

Demographic Evaluation of Paediatric Medico-Legal Cases In Casualty

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Abstract:

Introduction: Paediatric medico-legal cases are important public health problems in the paediatric casualty in India. These cases are among the leading causes of paediatric disabilities and deaths. We conducted a study to evaluate the demographic features of the medico-legal cases who presented to our paediatric casualty. **Methodology:** In a total of two-year study period, 120 patients were presented in casualty as medico-legal cases. Information about the patients was obtained from hospital records and analysed by us from casualty. **Results:** 70 male (58.3%) and 50 female (41.6%) patients were included in our study. The majority of the patients were between 10- 14 years of age (n=30; 25.0%). Fall from height was the major complaint (n= 60; 50%) of our patients. Winter was the most common season (n= 37; 30.6%) and January (n=13; 11%) was the most common month for medico-legal admissions. The majority of the patients (n=42; 35%) presented to our emergency room between 18- 24 hours. 78 cases (65%) had health risks at the time of presentation. **Conclusion:** Developing effective & preventive strategies is essential to prevent child injuries. Majority of cases were males and adolescents. There is an urgent need to focus more on this vulnerable age group i.e., adolescent age group. There should be increased awareness among paediatricians about these medico legal cases and improving counselling skills to handle relatives of patients.

Keywords: Medicolegal cases, Paediatric casualty, Paediatric disabilities

Introduction:

Unintentional childhood injuries are important issues that affect public health problems all over the world. They are considered major causes of short- and long-term disabilities. They are also considered leading causes of death in children and adolescents.¹ Injury is defined as any tissue damage caused by exposure to any physical or chemical agent.² Any external condition that intentionally or accidentally affects the physical or mental health of a patient and leads to any health risk or death is considered a medico-legal condition.³ There are very few population-based investigations that focus on the incidence of injuries among children and adolescents.⁴⁻⁶ These studies have

concluded that the age, sex, socioeconomic status, and geographic location are the major determinants of the incidence of injuries. Unintentional childhood injuries, regardless of their outcome, can lead to serious and important sequelae such as limitation of activity, time in bed, and absence from the school.⁴ In addition to that, it can lead to serious work and financial problems, anxiety and decreased overall quality of family life.^{7,8} The aim of our present study was to evaluate the demographic aspects of paediatric medico-legal patients and to analyse the variables which are responsible for their condition presenting at casualty.

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Methodology:

This transverse descriptive study was conducted at the paediatric casualty of our institute for a period of 2 years. The data were collected from the medico-legal files in our paediatric casualty & paediatric ward and were evaluated retrospectively by our team. The medico-legal files include the following information: gender and age of the patient, time, date & month, medical diagnosis and the possibility of health risks i.e. poor prognosis, disability or death. Those who had multiple traumas, multiple organ dysfunction and those who needed further examination and treatment or hospitalisation were considered to have possible health risks. The study was approved by the Medical Ethics Committee of our institute.

In our study, poisoning cases were divided between toxic & corrosive substance consumption and food poisoning. Accidental drug consumption which can be found in house, was clubbed with toxic substance consumption. Patients of fall from some height was separated from trauma & road traffic accident was also separated from it. Bite cases included snake bite, scorpion bite & unknown bite.

In our study, we included presentation at time of admission & divided it into season, month & time period (in hours) of presentation in casualty.

All the data was arranged in a tabulated form and was analysed using Epi info software version 7.1.2.

Results:

A total of 120 children presented to our paediatric casualty with medico-legal cases, out of total number of 17,700 patients presenting at casualty at the rate of 6.7 per 1000 population. 70 males (58.3%) and 50 females (41.6%) were included in this study. Mean age \pm SD was 10.50 ± 5.91 for male patients and 7.60 ± 5.76 for the females. The major age group was 10-14 years ($n= 30$; 25%) followed by the 14-18 years age group ($n= 28$; 23%). Demographic properties of the patients are presented in Table I.

Summer was the most common season ($n= 43$; 35.8%) and May ($n=13$; 10.8%) was the most common month for medico-legal presentations. The majority of patients ($n=40$; 33.3%) presented to our emergency service between 18-24 hours. 78 cases (65%) had health risks at the time of presentation. The presentation time of the medico-legal patients is depicted in Table II.

Fall from height was the major complaint ($n= 60$;

50%) of our patients while other complaints are presented in Table III.

Table 1 : Demographic properties of the patients.

Age Groups	MALES		FEMALES		TOTAL	
	Number of Patients	%	Number of Patients	%	Number of Patients	%
0 – 2 yrs	15	12.5	9	7.6	24	20.1
2-5 yrs	18	14.9	8	6.8	26	21.7
5-10 yrs	7	5.9	5	4.2	12	10.1
10-14 yrs	16	13	14	12	30	25
14-18 yrs	14	12	14	11	28	23
Total	70	58.3	50	41.6	120	100

Table II A: Presentation Time of Medico-Legal Patients According to Seasons

Season	Number of Patients	%
Winter	37	30.8
Summer	43	35.8
Rainy	40	33.4
TOTAL	120	100

Table II B: Presentation Time of Medico-Legal Patients According to Months

Month	Number of Patients	%
January	9	7.5
February	10	8.3
March	12	10
April	8	6.6
May	13	10.8
June	10	8.3
July	11	9.2
August	10	8.3
September	9	7.5
October	7	5.8
November	10	8.3
December	11	9.2
TOTAL	120	100

Table II C: Presentation Time of Medico-Legal Patients According to Time Period After Particular Event/ Starting of Complaints

Time Period (Hrs)	Number of Patients	%
6-12	25	20.8
12-18	22	18.3
18-24	40	33.3
>24	33	27.6
TOTAL	120	100

Table III: Complaints of Patients

Medicolegal Cases	Number of Patients	%
Toxic substance consumption & drug intake	4	3.3
Corrosive substance consumption	2	1.6
Food poisoning	6	5
Trauma	8	6.6
Electric shock	2	1.6
Swallowing of foreign substances	5	4.1
Bite	8	6.6
Drowning	4	3.4
Burns	10	8.4
Road traffic accidents	11	9.2
Fall from height	60	50
TOTAL	120	100

Discussion:

In our present study, we evaluated the incidence of paediatric medicolegal cases, their demographic features and factors affecting their presentation to casualty. During the study period, we estimated that 17,700 patients presented to our paediatric casualty. Only 120 (6.7 per 1000) were treated as medico-legal cases. In our present study, the rates of medico-legal cases were different from those reported in prior studies. Sever *et al.*³ and Yücel *et al.*⁹ reported rates of medico-legal cases as 2.3% and 7.4% respectively

and the difference in rates may be a reflection of multiple factors that affect presentations to casualty.¹⁰ There is evidence that younger parents, lower education and lower- income of families are some factors that increase the injury risk in paediatric patients.⁵

As shown in Table III, the majority of our medico-legal patients were surgically treated, traumatic cases with road traffic accidents and fall from height was the most common complaint (n= 60; 50%) of our patients. Fall from height was accidental in young children and was due to over enthusiastic behaviour in adolescents. These results are comparable with those of prior studies that reported higher rates of traumatic rather than medical inquiries presenting to the paediatric casualty and treated as medico-legal cases.^{3,9}

Our study was not consistent with Turla *et al.*¹¹ which found that drug poisoning was the prominent complaint of medico-legal cases aged between 0-18 years. The American Association of Poison Control Center reported that in 2003, 65.8 % of drug poisoning cases were between 0-19 age paediatric cases.¹² Sever *et al.*³ and Yücel *et al.*⁹ found that drug poisoning was the major reason of non traumatic medico-legal cases admitted to paediatric emergency service. This was also not consistent with our study.

Evening hours between 18-24 hours was the most frequent period of our medico-legal presentation (n=40; 33.3%). This is consistent with the past population-based studies of paediatric emergency applications that deduced that the most frequent time period for paediatric emergency service applications especially for medico-legal cases.^{9,13,14}

Like the previous studies^{3,9,11}, our patients frequently presented in Summer (n= 43; 35.8%), and May (n=13; 10.8%) was the most frequent month for presentations. The previous studies concluded that summer was the most frequent period of the year for paediatric medico-legal presentations peaked during May to August. The result was due to summer holidays of schools where children had longer outdoor playing time than any other season. This in turn, increased the possibility of incidental trauma and injuries. Our data revealed that a large number of children were injured as a result of over enthusiastic behaviour during the summer season & playing outside.

The incidence of paediatric medico-legal events is high and may result in transient or permanent sequelae that lead to important health risk or death. The unfortunate part of our study group (65%) had health risks at the time of admission, 7 of them died shortly just after admission to casualty. The consequences of the other patients who had health risks were not recorded. This was due to the fact that our present study is a retrospective study and depending upon data collected from hospital records. Data about patients hospitalised or send to other hospitals for further treatment were not enough for any statistical analysis, these were the limitations of present study. Further studies in our population should be conducted to develop effective preventive strategies for the medico-legal issues.

Conclusion:

Developing effective & preventive strategies is essential to prevent child injuries. Majority of cases were males and adolescents. There is an urgent need to focus more on this vulnerable age group i.e. adolescent age group. There should be increased awareness among paediatricians about these medico legal cases and improving counselling skills to handle relatives of patients. Also, there should be awareness among parents of adolescent age group about fall from height, trauma, & road traffic accidents especially during summer season.

There should be a medico-legal expert in a casualty or giving training to the medical officers to carry out medico-legal works safely and scientifically can definitely improve the proper handling of these cases. This can help in saving the doctors from harassment during conflict.

References:

1. World Health Organisation. World Report on Child Injury Prevention. Accessed: 12 September 2015. Available from:http://www.who.int/violence_injury_prevention/child/injury/world_report/report/en/
2. Judy K. Unintentional injuries in paediatrics. *Pediatr Rev* 2011;32:431-38.
3. Sever M, Saz EU, Koşargelir M. An evaluation of the pediatric medico-legal admissions to a tertiary hospital emergency department. *Turk J Trauma & Emergency Surgery* 2010;16: 260-67.
4. Rivara FP, Calonge N, Thomson RS. Population-based study of unintentional injury incidence and impact during childhood. *Am Public Health* 1989;79: 990-4.
5. Petridou E, Anastasiou A, Katsiardanis K, Dessypris K, Spyridopoulos T, Trichopoulos D. A prospective population based study of childhood injuries: The Velestino town study. *European Journal of Public Health* 2005;15:9-14.
6. Pieri R, Minotti D, Gentili L, Negosanti I, Ricci L, Bedei G, et al. Injuries in childhood: A study on emergency department admissions of pediatric population in an Emilia-Romagna USL. *Pediatr Med Chir* 1992;14:293-96.
7. Gofin R, Adler B, Hass T. Incidence and impact of childhood and adolescent injuries: A population-based study. *J Trauma* 1999;47:15-21.
8. Osberg JS, Kahn P, Rowe K, Brooke MM. Pediatric trauma: Impact on work and family finances. *Pediatrics* 1996;98:890-97.
9. Yücel AB, Sütölk Z, Yılmaz LH, Akbaba M, Aytaç N. Evaluation of the patients having visited Pediatric Emergency Service in the Faculty of Medicine of Cukurova University and recorded as medicolegal cases in 2004. *Adli Tıp Bülteni* 2005;10:90-5.
10. Streatfield PK, Khan WA, Bhuiya A, Hanifi SM, Alam N, Diboulo E, et al. Mortality from external causes in Africa and Asia: Evidence from INDEPTH Health and Demographic Surveillance System Sites. *Glob Health Action* 2014;7:25366.
11. Turla A, Aydın B. Evaluation of the judicial cases that have been admitted to Ondokuz Mayıs University Medical Faculty. *Adli Tıp Bülteni* 2007;12:106-11.
12. Watson WA, Litovitz TL, Klein-Schwartz W, Rodgers GC, Youness J, Reid N, et al. 2003 annual report of the American Association of poison Control Centers Toxic Exposure Surveillance System. *Am J Emerg Med* 2004;22: 335-404.
13. Kurugöl Z, Mutlubaş F, Koturoğlu G, Vardar F, Özkınay F, Özkınay C, et al. Çocukluk çağında kazalar ve zehirlenmeler. *Ege Pediatri Bülteni* 2001;8:79-82.
14. Bertan M, Güler Ç. Halk Sağlığı Temel Bilgiler. Ankara: Güneş Kitabevi, 1997:462-72.