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Television-related injuries in children—the British Columbia experience

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Abstract

Purpose: In Canada, mortality from falling televisions (TVs) is the 15th leading cause of childhood death owing to injury. Frequency, characteristics, and outcomes of TV childhood injuries were examined to determine any at risk populations.

Methods: All TV-related traumas at a tertiary children's hospital from 1997 to 2011 were identified using the Canadian Hospitals Injury Reporting and Prevention Program database and the hospital's trauma database. Charts of admitted patients were reviewed.

Results: Analysis of 179 injuries (10-24 per year) revealed a high frequency of injury in the home and a preponderance of head and neck injuries. Toddlers were the most commonly injured age group. Eleven admitted patients were identified; 6 were admitted to intensive care unit with significant head injuries, 2 of whom required surgery. More than half of admitted patients were First Nations or recent immigrants. The length of stay for a ward vs intensive care unit admission was 1.3 days (range, <1-2 days) compared with 7.6 days (range, <1-20 days), respectively. One child had residual deficits requiring rehabilitation, but there were no mortalities.

Conclusion: Injury severity appeared higher in patients from First Nations and recent immigrant families. Television injury would likely have been prevented by a securing device or support.

In 2009, American households had more television (TV) sets than people, with an average of 2.93 TVs to 2.54 people [1]. Although the number of sets per household had dropped to 2.5 in 2010, this still represents 116 million households with at least 1 TV and 31% of these with 4 or more sets [2]. The Canadian situation is similar, with 95% of all Canadian households in 2007 having at least 1 TV and 60% having 2 or more [3].

In September of 2006, the US Consumer Products Safety Commission [4] reported a startling increase in the number of pediatric deaths related to TV trauma and warned of the dangers of large TV sets resting on improper supports such as dressers or inadequate TV stands. Since that time, studies in several countries have confirmed the concerning finding that TV-related injuries are a significant source of pediatric trauma and that the rate of these injuries is increasing [5-13]. Literature on the Canadian experience with these types of injuries is lacking. Our aim was to delineate the provincial trauma burden owing to TV-related injury and to determine if any high-risk groups could be identified that might be targets for prevention education.

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1. Methods

A database review of all TV-related traumas seen at the single provincial tertiary children's hospital from January 1997 to December 2007 was carried out using data abstracted from the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) database. The CHIRPP is a nationwide database collecting data on injuries treated at 10 pediatric and 4 general hospitals in Canada. It obtains information regarding the circumstances surrounding the injury as well as information regarding the nature and treatment of the injury. Data fields include patient demographics, environment of injury, and type, mechanism, and severity of injury as well as patient disposition. These fields were used to characterize the incidence, environment, and characteristics of pediatric TV trauma in the province.

A retrospective chart review of all TV trauma admissions to the hospital between January 2007 and April 2011 was also carried out. Admissions from January 1997 to December 2007 were identified using the CHIRPP database, whereas admissions from January 2008 onward were identified using the hospital's own trauma database. Specific details abstracted included patient demographics; environment of injury; type, mechanism, and severity of injury; days admitted to intensive care unit (ICU); days of mechanical ventilation; operative interventions required; length of stay; patient disposition; and outcome. Descriptive statistics were used.

Both the database review and retrospective chart review were sanctioned by the institutional review board.

2. Results

A total of 179 children sustained TV-related trauma that, at minimum, required emergency department evaluation during the study period. The mean annual incidence increased from 14.3 injuries per year from 1997 to 2002 to 17.8 injuries per year from 2003 to 2007 (Fig. 1). The median age of injured children was 30 months (8-194 months), with 38% (n = 67) younger than 2 years and 81% (n = 148) younger than 5 years (Table 1). More than half (51%) of injuries occurred in toddlers (12-35 months of age inclusive),

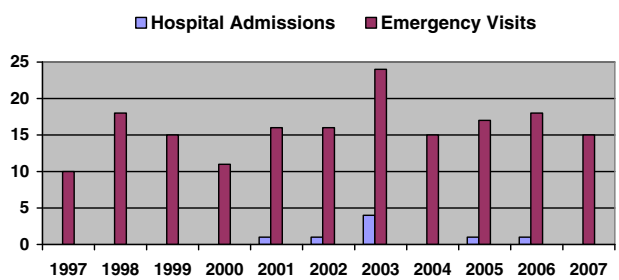

Fig. 1 Incidence of TV trauma emergency visits and hospital admissions from 1997 to 2007. This figure does not include hospital admissions from 2008 to 2011.

Table 1 Population demographics for nonadmitted vs admitted TV trauma patients

Variable	Nonadmitted	Admitted
No. of patients	168	11
Sex		
Male	112 (67%)	6 (55%)
Female	55 (33%)	5 (45%)
Age (mo)		
Mean	42.2	24.7
Median	30.5	19
Minimum/maximum	8/194	9/76
Age groups		
<12 mo	13 (8%)	2 (18%)
12-23 mo	47 (28%)	5 (46%)
2-4 y	75 (45%)	3 (27%)
5-9 y	24 (14%)	1 (9%)
10-14 y	7 (4%)	0
15-19 y	2 (1%)	0

and 64% of admissions were in this age group. Injuries were more common on weekdays (66%), and half of the injuries occurred in the early evening between 4:00 PM and 8:00 PM. Most injuries occurred in the home environment, most commonly in the living room, with a very small minority in educational or recreational spaces (Table 2).

The most common injury mechanism was that of a child colliding with the TV or TV stand. This resulted from several different activities including tripping while walking or running, falling from another piece of furniture or off another person, or being pushed while playing, roughhousing, or

Table 2 Summary of injury environment for nonadmitted vs admitted TV trauma patients

Variable	Nonadmitted	Admitted
Mechanism of injury		
Patient collided with TV/stand	118/168[a] (70%)	1/11[a] (9%)
TV/stand fell on patient	50 (30%)	10 (91%)
Injury environment		
Child's home (house, apartment, cottage)	138/162[a] (85%)	10/11[a] (91%)
Other home	15 (9%)	1 (9%)
Educational (school, preschool, daycare)	2 (1%)	0
Recreational (community/arts center, shopping mall)	6 (4%)	0
Hotel	1 (1%)	0
Injury room		
Bedroom	26/106[a] (24%)	1/7[a] (14%)
Classroom	1 (1%)	0
Kitchen	3 (3%)	0
Living room	74 (70%)	6 (86%)
Basement	1 (1%)	0
Other indoors	1 (1%)	0

[a] Total number of records available for analysis.