



RESEARCH ARTICLE

Characteristics of Children and Youth Who Visit the Emergency Department for a Behavioural Disorder

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Abstract

Objective: Relatively little is known about children who present to emergency departments (EDs) to stabilize acute emergencies related to behavioural disorders. This study describes patient and treatment characteristics of such children/youth. **Methods:** We conducted a retrospective medical record review of consecutive ED presentations made by children/youth (10 to 17 years) between January 2009 and December 2011 for visits with a main discharge diagnosis of hyperkinetic disorder, mixed disorder of conduct and emotions, or conduct disorder. Socio-demographic and ED visit data were analyzed descriptively. **Results:** During the study period, 365 consecutive presentations made by 325 children/youth. The most common presenting complaints were related to depression/self-harm (45.8%) and violent behaviours (28.8%). Many children/youth had a previously diagnosed psychiatric disorder (59.4%) and identified being under the care of a child psychiatrist (42.2%). The majority of ED visits were triaged as urgent or emergent (51.5% and 41.1%, respectively) and included mood and suicidality assessments (84.7% and 80.8%, respectively). Follow-up with various services was made for all visits. **Conclusion:** Children and youth presented to the ED for a behavioural disorder had urgent needs related to self-harm, depression and violent behaviours. These findings draw attention to the important role of the ED in managing physical safety and well-being concerns for families and recommending follow-up in the post-crisis period.

Key Words: *behavioural disorders, mental health, emergency department, pediatrics*

Résumé

Objectif: Nous en savons relativement peu sur les enfants qui se présentent au département d'urgence (DU) pour stabiliser des crises aiguës liées aux troubles de comportement. Cette étude décrit les caractéristiques des patients et des traitements de ces enfants/adolescents. **Méthodes:** Nous avons mené une revue rétrospective des dossiers médicaux des présentations consécutives au DU faites par des enfants/adolescents (de 10 à 17 ans) de janvier 2009 à décembre 2011, pour des consultations dont le diagnostic posé au congé était principalement de trouble hyperkinétique, de trouble mixte des conduites et des émotions, ou de trouble des conduites. Les données sociodémographiques et des visites au DU ont été analysées de manière descriptive. **Résultats:** Durant la période de l'étude, 365 présentations consécutives ont été faites par 325 enfants/adolescents. Les plaintes de présentation les plus fréquentes étaient liées à la dépression/automutilation (45,8%) et aux comportements violents (28,8%). Nombre d'enfants/adolescents souffraient d'un trouble psychiatrique précédemment diagnostiqué (59,4%) et étaient confirmés être sous les soins d'un pédopsychiatre (42,2%). La majorité des visites au DU ont été triées comme étant urgentes ou très urgentes (51,5% et 41,1%, respectivement) et incluaient des évaluations de l'humeur et de la suicidabilité (84,7% et 80,8%, respectivement). Le suivi avec divers services a été fait pour toutes les visites. **Conclusion:** Les enfants et les adolescents qui se sont présentés au DU pour un trouble de comportement avaient des besoins urgents liés à l'automutilation, à la dépression et aux comportements violents. Ces résultats attirent l'attention sur le rôle important du DU dans la prise en charge de la sécurité physique et des menaces au bien-être des familles, et la recommandation d'un suivi dans la période suivant la crise.

Mots clés: *troubles de comportement, santé mentale, département d'urgence, pédiatrie*

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Introduction

The prevalence and diagnosis of, and prescriptive practices for, behavioural disorders (namely attention-deficit/hyperactivity disorder (ADHD) and conduct disorder) have received much attention over the years (Culpepper & Fried, 2013; Stephen & Bailey, 2013; Frick & Dickens, 2006; Monuteaux, Faraone, Gross, & Biederman, 2007; Searight, Rottnek, & Abby, 2001). Less discussed, however, are the psychosocial struggles individuals with these disorders experience and what results when emotional and behavioural needs are unmet. There are common issues that children and youth with behavioural disorders struggle with that make them a vulnerable population. Socially, these children are less popular amongst peers and have fewer positive friendships (Elkins, Malone, Keyes, Iacono, & McGue, 2011; Mannuzza et al., 2000). Higher rates of depression, suicide attempts, and anxiety are reported among youth with behavioural disorders (Zahn-Waxler et al., 2008), and these youth are more likely to engage in risky behaviours such as substance abuse (Farone, Wilens, & Petty, 2007; Torok, Darke, & Kaye, 2012; Elkins et al., 2011) and have more involvement with the law (Pardini & Fite, 2010).

Deficits in the children's mental health care system in Canada have been magnified in recent years with ongoing discussions on how to address long wait lists for care, the lack of treatment services and options for children and their families, stigma associated with mental illnesses, and ensuring best available (i.e., evidence-based) treatments are employed (Kirby & Keon, 2004; Canadian Association of Paediatric Health Centres, The National Infant, Child and Youth Mental Health Consortium Advisory, The Provincial Centre of Excellence for Child and Youth Mental Health at CHEO, 2010; Waddell, McEwan, Peters, Hua, & Garland, 2007; Reid & Brown, 2008; Eggerston, 2005). For children and youth with behavioural disorders, such conditions create a fertile ground for parental frustration, maladaptive family dynamics, poor behavioural management, and illness deterioration. Families may find themselves in need of crisis intervention to stabilize their child's behaviours and emotions and improve family functioning. Families not experiencing these health care deficits may also experience a need for crisis intervention during management of their child's disorder potentially making the backgrounds and needs of the families seeking crisis care quite diverse.

An increasing trend in emergency department (ED) visits for children's mental health crises has been reported in Canada. More and more parents are seeking care for their children in EDs to stabilize acute mental health emergencies (Newton et al., 2009; Reder & Quan, 2004; Grupp-Phelan, Mahajan, & Foltin, 2009; Kennedy, Cloutier, Glennie, & Gray, 2009), request guidance for at-home child management (Cloutier et al., 2010), and gain access to health care resources (Cloutier et al., 2010). In the largest Canadian study to date, Newton et al. (2009) found that the number

of ED visits for all types of pediatric mental health emergencies, including behavioural disorders, across Alberta increased 15% from 2002 to 2006. Trends specific to behavioural disorders, however, were not addressed specifically in this study.

Children and youth with behavioural disorders can be agitated, aggressive, and experience severe emotional distress with co-morbid health conditions, making treatment difficult (Guevara et al., 2007). In a crisis situation, behaviours and distress can be heightened. Unfortunately, the ED can be a fast-paced and busy setting, which does not necessarily promote an environment for de-stimulation or ample time to address the constellation of behavioural, emotional, social, and family needs that may underpin the crisis. Crises for children and youth with behavioural disorders may include self-harm as a concern. A recent study in Israel reported that adjustment disorder, ADHD, and conduct disorder were the three most common diagnoses given to children (≤ 12 years) attending a psychiatric ED with suicidal ideation or attempt (Ben-Yehuda et al., 2012). In the same study, the most common diagnoses given to youth (>12 years) presenting for the same reasons were depression, adjustment disorder, and conduct disorder. A question not fully addressed in the literature is why children and youth with behavioural disorders visit the ED and what type of care they receive.

The objectives of this pilot study were to describe patient and treatment characteristics of children and youth who visit the ED for an emergency related to a hyperkinetic disorder, conduct disorder, or mixed disorder of conduct and emotions. In terms of treatment, we hypothesized that: (a) the most common event leading up to the ED visits would be violence/aggression related; (b) the majority of ED visits would be defined as semi-urgent to non-urgent in nature; (c) the majority of children and youth would receive mental health assessments, but would not receive brief counseling during their ED visit; and, (d) the majority of children and youth would be discharged from the ED with follow-up care recommended.

Methods

This pilot study was a retrospective medical record review; its descriptive driven nature was intended to inform subsequent, and more focused, studies. Records from January 1, 2009 to December 31, 2011 for consecutive pediatric behavioural mental health presentations to an urban, tertiary care ED were reviewed. Study inclusion criteria were children and youth aged 10 to 17 years who were assigned a main ambulatory care (discharge) diagnosis for the following behavioural disorders: hyperkinetic disorder (F90.x), conduct disorder (F91.x), and mixed disorder of conduct and emotions (F92.x) using the International Statistical Classification of Diseases and Related Health Problems Canadian version (ICD 10, CA). This diagnosis reflects the main reason for the provision of emergency services, and in

this study, the diagnosis was made by a general emergency medicine-trained physician in consultation with a child psychiatrist if a consultation occurred during the visit.

The ED where visits occurred was located in a psychiatry-resourced, general hospital. ED care was provided to children and youth by general emergency medicine-trained physicians and the hospital included on-site, inpatient beds and psychiatric consultation in the ED. Consultation, if requested, is provided health professionals during the ED visit who have training in social work or psychiatric nursing. These individuals function as a 'crisis team' in concert with assessment and consultation with staff and resident child psychiatrists as needed. During the three-year study period, the ED had an annual average of 4,842 pediatric patients, 18.6% of whom had mental health complaints. Patients in this study with behavioural disorder complaints are included in this 18.6% annual visit average. This study was approved by the University of Alberta's Health Research Ethics Board.

The study's protocol was based on published methodological guidelines (Gearing, Mian, Barber, & Ickowicz, 2006; Gilbert, Lowenstein, Koziol-McLain, Barta, & Steiner, 1996). Data were abstracted by a sole abstractor (SL) and a random check of data (10%) was performed three to four weeks following initial abstraction to reduce recall bias, but to ensure data were correctly abstracted from the medical record. This random check yielded no errors in initial abstraction (100% inter-rater reliability). Data were then transferred into a password secured excel spreadsheet for storage. Data were later imported into a statistical software program for analysis. Questions regarding data abstraction were reviewed on a regular basis by the abstractor and an experienced trainer (ASN).

Abstracted data reflected socio-demographic and health care visit characteristics. Socio-demographic data standard for each medical record – birth date, age at ED visit, sex, and postal code – as well as health care provider documentation of current medications, medical co-morbidities, medical resources, and social services resources. Postal codes were used to determine dissemination area to estimate median annual household income using Statistics Canada data (Statistics Canada, 2006). Health care visit characteristics included the following data standard for each medical record: dates of presentation and discharge, time registered in the ED, triage level per the Canadian Triage and Acuity Scale (CTAS; Howlett & Atkinson, 2012; Gravel et al., 2012), main ambulatory diagnosis, triage time, time seen by health care professional (physician, nurse, and/or mental health crisis team), and presenting complaint. We also abstracted health professional documentation of any consultative services, clinical assessments, clinical interventions (including crisis intervention and brief counseling), and recommended follow-up plan. In terms of clinical interventions, crisis intervention was determined by documentation

of physical and/or chemical restraint use and brief counseling was determined based on documentation by any health care professional of any of the following key phrases/words in the medical record: "discussed setting clear boundaries," "crisis planning reviewed," "provided psycho-education," and "reinforced importance of...". Missing data or data that could not be determined from the medical record were broadly classified as 'Unable to determine/Missing.'

Data were analyzed using Statistical Product and Service Solutions (SPSS) software, Version 19. Frequency distributions were presented for categorical variables, and continuous variables were presented using univariable summaries (means, medians, interquartile ranges).

Results

In total, 365 medical records for ED visits made by 325 children and youth were reviewed. Of the records reviewed, there were 76 multiple visits; 291 children made one ED visit, 28 children made two ED visits, and six children made three visits during the study period. The most common diagnosis for children and youth at their first ED visit was conduct disorder (n=209, 64.3%), followed by mixed disorder of conduct and emotions (n=61, 18.8%) and hyperkinetic disorder (n=55, 16.9%). As seen in Table 1, over half (n=193, 59.4%) of the children and youth had a previously diagnosed psychiatric disorder, and 42.2% children and youth (n=137) were under the care of a psychiatrist at the time of the ED visit.

Table 2 details the characteristics of the visits. The majority of ED visits were triaged as urgent (n=188, 51.5%) or emergent (n=150; 41.1%) and had presenting complaints related to depression/self-harm (n=164, 45.8%) and violent behaviours (n=105, 28.8%) documented at triage. Most ED visits had a documented mood assessment (n=309, 84.7%) and/or suicidality assessment (n=295, 80.8%). Approximately one-fifth of ED visits (n=80, 21.9%) involved crisis intervention including medication administration (e.g., physical and/or chemical restraint use); 34.5% of visits (n=126) involved brief family/individual counseling. Mental health consultations, either with a mental health crisis team or child psychiatrist, were requested for the majority of visits (73.4% and 60.3%, respectively) while consultation with social work was requested for 12.5% of visits (n=42). The majority of follow-up recommendations were to follow up with a primary health care provider (n=153, 41.9%) who included general practitioners, pediatricians, counselors, psychiatrists, or psychologists. Approximately 30% of visits (n=109) involved a recommendation to follow up with an outpatient psychiatry program while 13.7% of visits (n=50) involved a recommendation to follow up with the mental health crisis team affiliated with the ED. The median length of ED stay (time from triage to ED discharge) was 5 hours 33 minutes (IQR: 3 hours 41 minutes, 9 hours 15 minutes).

Table 1. Characteristics of children and youth at their first ED visit for a behavioural problem (n=325)

	n	(%)
Age group		
10-12 years	79	(24.3)
13-17 years	246	(75.7)
Gender		
Male	192	(59.1)
Female	133	(40.9)
Household annual income, median		
<\$30,000	11	(3.4)
\$30,000 - \$49,999	45	(13.8)
\$50,000 - \$69,999	167	(51.4)
\$70,000 - \$89,999	51	(15.7)
>\$90,000	31	(9.5)
Unavailable	20	(6.2)
Psychiatric medication use		
Yes	157	(48.3)
No	160	(49.2)
Unable to determine/missing	8	(2.5)
Previously diagnosed psychiatric disorder		
Yes	193	(59.4)
No	129	(39.7)
Unable to determine/missing	3	(0.9)
Other diagnosed health conditions ^a		
No past medical history documented	135	(41.5)
Medical co-morbidity	105	(32.3)
Fetal Alcohol Spectrum Disorder	25	(7.7)
Tourette's Syndrome	20	(6.1)
History of self-harm	63	(19.4)
History of substance abuse	62	(19.1)
Developmental delay	17	(5.2)
Language or speech delay	5	(1.5)
Congenital disorder	5	(1.5)
Other	3	(0.9)
Unable to determine/missing	4	(1.2)
Documented medical resource use		
Psychiatrist	137	(42.2)
Psychologist	40	(12.3)
Family physician/pediatrician	30	(9.2)
Other	28	(8.6)
None stated by family	15	(4.6)
Unable to determine/missing	75	(23.1)

^a Total >100%; some children/youth had multiple conditions

Table 2. ED visit characteristics (n=365)

	n	(%)
Triage (CTAS) level		
Resuscitation (Level 1)	0	(0.0)
Emergent (Level 2)	150	(41.1)
Urgent (Level 3)	188	(51.5)
Semi-Urgent (Level 4)	20	(5.5)
Non-Urgent (Level 5)	1	(0.3)
Missing	6	(1.6)
Presenting complaint		
Depression/self-harm	167	(45.8)
Violent behaviour	105	(28.8)
Anxiety/situational crisis	29	(7.9)
Disruptive behaviour	28	(7.7)
Bizarre behaviour	20	(5.5)
Moderate anxiety/agitation with paranoia	1	(0.3)
Overdose	1	(0.3)
Other	14	(3.8)
Documented assessment ^a		
Mood	309	(84.7)
Suicidality	295	(80.8)
Physical examination	196	(53.7)
Homicidality	144	(39.5)
None	1	(0.3)
Unable to determine/missing	15	(4.1)
Documented intervention ^a		
None	116	(31.8)
Brief counseling	126	(34.5)
Crisis intervention	80	(21.9)
Other	1	(0.3)
Unable to determine/missing	69	(18.9)
Documented consultation ^a		
Crisis team	268	(73.4)
Child psychiatry	220	(60.3)
Social work	46	(12.6)
Other	6	(1.6)
Documented follow-up recommendation ^a		
Health care professional	153	(41.9)
Outpatient psychiatry program	109	(29.9)
Crisis team	50	(13.7)
Child and family services	47	(12.9)
Other	16	(4.4)
Duration of ED visit	5 h 33 m (IQR ^b : 3 h 41 m, 9 h 15 m)	

^a Total >100%; some children/youth had multiple documentations

^b Interquartile Range

Discussion

In this study, medical records indicated that the majority of parents were looking for support in the ED during a crisis. Contrary to our hypothesis, more than 90% of the ED visits were triaged as clinically urgent or emergent indicating the seriousness of presenting complaints. While we anticipated that the most common event leading up to an ED visit would be violence/aggression related, key findings from this study that warrant more intensive exploration in the future are that self-harm and depressed mood precipitated almost half of ED visits.

Several studies report behavioural disorders as a risk factor for suicide-related behaviours and support the connection between aggression and impulsivity and suicide-related behaviours (Manor et al., 2010; Sourander et al., 2009; Impey & Heun, 2012; Horesh, Gothelf, Ofek, Weizman, & Apter, 1999; Kerr et al., 2007; Kasen, Cohen, & Chen, 2011). Impey and Huen (2012) raised a concern that it may be harder to detect suicide-related behaviours in children with ADHD and high impulsivity as such children may be less likely to regard self-injuries as suicide attempts. In 2010, Manor and colleagues found that while the majority of the youth who visited the ED for a suicide attempt were diagnosed with ADHD, only one third of these youth had been diagnosed as such, prior to the suicide attempt (Manor et al., 2010).

The connection between ADHD and suicide-related behaviours in the literature reflects recommendations for screening for ADHD symptoms in children and youth expressing suicidal thoughts and exhibiting related behaviours (Manor et al., 2010). In the ED, psychiatric consultation to assess children and youth with presenting complaints related to self-harm may yield a new diagnosis and begin service referral for families. In this study, 60% of children/youth received a child psychiatry consultation and 40% of children/youth had no previous psychiatric diagnosis. The number of consultations that resulted in new diagnoses could not be determined, but warrants prospective study to document the course of crisis and post-crisis care and related outcomes. Based on our study findings, it is also worthwhile to consider whether screening for suicidal thoughts and behaviours should be incorporated into routine, outpatient mental health and medical care for children and youth with behavioural disorders. Care that addresses the link between behavioural disorder symptoms (i.e., impulsivity, aggression, and lack of risk awareness) and self-harm can be tailored for those children and youth who need it and may potentially reduce crises that need to be addressed in the ED.

Our study's findings also point to the important role of the ED in managing physical safety and well-being concerns for families and recommending follow-up in the post-crisis period. We based our hypothesis that the majority of children and youth would receive mental health assessments, but would not receive brief counseling during their ED visit on a recent Canadian study that indicated an absence of

clinical practice guidelines for pediatric emergency mental health care in Canada (Leon et al., 2012). While this study confirmed this hypothesis, we could not determine assessments/interventions for 69 visits and 116 visits did not have a documented intervention. These findings draw attention to variation in documentation and clinical care and the need for standardized approaches. ED clinical pathways related to assessing and managing violent behaviours/self-harm for behavioural disorders in a milieu known to be fast-paced and busy would ensure that care is provided in a consistent, safe (both to the patient and family and health care provider), and de-stimulating manner. Clinical pathways could also indicate when psychiatric consultation is needed (e.g., when self-harm with intent is part of the presentation) and how to address the constellation of behavioural, emotional, social, and family needs that may underpin the crisis. Given the retrospective nature of this study, we could not determine how decisions were made by emergency physicians regarding child psychiatry consultation requests and crisis team involvement which occurred in 60% and 73% of visits, respectively. For example, decisions influenced by discomfort in addressing safety concerns in children/youth or concerns about disposition decision-making could be addressed through professional training and clinical pathways. Future exploration of the decision-making process by emergency physicians could help tailor the development of training and pathway content.

This study confirmed our hypothesis that the majority of children and youth would be discharged from the ED with follow-up care recommended. However, a better understanding of health care utilization both before and after the ED visit is still needed. This includes exploring return ED visits and post-ED community-based health care utilization (e.g., physician visits, specialized mental health services). New knowledge of health care utilization and post-crisis service gaps can help identify factors related to health care accessibility and utilization (particularly in the context of having a discharge recommendation from the ED), and may point to areas of health policy (e.g., government assistance) and/or service delivery (e.g., telehealth or web-based resources to address transportability issues, resources to improve parental knowledge) that are needed to support parents of children and youth with a behavioural disorder.

This study has several limitations. As a medical record review, the data were not originally collected for research purposes. We accounted for missing data in our results, but we may have underestimated certain child and treatment characteristics based on data unavailability. The ED was also a psychiatric-resourced ED and not part of a pediatric hospital; there may also be a natural selection bias in which children/youth attend such an ED, and our study sample may not be representative of the general population of children and youth with behavioural disorders who visit an ED in crisis. The main ambulatory diagnosis was used as an inclusion criterion for our study. It is standard that a

main ambulatory diagnosis reflects the primary ED treatment/care provided for a particular condition (in the case of suicide-related behaviours it would be physical or medical care). We chose the main ambulatory diagnosis as a criterion to determine our study sample because we wanted to include children and youth who visited the ED primarily for their behavioural disorder and not other reasons (e.g., pneumonia in a child with ADHD) to more accurately describe care for the behavioural disorder. Lastly, we chose to include the diagnosis of mixed disorders of conduct and emotions in this study as a means to include children and youth who presented to the ED with a nebulous constellation of emotional and behavioural concerns during the crisis that did not yield a more definitive behavioural diagnosis. We recognize that this diagnosis is vulnerable to confounding diagnoses (e.g., parent-child relational problems) and recommend that results from this pilot study be used to develop more focused ED studies for hyperkinetic and conduct disorders.

Conclusion

This study's findings add an important perspective of the reasons why parents bring their children to the ED and the type of emergency care received for a behavioural disorder. A key finding from the study was that children and youth presented to the ED for a behavioural disorder had urgent needs related to self-harm, depression and violent behaviours. These findings draw attention to the important role of the ED in managing physical safety and well-being concerns for families and recommending follow-up in the post-crisis period.

Acknowledgements/Conflict of Interest

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CONFERENCE WATCH

ANNUAL CANADIAN PSYCHOLOGICAL ASSOCIATION CONVENTION

June 5 - 7, 2014
Vancouver, British Columbia
Website: www.cpa.ca

THE NEUROSEQUENTIAL MODEL INAUGURAL SYMPOSIUM BRAIN DEVELOPMENT AND TRAUMA: IMPLICATIONS FOR INTERVENTIONS AND POLICY

June 10 - 12, 2014
Banff, Alberta
Website: <http://www.hullservices.ca/events/neurosequential-model-inaugural-symposium>

THE CANADIAN PEDIATRIC SOCIETY 91ST ANNUAL CONFERENCE

Montreal, Quebec
June 25 - 28, 2014
Website: www.annualconference.cps.ca/

INTERNATIONAL ASSOCIATION FOR CHILD AND ADOLESCENT PSYCHIATRY AND ALLIED PROFESSIONS (IACAPAP) WORLD CONGRESS

August 11 - 15, 2014
Durban, South Africa
Website: <http://iacapap.org/world-congresses>
Website: <http://www.iacapap2014.co.za/>

CANADIAN PSYCHIATRIC ASSOCIATION ANNUAL CONFERENCE

September 11 - 13, 2014
Toronto, Ontario
Website: www.cpa-apc.org

34th CANADIAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY ANNUAL MEETING

September 14 - 16, 2014
Toronto, Ontario
Website: www.cacap-acea.org

CANADIAN ATTENTION DEFICIT HYPERACTIVITY DISORDER RESOURCE ALLIANCE ANNUAL MEETING

October 17 - 19, 2014
Toronto, Ontario
Website: www.caddra.ca

EUROPEAN ACADEMY OF PAEDIATRICS EDUCATIONAL CONGRESS

October 17 - 21, 2014
Barcelona, Spain
Website: www.eapaediatrics.eu

CANADIAN ASSOCIATION OF PAEDIATRIC HEALTH CENTRES ANNUAL MEETING

October 19 - 22, 2014
Calgary, Alberta
Website: www.caphc.org

AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY ANNUAL MEETING

October 20 - 26, 2014
San Diego, California
Website: www.aacap.org

Editorial staff invite CACAP members and Journal readers to forward listings for upcoming conferences and meetings to be promoted in the Journal of the Canadian Academy of Child and Adolescent Psychiatry "Conference Watch".

Please submit listings to: MS. VICKI SIMMONS, Editorial Assistant vsimmons@shaw.ca