

Unnatural Deaths in the Paediatric Age Group in a Tertiary Hospital at Bangalore: An Autopsy Study

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Abstract

Background and Aim: During transition from childhood to adulthood, people are exposed to various hazards having potentiality lead to unnatural deaths by distorting physical, mental and social wellbeing. Studying pattern of unnatural deaths helps stakeholders to formulate policies for prevention of loss of important human resource.

Materials and Methods: A descriptive study with purposive sampling was conducted at KIMS Hospital and Research Centre, Bangalore from 2013 to 2015 wherein the data using pre-tested structured proforma was collected from autopsies of unnatural deaths among pediatric age group (0-18 years). The details pertaining to the Socio demographic characteristics, pattern of injuries and cause of death was ascertained from the police reports, reliable attendants of the deceased, histopathological /hospital records and postmortem reports. The data obtained from this study was analyzed statistically by presenting the data in the form of appropriate tables and graphs, computing the descriptive statistics like mean, median, standard deviation and percentages.

Results: Out of 832 cases, 703 (84.5%) were unnatural deaths, amongst which 8.8% cases were of paediatrics of age group. In that (82.2%) 51 cases belonged to 12-18 years, followed by 5-12 years and preschool age (3-5years) each with 4 cases (6.5%), 3 cases (4.8%) are of toddlers (1-3) years and no cases were reported among infants. Male preponderance was seen 35 cases (56%). Maximum number of deaths occurred during evening times i.e., 30 cases (48.39%). In the present study, maximum number of victims were from social class II i.e., 38 cases and least among social class I with only 1 case. Out of 62 cases, 37 cases (60%) were intentional deaths (1 case (3%) is homicidal and 36 cases (97%) were suicidal) and 25 cases (40%) were unintentional deaths. In the present study out of 36 suicidal cases, Hanging was the most preferred method used to commit suicide with 26 cases (42%), followed by burns and drowning with 1 (8%) case each. Out of 62 cases, only 12 (19%) cases were treated before death and remaining 50 (81%) were not treated prior to death.

Conclusion: This study indicates that there is an immense responsibility for the parents and caregivers in supervising their children. The public health burden of all unnatural deaths needs to be estimated to provide a rational basis for policy decisions to implement necessary interventions.

Key Words: Unnatural deaths, Paediatric age group (0-18years), Suicide.

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Introduction

It's been aptly said that "Child is the father of Man" and indeed the health status of a community is reflected by the paediatric age group (0 to 18 years) in a given area. It is estimated that all over the world, more than 26,000 children under the age of five mostly from developing

countries die every day.¹ India contributes one-sixth of the world's population, 29.5% of which belongs to the 0–14 year age group.²

A child of today is subjected to so much of stress starting from strained relationship between parents resulting in broken homes, expectations to perform better at the academic arena, comparison between children, sense of self neglect etc. The pattern of deaths among paediatric age group has changed from infections towards social etiologies during the last decades. Injury and violence are major killers of children because of the effects on social, physiological, economic and medical issues throughout the world, responsible for deaths in children and young people under the age of 18 years each year, causing public health issues.³

Keeping this in mind, a study was undertaken with the objectives to describe the demographic profile, to assess the proportion and causative factors of unnatural deaths in paediatric age group.

The rationale of determining the features and pattern of medico legal deaths in childhood will contribute to the establishment of a database for the formulation of national and international policies helping to lower the mortality rate in the paediatric age group.

Methodology

Using pre-tested structured proforma, data were collected from all cases of unnatural deaths among paediatric age group (0-18 years) brought to KIMS Hospital and Research Centre, Bangalore for a period of 18 months for autopsy. The details pertaining to the demographic characteristics, manner, time and place of death were ascertained from the investigating police officers, police reports and reliable attendants of the deceased. The data obtained from this study was analyzed statistically by presenting the data in the form of appropriate tables and graphs, computing the descriptive statistics like mean, median, standard deviation and percentages.

Results

During the period (November 2013 to April 2015) , 832 cases were brought for post mortem examination; out of which 703 (84.5%) deaths were due unnatural causes. Out of 703 cases of unnatural deaths ,62 (8.8%)

deaths were of 0-18years age group. Out of 62 cases, Male : Female ratio was found to be 1.29:1. Age wise distribution showed that 3 cases (4.8%) belonged to 1-3 years (Toddler), 4 (6.5%) cases were of the age group 3-5 years (Pre-school), 4 (6.5%) were of 5-12 years (School age) and 51 (82.2%) were of 12-18 years (teen) . **(Fig 1)**

The maximum number of unnatural deaths occurred during evening times i.e. 30 cases (48.39%) and the least number of cases were recorded between 12 am to 6AM (3 cases,4.84%). **(Table 1)**

As per the Modified Kuppuswamy scale (update for February 2019), this study of 62 cases had maximum victims from social class II i.e., 38 (61%) cases and least among social class I i.e., 1 case which accounted for 2%. **(Fig – 2)**

Amongst the 62 unnatural deaths in paediatrics, 37(60%) cases were intentional and 25 (40%) cases were unintentional. 1 case of intentional death (3%) was homicidal and 36 cases (97%) were suicidal in nature. Homicidal deaths was of a male victim, while in case of suicidal deaths 14 victims were males and 22 were females.

Hanging was the most common manner of death with 26 cases (42%) (12 cases males and 14 cases of females) out of 62 cases, followed by 10 cases (15%) of R.T.A (8 cases of males and 2 cases of females) and the least common were seen in electrocution and strangulation, accounting to 1 male victim case each (2%) . **(Table 2)**

Out of 36 suicidal cases, Hanging was found to be the most preferred method used (72%), followed by poisoning (22%), burns and drowning accounting to 3% of cases each. Depression followed by failure in studies ,family problems, love failure and ill health issues were found to be the reason for committing suicide.1/4th of them had previously attempted suicide.

Out of 25 cases of unintentional deaths, 40% cases were due to road traffic accidents followed by drowning and fall from height (24% each) with the least being due to electrical shock (4%). Out of 62 cases, more than 3/4th of them did not receive treatment prior to death **(Table 1)**

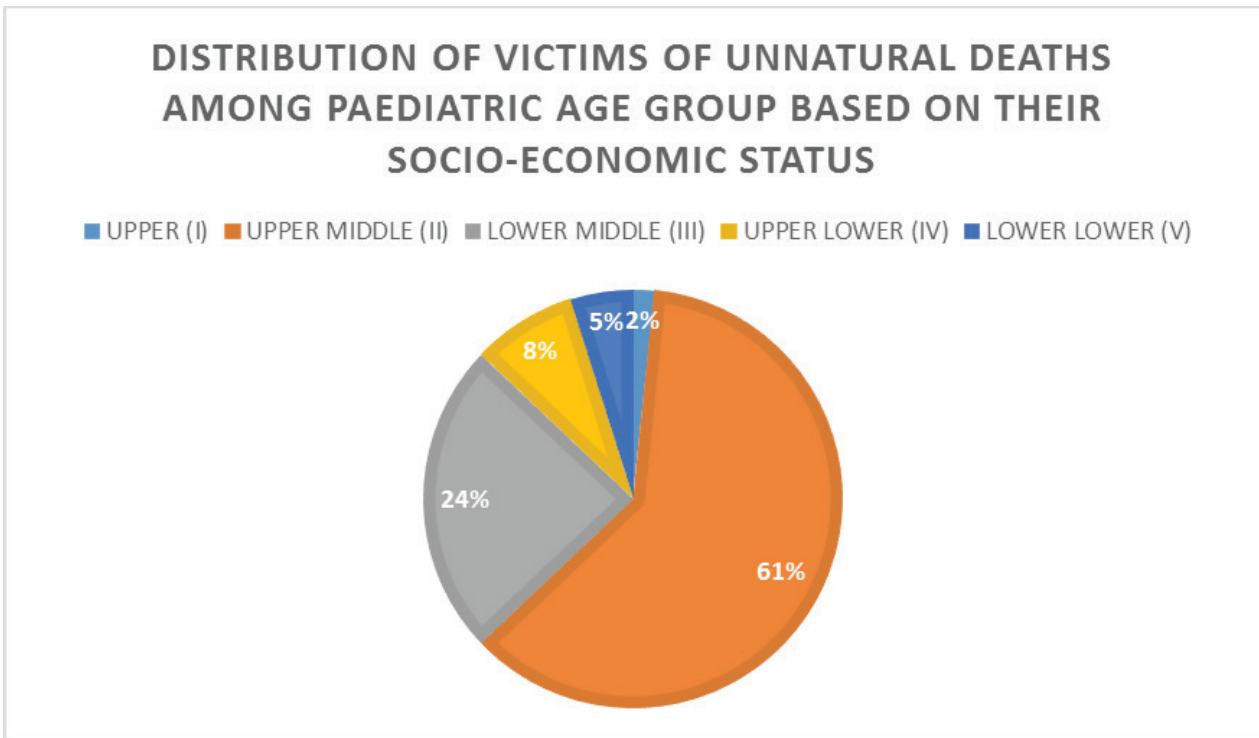


Fig 1: AGE INCIDENCE OF THE VICTIMS (0-18 years):

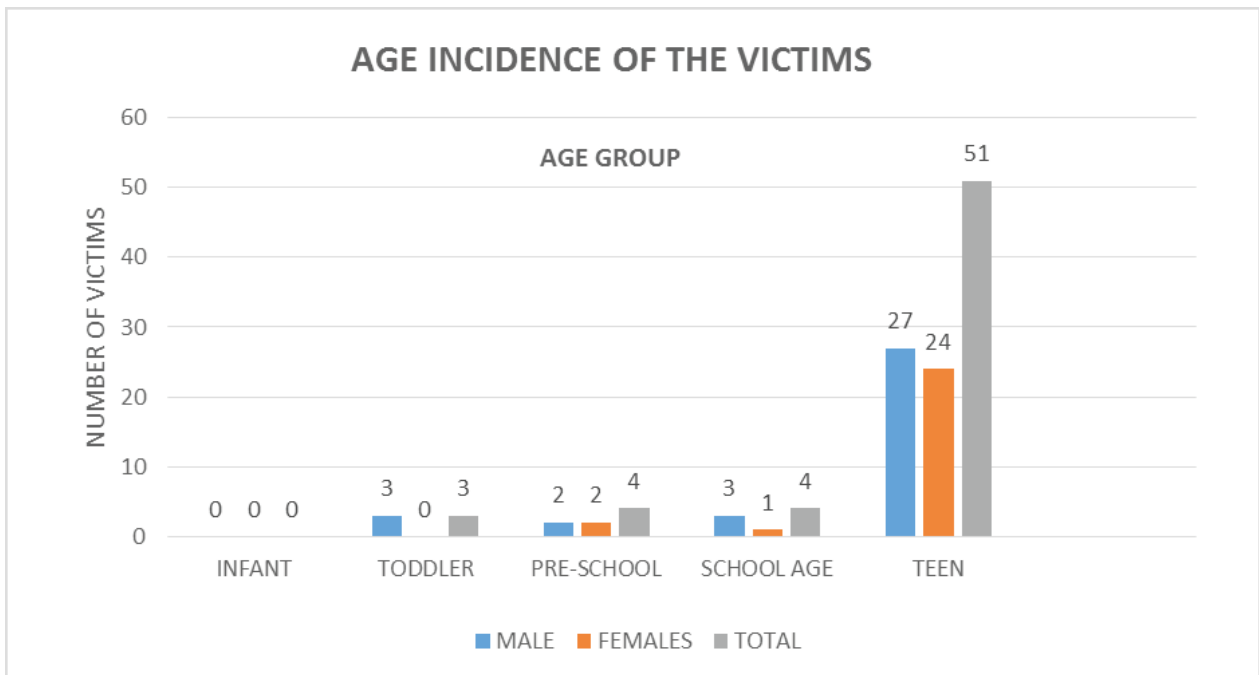


Fig 2: SOCIOECONOMIC STATUS OF THE VICTIMS

TABLE-1: Profile of Paediatric Victims of Unnatural death (n=62)

Characteristics		No. of Cases	(%)
TIME	12:01am to 6:00am	3	4.84%
	6:01am to 12:00pm	18	29.03%
	12:01pm to 6:00pm	11	17.74%
	6:01pm to 12:00am	30	48.39%
INTENTIONAL DEATHS (n=37)	Homicides	1	3%
	Suicides	36	97%
HISTORY OF PREVIOUS SUICIDAL ATTEMPTS	Yes	9	25%
	No	27	75%
METHODS EMPLOYED TO COMMIT SUICIDE (n=36)	Hanging	26	72%
	Poisoning	8	22%
	Burns	1	3%
	Drowning	1	3%
TYPE OF UNINTENTIONAL DEATHS (n=25)	R.T.A	10	40%
	Drowning	6	24%
	Electrical shock	1	4%
	Fall from height	6	24%
	Burns	2	8%
INCIDENCE OF ROAD TRAFFIC ACCIDENTS AND ITS SEX DISTRIBUTION (n=10)	Male	8	80%
	Female	2	20%
TREATMENT PRIOR TO DEATH	Treated	12	19%
	Not Treated	50	81%

TABLE: 02: MANNER OF DEATH WITH SEXWISE DISTRUBUTION

Manner of Death	Male		Female		Total	
	No.	Percent	No.	Percent	No.	Percent
Hanging	12	46%	14	54%	26	42%
Poisoning	2	25%	6	75%	8	13%
Burns	1	33%	2	67%	3	5%
Fall from height	5	83%	1	17%	6	10%
Drowning	5	72%	2	28%	7	11%
R.T.A	8	80%	2	20%	10	15%
Electrocution	1	100%	0	0%	1	2%
Strangulation	1	100%	0	0%	1	2%

Discussion

During the 18 months of study, only 62 cases of unnatural deaths among paediatric age group 0-18 years were studied. It represents only a part of problem of unnatural deaths among paediatric age group in Bengaluru as such cases are distributed in different mortuaries catering to different regions/areas of Bengaluru.

Among 62 cases of unnatural deaths in paediatric age group more deaths were seen in the age group of 12-18 years (Teens) i.e. 51 (82.2%) cases. The mean age of the males was 16.0 years while that of the females was 14.8 years in Ohene's and Meel's report^{4,5}. Unnatural deaths increase with age, since there is more violence expected in older children⁴. This could be attributed to mental instability and hormonal influence. Proper parental guidance and suitable moral support should be provided for the same.

35 (48.2%) cases were males and 27 (51.8%) cases were females. The male-to-female ratio was 2.1:1. as recorded in Sally's report⁴. This might be because

males are more prone active, curious and adventurous by nature.

Majority of unnatural deaths in the study occurred during evening (48.39%) and mid morning (29.03%). There must be an immense responsibility for the parents and caregivers in supervising this age group. Most of the victims were from Middle class in 85% of cases and least among Upper class i.e. 2%. An administrative policy of the country thereby plays a vital role in mortality and morbidity rates. Financial security of the weaker sections should be enhanced. 60% (37 cases) of the cases were intentional and 40% (25 cases) were unintentional deaths. Among unintentional deaths, 97% (36 cases) were suicidal and 3% (1 case) was homicidal in nature. Suicide in the past decade is an increasing trend with the increasing population of India, according to the National Crime Records Bureau. According to recent study, the suicide rate per 100,000 population among females of 10-19 years was 11.98, while it was 11.9 per 100,000 population among males of the same age in Sri Lanka by 2011⁶. Suicides tended to be more prevalent among older teenagers. At that stage of life, teenagers

feel distressed about their grades, sex, future plans, and jobs. Children less than 14 years of age less frequently suffer from psychiatric disorders, family conflicts, or romantic disappointment. Moreover, children do not develop insight in the definitiveness of death before the age of 12 or 14 years⁷.

Hanging was the most common method of suicide in Canada for child victims of suicide between the ages of 10-19 years⁸. In the present study the most common reason for committing suicide is depression in 53% of cases. As reported in literature, psychological autopsy has a paramount importance on elucidating death investigation on children and adolescent suicide, regarding the analysis of the implied risk factors^{9,10}. In these cases, psychological autopsy was fundamental to understand the suicidal behaviour and to determine the manner of death. From the present study among unintentional deaths R.T.A is the most common cause accounting for 40% followed by Drowning and Fall from Height with 24% each. Traffic crashes are the leading health threat to children in many countries^{11,12}. This may be due to the increased involvement of males in outdoor business and increased usage of vehicles by males. Alcohol abuse may be another factor which could be associated.

Conclusion

Unnatural dying is abrupt, and traumatic. Violence, Violation and Volition are its unique dimensions. Unnatural deaths among paediatrics are predictable and preventable. Education and employing effective strategies has a role to play in prevention, especially when it is paired with technology and legislation. If not preventable, prompt and immediate care should be provided in order to save the life of the victim.

Ethical Clearance: Obtained from IRB committee

Conflict of Interest : Nil

Source of Funding: Self

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