies. The longer a child waits without service is associated with a decrease in motivation for treatment and an increase in non-attendance or premature drop out of services (Schraeder, & Reid, 2015; McGarry et al., 2008). Long wait times are also associated with increased emotional distress and social dysfunction within the home, school, and community level (Brown et al., 2002). This implies that there is a pressing need to properly evaluate a child's needs in order to enhance triage prioritization and the provision of the appropriate service level based on need for children and adolescents requiring mental health care. Many agencies and communities have employed the recommended policy initiatives, and evaluating these tools and practices is the necessary next step.

Through the Canadian Psychiatric Association (CPA), physicians of Canada released a policy paper detailing wait time benchmarks for psychiatric practice (2006). They identified three levels of urgency for access associated wait times. *Emergent* level of need is considered the most pressing level of need. This level indicates danger to life or limb, with an immediate timeframe of hours or days. The CPA suggests access to specialist care within 24 hours. The second level of need, *urgent* need, includes any clinical and unstable conditions, that present with the potential to deteriorate quickly. The CPA advises consultation within one to two weeks in those presenting

with an urgent need for care. The final level is *scheduled* need for care. Patients presenting will have a level of disability or dysfunction. At this level of need, stable symptoms are exhibited, such as chronic depression without indication of suicidal behaviour. According to CPA, access to care should be available to scheduled need patients within approximately four weeks. The CPA outlines that the Wait Time Benchmarks for Patients with Serious Psychiatric Illnesses (2006) functions as a starting point for further development of access to care targets.

Surveying over 300 agencies providing child and adolescent mental health services in Canada, Kowaleski, McLennan, & McGrath (2011), examined the extent to which agencies are able to meet the benchmark for emergent, urgent, and scheduled care, and found that current practices do not meet the Canadian Psychiatric Association's benchmark wait times (2006). The survey revealed that the mean wait time for initial assessment for a low clinical priority level was approximately 109 days; 75 days for moderate; 29 days for high level; with the mean wait time for extremely high clinical priority 3 days. The authors noted that children rated as low clinical priority may present as avoidant in group activities due to anxiety, while a child rated extremely high clinical priority will present with serious suicidal or homicidal behaviour. This study revealed that the estimated wait time for an initial assessment decreased with increasing levels of clinical priority. A positive correlation was found between wait times and the size of an agency waitlist, but only for those considered of a lower level of clinical priority. This triaging approach is successful in separating the highest priority children from the impacts of waiting lists, but this results in the children with more routine mental health concerns experiencing the most substantial wait times and, consequently, are left most affected by the waitlist size and density. Although it is appropriate to assign shorter wait time for higher priority children, there is great disparity in how long a child will wait based on clinical need.

Of the participating agencies, 46% indicated having a waitlist for some of their programs; 27% reported a wait list for all programs/services; 18% indicated a waitlist for one program/service; and approximately 8% reported they did not have waitlists (Kowaleski, et al., 2011). The longest wait lists were for assessment and regularly scheduled treatments. This study also revealed that there was substantial variability in wait time experiences among participating agencies across the health, social services, mental health, and education sectors of the mental health system.

While the implications of these preliminary findings merit further investigation, it is evident that employing an evidence-based, systematic method of prioritizing cases is imperative. Youth with lower priority mental health needs accessing mental health services primarily through the education or specialized mental health sectors are most likely to endure long wait times. It is no surprise that emergency departments and general medical sectors are reporting high rates of inappropriate child and youth mental health referrals. Effective, efficient waitlist reduction strategies for child and youth mental health agencies across the continuum of need is required; to date, there is a limited understanding of how reliable and effective initial assessments are at prioritizing children and youth in need across a continuum of care.

Assessing Mental Healthy Urgency and Priority setting

With the persistent waitlist concerns and the high number of at risk children and youth requiring mental health services and attempting to access through multi-sectors, there is a significant need for agencies to collaborate and utilize streamline triaging tools to effectively prioritize children and youth to the appropriate mental health care.

Most systems of care across Canada, including CYMH, employ the long-standing approach to categorizing patients by urgency of “emergency, urgent, semi-urgent, or routine” and its

variants. These methods are highly subjective and probably inadequate to describe the urgency of patients on wait lists for CMH services (Smith, Hadron, & Steering Committee of The Western Canada Waiting List Project, 2002). In response to the need for better management of wait lists, there has been an increase in efforts to develop a more sophisticated system, consisting of priority criteria and numerical scores, to evaluate the relative clinical urgency of child and youth mental health (Smith, Hadron, & Steering Committee of The Western Canada Waiting List Project, 2002).

The Western Canadian Waiting List Project

Mental health screening, assessments and referral to services have become common practice. However, limited research has focused on evaluating these tools. In Canada, a collaborative team of 19 partner organizations joined together to address the waitlist issue facing public service agencies nationwide (Noseworthy, McGurran, & Hadorn, 2003). In an attempt to develop a standardized, reliable means of assigning priority levels for services, the Western Canadian Waiting List (WCWL) project was developed. This initiative targeted five clinical areas: cataract surgery, general surgery, hip and knee replacement, MRI, and children's mental health. The primary focus of the WCWL project was on developing, evaluating, and refining clinician-scored priority criteria instruments that are effective in assessing and comparing the urgency of patient on waiting lists. Researchers found that point-count scoring systems reflected the most effective priority setting measures across all target areas (Noseworthy, McGurran, & Hadorn, 2003). Authors reported moderate criterion validity for the 17-item manualized tool developed to prioritize cases of children's mental health. They also noted that during testing, participating clinicians found that the criteria and weights in the scale had demonstrated good face validity and were practical for use in clinical settings. Yet across the 18 assessors, the inter-rater reliability for case urgency ranking and judgment of maximum acceptable wait time was found to be very low

(ICC < 0.30). This finding may not be so surprising given that the clinician makes the decision to complete the prioritizing tool only after an intake interview is conducted, and an indication of the presence of a mental health problem is made. The WCWL project provides evidence to support the implementation of a reliable, standardized means to assess priority for child and youth seeking mental health services, but more evaluation is necessary.

To further examine the validity of the children's mental health priority setting tool developed by the MCWL project, Cawthorpe et al. (2007) studied the usefulness and validity of the 17-item priority-setting scale at assessing clinical urgency and providing an explicit and transparent method for setting priorities among children and adolescence. This study examined aspects of the Priority Criteria Score (PCS) to determine if the evidence supports the appropriateness and interpretability of the scale as a measure of patient urgency. To study these effects, two other measures were examined to test the criteria-related validity of the PCS. These included the Visual Analogue Scale of perceived urgency (VAS) and the perceived Maximum Allowable Wait Time in days (MAWT). After a brief intake call, staff completed each of these scales for youth who were referred to the central intake service and admitted. A total of 497 clients were referred and accepted for treatment over a 24-month period. Consistent with their results, the researchers concluded that PCS is a valid measure of urgency for priority setting and queue management. Yet despite finding significance, this study had various limitations that warrant the need to continue research in this field. The sample size was large, yet the age ranged only from 13 to 18 years old, indicating further research be conducted to see if a PCS measure is valid and effective at prioritizing younger children as well (Cawthorpe et al., 2007). Additionally, the items developed for the PCS appeared to have a strong focus on severity of mental or emotional distress,

family/social factors, and the likely benefit of intervention; and the scale outputted a single priority score for each case which indicated the urgency of mental health service (Cawthorpe et al., 2007).

The above literature also suggests that presentation of mental health issues and trauma symptomology can vary greatly as a function of a child or youth's developmental stage. Consideration of the different mental health risk factors and needs at various stages during infancy, childhood, and adolescence should be incorporated into the development of an urgency assessment tool. Yet this tool lacks attention to the differential indicators of service urgency. The same items would be triggered for service urgency for young children and adolescence, despite the literature demonstrating that there are different behavioural, emotional, and social characteristics unique to a child or youth's developmental level.

The Child and Adolescent Needs and Strengths – Mental Health

The Child and Adolescent Needs and Strengths – Mental Health (CANS-MH) Assessment tool is an alternative measure used in the prioritization and service planning of children and youth seeking mental health services (Anderson, Lyons, Giles, Price, & Estle, 2003). This measure is a communimetric tool utilized to assess need and guide service decision-making. The CANS-MH tool is designed to be used either as a *prospective* assessment tool for decision support during the process of planning services or as a *retrospective* assessment tool based on the review of existing information for use in the design of high quality systems of services. Categorized as a communimetric tool means that the individual items are designed to stand-alone as independent pieces of information to communicate understanding of the child or youth's immediate circumstances. Therefore, the items are designed to be valid and reliable on their own.

There is limited research examining the psychometric properties of the CANS-MH assessment tool. The items are not intended to be summed or factored together. Each item represents a potential target of clinical intervention. As such, traditional psychometrics including internal consistency and factorial validity may not be applicable. Nevertheless, studies have examined psychometrics of CANS ratings, including acceptable inter-rater reliability; however, no test-retest reliability has been established and there is very little published on its validity. One study that did examine the reliability of the CANS-MH scale concluded that the tool has acceptable inter-rater reliability and is effective in assessing the type and severity of the presenting problem, risk behaviours, functioning, and care intensity and organization (Anderson, et al., 2003). Unlike the PCS tool, it does not employ a priority scoring methodology but rather each of the 27 items are given a rating of need for action on a scale of 0 to 3, 0 = no evidence of need, 1 = watchful waiting/prevention, 2 = action, and 3 = immediate/intensive action. Any item scored as a 2 or 3 is considered an “actionable item” and warrants clinical intervention. Total score of actionable items is used to assess the intensity of treatment. This dichotomous assessment approach presents assessors with the difficulty to distinguish between “0” and “1” ratings and between “2” and “3” ratings, which can result in discrepancy between assessor ratings, challenging the reported acceptable inter-rater reliability (Anderson & Huffine, 2003).

In addition to the questionable inter-rater results, the item development for the CANS-MH tool did not take into consideration the developmental differences among children and youth which influenced the presentation and indicators of mental health issues. This too would affect the validity and reliability of the measure, considering the literature suggests that presentation of mental health problems vary dependent on the child or youth’s developmental stage (Cordell,

Snowden, & Hosier, 2016; Anderson, et al., 2003). The tool also neglects to employ an evidence-based approach to evaluate whether those in greatest need of service are prioritized as more urgent. Instead, the item anchors used in the CANS-MH were developed by focus groups with a variety of participants including families, family advocates, community representatives, mental health case workers and staff. This measure has a strong relationship to service planning and level-of-care decision-making (Lyons et al., 2000). To date, the literature suggests that the tool is effective in assessing need and guiding service decision-making. Yet, this tool was not developed using evidence-based approaches, and evaluations indicate weak psychometric properties. Failing to distinguish urgency based on age or development implies this tool also does not meet the Ministry's standards as part of child and youth mental health reform in Canada.

The instruments currently utilized to address the waitlist issue for children and youth seeking mental health services in Canada appear to be beneficial, but the evident limitations warrant further research and the need to development alternative, more effective screening instruments. Salient throughout the literature is the pressing need for a standardized prioritization screening tool that is evidence based and developed sensitive to any cultural and developmental differences. Demonstrating a need to ensure child and youth mental health prioritizing tools can be utilized across multiple sectors of the CYMHS, encouraging inter-sector collaboration and support for children and families. The InterRAI Child and Youth Mental Health Screener (ChYMH-S) is a relatively new mental health screening instrument, yet it appears to meet goals outlined in provincial policy reform initiative and provides evidence-informed care planning based on need. This tool is being utilized in various CYHM service agencies across Ontario, including inpatient, community programs, and within schools. The utilization of service urgency algorithms,

developed for the ChYMH-S, to enhance triaging and prioritization, promotes efficient and effective clinical practice across the child and youth mental health services. This tool will be utilized in the present study and will be discussed in further detail below.

Service Priority for Children and Youth with History of Maltreatment

The children's mental health system in Ontario aims to support the mental health needs of children and youth and their families. The system is in need of improvement, and the Ministry of Child and Youth Service's has called for change across sectors. There is a recognized need for greater service sector collaboration, including the implementation of high quality standardized triaging tools to support an integrated health information system, as many children and youth fall through the cracks in the *difficult to navigate* system (Shanley, Reid, & Evans, 2008; Pepler & Bryant, 2011). CYMH service agencies are not currently meeting benchmarks for wait times, nor are they functioning effectively in prioritizing urgency. Many agencies and communities have begun employing the recommended policy initiatives, and consistent with the literature, children and youth who are currently rated as highest clinical priority will present with serious suicidal or homicidal behaviour, with more complex psychiatric diagnoses. Review of the current strategies in place to support children and youth with mental health needs outlined the barriers in service utilization. Research indicates that those with a history of maltreatment have greater rates of both psychiatric and medical service utilization than those without a history of maltreatment so it is evident that maltreated children and youth are in significant need (DeBellis, 2001; Van der Kolk, 2017).

Children and youth who have experienced maltreatment, namely, neglect, physical, sexual, and/or emotional abuse (including exposure to domestic violence) demonstrate a significant increase in the occurrence of a variety of poor mental health outcomes (Cash, & Bridge, 2009).

The literature notes that children and youth who experience interpersonal trauma early in life are more susceptible to adverse long-lasting consequences than those who do not have a history of trauma. Specifically, there is a higher prevalence of psychiatric diagnoses, functional impairment, emotional and behavioural issues present in those who have a history of childhood maltreatment. Additionally, posttraumatic stress symptoms experienced by maltreated children and youth can lead to more compromised psychosocial and cognitive functioning. This suggests there is both a need to examine whether these experiences place children at higher service need. As a result, there is a need to further investigate how screening tools can be used to effectively triage and prioritize children and youth in need of mental health services. Greater understanding of the severe and persistent effects of maltreatment on the developing brain has given rise to many intervention and prevention programs substantiated as effective in promoting growth and recovery for maltreated individuals. Thus, ensuring these children and youth have streamlined access to these services is imperative to their recovery. Utilizing a standardized, reliable means of allocating priority for assessment and treatment is an important step towards improved delivery of appropriate timely child and youth mental health service to maltreated and non-maltreated youth alike.

Present Study

There is only modest support in the current literature regarding appropriate and timely prioritization of mental health services for high need children and youth, and the present study addressed this gap. By examining the factors associated with brief screening of child and youth mental health service prioritization, the current study aimed to explore how mental health triage personnel prioritize highly vulnerable cases. Specifically, the goal of the current study was to examine whether experiencing childhood interpersonal trauma (physical and sexual abuse; exposure to domestic violence, death or loss of parent/guardian, parental substance abuse, and

bullying) predicts service urgency. It is hypothesized that children and youth who have experienced interpersonal trauma will be assessed as a higher mental health service priority over those who have not.

To examine the hypothesis, the present study utilized retrospective data collected from the interRAI Child and Youth Mental Health Screener (ChYMH-S) assessment tool and compared mental health service urgency ratings of children and youth who have a history of interpersonal trauma (physical and sexual abuse; exposure to domestic violence, death or loss of parent/guardian, parental substance abuse, and bullying) with those who did not. The primary use of the interRAI ChYMH-S is to support decision-making related to triaging, placement, and service utilization. It informs immediate care planning and can be used to assist in identifying the need for a full, comprehensive mental health assessment and treatment (Stewart, Hirdes, McKnight; 2017, 2018).

Methods

Design

The current project utilized a cross-sectional descriptive field study in examining the factors that relate to the prioritization of care for children and youth who seek mental health services. To analyze the associated factors, the study utilized secondary data collected from a range of mental health service agencies across Ontario.

Participants

Data was collected from 19,645 participants from various community-based (outpatient) and residential (inpatient) children's mental health facilities across the province of Ontario who completed the ChYMH-S assessment. Of the sample collected, 10,531 were male (53.6%) and 9,114 were female (46.4%). Participant ages ranged from 4 to 18 ($M=11.11$, $SD=3.39$). For the

purpose of analysis, the study sample was stratified into three age groups. Children age 4 to 7 years made up 17.1% of the sample; 31.5% were youth between the ages of 8 to 11 years; and over half of the sample were 12 years or older (51.4%). Over half of the sample (58.9%) were youth with both parents holding legal guardianship; 29.8% were of single parent mother-led guardianship; 4.3% were single parent father-led guardianship; 4.6% had other family members as legal guardians. In 2% of the sample, a child protective agency held legal guardianship, and 0.4% were youth responsible for themselves. Only 5.1% of the children and youth identified the presence of a comorbid health diagnosis ($n = 1,004$), and 5.3% identified as having an intellectual disability.

Overall 12,900 children and youth reported experiencing some form of interpersonal trauma (65.9 %). Among all children and youth who reported experiencing trauma, 11.9% reported physical abuse; 6.8% reported sexual abuse; 23.7% reported domestic violence exposure; 20.6% reported emotional abuse; 17.8% reported parental substance abuse; 43.9% indicated a history of being bullied; and 18.7 % reported experiencing the death or loss of a parent.

Measure

The interRAI Child and Youth Mental Health- Screener (ChYMH-S)

The interRAI Child and Youth Mental Health- Screener (ChYMH-S) is a brief assessment tool used in assessing, prioritizing and triaging children and youth seeking mental health services. It is a standardized screener intended to provide seamless screening and support decision-making related to triaging, placement, and service urgency for children and youth with mental health needs (Stewart, Hirdes, & McKnight, 2017, 2018). It is one of the Child and Youth Mental Health (ChYMH) suite assessment tools, within the global InterRAI collaborative research network. The screener was designed to be used in multiple settings, including inpatient,

community programs and services as well as within schools (Stewart, Hirdes, & McKnight, 2017, 2018). This is a manualized, semi-structured assessment tool consisting of 99 items, and takes approximately 20 minutes to complete. It is divided into 10 subsections (identification information; mental state indicators; substance use or excessive behaviour; harm to self and others; behaviour; cognition, communication, and development; stress, trauma, and social relationships; education; summary; assessment information).

All data collected from the ChYMH-S is entered into a de-identified web-based software, password protected, encrypted, and stored on computers with no internet or USB ports to ensure confidentiality. This web-based software securely stores the data at interRAI Canada and provides each case a randomly assigned, study-specific participant number. The lead investigator of the project and interRAI fellow (Dr. Shannon Stewart) receives a quarterly cut of the data and this is stored on a password encrypted standalone computer at Western University.

Procedure

The study was approved by the University of Western Ontario ethics board (REB #106415). Informed consent was provided (either written or verbal, depending on the individual agency) by guardians of the children in the present study as part of the standard clinical care at each agency (Stewart, 2015). De-identified data for secondary analysis were generated from the software. Absent from the data were any data related to personal health information. Access to that aspect of the data for research purposes was completed through interRAI licensing agreements with users and researchers who implement the assessment system. Secondary data analysis was conducted on the data from the ChYMH-S tool administered in mental health service agencies across Ontario (Stewart, 2015).

The service providers administering the screener ranged in discipline and expertise and included nurses, psychiatrists, child and youth workers, speech and language therapists, developmental social service workers, social workers, and psychologists. The assessment takes approximately 20 minutes to complete but is subject to variability depending on case complexity. The tool is completed using multiple sources of information (i.e. family members, community members, document review, and clinical observations). All assessors are required to complete a full-day training session regarding how to administer and score the screener. Upon completion of the training, assessors must complete the interRAI competency evaluation to receive an Assessment and Intelligence Systems (AIS) certificate.

Outcome Variable

The interRAI Children's Algorithm for Mental Health and Psychiatric Services (ChAMPs) is an empirically based decision-support tool that can be used to inform the need and urgency of timing for a comprehensive, face to face mental health assessment (Stewart, Hirdes, & McKnight, 2017). The ChAMPs score is computed and applied to each case utilizing items from the interRAI ChYMH-S. The score reflects an evidence-based algorithm that has been developed utilizing specific determinants of urgency based on research, clinical relevance, and statistical power. There is a separate service urgency algorithm for three different age groups. This decision-making framework is based on research that suggests determinants of service urgency differs depending on the child/youth's developmental stage. There are various pathways that could lead a child to a higher score of service urgency. For children 7 years of age and under, the level of urgency ranges from 0-5. The determinants drawn from the ChYMH-S include danger to self, violence to others, nightmares, and lack of motivation. For children 8 to 11 years of age, the level of urgency ranges from 0-5. The determinants drawn from the

ChYMH-S are: Danger to self, danger to others, made negative statements, socially inappropriate behaviour, hyperactivity, and family/placement breakdown. Lastly, children 12 years of age and older reflected in the level of urgency range from 0-6. The determinants drawn from the ChYMH-S are: danger to self, danger to others, consider performing a self-injurious act, family/placement breakdown, intrusive thoughts/flashbacks, expresses intent to quit school, lack of interest in social interactions, expression of guilt or shame, violence to others, victim of emotional abuse, and concern for self-injury risk.

Across all three pathways, a score of three or higher is considered a high score and it is recommended that the clinical team consider the child to be prioritized for needed treatment. If the score is on the lower end, a score of 0 to 2, it is unlikely that a comprehensive assessment is needed or a specialized service would be needed, or the young person could wait for a period of time being seen. For the purpose of the current study, a high score represents high urgency for further mental health service, and a low score represents low mental health service urgency.

Independent Variables

The proposed study utilized various items in the ChYMH-S to determine if children and youth with a history of interpersonal trauma exposure are ranked as higher in mental health urgency. History of childhood maltreatment was measured based on the experience of physical abuse, sexual abuse, witnessing domestic violence, bullying, death or loss of a parent or guardian, and parental addiction or substance abuse. In the ChYMH-S assessment manual, physical abuse refers to any incident resulting in non-accidental injury, physical confinement, or excessive physical discipline experienced by the child regardless of his or her age when the incident(s) occurred. Sexual abuse was defined as any form of exposure of genitals, sexual touching or coercion, rape experienced by the child regardless of his or her age when the

incident(s) occurred. Witnessing domestic violence refers to the child having an awareness of, or knowledge of, or witnessing physical or verbal actions or threats toward another family member. Parental addiction or substance abuse referred to situations where a parent or primary caregiver is engaging in the repetitive and persistent use of alcohol or drugs (Stewart et al., 2015). Although demographic information is available on the instances of emotional abuse, this form of interpersonal maltreatment is omitted as a predictor.

The interpersonal trauma items included in the analysis are coded on the ChYMH-S on a scale of 0 to 5 indicating the prevalence and chronicity of the maltreatment (0 = never, 1 = more than 1 year ago, 2 = 31 days to 1 year ago, 3 = 8 to 30 days, 4 = 4 to 7 days, and 5 = in last three days). For the purpose of this study, the maltreatment variable was solely measured by the presence of interpersonal trauma or not, but not the severity or chronicity. Thus, these items were re-coded as binary variables "0= Present" versus "1= Absent." A sum score of childhood interpersonal trauma was computed by summing the six childhood maltreatment variables.

The study controlled for age, gender, and legal guardianship. These variables were selected through theoretical consideration. Although the literature also suggests that ADHD symptoms and risk for harm to self and others are strong indicators of mental health service urgency, they were omitted in the analysis because items measuring these factors are utilized in the ChAMPs scores, which was the outcome measure.

Data analyses

Descriptive statistics for all variables were conducted using percentages for the categorical independent and outcome variables. To examine the hypothesis and establish the effects of maltreatment (physical abuse, sexual abuse, and exposure to domestic violence, parental substance abuse, death or loss of a parent, and exposure to bullying) on the likelihood

that participants score high on the ChAMPs, multiple Pearson chi-square tests of association were performed. Subsequently, bivariate association between ChAMPs scores and various covariate variables were also conducted using the Pearson chi-square test of association. Additionally, the effect size of each association was also examined. The phi coefficient was applied to all 2 X 2 association, and the Cramer's V coefficient was applied to association with contingency tables larger than 2 X 2. The strength of the effect sizes was interpreted according to Cohen's conventions for phi and Cramer's V (Aron, Aron, & Coups, 2009). All analyses were executed using SPSS, version 25 for Windows (SPSS Inc., Chicago, IL, USA) and variables were considered significant if the p-value was less than .05.

In the current study, multiple analyses were conducted to examine the potential relationship between mental health service urgency and exposure to interpersonal trauma. Multiple testing frequency increases the probability of committing a Type I error and obtaining a significant finding due to chance. To control against the possibility of this statistical error, the current study applied a Bonferroni Correction that generated an adjusted confidence interval of .017, as there were 3 separate analyses.

Results

A series of analyses explored the complex relationship between childhood maltreatment and mental health service urgency. It was hypothesized that children who had experienced one or more forms of interpersonal trauma would score higher on the The interRAI Children's Algorithm for Mental Health and Psychiatric Services (ChAMPs) than children who had not experienced any form of interpersonal trauma. Gender differences, and associations with legal guardianship were also explored. Since the ChAMPs scores differ based on developmental level

(4 to 7 years, 8 to 11 years, 12 +), the main analysis results for each developmental level are presented separately.

Childhood Interpersonal Trauma. Basic descriptive statistics and frequencies of the interpersonal trauma variables examined in the study are shown in Table.1 The table presents the distribution of maltreatment by age (n = 19,645). Overall, 12,900 children and youth reported experiencing some form of interpersonal trauma (65.9%). Rates of youth who were exposed to these maltreatment forms appeared to increase by nearly 10% for each age category, 50% of children under 7 years experienced some form of trauma, subsequently 63.9% of children 8 to 11 years reported exposure, and lastly 72.2% of youth 12 and older reported experiencing some form of interpersonal trauma. For children age 4 to 7, witnessing domestic violence was reported most frequently (24.2%) and a history of bullying was reported second most frequently (22.1%). A history of bullying exposure was reported most frequently for both children age 8 to 11 years (41.5%) and children 12 or older (52.7%). The second most commonly reported form of interpersonal trauma reported for both children age 8 to 11 years and children 12 or older was domestic violence exposure. Sexual abuse exposure had the lowest frequency across all three developmental age groups; children age 4 to 7 (3.1%), children age 8 to 11 years (4.2%), and children 12 or older (9.6%).

Table 1. Distribution of Childhood Interpersonal Trauma Exposure by Age Group (n=19,645).

Variable	Developmental Age Group			Total N (%)
	Under 7 N (%)	8 to 11 N (%)	12 and older N (%)	
Interpersonal Trauma Exposure				
Absent	1656 (49.4)	2225 (36.1)	2787 (27.8)	6,668 (34.1)
Present	1698 (50.6)	3946 (63.9)	7256 (72.2)	12,900 (65.9)
Sexual Abuse History				
Absent	3261 (96.1)	5933 (95.8)	9123 (90.4)	18,317 (93.2)
Present	104 (3.1)	260 (4.2)	964 (9.6)	1,328 (6.8)
Physical Abuse History				
Absent	3089 (91.8)	5611 (90.6)	8598 (85.2)	17,298 (88.1)
Present	276 (8.2)	582 (9.4)	14.89 (14.8)	2,347 (11.9)
Witnessing DV History				
Absent	2549 (75.8)	4693 (75.8)	7740 (76.7)	14,982 (76.3)
Present	816 (24.2)	1500 (24.2)	2347 (23.3)	4,663 (23.7)
Death/Loss of Primary Caregiver				
Absent	2850 (84.7)	5069 (81.9)	8060 (79.9)	15,979 (81.3)
Present	515 (15.3)	1124 (18.1)	2027 (20.1)	3,666 (18.7)
Bullying Victim History				
Absent	2623 (77.9)	3625 (58.5)	4773 (47.3)	11,021 (56.1)
Present	742 (22.1)	2568 (41.5)	5314 (52.7)	8,624 (43.9)
Parental Addiction or Substance Use				
Absent	2801 (83.7)	5177 (84.4)	7954 (80)	15,932 (82)
Present	545 (16.3)	959 (15.6)	1986 (20)	3,490 (18)

Mental Health Service Urgency. The distribution of the outcome variable Children's Algorithm for Mental Health and Psychiatric Services score (ChAMPs) is presented in Table 2. Approximately one-quarter of the 19,645 children and youth sample had high mental health service urgency (25.4%) compared with low mental health service urgency (74.6%). Furthermore, 35% of adolescents, 18.7% of youth, and 8.5% of children had a high urgency score.

Table 2. Distribution of Mental Health Service Urgency by Age (n=19,645).

Variable	Age group			Total
	4 to 7	8 to 11	12 & older	
	N (%)	N (%)	N (%)	N (%)
ChAMPS Score ^a				
High Urgency	287 (8.5)	1,158 (18.7)	3,541 (35)	4,986 (25.4)
Low Urgency	3,078 (91.5)	5,035 (81.3)	6,546 (65)	14,659 (74.6)
Total	3,365	6,193	10,087	

Note. A. ChAMPS score = Children's Algorithm for Mental Health and Psychiatric Services score.

Mental Health Service Urgency by Interpersonal Trauma. Examining the cross tabulation of mental health service urgency by interpersonal trauma exposure, the results revealed that overall 5.3% of children age 4 to 7, 13.7% of children age 8 to 11, and 28.8% of children 12 and older had a history of interpersonal trauma and high mental health service urgency.

Legal Guardianship. The results, presented in table 3 below, revealed that over half of the sample (58.9%) were youth with both parents holding legal guardianship, while 29.8% were of single mother guardianship, 4.3% were of single father, 4.6% had other family members as legal guardians, in 2% a child protective agency held legal guardianship, and 0.4% of the sample were youth responsible for themselves. For children and youth in all three age groups, residing both parents as guardians represented largest proportion of legal guardianships, with single mother guardianship being second. As you can see in table 3, the proportions for each of the other guardianship statuses accounted for less than 5%.

Table 3. Distribution of Legal Guardianship by Age. (n=19,645).

Variable	Age group			Total
	4 to 7	8 to 11	12 & older	
	N (%)	N (%)	N (%)	N (%)
Legal Guardianship				
Both parents	2,032 (60.4)	3,753 (60.6)	5,794 (57.4)	11,579 (58.9)
Mother only	974 (28.9)	1,805 (29.1)	3,070 (30.4)	5,849 (29.8)
Father only	124 (3.7)	226 (3.6)	489 (4.8)	839 (4.3)
Other relative(s)/nonrelative(s)	166 (4.9)	292 (4.7)	445 (4.5)	913 (4.6)
Child protection agency	62 (1.8)	112 (1.8)	219 (2.2)	393 (2)
Youth responsible for self	7 (.2)	5 (.1)	60 (.6)	72 (.4)
Total	3,365	6,193	10,087	

Mental Health Service Urgency and Maltreatment

Developmental Age Group 1: Children age 4 to 7 years

Mental Health Service Urgency by Interpersonal Trauma. The current study examined the relationship between mental health service urgency and interpersonal trauma for children age 4 to 7 years old. Of the 1,698 children in this age group with a history of interpersonal trauma, 10.5% scored high on mental health service urgency, while 89.5% scored below the cut off on mental health service urgency.

Bivariate Association Between Mental Health Service Urgency and Interpersonal Trauma. Chi-square tests of independence were conducted to examine the relationship between mental health service urgency (ChAMPs, high versus low) and presence of interpersonal trauma for children 4 to 7 years old. For this age group, experiencing any form of interpersonal trauma was significantly associated with mental health service urgency at the bivariate level. Specifically, a significantly larger proportion of those scoring high on mental health service urgency had a history of interpersonal trauma (62.8%) compared to those without a history of maltreatment (37.2%) ($\chi^2 = 18.49$, $df = 1$, $p < 0.001$). However, the effect size for this finding was small, $\Phi = .07$, $p < .01$ (Aron et al., 2009).

Developmental Level 2: Children age 8 to 11 years

Mental Health Service Urgency by Interpersonal Trauma. The current study examined the relationship between mental health service urgency and interpersonal trauma for children age 8 to 11 years old. Of the 3,946 children in this age group with a history of interpersonal trauma, 21.5% were scored high on mental health service urgency, while 78.5% scored low on mental health service urgency.

Bivariate Association Between Mental Health Service Urgency and Interpersonal Trauma. Chi-square tests of independence were conducted to examine the relationship between mental health service urgency (ChAMPs, high versus low) and interpersonal trauma for children 8 to 11 years old. For this age group, experiencing any form of interpersonal trauma was significantly associated with mental health service urgency at the bivariate level. Specifically, a significantly larger proportion of those presenting with maltreatment history compared to those without a history of maltreatment were rated as having high urgency (73.7% vs. 26.3%, $\chi^2 = 58.82$, $df = 1$, $p < 0.001$). However, the effect size for this finding was small, $\Phi = .10$, $p < .01$ (Aron et al., 2009).

Developmental Level 3: Children age 12 years and older

Mental Health Service Urgency by Interpersonal Trauma. The current study examined the relationship between mental health service urgency and interpersonal trauma for children 12 years and older. Of the 7,256 children in this age group with a history of interpersonal trauma, 40.1% were scored high on mental health service urgency, while 59.9% scored low on mental health service urgency.

Bivariate Association Between Mental Health Service Urgency and Interpersonal Trauma. Chi-square tests of independence were conducted to examine the relationship between mental health service urgency (ChAMPs, high versus low) and interpersonal trauma for children 12 years and older. For this age group, experiencing any form of interpersonal trauma was significantly associated with mental health service urgency at the bivariate level. Specifically, a significantly larger proportion of those presenting with maltreatment history (82.4%) compared to those without a history of maltreatment (17.6%), were rated as having high urgency ($\chi^2 = 278.21, df = 1, p < 0.001$). However, the effect size for this finding was small, $\Phi = .16, p < .01$ (Aron et al., 2009).

Mental Health Service Urgency and Gender

Developmental Age Group 1: Children age 4 to 7 years

Mental Health Service Urgency by Gender. The current study examined the relationship between mental health service urgency and gender for children 4 to 7 years old. Of the 287 children in this age group with high mental health service urgency, 25% were female and 75% were male. Overall, 6.4% of the children age 4 to 7 were males with high service urgency ($n = 215$), and 2.1% of this group were females with high service urgency ($n = 72$).

Bivariate Association Between Mental Health Service Urgency and Gender. Chi-square tests of independence were also conducted to examine the relationship between mental health service urgency and gender. Results revealed that scores on mental health service urgency and gender were significantly related for this age group ($\chi^2 = 6.96, df = 1, p < 0.017$). There was a significantly greater proportion of those who scored high on mental health service urgency were males (74.9% vs. 25.1%). Additionally, a larger proportion of males in this age group had high

service urgency (9.4%) compared with the proportion of females who had high service urgency (6.7%). However, the effect size for this finding was small, $\Phi = .05$, $p < .01$ (Aron et al., 2009).

Developmental Level 2: Children age 8 to 11 years

Mental Health Service Urgency by Gender. The current study examined the relationship between mental health service urgency and gender for children 8 to 11 years old. Of the 1,158 children in this age group with high mental health service urgency, 25.9% were female and 74.1% were male. Overall, 13.9% of the children age 8 to 11 were males with high service urgency ($n = 858$), and 4.8% of this group were females with high service urgency ($n = 300$).

Bivariate Association Between Mental Health Service Urgency and Gender. Chi-square tests of independence were also conducted to examine the relationship between mental health service urgency and gender. Results revealed that scores on mental health service urgency and gender were significantly related for this age group ($\chi^2 = 63.27$, $df = 1$, $p < 0.017$). A significantly greater proportion of those who scored high on mental health service urgency were males (74.1% vs. 25.9%). Additionally, a larger proportion of males in this age group had high service urgency (21.7%) compared with the proportion of females who had high service urgency (13.4%). However, the effect size for this finding was small, $\Phi = .10$, $p < .01$ (Aron et al., 2009).

Developmental Level 3: Children age 12 years and older

Mental Health Service Urgency by Gender.

The current study examined the relationship between mental health service urgency and gender for children 12 years or older. Of the 3,541 children in this age group with high mental health service urgency, 63.5% were female and 36.5% were male. Overall, 12.8% of the children 12 years or older were males with high service urgency ($n = 1,291$), and 22.3% of this group were females with high service urgency ($n = 2,250$).

Bivariate Association Between Mental Health Service Urgency and Gender. Chi-square tests of independence were also conducted to examine the relationship between mental health service urgency and gender. Results revealed that scores on mental health service urgency and gender were significantly related for this age group ($\chi^2 = 80.19, df = 1, p < 0.017$). A significantly greater proportion of those who scored high on mental health service urgency were females (63.5% vs. 36.5%). Additionally, a larger proportion of females in this age group had high service urgency (38.8%) compared with the proportion of males who had high service urgency (30.1%). However, the effect size for this finding was small, $\Phi = .09, p < .01$ (Aron et al., 2009).

Mental Health Service Urgency and Legal Guardianship

Bivariate Association Between Mental Health Service Urgency and Legal Guardianship. The association between mental health service urgency and legal guardianship was also examined. Chi-square tests of independence were conducted for all three developmental age groups and the results revealed a significant relationship between the variables for all three age groups.

Children 4 to 7 years. Mental health service urgency was significantly associated with legal guardianship for children 4 to 7 years ($\chi^2 = 14.69, df = 5, p < 0.017$) and a small effect size was found (Cramer's $\Phi = .07, p < .01$). For this age group, the greatest proportion of high mental health urgency among the legal guardianship categories were children who had a Child Protection Agency (CAS) as their guardian (16.1%). Subsequently, 10.4% with a single mother as guardian had high urgency, 10.8% with neither parent(s) but other relatives or non-relatives as guardian had high urgency, 8.1% with a single father as guardian had high urgency, 7.3% with both parents as guardians had high urgency. Furthermore, half of the subsample who scored high

on mental health service urgency had both parents as legal guardian. Single mother guardianship represented 35.2% of those with high mental health service urgency, while single fathers represented only 3.5% of high mental urgency scorers. CAS guardianship represented only 3.5% of the children with high mental health service urgency, and neither parent(s) but other relatives or non-relatives as guardian represented 6.3%. The children in this age group who were categorized as responsible for themselves were all below the cut off score on mental health service urgency.

Children 8 to 11 years. Mental health service urgency was also significantly associated to legal guardianship for children 8 to 11 years ($\chi^2 = 39.93$, $df = 5$, $p < 0.001$), and a small effect size was found (Cramer's $\Phi = .08$, $p < .01$). For this age group, one-quarter of children with Child Protection Agency (CAS) as their guardian had high mental health service urgency (24.1%). Single mother guardians had the second largest proportion of high mental health urgency among the legal guardianship categories (22.9%). Subsequently, 21.2% with neither parent(s) but other relatives or non-relatives as guardian had high urgency, 16.4% with both parents as guardians had high urgency, and 15.9% with a single father as guardian had high urgency. Furthermore, over half of the subsample who scored high on mental health service urgency had both parents as the legal guardian (53.3%). Single mother guardianship represented 35.8% of those with high mental health service urgency, while single fathers represented only 3.1% of high mental urgency scorers. CAS guardianship represented only 2.3% of the children with high mental health service urgency, neither parent(s) but other relatives or non-relatives as guardian represented 5.4%, and those categorized as responsible for themselves represented less than 1%. The children in this age group who were categorized as responsible for themselves were all below the cut off score on mental health service urgency.

Children 12 years and older. Mental health service urgency was also significantly associated to legal guardianship for children 12 and older ($\chi^2 = 62.12$, $df = 5$, $p < 0.001$), with a small effect size (Cramer's $\Phi = .08$, $p < .01$). For this age group, close to half of the children who had a Child Protection Agency (CAS) as their guardian had high mental health service urgency (47%). Similarly, 48.3% of children in this group who were responsible for himself or herself had high mental health service urgency. Single mother guardians had the next largest proportion of high mental health urgency among the legal guardianship categories (38.7%). Next, 38.4% with a single father as guardian had high urgency, 38% with neither parent(s) but other relatives or non-relatives as guardian had high urgency, and 32.1% with both parents as guardians had high urgency. Furthermore, half of the subsample who scored high on mental health service urgency had both parents as legal guardian. Single mother guardianship represented 35.5% of those with high mental health service urgency, while single fathers represented only 5.3% of high mental urgency scorers. CAS guardianship represented 2.9% of the children with high mental health service urgency, neither parent(s) but other relatives or non-relatives as guardian represented 4.9%.

Summary of Major Findings

The current study examined the relationship between mental health service urgency and childhood interpersonal trauma. Two sets of analyses were conducted; the first and primary analysis focused on the impact of interpersonal trauma on mental health service urgency. The second analysis reflected associations between mental health service urgency and covariates including gender and the youth's living arrangements. The goal of the primary analysis was to establish the possible link between maltreatment (physical abuse, sexual abuse, and exposure to domestic violence, parental substance abuse, death or loss of a parent, and exposure to bullying)

on the likelihood that children score high on the Children's Algorithm for Mental Health and Psychiatric Services (ChAMPs). Given that the algorithm is based on research that suggests determinants of service urgency differs depending on the child/youth's developmental stage, the analyses were separated by age group.

Results indicated that mental health service urgency was significantly associated with a history of interpersonal trauma for all three age groups. Specifically, a significantly larger proportion of those presenting with maltreatment histories compared to those without a history of maltreatment scored higher on mental health service urgency. Analysis of gender differences revealed a significant association between gender and mental health service urgency. Results indicated that three-quarters of the children in groups 4 to 7 years of age and 8 to 11 years of age with higher mental health service urgency are males. In contrast, 63.5% of children ages 12 or older who scored high on mental health service urgency were female. Mental health service urgency was also significantly related to legal guardianship status across all three age groups. Overall, children with CAS guardian status had a greater proportion of high mental health service urgency compared to all other guardian status categories. However, the magnitude of the relationships was small for all associations examined.

Discussion

The current study examined the factors associated with the brief screening of child and youth mental health service prioritization and aimed to explore how mental health triage personnel prioritize highly vulnerable cases. The interRAI ChYMH-S assessment was used to collect information on maltreatment, mental health service urgency, age, legal guardianship, and gender of the children and youth. The purpose of the present study was to examine the link between service urgency and potential experiences of early exposure to interpersonal trauma in children and youth.

The goal of the current study was to examine whether experiencing childhood interpersonal trauma (physical and sexual abuse; exposure to domestic violence, death or loss of parent/guardian, parental substance abuse, and bullying) was associated with mental health service urgency. Below, is a review of the relevance of this study's findings, how the results add to our understanding of the impact of trauma and add to the growing body of Child Mental Health research. Following this review, the implication to policy, practice, and clinical evaluation, and the potential limitations and suggestions for directions are presented.

The Relevance of Results to Previous Research

Overall, the results of the present study provide great relevance to the previous research in the field. The primary hypothesis, that children and youth who have experienced interpersonal trauma would be assessed as a higher mental health service priority over those who have not, was examined. The results of the current study revealed that children and youth with a history of interpersonal trauma have higher mental health service urgency than those who do not have a history of such trauma. Furthermore, associations between mental health service urgency with respect to living arrangements and gender were additionally examined and guardianship status and gender had a significant impact on mental health service urgency for all ages examined. These findings are discussed further below.

Mental Health Service Urgency and Interpersonal Trauma

Proportions of youth with interpersonal trauma histories and high mental health service urgency were examined across the three age groups. It was hypothesized that a greater number of children and youth with a history of interpersonal trauma exposure than those without a trauma history would be scored as have high mental health service urgency. The results revealed that across all three age groups, participants with a history of interpersonal trauma were

overrepresented in the more urgent category. A significantly larger proportion of those presenting with maltreatment histories compared to those without a history of maltreatment scored higher on mental health service urgency score. Children 4 to 7 years old who presented with interpersonal trauma history were 25.6% more likely to have high mental health service urgency than those who did not report such trauma history. Children 8 to 11 years old who presented with interpersonal trauma history were 47.4% more likely to have high urgency than those who did not report such trauma. Children age 12 and older who presented with interpersonal trauma history were 65% more likely to have high urgency than those who did not report such trauma.

The phenomena that children and youth who experience interpersonal trauma early in life are more susceptible to adverse long-lasting consequences than those who do not have a history of trauma is salient in the literature. These current study findings are consistent with previous research which indicate children and youth who are exposed to interpersonal trauma are more likely to have mental health issues requiring urgent follow-up service. Specifically, prior research indicates that those with a history of trauma have greater rates of both psychiatric and medical service utilization than those without a history of maltreatment (DeBellis, 2001; Van der Kolk, 2017). The literature notes that children and youth who experience interpersonal trauma early in life are more susceptible to adverse long-lasting consequences than those who do not have a history of trauma. Specifically, there is a higher prevalence of psychiatric diagnoses, functional impairment, emotional and behavioural issues present in those who have a history of childhood maltreatment. Furthermore, those with a history of maltreatment have greater rates of both psychiatric and medical service utilization than those without a history of maltreatment (DeBellis, 2001; Van der Kolk, 2017). Researchers note a higher prevalence of psychiatric diagnoses, functional impairment, emotional and behavioural issues present in those who have a history of childhood

maltreatment. Children and youth exposed to maltreatment are at a heightened risk for depression at all stages in life, as well as comorbid anxiety, and antisocial behaviour (Widom, DuMont, and Czaja, 2007; DeBells & Zisk, 2014).

The high urgency ratings among maltreated children and youth in the current study were consistent with the literature suggesting children and youth who are currently rated as highest clinical priority will present with serious suicidal or homicidal behaviour and with more complex psychiatric diagnoses. Specifically, the literature in this area also indicates that children and youth who experience trauma of an interpersonal nature (physical, sexual, and emotional abuse; neglect; exposure to domestic violence) have higher rates of PTSD and post-traumatic stress symptoms (PTSS) (DeBellis, 2001; Kaplow & Widom, 2007; Van der Kolk, 2017). Exposure to maltreatment is associated with an increased risk of adolescent suicide and suicidal behavior, and it is well established that higher rates of suicide and suicide-related behaviors are found among older youth (Felitti, et al., 1998; NIMH, 2001; Hoddas, 2010). Self-harm is a phenomenon that can also exist in the early years, particularly when a child has a history of trauma or neglect. Self-harm has been witnessed in children as young as three years old (Evan, Hawton, & Rodham, 2005). Furthermore, when maltreatment occurs during development, chronic PTSD symptoms can present, leading to more compromised psychosocial and cognitive functioning well into adolescence and adulthood. Apart from post-traumatic stress disorder, many maltreated youth meet the diagnostic criteria for many alternative disorders (Cook, Spinazzola, Ford, Lanktree, Blaustein, Cloitre, et al., 2005). Moreover, a number of developmental domains can be affected including attachment systems, biology, affect regulation, dissociation, behavioural control, cognition, and self-concept. All the factors outlined above place a child at higher risk for severe implications that often require immediate support and intervention (Cook et al. 2005; Van der Kolk, 2017).

As previously mentioned, the current study results indicate that children and youth who have been maltreated are over-represented among those with high mental health urgency ratings. The current study found that nearly 25% of the sampled youth met the cut off for high mental health service urgency, indicating they required immediate follow-up service/assessment. These findings are consistent with literature suggesting the need to intervene early and support these high need children and youth. These results additionally highlight a specific need for clinicians to take a trauma-informed approach to triaging and ensure they are assessing for traumatic experiences when formulating a client's presentation (Arbeau, Theall, Willoughby, Berman, & Stewart, 2017; (Ko, Ford, Kassam-Adams, Berkowitz, Wilson, 2008; Adams, 2010). Without asking about histories of interpersonal trauma, clinicians run the risk of over-diagnosing specific mental health disorders and missing the potential underlying causes for their difficulties.

Although the current study found that a significantly larger proportion of participants presenting with trauma histories scored as higher on mental health service urgency than those without, the initial descriptive results revealed relatively low proportions of those with high mental health service urgency and exposure to interpersonal trauma. Specifically, results of the present study indicated that the majority of youth who had reported experiencing at least some form of interpersonal trauma scored below the cut off for high mental health service urgency. These findings are consistent with previous research that not all children experience trauma in the same way. Only a sub-sample of children and youth exposed to trauma actually experience serious signs and symptoms. Although experiencing interpersonal trauma in childhood or adolescence can have serious and long-lasting impacts on mental health and well-being, only some traumatized children are considered to be in high need for treatment, while others experience mild and manageable symptoms. According to prior literature, the most common diagnoses after a child or youth is

screened for mental health services were attention deficit/hyperactivity disorder (ADHD), disruptive behaviours, oppositional defiant disorder (ODD), conduct disorder, bipolar or mood disorder, autism spectrum disorder, and depressive disorders (Grudnikoff, Taneli, & Correll, 2015). The most common initial complaint was suspected or actual suicidality, then disruptive behaviour, homicidal/aggressive threats and behaviours. The finding in the current study that revealed low urgency rates, even among traumatized youth, appear to coincide with these findings within the literature. Furthermore, approximately 18 to 40% of emergency department visits are inappropriate, as they often involve children and youth with low urgency who present with low severity of the presenting issues, low harm potential, and an absence of suicidality or psychosis (Edelsohn, Braitman, Rabinovich et al., 2003; Soto, Fredrickson, Trivedi, et al., 2009).

In addition, the results of the current study that indicate only some children with trauma histories could be related to the way the child/youth interpreted the trauma and other protective factors the child may have accessed. Numerous studies have examined why some children who have been maltreated suffer serious mental health issues while some are able to buffer the effects of the abuse and cope in more positive ways (Bogar & Hulse-Killacky, 2006; Hassan, 2017). The findings of the current study are similar to research which suggests that the way an individual processes a trauma will influence how they cope with the experience. Some children who experience more severe maltreatment may find ways to cope more effectively and therefore do not present with high mental health service urgency. Moreover, there may be protective factors in the child's life not assessed in the present study that could affect the child's resiliency including social supports, spirituality and treatment options (Bogar & Hulse-Killacky, 2006; Folger, & Wright, 2013). Resiliency factors such as social support, accessible treatment options, and spirituality can buffer the potential negative impact of the trauma. (Folger, & Wright, 2013). When children have

resiliency, they are better equipped to cope with future stressors and appear to process their traumatic experiences in more adaptive ways. Consequently, there is the potential for youth in the current sample to have experienced interpersonal trauma, but their level of resiliency protected them for experiencing enduring mental health and behavioural issues following trauma. Consequently, there is the potential for youth in the current sample to have experienced interpersonal trauma, but their level of resiliency protected them for experiencing enduring mental health and behavioural issues following trauma. Children who experience more severe maltreatment may find ways to cope more effectively and therefore do not present with high mental health service urgency (Bogar & Hulse-Killacky, 2006; Folger, & Wright, 2013).

Impact of Legal Guardianship Status on Mental Health Service Urgency

Results from the current study reveal that legal guardianship status had a significant impact on mental health service urgency ratings across all three age groups examined. Overall, children with Children's Aid (CAS) as their guardian had a greater proportion of high mental health service urgency compared to all other guardian status categories. This finding was true across all age groups. The age group with the highest proportion was children 12 and older, where almost half the children with CAS as guardian had high mental health service urgency. It is clear from the results of the present study that current association with CAS appeared to have a large impact on their urgency for mental health service. These findings are consistent with previous research that suggests that children involved with the child welfare system are at heightened risk for maltreatment and mental disorder through childhood into adulthood (Greenson et al., 2011; Scott, Smith, & Ellis, 2010). The Children's Aid Societies (CAS) help to protect infants, children and youth who are experiencing abuse or are at risk of experiencing abuse, physically, sexually, emotionally or through neglect or abandonment. Often those who have experienced these forms of

interpersonal trauma are removed from the care of their parents and family. The CAS guardianship related findings in the present study coincide with literature that indicates a child is most often processed through the Child Welfare System (CWS) when an occurrence of maltreatment is substantiated. The CWS aims to provide safety, security, and stability to children/youth, thus the main goal of the CWS is to protect and care for children/youth who have experienced maltreatment (Greeson et al., 2011). Many of the present study's sampled children/youth could have attained CAS guardianship due to a substantiated incidence of maltreatment, which additionally supports the noteworthy association between mental health service urgency and CAS guardianship.

In the current study, single mother guardianship had the second greatest proportion of high mental health scores compared to those below the cut-off, for children under 12 years old. In contrast, the results revealed that children reporting as being responsible for themselves represented the second largest proportion of high mental health scores compared to those below the cut-off, only for children over 12 years of age. Single mother guardianship represented the next greatest proportion of high mental health service urgency for children 12 years and older. Single mother guardianship also appeared to be related to high service urgency, this too is consistent with literature in the field that indicates that children from single-parent families are twice as likely to suffer from mental health problems and psychiatric disorders as those living with married parents (Blum, Boyle, & Offord, 1988; Behere, Basnet, & Campbell, 2017). The study results are in keeping with research examining the impact of family structure and mental health service utilization. Specifically, children from a single-parent family are more than twice as likely to report internalizing and externalizing problems and more likely to have a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) (Behere, Basnet, & Campbell, 2017). Furthermore, children of single-parent households are at a heightened risk for a variety of social, emotional and behavioural

problems that greatly impact academics and social functioning. (Lipman, Boyle, Dooley, & Offord, 2002) The study results are also consistent with literature that suggests single motherhood is linked to the increased risk for child maltreatment (Schneider, 2017), indicating the sampled children/youth are more vulnerable to the adverse effects of maltreatment and likely the require urgent mental health care.

In addition, the current study results that found children over 12 years who reported being responsible for themselves (emancipated minor) represented a large proportion of high mental health service urgency scores are also consistent with prior literature. Specifically, researchers have shown that emancipated youth, both from parents and foster care system, are at higher risk for mental disorders (Edidin, Ganim, Hunter, & Karnik, 2012; Toro, Dworsky, & Fowler, 2007) suggesting that that youth emancipated from guardianship are more likely to report various mental problems, drug addictions, or suicide attempts compared to their housed peers. Consequently, the results of the current study that indicates that children who identify as legally emancipated from guardianship appear to reflect a heightened risk for serious mental health issues requiring more urgent care. The current study further highlights the need for clinicians to examine the relationship between guardianship within a trauma-informed approach when triaging children and youth seeking services.

Gender and High Mental Health Service Urgency

Analysis from the present study additionally provides significant findings to contribute to research in the area of gender differences among children and youth with high mental health needs. Gender had a significant impact on mental health urgency scores. Specifically, in the current study, three-quarters of children in groups 4 to 7 years old and 8 to 11 years old with high mental health service urgency were males. In contrast, the majority of children ages 12 or older who scored high

on mental health service urgency were female (63.5%). Results suggest that older females were more likely to have higher mental health service urgency, while males were at higher risk at a younger age. The present study finding indicating that younger males have higher service urgency than young females is consistent with prior literature that reveal female gender is associated with lower rates of mental health service use because females seek services less frequently and are less likely to be subsequently diagnosed than males (Posserud, Lundervold, 2013; Burns et al., 1995). The present results indicated that younger males were 3 times more likely than females to receive a high score on the service urgency algorithm. For the two younger age groups, determinates of high mental health service urgency included items related to danger to self/others, mood disturbances, making negative statements, and hyperactivity. This is consistent with prior literature that males, during childhood and early adolescence, present with more externalizing symptoms, which are easier to recognize than internalizing symptoms (Posserud, Lundervold, 2013; Paula, C. S., Bordin, Mari, Velasque, Rohde, & Coutinho, 2014).

Children seeking service for urgent mental health needs tend to be males with aggressive and violent presentations. According to previous research, following the experience of interpersonal trauma, the externalizing reactions to trauma for children 6 to 11 include irritability, angry reactive outbursts, and tendencies towards fighting, and hyperactivity (Hoddas, 2010; NIMH, 2001). The internalizing behaviours common to young male children who have experienced interpersonal trauma include distress during separation from caregiver, regressive behaviours, extreme withdrawal, irrational fears, flat affect, depression and anxiety symptoms (NIMH, 2001). Furthermore, females with the same type of diagnosis and severity of symptoms were less likely to be referred to services than males. It is apparent that females must present as more impaired than boys to be referred for assistance. The present study, consistent with previous

findings, suggests a need for greater attention to this disparity and the unequal access to mental health care.

The findings in the current study that indicate older females were more likely to have higher mental health service urgency than males were incongruent with previous research on gender disparity among service utilization. This inconsistency may reflect the fact that the ChYMH-S urgency algorithm used in the present study may be more effective in triaging children based on need. Furthermore, these findings are consistent with previous research demonstrating the differential influence of gender on a child's reactivity to interpersonal trauma exposure, presenting as different behavioural indicators (Crosson-Tower, 2010; Hoddas, 2010). The items in the ChYMH-S utilized as the determinants of urgency in older youth are consistent with the research extant and clinical relevance. The determinants relate to danger to self or others, and various symptoms associated with Posttraumatic stress disorder (PTSD). Commonly cited throughout the literature is a gender disparity for risk of PTSD following a traumatic event. Females appear to be more likely to develop PTSD after experiencing trauma than males (Breslau, 2009; Moore, Gaskin, & Indig, 2013). Thus, the present results appear to be consistent with the literature in this area that reports higher rates of PTSD symptom experience and self-harm following trauma exposure by female than male adolescents (DeBellis, 2001; Van der Kolk, 2017).

Overall, it is apparent that childhood interpersonal trauma exposure has an impact on mental health service urgency. These findings, along with the gender and guardianship analyses yielded important implications that provide significant contributions to the growing body of literature. Yet, the prevailing rates of childhood maltreatment and youth mental health issues implies a need for continued research examining the barriers that impact the child and youth mental health waitlists, and factors that predict prioritization of care for children and youth seeking

services. The current study employed the ChYMH-S tool, a mental health screening protocol utilized across multiple sectors of the child and youth mental health system (CYMHS) to support triaging and service allocation. In utilizing this tool, many substantial implications for policy and practice were uncovered in this study. These implications are discussed further below.

Policy Implications

Although there has been substantial advancement made in the last decade, the children's mental health system in Ontario has yet to effectively address the challenge of providing services for children and youth who experience mental health challenges as well as the burden placed on service providers. This reflects the costly, highly fragmented, and difficult system that families and children navigate in seeking mental health care (Shanley, Reid, & Evans, 2008; Pepler & Bryant, 2011). Action by all levels of government, communities, service providers, and caregivers is necessary to realize improvement across child and youth service sectors, and there is a clear need for policy reform and application nationwide.

The current study provides an important contribution to support evidence-informed improvements to the child and youth mental health service. Specifically, the study utilized an evidence-based assessment instrument intended to support decision-making related to triaging, placement, and service utilization across all CYMHS sectors. This tool, the ChYMH-S can be utilized to effectively mitigate some of the systemic barriers to appropriate, timely access to mental health services for children and youth in need across service sectors across the lifespan (Stewart & Hirdes, 2017).

The psychometric properties have been examined for the ChYMH-S, but not yet published (Stewart, Babcock et al., manuscript in preparation). The screener is based on the full ChYMH instrument, which has been shown to have strong validity and reliability for children and youth

(Phillips & Hawes, 2012; Phillips & Hawes, 2015; Stewart & Hamza, 2017; Lau et al., 2017). The ChYMH, along with most other interRAI instruments are currently being utilized in Ontario across multiple settings to assess the strengths, needs and level of functioning of children and youth (Stewart, Hirdes, et al., 2015; Stewart, LaRose et al., 2015). In addition to providing service urgency algorithms to enhance triaging and prioritization, the instrument provides evidence-informed care planning based on the level of need to promote efficient and effective clinical practice (Stewart, Theall et al., 2015, 2016).

As outlined in the *A Shared Responsibility: The Ontario Policy Framework for Child and Youth Mental Health* (2013), the policy developed by the Ontario Ministry of Child and Youth Services (MCYS), there is a greater need for earlier mental health identification, enhanced collaboration across child and youth-serving sectors, and increased consistency in service provision. The ChYMH-S utilized in the current study meets many of the goals outlined in provincial policy reform initiative and provides evidence-informed care planning based on need. Furthermore, this tool is being utilized in various child and youth service agencies across Ontario, including inpatient, community programs, and within schools.

A review of the literature revealed a lack of child and youth mental health assessment tools that assist in prioritizing access to services. Research examining the pathway through mental health service sectors indicates that the education sector is the main point of contact for youth seeking service for behavioural, emotional, and/or substance use problems, and overall those entering through this sector were least likely to receive subsequent services (Farmer Burns, Phillips, Angold, & Costello, 2003). These findings support the significance of the education sectors as a mental health provider for children and youth in need as an important collaborative sector in the reform of the CYMHS. As noted above, the tool used in the current study, the ChYMH-S, is

utilized across multiple sectors of the CYMHS, including the education sector. Although the current study did not evaluate which sector the sampled youth entered through, it is expected that the nearly 20,000 sampled youth seeking mental health services within Ontario, entered through pathways typically recognized within the general population of children and youth seeking MH support.

Furthermore, the current study has important practical implications in regard to the CYMH waitlist burden. Considering that 75% of children in Canada who suffer from mental health disorders do not have their needs effectively met, there is a great need for appropriate prioritization and allocation of service and support to combat the waitlist issues and help the unserved high-risk youth. The service urgency algorithms in the current study were developed specifically for the ChYMH-S to enhance triaging and prioritization and promote more efficient and effective clinical practice across the child and youth mental health services.

Practical Implications

Findings from the current study have numerous significant clinical implications, and the potential to inform the clinical practice to improve mental health service allocation to high-risk children and youth. The present study provides insight into the characteristics of youth presenting with high mental health service urgency. There are few reports of standardized methods for directing and prioritizing risk with children and service prioritization, with even less research examining the efficacy of any of the available instruments. This study investigated the degree to which children and youth exposed to interpersonal trauma are ranked as having higher priority needs than those children who were not exposed to such experiences. As part of this process, the potential of the ChYMH-S urgency algorithm to promote improved triaging and prioritization for children who have experienced maltreatment was examined and appeared effective in allocating

appropriate services to high need children and youth. Specifically, youth presenting with histories of interpersonal trauma appear to have significantly higher proportions of requiring urgent mental health service urgency than those without such histories.

A significant strength of this study was the large sample size, which gave the project strong power and generalizability. Over 60 mental health agencies with both inpatient and outpatient services contributed to the data. The relatively large sample size increases the approximate representation of children and youth who are seeking a broad range of mental health services across a variety of agencies, schools and hospitals in Ontario.

To address the child and youth mental health service waitlist burden, various screening tools have been developed to stream-line, prioritize and refer children and youth to mental health care agencies and services. Yet, waitlist issues persist, so it is imperative to ensure that those at highest risk are being prioritized effectively and that standardized tools are reliable in directing children and youth to appropriate mental health services. The service urgency algorithm objectively applied to each case is evidence-based and the determinants of service urgency differ depending on developmental stage. This is an additional strength of the current study as the various pathways that could lead a child to a higher score of service urgency are considered. This is a limitation to the alternative screening tools reviewed previously in the current study. Furthermore, a limited number of studies have examined the prevalence rates of overall interpersonal trauma exposure within a large clinical sample of children and youth. Therefore, the current study contributes valuable descriptive findings to the current trauma literature. Child maltreatment and related experiences have been identified as common risk factors for poor mental health (Scott, Smith, & Ellis, 2010). Thus, identifying these youth holds important implications. Greater understanding of the severe and persistent effects of maltreatment on the developing brain has

given rise to many intervention and prevention programs substantiated as effective in promoting growth and recovery for maltreated individuals. Thus, ensuring these children and youth have streamlined access to these services is imperative to their recovery.

Clinical Implications

The present study additionally provides numerous implications for child and youth mental health clinicians such as psychologists, counsellors, and intake personnel. Foremost, these findings are consistent with previous research suggesting childhood interpersonal trauma is a risk factor for future severe mental health issues (De Bellis, 2001). As the present study determined, children who had experienced at least one form of interpersonal trauma were significantly more likely to have higher mental health service urgency than those without maltreatment histories. Child and youth mental health triaging personnel should be vigilant in prioritizing the mental health services for children in need. Findings of the present study imply a need to consider past trauma exposure when determining mental health urgency and directing to services.

As each child's trauma exposure is unique, so too is the means by which they process their victimization. The emotional and behavioral expressions can vary depended on many factors, such as the age of onset of maltreatment, disclosure of their victimization, age at intake, interpersonal trauma (DeBellis, 2001), so it is also important for clinicians to remain mindful of how each child processes their trauma when assessing and triaging. The present study lends support to the notion that even more subtle or indirect forms of interpersonal trauma, such as bullying victimization or parental substance abuse, can have damaging effects on a child's mental health. Social desirability bias and understanding what constitutes violence or abuse may impact the reporting of trauma exposure. Therefore, clinicians should be cautious when inquiring about past trauma to ensure any trauma exposure is accurately reported. Clinicians are encouraged to implement trauma-informed

treatment to support the development of adaptive coping strategies. Furthermore, clinicians should consider the type of interpersonal trauma experienced and engage in the appropriate interventions and treatment based on this knowledge.

Clinicians should also consider the age and gender of a youth seeking mental health services, as the present study identified gender and age differences among children and youth scoring high on mental health service urgency. Lastly, it is also important to note that the present study found that children and youth who had Children's Aid Society as their legal guardian, single mother guardianship, and emancipated youth responsible for themselves were more likely to have high mental health service urgency than all other guardianship categories. These findings provide strong support to suggest that children's mental health triaging personnel should also be mindful of the youth's guardianship status when establishing urgency and directing families to services.

Moreover, the results of this study address the gap in having practical implications related to evidence-informed treatment, improved service allocation, and reduced wait times for vulnerable children and youth. Identifying these children has important implications as childhood mental disorders often persist into adulthood and have many pervasive negative consequences.

Limitations

Although findings from this study have meaningful implications for the field, it is important to consider the various limitations. First, the data for the current study was collected from a clinical sample of youth who were accessing the mental health system through various child and youth sectors across Ontario. Therefore, the results will generalize to children and youth who are seeking mental health services but may not be representative of the broader population of children and youth in need of mental health services.

In addition, by the nature of assessing child maltreatment, there is the concern of inaccurate reporting. Specifically, participants may not recall their experiences accurately or fear the stigmatization of a disclosure that could have led to a social desirability bias, thereby affecting the accuracy of trauma exposure reports. Furthermore, maltreatment rates in the current study may not be accurate if some form of trauma went unreported. There are various possible contributing factors to the potential inaccurate reporting of trauma. For one, an individual's level of social desirability may be one contributing factor affecting the disclosure of maltreatment and other forms of indirect trauma exposure (Rosenbaum & Langhinrichsen-Rohling 2006). Social desirability bias refers to the tendency for people to present a favorable image of themselves when interviewed or on a questionnaire. The desire to be viewed through a positive lens by individuals with high levels of social desirability are more likely to underreport violent incidences and occasions of abuse. Although the questions asked in the current study were carefully developed to minimize this bias, it cannot prevent the possibility that some of the participants may have avoided some disclosure on their undesirable behaviours or experiences. It should be noted that the assessment approach has been minimized through the use of collateral resources and other sources of information. However, if there has been no disclosure, trauma would be under-detected. Furthermore, if the informant on interpersonal trauma was the youth themselves, it is additionally possible that they did not recall their experiences or that a fear of being stigmatized inhibited their abuse disclosure.

Secondly, Straus, Hamby, Boney-McCoy, and Sugarman (1999) have suggested other possible factors that may impact the reporting rates of interpersonal trauma. For example, the researchers identify negative attribution, which refers to the negative intentions or blame attributed to the victims of trauma or abuse, and violence approval, which is the degree to which violence is

considered acceptable within a variety of interpersonal situations. Parents with a high level of negative attribution tend to believe their use of violence is the children's fault, while those who approve of violence may not regard their acts as problematic (Straus, et al., 1999). As a result, guardians and/or parents may be less inclined to report their abusive behaviours that are socially undesirable and even criminal.

As outlined in previous studies (Sundermann & DePrince, 2015), chronicity and severity of maltreatment can increase the risk for serious mental health issues. The present study did not consider the chronicity and frequency of the interpersonal trauma exposure. Yet, developmental traumatology research has revealed that the more chronic and frequent a child's maltreatment exposure, the more likely the child is to experience greater severity of symptoms and are at an increased risk for serious mental health issues (De Bellis, 2001; Sundermann & DePrince, 2015).

Furthermore, the earlier age of onset of maltreatment and the experience of multiple forms of maltreatment is related to more severe and long-lasting effects (Scott, Smith, & Ellis, 2010; Kaplow & Wisdom, 2007; Van der Kolk, 2017). The current study did not explore the age of onset for maltreatment, nor did it examine the compounding impact of multiple forms of maltreatment on mental health needs. Accordingly, future research in the area of interpersonal trauma exposure in childhood should evaluate the severity and chronicity of the maltreatment, along with age of onset and resiliency factors.

Future Directions

Although the current study added to the literature, there is still considerable work to be done to understand the complexities of interpersonal trauma exposure and how best to prioritizing children's mental health needs. Findings from the current study highlight several areas for future research. Future studies should first attempt to replicate these findings in various tertiary care or

community based mental health service agencies across additional provinces in Canada. This would help provide a more comprehensive understanding of the prioritization of urgent mental health needs among vulnerable children seeking services.

Secondly, future research exploring the effects of childhood maltreatment and mental health service urgency should include additional characteristics related to the severity and chronicity of interpersonal trauma that had occurred. The present study only examined if childhood maltreatment had been present in the child's life. An examination of the severity of the maltreatment, how long the maltreatment occurred in the child's life and the frequency that the maltreatment occurred was not examined in the present study. Examining these characteristics of the maltreatment would contribute to further understanding of the mental health sequelae of maltreated children and youth.

Continued examination of the impact of interpersonal trauma on a child's mental health should pursue the investigation into the associated impact of maltreatment onset and number of maltreatment exposures. These factors were examined within the current study, but prior research reveals strong direct associations between maltreatment onset and multiple forms of trauma and adverse mental health outcomes in childhood and later life (Scott, Smith, & Ellis, 2010; Kaplow & Wisdom, 2007; Van der Kolk, 2017).

Many factors such as social support, spirituality, and access to treatment options appear to buffer the effects of the maltreatment for some youth resulting in adaptive coping strategies (Bogar & Hulse-Killacky, 2006). Children/youth who had experienced interpersonal trauma may have sought out more protective factors that allowed them to be resilient to the trauma. Many children who experience more severe maltreatment may find ways to cope more effectively and therefore do not present with high mental health service urgency. Thus, future research should seek to

examine the impact of resiliency and protective factors on the association between maltreatment exposure and high mental health service urgency.

Summary

Notwithstanding the aforementioned limitations to the current study, the findings of this research are unique in that they contribute to our understanding of interpersonal trauma, bringing attention to several factors related to mental health service urgency for children and youth. The current findings do contribute to a growing body of research regarding childhood maltreatment and have important implications for mental health service providers.

The current study explored the relationship between childhood maltreatment and mental health screening outcomes, identifying that children and youth who have experienced maltreatment are significantly more likely to score high on mental health service urgency than those who have not. This finding is supported by a considerable body of previous research that indicates children/youth who are exposed to some form of interpersonal trauma are more likely to have mental health issues requiring urgent follow-up service. Children and youth with the Children's Aid Society as their legal guardianship appear to be associated with higher mental health service need. Finally, important gender differences found in the current study will also contribute to prior research. For example, younger males and older females appear to be at a higher risk for needing urgent mental health service and supports. Moreover, the findings of this study promote appreciation for the needs of maltreated children/youth and provide evidence that the ChYMH-S can effectively assist in prioritizing those with the greatest service urgency.

There are few reports of standardized methods for directing and prioritizing risk with children and service prioritization, with even less research examining the efficacy of any of the available instruments. This study investigated the degree to which children and youth exposed to

interpersonal trauma are ranked as having higher priority needs than those children who are not exposed to such maltreatment. As part of this process, the potential of the ChYMH-S urgency algorithm to promote improved triaging and prioritization for children who have experienced maltreatment was examined. Results of this study address the gap in having practical implications related to evidence-informed treatment, improved service allocation, and reduced wait times for these vulnerable children and youth. In conclusion, the current study provides valuable insight that can support the development of appropriate system-level changes to policy and practice when servicing children and youth with mental health needs in Canada.

References

- 2016 Report Card: Child and youth mental health promoting a seamless coordinated system of care that puts children, youth and families first (2016). *Children's Mental Health Ontario*: Toronto.
- Adams, E.J. (2010), "Healing invisible wounds: why investing in trauma-informed care for children makes sense", Justice Policy Institute, Washington, DC
- Afifi, T., MacMillan, H., Boyle, M., Taillieu, T., Cheung, K., & Sareen, J. (2014). Child abuse and mental disorders in Canada. *Canadian Medical Association Journal*, 186(9), E324-E332. doi:10.1503/cmaj.131792
- American Psychiatric Association (2013). Trauma- and Stressor-Related Disorders, in Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition. American Psychiatric Publishing; Arlington, VA: 2013.
- Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., . . . Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience*, 256(3), 174-186. 10.1007/s00406-005-0624-4
- Anderson, R. L., Lyons, J. S., Giles, D. M., Price, J. A., & Estle, G. (2003). Reliability of the child and adolescent needs and strengths-mental health (CANS-MH) scale. *Journal of Child and Family Studies*, 12(3), 279-289. doi:10.1023/A:1023935726541
- Arbeau, K., Theall, L., Willoughby, K., Berman, J. M., & Stewart, S. L. (2017). What Happened? Exploring the Relation between Traumatic Stress and Provisional Mental Health Diagnoses for Children and Youth. *Psychology*, 8(14), 2485.s.

- Aron, A., Aron, E. J., & Coups, E. J. (2009). *Statistics for psychology* (5th Ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Bath, H. (2008), "The three pillars of trauma-informed care", *Reclaiming Children and Youth*, Vol. 17 No. 3, pp. 17-21.
- Behere, A. P., Basnet, P., & Campbell, P. (2017). Effects of Family Structure on Mental Health of Children: A Preliminary Study. *Indian journal of psychological medicine*, 39(4), 457-463.
- Blum, H. M., Boyle, M. H., & Offord, D. R. (1988). Single-parent families: child psychiatric disorder and school performance. *Journal of the American Academy of Child & Adolescent Psychiatry*, 27(2), 214-219.
- Bogar, C. B., & Hulse-Killacky, D. (2006). Resiliency determinants and resiliency processes among female adult survivors of childhood sexual abuse. *Journal of Counseling & Development*, 84(3), 318-327.
- Breslau, N. (2009). The epidemiology of trauma, PTSD, and other posttrauma disorders. *Trauma, Violence, & Abuse*, 10(3), 198-210.
- Brown, S. A., Parker, J. D., & Godding, P. R. (2002). Administrative, clinical, and ethical issues surrounding the use of waiting lists in the delivery of mental health services. *Journal of Behavioural Health Services & Research*, 29(2), 217-228.
- Burns, B. J., Costello, E. J., Angold, A., Tweed, D., Stangl, D., Farmer, E. M., & Erkanli, A. (1995). Children's mental health service use across service sectors. *Health affairs*, 14(3), 147-159.
- Canadian Institutes for Health Research. (2010). *Access and wait times in child and youth mental health: A background paper*. Retrieved from:

- http://www.excellenceforchildandadulthood.ca/sites/default/files/policy_access_and_wait_times.pdf
- Cash, S. J., & Bridge, J. A. (2009). Epidemiology of youth suicide and suicidal behavior. *Current opinion in pediatrics*, 21(5), 613.
- Cawthorpe, D., Wilkes, T. C. R., Rahman, A., Smith, D. H., Conner-Spady, B., McGurran, J. J., & Noseworthy, T. W. (2007). Priority-setting for children's mental health: Clinical usefulness and validity of the priority criteria score. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 16(1), 18.
- Child Welfare Information Gateway. (2015). Understanding the effects of maltreatment on brain development. Washington, DC: U.S. Department of Health and Human Services, Children's Bureau.
- Cordell, K. D., Snowden, L. R., & Hosier, L. (2016). Patterns and priorities of service need identified through the Child and Adolescent Needs and Strengths (CANS) assessment. *Children and Youth Services Review*, 60, 129-135.
- Cook, A., Spinazzola, J., Ford, J., Lanktree, C., Blaustein, M., Cloitre, M. et al. (2005). Complex Trauma in Children and Adolescents. *Psychiatric Annals*, 35, 390-398.
<https://doi.org/10.3928/00485713-20050501-05>.
- Crosson-Tower, C. (2010). Understanding child abuse and neglect (8th ed.). Boston: Allyn & Bacon.
- De Bellis, M. D. (2001). Developmental traumatology: The psychobiological development of maltreated children and its implications for research, treatment, and policy. *Development and psychopathology*, 13(03), 539-564.

- De Bellis, M. D., Hooper, S. R., Spratt, E. G., & Woolley, D. P. (2009). Neuropsychological findings in childhood neglect and their relationships to pediatric PTSD. *Journal of the International Neuropsychological Society, 15*(06), 868-878.
- De Bellis, M. D., & Zisk, A. (2014). The biological effects of childhood trauma. *Child and adolescent psychiatric clinics of North America, 23*(2), 185-222.
- Edelsohn, G. A. (2004). Urgency counts: The why behind pediatric psychiatric emergency visits. *Clinical Pediatric Emergency Medicine, 5*(3), 146-153. doi:10.1016/j.cpem.2004.05.001.
- Eddin, J. P., Ganim, Z., Hunter, S. J., & Karnik, N. S. (2012). The mental and physical health of homeless youth: a literature review. *Child Psychiatry & Human Development, 43*(3), 354-375.
- Evans, E., Hawton, K., & Rodham, K. (2005). Suicidal phenomena and abuse in adolescents: A review of epidemiological studies. *Child Abuse & Neglect, 29*(1), 45-58. doi:10.1016/j.chiabu.2004.06.014
- Farmer, E. M., Burns, B. J., Phillips, S. D., Angold, A., & Costello, E. J. (2003). Pathways into and through mental health services for children and adolescents. *Psychiatric Services, 54*(1), 60-66.
- Folger, S. F., & Wright, M. O. D. (2013). Altering risk following child maltreatment: Family and friend support as protective factors. *Journal of Family Violence, 28*(4), 325-337.
- Ford, J. D., & Kidd, P. (1998). Early childhood trauma and disorders of extreme stress as predictors of treatment outcome with chronic posttraumatic stress disorder. *Journal of Traumatic Stress, 11*(4), 743-761.

- Glod, C. and Teicher, M. (1996): Relationship between early abuse, PTSD, and activity levels in prepubertal children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35 (10), 1384-1393.
- Government of Canada (2006). *The human face of mental health and mental illness in Canada*. Ottawa: Minister of Public Works and Government Services Canada.
- Green, J. G., McLaughlin, K. A., Berglund, P. A., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2010). Childhood adversities and adult psychiatric disorders in the national comorbidity survey replication I: associations with first onset of DSM-IV disorders. *Archives of general psychiatry*, 67(2), 113-123.
- Greeson, J. K., Briggs, E. C., Kisiel, C. L., Layne, C. M., Ake III, G. S., Ko, S. J., ... & Fairbank, J. A. (2011). Complex trauma and mental health in children and adolescents placed in foster care: Findings from the National Child Traumatic Stress Network. *Child welfare*, 90(6), 91.
- Grudnikoff, E., Taneli, T., & Correll, C. U. (2015). Characteristics and disposition of youth referred from schools for emergency psychiatric evaluation. *European child & adolescent psychiatry*, 24(7), 731-743.
- Herrenkohl, T. I., Sousa, C., Tajima, E. A., Herrenkohl, R. C., & Moylan, C. A. (2008). Intersection of child abuse and children's exposure to domestic violence. *Trauma, Violence & Abuse*, 9, 84-99.
- Ko, S.J., Ford, J.D., Kassam-Adams, N., Berkowitz, S.J., Wilson, C., Wong, M., Brymer, M.J. and Layne, C.M. (2008), "Creating trauma-informed systems: child welfare, education, first responders, health care, juvenile justice", *Professional Psychology: Research and Practice*, Vol. 39 No. 4, pp. 396-404.

- Kessler RC, Berglund P, Demler O, Jin R, and Merikangas K. R. Walters (2005). Lifetime prevalence and age of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. *Arch Gen Psychiatry*, 62 (6): 593-602. 10.1001/archpsyc.62.6.593.
- Kowaleski, K., McLennan, J. D., & McGrath, P. A. (2011). A preliminary investigation of wait times for child and adolescent mental health services in Canada. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 20(2), 112-119.
- Langer, D. A., Wood, J. J., Wood, P. A., Garland, A. F., Landsverk, J., & Hough, R. L. (2015). Mental health service use in schools and non-school-based outpatient setting: comparing predictors of service use. *School Mental Health*. Retrieved from <http://link.springer.com/article/10.1007/s12310-015-9146-z>
- Lau, C. (2017). Development and Psychometric Validation of the interRAI Internalizing and Externalizing Subscales.
- Lipman, E. L., Boyle, M. H., Dooley, M. D., & Offord, D. R. (2002). Child well-being in single-mother families. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41(1), 75-82. doi:10.1097/00004583-200201000-00014
- Lyons, J. S., Sokol, P. T., Khalsa, A., & Lee, M. (1999) *The Child and Adolescent Needs and Strengths for children with mental health challenges (CANS MH): manual*. Winnetka, IL: The Buddin Praed Foundation.
- Lyons, J. S., Uziel-Miller, N. D., Reyes, F., & Sokol, P. T. (2000) Strengths of children and adolescents in residential settings: prevalence and associations with psychopathology and discharge placement. *Journal of the American Academy of Child and Adolescent Psychiatry*, XXXIX, 176-181.

- Maas, C., Herrenkohl, T. I., & Sousa, C. (2008). Review of research on child maltreatment and violence in youth. *Trauma, Violence, & Abuse*, 9(1), 56-67.
- Mangion, M., & C. Buttigieg, S. (2014). Multi-type childhood maltreatment: associations with health risk behaviours and mental health problems in adolescence. *Journal of Children's Services*, 9(3), 191-206
- McGarry, J., McNicholas, F., Buckley, H., Kelly, B. D., Atkin, L., & Ross, N. (2008). The clinical effectiveness of a brief consultation and advisory approach compared to treatment as usual in child and adolescent mental health services. *Clinical child psychology and psychiatry*, 13(3), 365-376.
- McLuckie, A., Kutcher, S., Wei, Y., & Weaver, C. (2014). Sustained improvements in students' mental health literacy with use of a mental health curriculum in Canadian schools. *BMC psychiatry*, 14(1), 1.
- Moore, E., Gaskin, C., & Indig, D. (2013). Childhood maltreatment and post-traumatic stress disorder among incarcerated young offenders. *Child abuse & neglect*, 37(10), 861-870.
- Moylan, C. A., Herrenkohl, T. I., Sousa, C., Tajima, E. A., Herrenkohl, R. C., & Russo, M. J. (2010). The effects of child abuse and exposure to domestic violence on adolescent internalizing and externalizing behavior problems. *Journal of family Violence*, 25(1), 53-63.
- National Institute of Mental Health (NIMH) (2001): Helping children and adolescents cope with violence and disasters. Washington, DC: Department of Health and Human Services, Public Health Service, National Institute of Health.

- Noseworthy, T. W., McGurran, J. J., & Hadorn, D. C. (2003). Waiting for scheduled services in Canada: development of priority-setting scoring systems. *Journal of evaluation in clinical practice*, 9(1), 23-31.
- Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: a global public-health challenge. *The Lancet*, 369(9569), 1302-1313.
- Paula, C. S., Bordin, I. A., Mari, J. J., Velasque, L., Rohde, L. A., & Coutinho, E. S. (2014). The mental health care gap among children and adolescents: data from an epidemiological survey from four Brazilian regions. *PLoS One*, 9(2), e88241.
- Pepler, E., Bryant, M. (2011, May). A call for change to the system for delivering child & youth mental health services in South Western Ontario. Richard Ivey School of Business, University of Western Ontario.
- Perreault, S., & Brennan, S. (2010). Criminal victimization in Canada, 2009. Juristat: Canadian Centre for Justice Statistics, 30(2), 1G.
- Phillips CD, Hawes C. 2015. The interRAI Pediatric Home Care (PEDS HC) Assessment: Evaluating the Long-term Community-Based Service and Support Needs of Children Facing Special Healthcare Challenges. *Health services insights*. 8:17
- Polanczyk, G. V., Salum, G. A., Sugaya, L. S., Caye, A., & Rohde, L. A. (2015). Annual Research Review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *Journal of Child Psychology and Psychiatry*, 56(3), 345-365.
- Posserud, M. B., & Lundervold, A. J. (2013). Mental health services use predicted by number of mental health problems and gender in a total population study. *The Scientific World Journal*, 2013.

- Public Health Agency of Canada. (2010). Canadian Incidence Study of Reported Child Abuse and Neglect – 2008: Major Findings. Ottawa.
- Rosenbaum, A., & Langhinrichsen-Rohling, J. (2006). Meta-research on violence and victims: The impact of data collection methods on findings and participants. *Violence and Victims*, 21, 404–409.
- Schraeder, K. E., & Reid, G. J. (2015). Why wait? The effect of wait-times on subsequent help-seeking among families looking for children’s mental health services. *Journal of abnormal child psychology*, 43(3), 553-565.
- Scott, K. M., Smith, D. R., & Ellis, P. M. (2010). Prospectively ascertained child maltreatment and its association with DSM-IV mental disorders in young adults. *Archives of general psychiatry*, 67(7), 712-719.
- Shanley, D. C., Reid, G. J., Evans, B. (2008). How parents seek help for children with mental health problems. *Administration and Policy in Mental Health*, 35(3), 135-146.
- Schneider, W. (2017). Single mothers, the role of fathers, and the risk for child maltreatment. *Children and Youth Services Review*, 81, 81-93. doi:10.1016/j.chilyouth.2017.07.025
- Soto, E. C., Frederickson, A. M., Trivedi, H., Le, A., Eugene, M. C., Shekher, M., ... Correll, C. U. (2009). Frequency and correlates of inappropriate pediatric psychiatric emergency room visits. *Journal of Clinical Psychiatry*, 70(8), 1164-1177.
- Stewart, S. L., & Hamza, C. A. (2017). The child and youth mental health assessment (ChYMH): An examination of the psychometric properties of an integrated assessment developed for clinically referred children and youth. *BMC Health Services Research*, 1710.1186/s12913-016-1970-9

Stewart S. L., Hirdes, J. P., Curtin-Telegdi, N., Perlman, C., MacLeod, K., Ninan, A., Hall, M., Currie, M., Carson, S., Morris, J. N., Berg, K., Björkgren, M., Frijters, D., Fries, B. E., Gray, L., Henrard, J-C., Ljunggren, G., Smith, T., & Steel, K. (2015). *interRAI Child and Youth Mental Health (ChYMH) Assessment Form and User's Manual. Version 1.* Washington, DC: interRAI.

Stewart S. L., Hirdes, J. P., Curtin-Telegdi, N., Perlman, C., MacLeod, K., Ninan, A., Hall, M., Currie, M., Carson, S., Morris, J. N., Berg, K., Björkgren, M., Frijters, D., Fries, B. E., Gray, L., Henrard, J-C., Ljunggren, G., Smith, T., & Steel, K.. (2017). *interRAI Child and Youth Mental Health (ChYMH) Assessment Form and User's Manual. Version 9.3*. Washington, DC: interRAI.

Stewart S. L., Hirdes J.P., McKnight M., (2017). *InterRAI Child and Youth Mental Health-Screener (ChYMH-Screener) Assessment Form and User's Manual. Version 9.1* Washington, DC: InterRAI.

Stewart S. L., Hirdes J.P., McKnight M., (2018). *InterRAI Child and Youth Mental Health-Screener (ChYMH-Screener) Assessment Form and User's Manual. Version 9.3* Washington, DC: InterRAI.

Stewart, S.L., Theall, L.A., Morris, J.N., Berg, K., Björkgren, M., Declercq, A., Finne-Soveri, H., Fries, B.E., Frijters, D., Gray, L., Head, M., Hirdes, J.P., James, M., Ljunggren, G., Meehan, B., Smith, T., Steel, K., Szczerbinska, K., & Topinková, E. (2015). *interRAI Child and Youth Mental Health Collaborative Action Plans (CAPs) for use with the interRAI Child and Youth Mental Health (ChYMH) Assessment Instrument, Version 9.3, Standard Edition.* Washington, DC: interRAI.

- Stewart, S.L., Theall, L.A., Morris, J.N., Berg, K., Björkgren, M., Declercq, A., Finne-Soveri, H., Fries, B.E., Frijters, D., Gray, L., Head, M., Hirdes, J.P., James, M., Ljunggren, G., Meehan, B., Smith, T., Steel, K., Szczerbinska, K., & Topinková, E. (2016). interRAI Child and Youth Mental Health Collaborative Action Plans (CAPs) for use with the interRAI Child and Youth Mental Health (ChYMH) Assessment Instrument, Version 9.3, Standard Edition. Washington, DC: interRAI.
- Straus, M. A., Hamby, S. L., Boney-McCoy, S., & Sugarman, D. (1999). The personal and relationships profile (PRP). Durham, NH: University of New Hampshire, *Family Research Laboratory*.
- Sundermann, J. M., & DePrince, A. P. (2015). Maltreatment characteristics and emotion regulation (ER) difficulties as predictors of mental health symptoms: Results from a community-recruited sample of female adolescents. *Journal of Family Violence, 30*(3), 329-338.
- Toro, P. A., Dworsky, A., & Fowler, P. J. (2007, March). Homeless youth in the United States: Recent research findings and intervention approaches. In *National symposium on homelessness research*.
- United States Department of Health and Human Services. (2006). Child maltreatment 2004. Washington: Administration for Children and Families.
- Van der Kolk, B. A. (2017). Developmental Trauma Disorder: Toward a rational diagnosis for children with complex trauma histories. *Psychiatric annals, 35*(5), 401-408.
- Waddell, C., Mcewan, K., Shepherd, C. A., Offord, D. R., & Hua, J. M. (2005). A Public health strategy to improve the mental health of Canadian children. *Canadian Journal of Psychiatry, 50*, 226–233.

- Waddell, C., Offord, D. R., Shepherd, C. A., Hua, J. M., & McEwan, K. (2002). Child psychiatric epidemiology and Canadian public policy-making: The state of the science and the art of the possible. *Canadian Journal of Psychiatry*, 47(9), 825-832.
- Widom, C. S. (1999). Posttraumatic stress disorder in abused and neglected children grown up. *American Journal of Psychiatry*, 156(8), 1223-1229.
- Widom, C. S., DuMont, K., & Czaja, S. J. (2007). A prospective investigation of major depressive disorder and comorbidity in abused and neglected children grown up. *Archives of general psychiatry*, 64(1), 49-56

Curriculum Vitae

Name: Catherine Marshall

Post-secondary Education and Degrees: Western University
London, Ontario, Canada
M.A Counselling Psychology
2016-2019

The University of Guelph
Guelph, Ontario, Canada
B.A Psychology (Honours)
2010-2015

Honours and Awards: Entrance Scholarship
Western University
2016

Dean's Honour List
The University of Guelph
2011-2015

Related Work Experience

Research Assistant- Poverty Reduction Project
London Family Court Clinic
2016-2018

Clinician
Multidisciplinary Clinical Supports Program
London Family Court Clinic
2017-2018

Co-Facilitator
Merrymount Children's Centre
Jan-Jun 2018

Graduate Research Assistant
Faculty of Education- interRAI Research Lab
Western University
Jan-July 2017