



## RESEARCH ARTICLE

# Pediatric Referrals for Urgent Psychiatric Consultation: Clinical Characteristics, Diagnoses and Outcome of 4 to 12 Year Old Children

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## Abstract

**Objectives:** 1) To describe clinical characteristics and outcomes of children referred for urgent psychiatric consultation to a Child and Adolescent Mental Health Urgent Consult Clinic (CAMHUCC); and, 2) To study the association between referral source, clinical characteristics, and post assessment outcome. **Method:** This is a 12-month retrospective cohort study of children aged 4 to 12-years referred to a CAMHUCC. The clinic's electronic data base contains demographic and clinical information including reason for referral, diagnosis, and consult outcome. Study data were extracted and analyzed using descriptive statistics and Mann-Whitney U tests. **Results:** The study sample consisted of 120 children, 41.5% male, average age 9.03 years (SD=2.2). Fifty-percent were referred by Children's Mental Health Agencies (CMHA) and 31.7% by Emergency Departments. The most frequent reason for referral was aggression (64.1%). Most common diagnoses were externalizing disorders (76.7%). Thirty-percent had an identified learning disorder, 80% were referred back to the community and 14.2% were referred to outpatient clinic. There was a significant association between referral from an Emergency Department and female gender ( $p=0.048$ ) and brief follow-up with CAMHUCC ( $p=0.006$ ). **Conclusion:** Regardless of source of referral, the most common reason for urgent psychiatric referral was aggression and the majority of individuals did not require inpatient psychiatric care. Collaborative multiagency education in child and adolescent mental health disorders, including the role of learning disabilities in externalizing behaviors, may improve the capacity of CMHA and schools to identify and provide focused interventions that may, in turn, reduce behavioral crisis and visits to Emergency Departments and urgent clinics.

**Key Words:** pediatric, emergency, children, psychiatry, urgent consult

## Résumé

**Objectifs:** 1) Décrire les caractéristiques cliniques et les résultats d'enfants référés à une consultation psychiatrique d'urgence dans une clinique de consultation d'urgence pour la santé mentale d'enfants et d'adolescents (CCUSMEA). 2) Étudier l'association entre la source de la référence, les caractéristiques cliniques, et le résultat après l'évaluation. **Méthode:** Il s'agit d'une étude de cohorte rétrospective de 12 mois auprès d'enfants de 4 à 12 ans référés à une CCUSMEA. La base de données électroniques de la clinique contient des données démographiques et des renseignements cliniques dont le motif de la référence, le diagnostic et le résultat de la consultation. Les données de l'étude ont été extraites et analysées à l'aide de statistiques descriptives et des tests U de Mann-Whitney. **Résultats:** L'échantillon de l'étude consistait en 120 enfants, dont 41,5 % étaient des garçons, de 9,03 ans d'âge moyen (ET = 2,2). Cinquante pour cent ont été référés par des organismes de santé mentale pour enfants (OSME) et 31,7 % par des services

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Submitted: May 8, 2017; Accepted: August 13, 2018

d'urgence. Le motif le plus fréquent des références était l'agression (64,1 %). Les diagnostics les plus communs étaient les troubles externalisés (76,7 %). Trente pour cent avaient un trouble d'apprentissage dépisté, 80 % étaient renvoyés dans la communauté et 14,2 % étaient référés à une clinique ambulatoire. Il y avait une association significative entre une référence provenant d'un service d'urgence et le sexe féminin ( $p = 0,048$ ) et un bref suivi à la CCUSMEA ( $p = 0,006$ ). **Conclusion:** Peu importe la source de la référence, le motif le plus commun d'une référence à une urgence psychiatrique était l'agression et la majorité des personnes ne nécessitait pas d'hospitalisation pour soins psychiatriques. L'éducation en collaboration de multi-organismes en matière de troubles de santé mentale pédiatriques, y compris le rôle des difficultés d'apprentissage dans les comportements externalisés, peut améliorer la capacité des OSME et des écoles de reconnaître et de fournir des interventions ciblées qui peuvent à leur tour réduire les crises de comportement et les visites aux services et aux cliniques d'urgence.

**Mots clés:** *pédiatrique, urgence, enfants, psychiatrie, consultation d'urgence*

## Introduction

Current epidemiological information reports the worldwide prevalence of child and adolescent mental health disorders as approximately 20% (WHO, 2003). In Canada and the USA, 15% - 20% of children/adolescents have a mental disorder, yet only 1/5 receive adequate mental health services (Kirby & Keon, 2006; Government of Canada, 2006; US Department of Health and Human Services, 2001). Over the last decade, Canada and the USA have seen a significant increase in presentation of children/adolescents with mental health problems to Emergency Departments (ED) (Newton, Ali, Johnson, & Haines, 2009; Simon & Schoendorf, 2014; Sheridan, Johnson, Fu, Spiro, & Hansen, 2017). Pediatric Emergency Departments (PED) report that at least 5% of all presentations are for mental health problems (Edelsohn, Braitman, & Rabinovich, 2003; Chun, Katz, & Duffy, 2013; Newton et al., 2009). Approximately 20 - 25% of the mental health presentations are for children less than 12 years of age brought to the ED by parents seeking help for behavior problems (Sheridan et al., 2015).

PEDs have become the primary portal for access to children's mental health services (Cloutier et al., 2010) and pediatricians identify a lack of training and confidence in dealing with this population (Fremont, Nastasi, Newman, & Roisen, 2008; Soto et al., 2009). Although there are few studies specific to children, it has been hypothesized that the increased use of the PED might be due to an increase in non-urgent presentations, as opposed to a higher prevalence rates of mental health disorders (Fremont et al., 2008; Soto et al., 2009).

A Canadian study of children and adolescents referred for psychiatric urgent consultation showed that males outnumbered females (63% vs 37%), the most common diagnosis was adjustment disorder (29%), and majority of patients did not need ongoing psychiatric care (66.9%) (Lee & Korczak, 2010). Results of a large retrospective study of a PED showed that one third of psychiatric presentations were considered 'inappropriate' and concluded that access to urgent child and adolescent psychiatric services in the community may address this problem (Fremont et al., 2008).

A recent Canadian study described trends in utilization of PEDs for mental health concerns. The study reported a 47% increase in the number of mental health presentations and found that return visits represented a significant proportion of all mental health-related visits. There was a reduction in high acuity presentations but an increase in mid-acuity level and an increase in the number of mental health-related visits resulting in admission. The authors highlight the need to reassess the allocation of resources to optimize risk assessment, and follow-up with mental health services at discharge from the PED (Mapelli, Black, & Doan, 2015).

The trend of increasing visits to the ED for non-urgent problems may present significant challenges related to mental health care costs, quality of care, and physical space utilization (Newton et al., 2009; Sheridan et al., 2017). To address this issue there is a need to determine which demographic and clinical characteristics differentiate children who require hospital-based psychiatric services from those who require community based mental health services.

In Canada, most cities and towns have access to Government-funded community-based Children's Mental Health Agencies (CMHA) that provide self-referral services, including walk-ins, to children, adolescents, and their families, for behavioral, emotional, and family problems. The front-line staff of these agencies may be child and youth workers, bachelors level social workers, and/or behavior therapists. If a case worker is concerned about the possibility of an underlying psychiatric disorder, they access their agency's contracted child and adolescent psychiatrist for consultation and diagnosis. The staff at CMHA do not make a diagnosis, however they provide a spectrum of behavioral and family assessment and interventions for a variety of low-to-moderate severity behavioral and emotional problems. In addition, the CMHA works in close collaboration with schools to serve the needs of these children in the school system.

In order to bridge the gap between outpatient community services and inpatient care including admissions to emergency departments, an outpatient child and adolescent mental health urgent consult clinic (CAMHUCC) was initiated. The CAMHUCC is situated within a university ambulatory care hospital in Kingston, Ontario and has been funded as

a full time multidisciplinary clinic for adolescents 13-17 years of age since 2012 by the South East Local Health Integration Network. The clinic's assessment team consists of a child and adolescent psychiatrist/psychiatry resident, a social worker, a registered nurse, and a behavioural therapist. The clinic is mandated to provide expedited risk assessment and crisis intervention within 48-hours of referral by the ED/PED. In 2016, the Pediatric Department requested a similar service for children 4-12 years of age who presented in crisis to PED. The clinic applied for and received additional funding for a psychological associate and a behavioural therapist (with a 4-year college diploma in applied behavioral analysis and intervention) for this population. ED physicians, pediatricians, school personnel, primary care physicians, and CMHA counselors were provided with written and verbal information on criteria for use of the CAMHUCC. ED physicians and pediatric clinics use allocated appointments at their discretion. A formal risk assessment protocol was developed with the school boards and CMHA for urgent referrals. This protocol allows mental health leads to fax an urgent referral and contact the clinic directly.

The present study aims to describe the clinical characteristics, diagnosis, and service outcome of children referred to the CAMHUCC and identify the characteristics associated with discharge to hospital-based or community-based care.

## Method

This is a retrospective cohort study. The sample for this study consisted of children aged 4-12 years old who were assessed by the CAMHUCC from February 2016 to February 2017.

The CAMHUCC gathers patient information at the initial assessment as part of a psychiatric clinical history, and this information is entered into an electronic clinic database by administrative staff. Data collected in the CAMHUCC includes demographic and clinical variables including age, gender, living arrangements, referral source, reason for referral, presenting problem(s), bullying victimization, Individualized Educational Plan (IEP), history of sexual abuse, history of previous treatment(s)/admission, consult diagnosis, consult outcome and family history of psychiatric disorders. The clinic uses Connors Rating Scale and SNAP-IV for ADHD, Child Depression Inventory-2 for Depression and MASC for anxiety disorders. These are completed during the assessment conducted by one of the three child and adolescent psychiatrists who serve CAMHUCC.

Data used in this study was transferred into an excel spreadsheet and uploaded to SPSS v23 for analysis. Patient diagnoses were collapsed into externalizing (Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), Conduct Disorder (CD), Autism Spectrum Disorder (ASD), and Developmental Disability) and

internalizing disorders (anxiety and mood disorders). Descriptive statistics such as means, frequency counts, and percentages were used to describe the study population. Clinical and demographic variables and their association with the various outcomes following the assessment at CAMHUCC, were assessed using Mann-Whitney U tests. Statistical significance was set at the  $p \leq 0.05$ .

Prior to commencement, this research study was reviewed for ethical compliance by the Queen's University Health Sciences and Affiliated Teaching Hospital Research Ethics Board.

## Results

During the study period, 527 children and adolescents were assessed by CAMHUCC. Of these, 23% ( $n=120$ ) were between 4-12 years of age and constitute the sample for this study. The mean age was 9.03 years ( $SD=2.23$ ) formed the sample for this study. The mean age of the study group was 9.03 years ( $SD=2.23$ ), and females outnumbered males, and 50% of the referrals were from CMHA. The most common reason for referral was aggression followed by internalizing symptoms. Table 1 presents the demographic and clinical characteristics of the study group.

Review of gender differences by referral source showed females were significantly more likely to be referred by CMHA ( $p=0.043$ ) and to be referred for anxiety symptoms ( $p=0.039$ ). Females were also significantly more likely to have family members with a history of internalizing disorders ( $p=0.036$ ), and to be discharged with a referral for follow-up in an outpatient psychiatry clinic ( $p=0.026$ ). Males were significantly more likely to receive brief crisis intervention by the CAMHUCC.

Table 2 presents differences in demographic and clinical characteristics by referral source. PED/ED referrals were statistically significantly older (mean (SD) age 9.84 years (2.11) versus 8.66 years (2.20)  $p=0.006$ ), than those referred by CMHA or primary care. Referrals from CMHA or school were significantly more likely to be younger (mean (SD) age 8.50 years (2.30) versus 9.57 years (2.06)  $p=0.009$ ), than other referral sources. There was a significant association between referrals from PED/ED and living with one parent or a caregiver, aggression, suicidal ideation, a history of being bullied, and past mental health treatment. Being female, living with one parent or a caregiver, suicidal ideation, a history of being bullied, and past mental health treatment were all significantly associated with referrals from CMHA or schools.

Table 3 shows the difference between clinical and demographic variables and the post assessment outcomes. Referrals to CMHA were statistically significantly younger (mean (SD) age 8.49 years (2.10) versus 9.49 years (2.28)  $p=0.012$ ), than those referred to outpatient or provided brief intervention in CAMHUCC. Those who received brief

Population characteristics	n=120	%
<b>Gender</b>		
Male	51	42.5
Female	69	57.5
<b>Living arrangements</b>		
Living with both parents	63	52.5
Living with one parent/other caregivers	57	47.5
<b>Referral source</b>		
Primary care	22	18.3
CMHA/school	60	50.0
Emergency department	38	31.7
<b>Reason for referral</b>		
Aggression	77	64.1
Suicidal threat	21	17.5
Anxiety and depression	22	18.3
<b>Clinical characteristics</b>		
Positive family psychiatric history	107	89.2
Sexual abuse	6	5.0
Special education/IEP	37	30.8
Bullying victimization	22	18.3
Past mental health intervention/treatment	76	63.3
<b>Clinic assigned diagnosis</b>		
None	10	8.3
Externalizing disorders	92	76.7
Internalizing disorder	18	15.0
<b>Outcome following urgent assessment</b>		
Referred to CMHA	51	42.5
CAMHUCC brief crisis intervention	45	37.5
Neurodevelopment clinic/ mood and anxiety clinic	17	14.2
Elective admission for diagnostic clarification	7	5.8

crisis intervention from CAMHUCC were more likely to be younger (mean (SD) age 8.69 years (2.19) versus 9.60 years (2.22)  $p=0.030$ ). There was no significant age difference between those referred to outpatient psychiatry clinics, (mean (SD) age 8.89 years (2.32) versus 9.88 years (1.41)  $p=0.117$ ), or those referred to CMHA.

As shown in Table 3, individuals referred to CMHA were more likely to have been referred themselves or schools and were significantly associated with past mental health treatment. Those who received brief crisis intervention by the CAMHUCC were more likely to be male, living with one parent or a guardian, referred through the PED/ED, CMHA, or school, presented with suicidal threats or anxiety and depression, and had a positive family psychiatric history. Those referred to an outpatient clinic were more likely to be female, were referred for anxiety or depression, and were

given diagnoses of externalizing and internalizing disorders by the CAMHUCC. There were only seven elective admissions for observational assessment and diagnostic clarification, which have not been included in the table above.

## Discussion

This twelve-month retrospective cohort study examined the clinical characteristics and consultation outcomes of 4-12 year old children referred to a hospital based urgent psychiatric clinic by PED/ED, primary care, CMHA and school boards. Some results of our study are similar to previous studies. A Canadian study of children and adolescent (mean age 12.2 SD=3.2) reported a higher proportion of males, behavioral problems, and the majority of children assessed did not require ongoing psychiatric care (Lee & Korczak, 2010). Another result which was similar to existing

Population characteristics	ED n=38	CMHA/School n=60	Primary Care n=22
<b>Gender</b>			
Male	0.260		0.208
Female		0.043	
<b>Living arrangements</b>			
Living with both parents	—	—	—
Living with one parent/other caregivers	0.002	<0.001	0.095
<b>Reason for referral</b>			
Aggression	0.028	0.088	0.665
Suicidal threat	0.001	0.031	0.253
Anxiety and depression	0.625	1.00	0.557
<b>Clinical characteristics</b>			
Positive family psychiatric history	0.942	0.380	0.296
Sexual abuse	0.929	0.404	0.236
Special education/IEP	0.587	0.076	0.102
Bullying victimization	0.002	0.019	0.530
Past mental health intervention/treatment	0.045	0.024	0.443
<b>Clinic assigned diagnosis</b>			
None	0.906	0.511	0.479
Externalizing disorders	0.951	0.667	0.630
Internalizing disorder	0.870	0.309	0.263
<b>Outcome following urgent assessment</b>			
Referred to CMHA	0.101	0.043	0.521
Camhucc brief crisis intervention	0.006	<0.001	0.069
Neurodevelopment clinic/ mood and anxiety clinic	0.830	0.434	0.442
Elective admission for diagnostic clarification	0.065	0.007	0.198

research was that aggression was the most frequent reason for referral for children under 12 years of age. A study of PED presentations reported that children under 12 years of age were frequently brought in by parents and that the PED had become the primary portal for accessing mental health services for non-urgent behavior problems (Sheridan et al., 2015). One explanation for this may be the lack of timely access to community services for these children, or perhaps maybe a pattern of crisis-oriented help seeking by chaotic parents who have their own mental health issues that interfere with coordinating scheduled appointments with the appropriate services.

Our results differed from previous studies is that in our study over three quarters of the children had an externalizing disorder including Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD),

Conduct Disorder (CD) and Learning Disorders. This is explicable as CMHA workers do not have training to generate diagnosis, and although pediatricians diagnose ADHD and ODD, most patients with complex comorbidities require psychiatrists to assign a diagnosis based on a comprehensive diagnostic assessment which includes biopsychosocial formulation and management plan. It is also noteworthy that almost 2/3 of the children had past contact with some mental health service and were referred after community-based assessment and intervention. These children had significant psychosocial problems and high prevalence of parental psychopathology, which in the case of ADHD is known to have high heritability (Smalley et al., 2000).

A significant finding of our study was the presence of learning disorders in more than a quarter of the study sample. This result is not surprising as previous research has

Table 3. Relationship of clinical and demographic variables to outcomes following urgent assessment				
	Referred to CMHA N=51	CAMHUCC Brief Crisis Intervention N=45	Referral to Clinic N=17	Elective Admission N=7
Population characteristics				
Gender				
Male		0.006		0.112
Female	0.082		0.026	
Living arrangements				
Living with both parents	—	—	—	—
Living with one parent/other caregivers	0.235	0.013	0.279	0.303
Referral source				
Primary care	0.521	0.069	0.452	0.198
Cmha/school	0.043	<0.001	0.434	0.007
Emergency department	0.101	0.006	0.830	0.065
Reason for referral				
Aggression	0.383	0.732	0.114	0.222
Suicidal threat	0.157	0.011	0.504	0.211
Anxiety and depression	0.757	0.039	0.009	0.776
Clinical characteristics				
Positive family psychiatric history	0.143	0.007	0.894	0.763
Sexual abuse	0.634	0.829	0.858	0.247
Special education/iep	0.773	0.388	0.891	0.331
Bullying victimization	0.868	0.716	0.937	0.776
Past mental health intervention/treatment	0.005	0.080	0.910	0.042
Clinic assigned diagnosis				
None	0.013	0.062	0.694	0.413
Externalizing disorders	0.965	0.120	0.013	0.561
Internalizing disorder	0.060	0.693	0.001	0.957

demonstrated an association between learning disorders with aggression and other neurodevelopmental disorders (Mawson, 2012; Pliszka, 2000; Adams, Snowling, Hennessy, & Kind, 1999). Aggression resulting in ED presentation is one manifestation of underlying learning challenges and accompanying frustration. Further, there is strong evidence that childhood-onset of social and behavioral problems and externalizing disorders, are strongly related to adult violence and personality disorders (Soderstrom, Nilsson, Sjodin, Carlstedt, & Forsman, 2005; Hofvander, Ossowski, Lundstrom, & Anckarsäter, 2009). As expected, suicidality was evident in a small percentage of children under 12 years of age and frequently a suicidal threat was made during an anger outburst.

The results of our study suggest that a large proportion of children referred from the ED for urgent psychiatric consultation, have underlying learning problems, chaotic family histories including parental mental health problems, parental marital conflict/breakdown, domestic violence and conflictual peer relationships, including bullying and bullying victimization at school.

This study differentiates children who require hospital-based services from those that could be served by CMHA and school-based programs designed to meet the needs of these children and families. CMHA have evidence based behavioral and child management interventions that can serve the needs of these children. Developing collaborative inter-agency, interdisciplinary, integrated approach between mental health professionals, CMHA and educators can

assist in developing comprehensive and targeted treatments which include behavioral, academic and mental health interventions and would assist in better triage from least to the most intrusive services. Encouraging the use of CMHA as a first port of call for externalizing behaviors through the development of a central triage system would facilitate better referral practices and timely services for children and families.

This study has a number of limitations including those that are inherent in retrospective studies based on clinical rather than research database. Another limitation is that due to small counts in different diagnoses we collapsed diagnoses into broad groups for example ODD, ADHD, CD into externalizing disorders and anxiety and depression into internalizing disorders. Larger, longitudinal studies are needed to examine outcome of psychiatric consultation, brief intervention, CMHA and school interventions on the early and long-term outcomes of comprehensive interventions (Hendren, Haft, Black, & White, 2018).

#### Acknowledgements/Conflicts of Interest:

The authors wish to acknowledge Nicholas Axas and Lianne Repetti for maintaining the database. The authors have no financial or other conflict of interest to declare.

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