Child Psychiatry & Human Development (2022) 53:765–775
https://doi.org/10.1007/s10578-021-01161-2

ORIGINAL ARTICLE

Mental Health Service Urgency in Children's Mental Health: Factors Impacting the Need for Expedited Services

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Accepted: 16 March 2021 / Published online: 9 April 2021

Abstract

Delayed access to mental health services for children and adolescents has been linked to an increased risk of harm and nonattendance to scheduled appointments. While studies suggest that the lack of standardized assessments for prioritizing individuals has contributed to long wait times, the inconsistent use of assessments across service sectors in Ontario continues to persist. This has contributed to a paucity of information surrounding which children and adolescents may require urgent mental health services. Using a large secondary data set, this study examined whether service sector (e.g., school), and other individual client characteristics (e.g., age, sex, legal guardianship, interpersonal and school conflict) predicted greater mental health service urgency in 61,448 children and adolescents assessed using the interRAI Child and Youth Mental Health Screener. Binary logistic regression revealed that all predictors, except for sector, showed a significant effect on service urgency. Findings are instrumental in prioritization, reducing the likelihood that children with acute needs remain on waitlists.

Keywords Child · Adolescent · Prioritization · Binary logistic regression · interRAI

Introduction

Mental health concerns among children and adolescents are common, with an estimated 1 in 5 being affected [1]. Due to increasing rates of mental health need without corresponding increases in service funding, the number of children and adolescents requiring supports is expected to rise at an alarming rate [2, 3]. One theoretical framework to understand the multilevel influences on mental health promotion is the social-ecological model (SEM). The SEM is a multi-tier model that organizes risk and protective factors taken from the child or adolescent's intrapersonal, interpersonal, school and community spheres. A child or adolescent's well-being is the product of complex interactions between factors in each of the respective spheres [4]. Existing work in the field has focused on intrapersonal and interpersonal characteristics and organizational factors, with fewer studies taking on a multi-level perspective [5].

Potentially hindering the ability to create comprehensive theoretical conceptualizations that adopt a multi-level lens is the layout of the current mental health care system. The child and adolescent mental health care system in Ontario is often characterized by siloed delivery systems and lengthy wait times to be connected to services [3]. Over the years, researchers have highlighted the ongoing inability to address the challenges facing the mental health system, as there is an absence of a standardized method for measuring child and adolescent mental health [6]. The inconsistency in practices across the province has resulted in roughly 75% of our most vulnerable children and adolescents receiving no mental health treatments at all. This is problematic, as there are several benefits associated with early, evidence-based treatment of mental health concerns [5, 7, 8].

Children and adolescents with unmet mental health needs are at a greater risk of an array of maladaptive outcomes such as school disengagement, involvement with the criminal justice system, and underemployment as they get older [7]. It is imperative that children and adolescents get access to appropriate mental health resources in a timely fashion. However, 90% of parents are reporting wait times for starting or transitioning between services to be the biggest gap in their child or adolescent's care [3, 9]. The time spent on wait lists for mental health resources may cause the child or adolescent's problems to worsen, increasing the risk of harm and hospitalization and contributing to appointment

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nonattendance by some families; a waste of service sector resources and exacerbating the wait list issue immobilizing the province [7].

In an effort to curb maladaptive outcomes that stem from excessive wait times, the Canadian Psychiatric Association (CPA) released a policy paper outlining appropriate wait times for three levels of care: *emergent, urgent* and *scheduled*; with the longest wait time for specialist services between two to four weeks [10]. Despite these guidelines, recent evidence has suggested that Ontario is not meeting the standards highlighted by the CPA. At present, 28,000 children and adolescents living in the province are waiting as long as 2.5 years for mental health treatments [3]. The use of standardized screening practices can tremendously aid with managing wait lists by identifying the children at greatest risk [11], and through the use of a common language can scaffold an improved and integrated mental health care system [12].

Individual Characteristics of the Child or Adolescent

To begin selecting standardized methods that will improve the responsivity of the existing mental health care system, it is important to understand the characteristics of the children and adolescents that rely on these services. Of particular focus for the current study are individual level characteristics, including the sex and age of the child or adolescent, legal guardianship, interpersonal relationships, school relationships, intellectual disability and co-occurring health conditions.

Research has suggested that there are sex and age differences associated with psychopathology. Specifically, females are more likely to experience internalizing symptoms and males are more likely to experience externalizing symptoms [13] and be diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD) more frequently [14, 15]. Additionally, 50% of all lifetime mental health disorders have their onset by mid-teens [16], suggesting that adolescence is a sensitive developmental period. Adolescence has also been associated with the onset of non-suicidal self-injurious behaviours, higher levels of suicide ideation, personality disorders, smoking and alcohol use [16–21]. The child and adolescent mental health literature places a large emphasis on family structures with evidence suggesting that children and adolescents under the guardianship of child protection agencies and adolescents that are responsible for themselves, experience the poorest outcomes; greater prevalence of mental health disorders, developmental delays [22–24] and greater rates of anxiety and depression when compared to their peers [25, 26] who live in dual-parent households. Beyond just the family composition is an emerging interest in the literature surrounding relationships between family, friends and school personnel and socio-emotional development [27–29]. In general, the more negative relationships that a child or adolescent experiences increase the level of risk for experiencing emotional distress [30].

When compared to the evidence of associations between legal guardianship, interpersonal relationships, school relationships and mental health in the literature for typically-developing children and adolescents, research focused on mental health outcomes for those with intellectual disabilities and comorbid health conditions continues to emerge [31]. Research surrounding children with intellectual disabilities suggests they use more health care services, as they experience more problematic behaviours and are at increased risk of experiencing a mental health disorder when compared to peers without an intellectual disability [32]. Similarly, children and adolescents with comorbid health problems have been found to be at an increased risk of developing mental health concerns compared to their peers without medical conditions [33].

Service Utilization in Ontario

In Ontario, the delivery of mental health supports for children and adolescents is primarily the responsibilities of the Ministries of Children, Community and Social Services, Health and Long-Term Care and Education [6, 34]. In recent years, schools have become popular grounds for mental health assessment and treatment, given how much time children and adolescents spend in these settings [35]. In these settings, children being disruptive in the classroom environment are likely to be addressed [36]. Comparison of the mental health state needs across service sectors is difficult, as this information is not routinely measured and reported. However, emerging research is suggesting there is variability in the needs and mental health profiles of children and adolescents across these settings [37]. Over the years, there has been an increase in the rate of acute care service visits, typically reserved for psychiatric emergencies [1], despite the appropriateness. Gandhi et al. [38] found a large percentage of children and adolescents accessing mental health supports via hospitals for non-urgent reasons when compared to other service sectors. These findings suggest that children and adolescents may be visiting hospitals for non-urgent problems as a method of obtaining resources, due to the layout of our existing mental health care system and the delayed access to appropriate services [39, 40].

Present Study

Although there are several studies suggesting certain variables influence mental health need, much less is known about how these variables influence mental health service

urgency. To date, very little research has been conducted examining factors related to urgency for mental health services in Ontario using a SEM. An understanding of specific characteristics that result in a greater need for further assessment and intervention taken from the child or adolescent's intrapersonal, interpersonal, school and community spheres can aid in prioritization, address fragmentation and the wait-list crisis immobilizing the province. This study is unique in that it is the first study to examine relationships between risk factors and mental health service urgency using the interRAI Child and Youth Mental Health Screener (ChYMH-S) [41]. The current study focused on the relationship among interpersonal conflict, school conflict, legal guardianship, intellectual disability, comorbid health condition(s), age, sex and service sector on mental health service urgency. It was hypothesized that in a multivariate model, higher mental health service urgency would be associated with being female, age, interpersonal conflict, school conflict, an intellectual disability, and presence of comorbid health conditions. It was also expected that assessments completed in hospital would be more urgent than other service sectors.

Methods

Participants

Archival data from 61,448 children and adolescents between 4 and 18 years of age ($M = 12.36$, $SD = 3.73$) seeking mental health services across Ontario were analyzed. All participants were assessed using the ChYMH-S in either school, hospital, mental health agency or a Local Health Integration Network (LHIN). Overall frequencies across the entire sample are reported in Table 1.

Procedures

Prior to completion of the ChYMH-S, trained assessors at the locations obtained informed consent from the guardian(s) of the participating child or adolescent. Guardian(s) were not provided compensation for their participation. All data collected was entered on the interRAI Canada secure server that is housed at a partner university. interRAI Canada provides each child and adolescent a randomly assigned, study-specific participant number. The access to this information for research purposes has been completed through interRAI licensing agreements and the secondary analysis of the data has been approved by The University of Western Ontario's Research Ethics Board.

Table 1 Sample characteristics (N = 61,448)

Variables	Frequency (%)
Sex	
Male	30,490 (49.62)
Female	30,958 (50.38)
Legal guardianship	
Both parents	38,172 (62.12)
Mother only	16,813 (27.36)
Father only	2552 (4.15)
Neither parent but other relative(s) or nonrelative(s)	2753 (4.48)
Youth responsible for self	60 (0.10)
Child Protection Agency	1098 (1.79)
Intellectual disability	
No	58,660 (95.46)
Yes	2788 (4.54)
Comorbid health condition	
No	58,459 (95.14)
Yes	2989 (4.86)
Interpersonal conflict	
No	39,643 (64.51)
Yes	21,805 (35.49)
School conflict	
No	26,260 (42.74)
Yes	35,188 (57.26)
Service sector	
CYMH agency	38,302 (62.33)
School	177 (0.29)
LHIN	17,784 (28.94)
Hospital	5185 (8.44)

CYMH agency Child and Youth Mental Health agency, *LHIN* Local Health Integration Network

Measures

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

This brief, semi-structured assessment tool is composed of 99 items and takes approximately 20 min to complete depending on case complexity. It has been designed to be used in inpatient, outpatient and school settings for the assessment, prioritization and triaging of children and adolescents who are seeking mental health services [41]. The tool is completed using multiple sources of information (e.g., family members, clinical observations, review of documentation). Assessors from a variety of professional backgrounds are required to complete a full-day training session to learn how to administer and score the screener.

The ChYMH-S is among several comprehensive assessment and screening systems designed by interRAI to aid researchers and clinicians in supporting vulnerable populations

[12]. For the current study, a variety of risk factors obtained from the ChYMH-S were utilized to investigate service urgency. Many studies have found the scales and algorithms in the instruments to demonstrate strong psychometric properties [8, 42–55].

interRAI Children's Algorithm for Mental Health and Psychiatric Services (ChAMhPS)

The ChAMhPS score is an empirically based decision-support tool that can be used to inform the urgency of timing for a comprehensive, face to face mental health assessment [41]. There are three algorithms based on research that support predictors of service urgency for the developmental stage of the child or adolescent. The variables within the algorithm were specifically chosen to ensure they were not "gameable", thereby reducing the likelihood that certain items could be artificially inflating urgency levels for mental health services.

For children ages 7 years and under, the levels of urgency for services range from 0 to 5. To create a ChAMhPS score for this age group, determinants from the ChYMH-S include danger to self, violence to others, nightmares and lack of motivation. For children 8–11 years of age, the level of urgency ranges from 0 to 5 and determinants include danger to self, danger to others, making negative statements, socially inappropriate behaviours, hyperactivity and family/placement breakdown. For children ages 12 years and older, the levels of urgency for services ranges from 1 to 6. Determinants from the ChYMH-S include danger to self, danger to others, consideration of performing a self-injurious act, family/placement breakdown, intrusive thoughts/flashbacks, expression of 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. A score equal to three or higher for any of the age groupings indicates an urgent need for mental health services or a full assessment. Scores on the lower end (i.e., 3 and 4) would call for a full, comprehensive assessment and a need for more urgent care. Scores on the higher end (i.e., 5 and 6) often reflect more emergent care due to suicide risk or violence. While contingent on clinician decisions, scores in this upper range often warrant immediate action on the part of the mental health personnel [41], particularly where there is a lack of social and community supports. Based on cut points highlighted in the manual, scores between 0–2 represent low mental health service urgency and scores of 3 or greater represent a high urgency.

Service Sector

School, child and youth mental health agency (CYMH agency), hospital and LHIN were available groupings to reflect the service sector administering the ChYMH-S.

Age

The year corresponding to their date of birth was subtracted from the year corresponding to the date of their initial ChYMH-S assessment. To align with the ChAMhPS algorithm, age was divided into three categories to illustrate various developmental stages (4–7 years, 8–11 years, and 12–18 years of age).

Sex

The assessor indicated if the child or adolescent was male or female.

Legal Guardianship

Options available included (1) *both parents,* (2) *mother only,* (3) *father only,* (4) *neither parent but other relative(s) or nonrelative(s),* (5) *child protection agency* and (6) *youth responsible for self.*

Interpersonal Conflict

Interpersonal conflict was derived using four items from the ChYMH-S that assess the child or adolescent's interactions with family and friends. The items were: (i) conflict with or repeated criticism of family, (ii) family are persistently hostile or critical of child/adolescent, (iii) friends are persistently hostile or critical of child/adolescent and (iv) pervasive conflict with peers (exclude close friends). The composite variable *interpersonal conflict* was coded dichotomously as either *no* or *yes* to indicate the absence/presence of interpersonal conflict.

School Conflict

Similarly, a composite variable reflective of *school conflict* was derived using: (i) increase in lateness or absenteeism, (ii) poor productivity or disruptiveness and (iii) conflict with school staff. The derived variable *school conflict* was coded as either *no* or *yes* to indicate the absence/presence of school conflict.

Intellectual Disability and Comorbid Medical Condition(s)

Children or adolescents responded either *no* or *yes* to indicate the absence/presence of an intellectual disability

and serious comorbid medical condition (e.g., epilepsy, diabetes).

Statistical Analyses

All statistical analyses were conducted using SAS 9.4. To address the study's aim, a hierarchical binary logistic regression model was conducted to identify which risk factors measured by the ChYMH-S were associated with greater mental health service urgency. Due to the sample size being quite large, the logistic regression was performed resulting in odds ratios with associated 99% confidence intervals. Prior to conducting the logistic regression, frequency and descriptive statistics were conducted for all risk factors of interest. Secondly, assumptions testing assessing the suitability for a logistic regression model was completed; with no major violations to report. Finally, the hierarchical binary logistic regression model was conducted using fit indices; (i) chi-square likelihood ratios and (ii) the measure of how closely data fits the regression line (R^2), to determine the most parsimonious model [56].

Results

Bivariate Analysis of Sample Characteristics by Mental Health Service Urgency

Of the 61,448 children and adolescents, 16,657 exhibited high mental health service urgency. Results from Table 2 provide the Chi-square test of association and the accompanying significance values between mental health service urgency and the risk factors of interest. At this level, sex, age, legal guardianship, interpersonal and school conflict, intellectual disability, comorbid health condition and service sector were significant predictors of mental health service urgency ($p < 0.0001$). There was a significant association between sex and mental health service urgency ($\chi^2 = 477$, $df = 1$, $p < 0.0001$), with 7061 male and 9596 female children and adolescents exhibiting a high need for urgent services. Approximately 22% of the sample were 12–18 years of age and exhibited a high need for urgent mental health services. The majority of the high service urgency cases had both parents who held legal guardianship (57%, $\chi^2 = 308$, $df = 5$, $p < 0.0001$) and were assessed in CYMH agencies (55%, $\chi^2 = 917$, $df = 3$, $p < 0.0001$). Children and adolescents were most likely to exhibit high mental health service urgency if they reported: an intellectual disability (35% vs. 27%, $\chi^2 = 87$, $df = 1$, $p < 0.0001$), comorbid health condition(s) (34% vs. 27%, $\chi^2 = 72$, $df = 1$, $p < 0.0001$), interpersonal conflict (40% vs. 20%, $\chi^2 = 3034$, $df = 1$, $p < 0.0001$) or school conflict (32% vs. 20%, $\chi^2 = 1084$, $df = 1$, $p < 0.0001$).

Binary Logistic Regression

A hierarchical binary logistic regression analysis was used to determine if sex, age, legal guardianship, interpersonal conflict, school conflict, service sector, intellectual disability and comorbid health condition(s) predicted mental health service urgency. The addition of service sector in the last step of the hierarchical binary logistic regression model inflated the likelihood ratio without drastically improving the model fit to the data. As the likelihood ratio is considered to be the best removal criterion [51], service sector was removed from the final model due to the small statistical contribution it provided. The full model with seven risk factors provided a significantly better fit to the data than the constant-only model, Likelihood ratio $X^2(12) = 7728.70$, $p < 0.0001$, Max-rescaled $R^2 = 0.17$. The model was able to discriminate between those who exhibited high mental health service urgency from those with low mental health service urgency with 72% accuracy. In the model with sex, age, legal guardianship, interpersonal conflict, school conflict, intellectual disability and comorbid health conditions, all variables were statistically significant predictors of mental health service urgency, except for youth responsible for themselves. Table 3 presents the results for the model including regression coefficients, standard errors, odds ratios, 99% confident intervals, Wald statistics and significance values.

Males had a 21% decrease in odds of exhibiting high mental health service urgency when compared to their female counterparts. Children (4–7 years of age) had an 83% decrease in odds and children (8–11 years of age) had a 60% decrease in odds of belonging to a high mental health service urgency group when compared to adolescent (12–18 years of age) peers. All categories of legal guardianship were significantly related to mental health service urgency, except for youth responsible for themselves ($p = 0.1809$). Specifically, compared to children and adolescents living with Child Protection Agencies, all other arrangements for guardianship resulted in a reduction in the likelihood of belonging to a high mental health service urgency group: both parents (38%), mother only (25%), father only (28%), neither parent but other relative(s) or non-relative(s) (26%). Absence of an interpersonal or school conflict resulted in a 59 and 41% decrease in odds of exhibiting high mental health service urgency, respectively. Finally, no report of an intellectual disability and comorbid health condition(s) was associated with a reduction in the likelihood of exhibiting high mental health service urgency; 21 and 18%, respectively.

Table 2 Frequencies for risk factors as a function of mental health service urgency

Variables	Low mental health service urgency	High mental health service urgency	χ^2 (p)
Sex			
Male	23,429	7061	477 (<0.0001)
Female	21,362	9596	
Age groups			
4–7 years	7748	659	
8–11 years	12,972	2723	3681 (<0.0001)
12–18 years	24,071	13,275	
Legal guardianship			
Both parents	28,716	9456	
Mother only	11,649	5164	
Father only	1767	785	
Neither parent but other relative(s) or nonrelative(s)	1938	815	308 (<0.0001)
Youth responsible for self	38	22	
Child Protection Agency	683	415	
Interpersonal conflict			
No	31,801	7842	3034 (<0.0001)
Yes	12,990	8815	
School conflict			
No	20,936	5324	1084 (<0.0001)
Yes	23,855	11,333	
Intellectual disability			
No	42,973	15,687	87 (<0.0001)
Yes	1818	970	
Comorbid medical condition			
No	42,813	15,646	
Yes	1978	1011	72 (<0.0001)
Service sector			
CYMH agency	29,067	9235	
School	147	30	917 (<0.0001)
LHIN	11,474	6310	
Hospital	4103	1082	

CYMH agency Child and Youth Mental Health agency, *LHIN* Local Health Integration Network

Discussion

Although an extensive literature exists on child and adolescent psychopathology, there is a paucity of information on the relationship between risk factors reflective of multiple contexts of the child or adolescent's life on mental health service urgency. The aim of the current study was to examine the associations between service sector, age, sex, legal guardianship, interpersonal conflict, school conflict, intellectual disability, comorbid health condition(s) and mental health service urgency. As hypothesized, being an adolescent female, under child protection agency guardianship, reporting interpersonal conflict, school conflict, an intellectual disability or comorbid health condition(s) were related to higher mental health service urgency. It is important to note that service sector was removed from the final model, thus, eliminating the possibility to comment on its relationship to mental health service urgency.

In this study, males exhibited a reduction in the likelihood of belonging to a high mental health service urgency group. The literature has suggested that symptoms experienced by males are more easily recognized and tend to garner supports more frequently and quickly compared to the covert symptoms often exhibited by females [57]. Females tend to have several mental health needs and due to the covert nature of their symptoms, receive diagnoses later in life. It could be that when females are connected to services, they are experiencing more extreme forms of psychopathology and are exhibiting more distressing concerns to warrant mental health supports [57, 58]. However, this assumption is speculative and further longitudinal research on help seeking behaviours is needed to support this explanation.

Table 3 Binary logistic regression analysis predicting mental health service urgency

Variable	*B*	*SE*	*OR*	99% CI	Wald statistic	*p*
Sex						
Male	− 0.24	0.020	0.79	[0.75, 0.83]	142.97	< 0.0001
Female (RC)						
Age groups						
4–7 years	− 1.79	0.043	0.17	[0.15, 0.19]	1740.56	< 0.0001
8–11 years	− 0.91	0.025	0.40	[0.38, 0.43]	1338.88	< 0.0001
12–18 years (RC)						
Legal guardianship						
Both parents	− 0.48	0.068	0.62	[0.52, 0.74]	49.85	< 0.0001
Mother only	− 0.29	0.070	0.75	[0.63, 0.90]	17.33	< 0.0001
Father only	− 0.33	0.081	0.72	[0.58, 0.88]	16.70	< 0.0001
Neither parent but other relative(s) or nonrelative(s)	− 0.30	0.081	0.74	[0.60, 0.91]	13.67	0.0002
Youth responsible for self	− 0.40	0.30	0.67	[0.32, 1.44]	1.79	0.1809
Child Protection Agency (RC)						
Interpersonal conflict						
No	− 0.90	0.020	0.41	[0.39, 0.43]	2095.05	< 0.0001
Yes (RC)						
School conflict						
No	− 0.52	0.021	0.59	[0.56, 0.63]	648.21	< 0.0001
Yes (RC)						
Intellectual disability						
No	− 0.24	0.044	0.79	[0.71, 0.88]	28.96	< 0.0001
Yes (RC)						
Comorbid Medical Conditions						
No	− 0.20	0.043	0.82	[0.73, 0.91]	22.02	< 0.0001
Yes (RC)						

RC reference category, *CI* confidence interval for odds ratio (*OR*)

Adolescence (12–18 years of age) was associated with an inflation in the likelihood of belonging to a high mental health service urgency group. Consistent with previous literature, adolescence is a sensitive developmental period, with the onset of more than 50% of mental health concerns before one's 18th birthday [16, 19]. The onset of several mental health concerns, paired with the societal pressure of being confident in one's self and position relative to family, friends and the community [59], may be driving the urgency of mental health services in this particular age group. As hypothesized, guardianship of child protection agencies was associated with an inflation in the likelihood of belonging to a high mental health service urgency group. Consistent with previous literature, children and adolescents under this type of guardianship have poorer general health, higher rates of substance use, lower well-being, are more likely to commit crimes and attain fewer academic milestones [24]. In this study, emancipated youth did not have a statistically significant influence on mental health service urgency. However, the literature supports that these adolescents are at greater risk of experiencing mental health concerns when compared to their peers [25, 26]. The lack of a statistically significant finding could be attributed to the small sample size ($N = 60$) of this particular group. Contrary to previous literature, children and adolescents living with neither parent but other relative(s) (i.e., a grandparent) did not have significantly poorer mental health outcomes compared to peers living in single-parent households [60, 61]. In this study, mother-only, father-only and neither parent but other relative(s) or nonrelative(s) resulted in similar reductions in the likelihood of belonging to a high mental health service urgency group.

Non-traditional family structures are generally faced with fewer resources than two-parent households [62]. For example, single-parent guardianship arrangements may be characterized as stressful due to economic restraints and the added pressure of child-rearing with minimal or no supports [63]. The added financial pressure, impacts the levels of stress experienced by the parent or guardian which subsequently shapes the caregiver-child relationship [64]. Children and adolescents in these guardianship arrangements often experience less emotional support, fewer rules, and harsher disciplinary actions [63]. Recent research has expanded

to include several other non-traditional family structures beyond the single-parent household. Perales et al. [62] explored the relationships between family structures and the risk for mental health disorders among 6310 Australian children and adolescents (aged 4–17 years) and found that the prevalence for mental health disorders was not statistically different across the different guardianship arrangements. Our findings provide additional support to Perales and colleagues [62] suggesting that children and adolescents from non-traditional family structures may experience similar mental health concerns due to their common struggles.

Our findings of a reduction in the likelihood of belonging to a high mental health service urgency group in the absence of interpersonal and school conflict is consistent with previous literature suggesting that conflictual relationships with family, friends and school personnel result in poor mental health and overall well-being [24, 28, 65]. Children and adolescents from households that are characterized as conflictual are less likely to develop good friendships [28]. Additionally, the tense relationships act as a risk factor for externalizing and internalizing disorders [27, 66], antisocial behaviours, substance use [27] and victimization [67]. The lack of social skills and exhibition of disruptive behaviours become problematic in an educational context. These behaviours put children and adolescents at greater risk for poorer academic functioning [66] which may negatively impact the child or adolescent's desire to attend school. Excessive absenteeism has been linked to social isolation, involvement with the juvenile system, and permanent dropout from school, placing students at greater risk for poorer occupational and economic outcomes [68, 69]. Such factors increase their need for urgent, mental health services.

Similarly, children and adolescents with an intellectual disability or comorbid health condition(s) had an increased likelihood of belonging to a high mental health service urgency group. This finding is consistent with the literature that suggests children and adolescents with an intellectual disability are at risk for maladaptive outcomes due to deficits in their intellectual functioning, conceptual and adaptive skills [32] and that children and adolescents with comorbid health condition(s) are at an increased risk for internalizing symptoms and social functioning deficits [33, 70–72]. Children and adolescents with intellectual disabilities [32, 73] and comorbid medical conditions are also at an increased risk for polyvictimization [74]. Children and adolescents with either an intellectual disability or a comorbid medical condition may utilize mental health services more frequently because of the unique needs they face, that are exacerbated by underlying mental health conditions [71, 75].

Notwithstanding the novel findings, this study has some limitations. First, the study design was cross-sectional, preventing the ability to comment on predictive mechanisms resulting in mental health service urgency [76]. Second, children and adolescents who have experienced trauma of any type (e.g., emotional abuse, physical abuse) are at greater risk of psychiatric and medical service utilization when compared to peers without a history of trauma [77–79]. This study did not include trauma related variables as risk factors in the model, as an abuse item exists in the ChAMhPS algorithm. Future research would benefit from expanding this study to include community-based samples and adopting a longitudinal study design. This would provide a comprehensive overview of the child and adolescent mental health landscape in Ontario and inform continuity in profiles across the child or adolescent's development. Finally, co-occurring psychiatric conditions were not examined in this study. Future research utilizing the interRAI Child and Youth Mental Health [80] and the interRAI Child and Youth Mental Health and Developmental Disability [81] instruments will examine service urgency based on psychiatric diagnoses.

Collectively, our results suggest that age, sex, legal guardianship, interpersonal conflict, school conflict, intellectual disability and comorbid health condition(s) are associated with the urgency for mental health services. Although more research is required to determine if similar patterns are present in community samples, our findings can enhance clinical decision making around the prioritization of children and adolescents to mental health resources tailored to their needs and based on urgency. Furthermore, the interRAI tool, alongside its counterparts, in the child and youth suite provides a helpful assessment-intervention system that provides high quality data to improve continuity of care and address fragmentation across service sectors [12].

Summary

In sum, current practices in Ontario are resulting in long wait times to be connected to mental health services, negatively impacting the well-being of children and adolescents. However, it is unclear which children and adolescents are being properly prioritized for services due to lack of standard evaluations in Ontario. Evidence-based approaches to triaging and prioritizing mental health services based on need are required. Using an assessment developed to assist with prioritizing children and adolescents for mental health services, this study explores characteristics associated with a greater need for urgent, mental health services. Overall, the results of the current study suggested that being an adolescent (12–18 years of age), female, having a child protection agency holding guardianship, experiences of interpersonal and school conflict, an intellectual disability and comorbid health condition(s) are related to greater odds of belonging to a high mental health service urgency group. These findings provide a better understanding of the character profiles

of the children and adolescents currently receiving services in Ontario. In turn, this could inform current practices by guiding prioritization, reducing the likelihood that children and adolescents with acute needs remain on waitlists.

Funding This study was partially funded by the London Community Foundation (RES001102).

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study. This study was approved by the Research Ethics Board at The University of Western Ontario.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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