

Study of Unnatural Deaths in Pediatric Age Group at Tertiary Care Centre**Dharmendra Kumar¹, Smriti Sinha², Ritu³, Prabhat Kumar⁴, Vijay Kumar Prasad⁵**¹Associate Professor, Department of Forensic Medicine and Toxicology, Radha Devi Jageshwari Memorial Medical College & Hospital, Turki, Muzaffarpur, Bihar²Senior Resident, Department of Microbiology, Patna Medical College, Patna, Bihar³Assistant Professor, Department of Forensic Medicine and Toxicology, Patna Medical College, Patna, Bihar⁴Assistant Professor, Department of Forensic Medicine and Toxicology, Radha Devi Jageshwari Memorial Medical College & Hospital, Turki, Muzaffarpur, Bihar⁵Professor and Head of Department, Department of Forensic Medicine and Toxicology, Radha Devi Jageshwari Memorial Medical College & Hospital, Turki, Muzaffarpur, Bihar

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Corresponding author: Dr. Smriti Sinha

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Abstract:**Background:** People are exposed to a variety of risks as they grow from childhood to maturity, which may cause unnatural deaths by impairing social, mental, and physical welfare. Examining trends in untimely deaths aids interested parties in developing strategies to stop the loss of valuable human capital.**Methods:** From March 2016 to August 2017, a descriptive study utilizing purposive sampling was carried out at PMCH, Patna. Data from autopsy of unnatural deaths among the pediatric age range (0–18 years) was collected using pre-tested structured proforma. The police reports, trustworthy witnesses of the deceased, histopathological/hospital records, and post-mortem reports were used to gather information about the sociodemographic features, pattern of injuries, and cause of death. By presenting the data in the appropriate tables and computing descriptive statistics like mean, median, standard deviation, and percentages, the data from this study was statistically examined.**Results:** Of the 832 cases, 703 (84.5%) resulted in unnatural deaths, with 8.8% of those cases being children in that age range. Of those, 51 (82.2%) belonged to the age range of 12 to 18 years, with 4 cases (6.5%) each for 5 to 12 years and preschool age (3-5 years). Three cases (4.8%) were of toddlers (1-3 years), and there were no instances reported among newborns. In 35 cases, there was a preponderance of men (56%). The maximum number of deaths 30 cases, or 48.39% occurred in the evening. In the current study, social class II accounted for the greatest number of victims (38 cases), whereas social class I accounted for the fewest (only 1 case). Of the 62 cases, 37 (or 60%) resulted in deliberate deaths, 1 (or 3% of cases) was homicidal, 36 (or 97%) were suicidal, and 25 (or 40%) were accidental fatalities. Out of the 36 suicidal cases in the current study, 26 cases (42%), or hanging, were the most frequently utilized means of suicide. Burns and drowning each accounted for one occurrence (8%), followed by hanging. Of the 62 cases, only 12 (19%) had treatment before to death, and the remaining 50 (81%) did not receive treatment.**Conclusion:** According to this study, parents and other caregivers have a huge duty to watch over their children. To give policy decisions the justification they need to implement the appropriate interventions, the public health burden of all unnecessary fatalities must be evaluated.**Keywords:** Unnatural pediatric deaths, Socio economic status, Suicide.

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Introduction

The past few decades have seen a notable increase in the non-natural causes of death in the pediatric age group. When an injury, accident, poisoning, or other violent act causes someone to die before their time, it is considered unnatural and goes against the natural order. The cause of unnatural fatalities is typically influenced by a multitude of cultural and social elements within a nation. Intentional or inadvertent activities may be the cause of the

unnatural deaths. The primary cause of unnatural fatalities in children is inadvertent behaviour, which primarily stems from accidents. Suicidal and homicidal deaths are examples of intentional activities that result in death. After the newborn stage, trauma-related deaths and sudden infant death syndromes are also rather common. The other most common causes of pediatric unnatural deaths in our nation are drowning, electrocution, burns,

falls from heights, explosions, building collapses, animal attacks, large-scale disasters, and mechanical asphyxia [1]. Pediatric murder deaths are not prevalent.

Records of police investigations are a useful resource for learning about the circumstances behind a person's death. The majority of unexplained deaths are reported to the mortuary, and autopsies are crucial to the study of pediatric fatalities.

By analyzing these documents in conjunction with the results from the postmortem investigation, we may be able to determine the manner and cause of death, identify possible areas for intervention, and create preventative measures.

Material and Methods

Data was collected from all cases of unnatural deaths among children (0–18 years old) brought to Patna Medical College and Hospital, Patna, Bihar for an autopsy during an 18-month period (March 2016 to August 17) using pre-tested structured

proforma. The investigating police officers, police reports, and trustworthy witnesses of the deceased provided the information regarding the demographics, mode, time, and location of death.

By presenting the data in the appropriate tables and computing descriptive statistics like mean, median, standard deviation, and percentages, the data from this study was statistically examined.

Results

832 cases were brought for post mortem investigation throughout the course of the 18-month period; of these, 703 (84.5%) fatalities had non-natural causes. Sixty-two (8.8%) of the 703 unnatural death incidents involved people between the ages of 0 and 18.

The male to female ratio of 62 cases was determined to be 1.29:1. The age distribution of the cases revealed that 3 (4.8%) belonged to the toddler age group, 4 (6.5%) to the preschool age group, 4 (6.5%) to the school age group, and 51 (82.2%) to the teen age group. (Table 1).

Table 1: Age incidence of the victims

Age group in years	No. of cases	Percentage
1-3 (Toddler)	3	4.8%
3-5 (Pre-school)	4	6.5%
5-12 (Scholl age)	4	6.5%
12-18 (Teen)	51	82.2%

The majority of the 62 victims in this study, or 38 cases, belonged to social class II (61%) and the least, or 1 case, to social class I (2%), according to the Modified Kuppuswamy scale. (Table 2)

Table 2: Socioeconomic status of the victims

Socioeconomic status	No. of cases	Percentage
Upper	1	2%
Upper middle	38	61%
Lower middle	15	24%
Upper lower	5	8%
Lower	3	5%

The majority of unnatural deaths—30 cases, or 48.39 percent occurred in the evening, while the lowest number—3 cases, or 4.84% occurred between 12 and 6 AM.

Of the 62 unnatural deaths in pediatrics, 37 (or 60%) were deliberate, while the remaining 25 (or 40%) were not. Thirty-six cases (97%) of purposeful death were suicide, while one case (3%) involved homicide. There was one male victim of homicide, compared to 14 male and 22 female victims of suicide.

Out of 62 cases, hanging accounted for 26 cases (42%) or 12 cases of male and 14 cases of female victims. Ten cases (15%) of R.T.A. (8 cases of male and 2 cases of female victims) followed, and the least common causes of death were strangling and electrocution, which accounted for 1 male victim case each (2%).

Of the 36 suicidal cases that were examined, hanging was determined to be the most frequently employed method (72%), followed by poisoning (22%), burns (3%), and drowning. Suicide was discovered to be caused by depression, which was followed by academic failure, familial concerns, failed romantic relationships, and health problems. One-fourth of them had made an attempt at suicide before.

Of the 25 unintentional fatality instances, 40% were caused by driving accidents, followed by drowning and falls from a height (24% each), with electrical shock accounting for the least amount of cases (4%). More than three-quarters of the 62 instances did not receive treatment before they passed away. (Table 3,4)

Table 3: 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 4: Manner of Death with sex wise Distribution

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

Of the 62 cases of unnatural fatalities in the pediatric age group, 51 (82.2%) cases occurred in the 12–18 year old (Teen) age group. According to Ohene and Meel's report [2,3], the mean age of the males was 16.0 years, while the mean age of the females was 14.8 years. Unnatural deaths tend to increase with age since older children are more likely to experience violence [2]. Hormonal influences and mental instability could be to blame for this. For the same, appropriate moral support and parental direction should be given.

There were 27 (51.8%) female cases and 35 (48.2%) male cases. The ratio of male to female was 2.1:1, as stated in Sally's report [2]. This could be because men are naturally more likely to be active, inquisitive, and daring. Majority of unnatural deaths in the study occurred during evening (48.39%) and mid-morning (29.03%).

In order to supervise this age group, parents and other caretakers must bear a great deal of responsibility. In 85% of the cases, the victims

belonged to the middle class, while only 2% were from the upper class. Thus, the nation's administrative policies have a significant impact on the rates of morbidity and death. It is important to strengthen the weaker groups' financial security. Of the incidents, 40% (25 cases) were accidental fatalities and 60% (37 cases) were purposeful. Of the inadvertent deaths, 97% (36 instances) had suicidal tendencies, and 3% (1 case) had homicidal tendencies. As India's population grows, suicide has been on the rise over the last ten years, according to the National Crime Records Bureau. A recent study found that by 2011, the suicide rate per 100,000 people in Sri Lanka for females aged 10 to 19 was 11.98, while the rate for boys of the same age was 11.9. [4] Teenagers who were older tended to commit suicide at a higher rate.

Teens at that age are anxious about their employment, future goals, sex, schoolwork, and other aspects of their lives. Less often, children under the age of 14 experience mental health issues, familial strife, or romantic disappointment. Furthermore, youngsters do not begin to understand

the finality of death until they are 12 or 14 years old. [5]For young people who committed suicide in Canada between the ages of 10 and 19, hanging was the most popular technique. [6]

According to the current study, 53% of suicide cases has depression as their primary cause. According to published research, psychiatric autopsies are crucial for clarifying death investigations involving child and adolescent suicide, particularly when it comes to examining potential risk factors. [7,8] In these cases, a psychiatric autopsy was essential to comprehending the suicidal behavior and figuring out how the person died. According to the current study, R.T.A. accounts for 40% of unintentional deaths, with drowning and falls from height accounting for 24% of deaths each. In many nations, traffic accidents pose the greatest risk to children's health. [9,10] This could be because men are more likely to work outside and drive more often than women are. Abuse of alcohol could be another contributing factor.

Conclusion

Unnatural death is painful and sudden. Its three distinct dimensions are volition, violence, and violation. Pediatric unnatural fatalities are foreseeable and avoidable. Prevention can be achieved in part by using effective techniques and education, especially in conjunction with technology and regulation. In order to save the victim's life, prompt and immediate care should be given if it cannot be prevented.

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