Original article

Medico – Legal Profile among the Unnatural Deaths in Paediatric Age Group at SMS Hospital, Jaipur

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How to cite this article: R.K Punia, Dipender Singh, Siddharth Vijay Vergia et. al. Medico – Legal Profile among the Unnatural Deaths in Paediatric Age Group at SMS Hospital, Jaipur. Indian Journal of Forensic Medicine and Toxicology 2023;17(3).

Abstract

Background: Childhood begins after birth and continues into adolescence; according to the Children's Bill of Rights, childhood is defined as the life up to 18 years after birth. Childhood mortality is a reliable indicator of health care facilities of a country and its development.

Aims & Objective: Assessment of medico–legal profile among the unnatural deaths in paediatric age group at SMS Hospital, Jaipur

Material & Methodology: A cross sectional observational prospective study that used inclusion and exclusion criteria was conducted. 65 autopsies of medico-legal paediatric unnatural death were taken in the study. The present study had been conducted in the Mortuary, Department of Forensic Medicine & Toxicology, SMS Hospital, Jaipur during the period from 15 June 2021 to 14 June 2022.

Result & Observation: In this study total 65 pediatric victims studied. Male children account for 61.54 % (40 victims) while female account for 38.46 % (25 victims), unintentional pattern of death was present in 49 subject with accidental manner of death in all. Intentional pattern of death was present in 16 subject with homicidal manner of death in 6.15 % and suicidal manner of death in 18.45 %, In present study 23 subject (35.38 %) died due to Road Traffic Accident, followed by Fall From Height in 12 subject (18.45 %).

Conclusion: From the study we concluded that there is an immense responsibility for the parents and caregivers in supervising their children. If the incident cannot be prevented, the victim should receive immediate care right away in order to save their life.

Key word: Paediatrics, Childhood, Medico – legal , Accident , Fall from Height.

Introduction

Pediatrics is the branch of medicine that deals with the medical care of infants, children, and adolescents, and the age limit usually ranges from birth up to 18 (in some places until completion of secondary education, and until age 21 in the United States)[1]. Childhood begins after birth and continues into adolescence; according to the Children's Bill of Rights, childhood is defined as the life up to 18 years after birth[2]. Unnatural childhood deaths are not

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only associated with intense trauma and separation distress, but also relate to a sense of self neglect to protect children from harm[3]. Trauma has been a major cause of death in childhood populations[4]. Childhood mortality is a reliable indicator of health care facilities of a country and its development[5]. Death records statistics are considered reliable and used all over the world[6]. This study is thus being initiated to observe the medico – legal profile of unnatural deaths in pediatric age group from birth to 18 years.

Aim & objectives

Study was conducted to evaluate the victims of unnatural deaths in paediatric age group in terms of medico - legal profiles and to paint a picture therefor.

Materials and method

All medico-legal paediatric unnatural death cases autopsied at SMS Medical College and Attached Group of Hospitals, Jaipur, who gave written informed consent for participation in the study were included in the cross – sectional descriptive observational study. We excluded the unnatural deaths in paediatric age group whose medico-legal autopsy was waived off by investigation officer and all cases of natural death in paediatric age group autopsied at mortuary. The sample size was calculated at 95% confidence level, assuming 60% intentional deaths among unnatural deaths in pediatric age group as found in the seed article "unnatural deaths in pediatric age group in a tertiary hospital in Bangalore: an autopsy study. At relative allowable error of 20%, 65 cases of unnatural deaths in the pediatric age group were required as sample size for the purpose of the present study. The sampling technique used was consecutive sampling.

Observations and Results

During the study period , 346 paediatric autopsies conducted in the Mortuary, Department of Forensic Medicine, SMS Medical College and Attached Group of Hospitals Jaipur out of which 65 cases were of medico – legal unnatural paediatric death. Unnatural paediatric death constitutes 18.78% of all medico – legal paediatric deaths. All details were recorded and analysed.

In this study total 65 pediatric victims studied. Male children account for 61.54% (40 victims) while female account for 38.46% (25 victims).

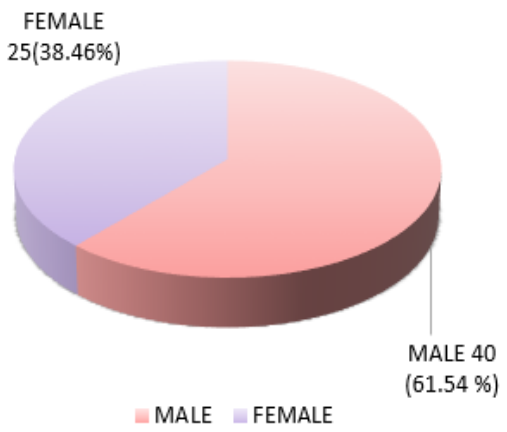

Figure 1: Showing Gender Wise Distribution Of Victims.

In present study 53 subject (81.55%) died after receiving treatment and 12 subject (18.45%) died on spot.

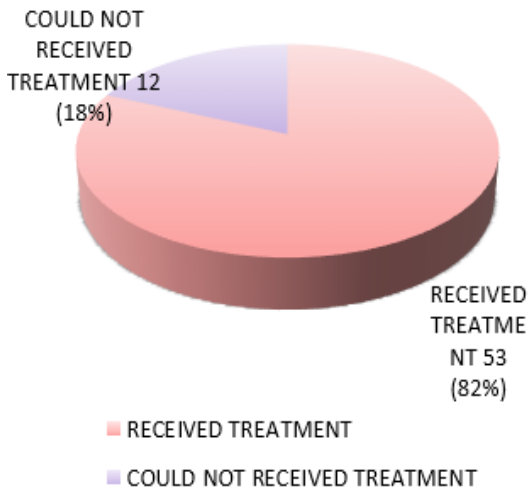

Figure 2: Showing Treatment Wise Distribution Of Victims.

In present study unintentional pattern of death was present in 49 subject with accidental manner of death in all. Intentional pattern of death was present in 16 subject with homicidal manner of death in 6.15% and suicidal manner of death in 18.45%.

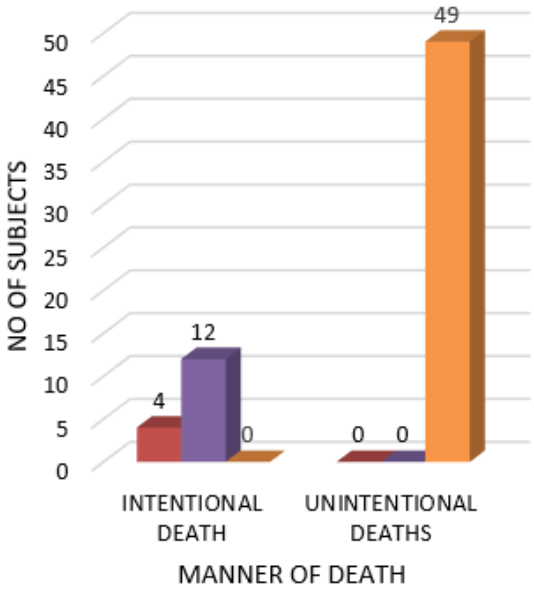

Figure 3: Showing Pattern Of Death Wise Distribution Of Victims.

In present study 23 subject (35.38%) died due to Road Traffic Accident, followed by Fall From Height in 12 subject (18.45%), Poisoning in 7 subject (10.77%), Hanging & Burn in 6 – 6 subject (9.23%), Accidental Poisoning in 4 subject (6.15%), Snake Bite & Assault in 3 – 3 subject (4.6%) and Machine Injury in only 1 subject (1.54%).

Table 1: Showing Type Of Death Wise Distribution Of Victims.

Pattern Of Death	Type Of Death	No. Of Subjects	Percentage
Intentional	Assault	03	04.60 %
	Hanging	06	09.23 %
	Poisoning	07	10.77 %
Unintentional Death	Burn	06	09.23 %
	F.F.H	12	18.45 %
	Accidental Poisoning	04	06.15 %
	Snake Bite	03	04.60 %
	Machine Injury	01	01.54 %
	R.T.A	23	35.38 %
Total		80	100%

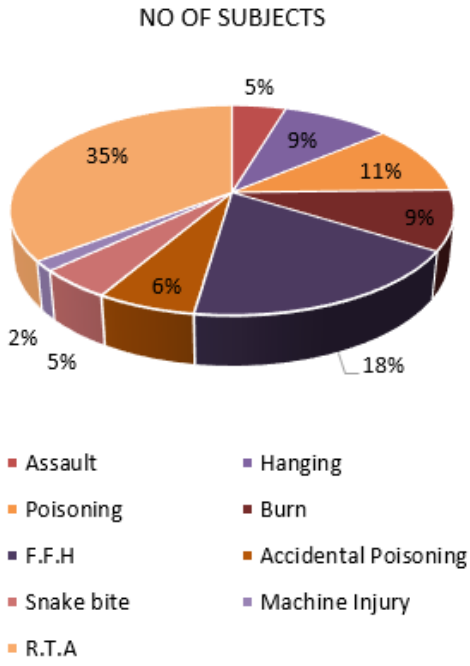

Figure 4: Showing Type Of Death Wise Distribution Of Victims.

Discussion

Males (61.54%) victims predominant over the females (38.46%) in the present study with a Male: Female ratio of about 1.6:1. Similar results have been reported by **Athani P, et al., Bangalore, 2017 (55.22%)[6]; Kumar A, et al., Varanasi, 2014 (56.55 %)[7]; Varma RK, et al., Bangalore, 2021 (56 %)[8].** This is attributable to the fact that Males are the active participants of the society and more commonly engaged in outdoor activities. This explains the male preponderance in all studies.

The majority of victims in this study succumbed to death after getting treatment 81.55 % and remaining 18.45 % died on the spot or in the way to reach the hospital. However in contrast to this very less no of children able to get the treatment in the study of **Varma RK, et al., Bangalore, 2021 (treated; 19%)[8].** This explains the fact that, despite receiving treatment, children did not survive in the majority of cases because their body's ability to recover from injury or harm is far lower than that of adults. Therefore, if anything happens to a child, there should be no delay in transporting them to the hospital.

In present study unintentional pattern of death was present in 49 subject with accidental manner of

death in all. Intentional pattern of death was present in 16 subject. Similar result was present in study of **Kumar A, et al., Varanasi, 2014 (intentional; 8.85%, unintentional 91.15%)**[7] however in contrast to this result were different in study of **Varma RK, et al., Bangalore, 2021 (intentional; 60 %, unintentional 40%)**[8]**.** The majority of unintentional deaths in our study is explaining the fact that preventable deaths are more in our area, which can be easily minimized if the proper guidance, communication is given to the children's regarding the measures to prevent these preventable deaths e.g parents should advised children to take proper precaution while they are near any electrical or inflammable substance, proper counselling of children should be done in school so that teachers have knowledge about what's going in the children's mind, toddler age children should be given proper care. All of these measures may modify the pattern of paediatric fatalities in our area and aid in preventing unintentional deaths.

In present study accidental manner of death was present in 49 victims with suicidal manner of death in 18.45 % and homicidal manner of death in 6.15 %. Similar result present in study of **Kumar A, et al., Varanasi, 2014 (Accidental; 51.72%, Suicide; 5.12%, Homicidal; 3.73%)**[7]**.** However the suicidal deaths are most common in the study of **Athani P, et al., Bangalore, 2017 (Suicide; 40.63%, Homicide; 9.36 %)**[6]**; Varma RK, et al., Bangalore, 2021(Accidental ; 40%, Suicide; 58.2%, Homicidal; 1.8%)**[8]**.** Due to parents' intense work schedules and lack of qualified child care, there are more deaths in metropolitan cities like Bangalore, which is clearly explicable. Additionally, school-age youngsters experience severe pressure about their future settlement, which contributes to their depression. RTA is also easily explainable due to the courage of Rash driving by the children's of this age. All of these fatalities might be easily avoided if children were given the right care and instruction.

In present study 23 subject (35.38%) died due to Road Traffic Accident, followed by Fall From Height in 12 subject (18.45 %), Poisoning in 7 subject (10.77 %), Hanging & Burn in 6 – 6 subject (9.23 %), Accidental Poisoning in 4 subject (6.15 %), Snake Bite & Assault in 3 – 3 subject (4.6 %) and Machine Injury in only 1 subject (1.54 %). Similar result observed in study of **Kumar A, et al., Varanasi, 2014 (RTA; 41.33%)**[7]**;** however the cause of death - hanging is pre dominant in the study of **Varma RK, et al., Bangalore, 2021 (Hanging; 42%, RTA – 40%; Burn & drowning; 8 % each). Athani P, et al., Bangalore, 2017 (RTA – 26.04%, Hanging – 33.33%, Drowning – 15.63%)**[8]**.** This difference in causes of death can be easily explained by the fact that children's suicidal ideation has increased significantly in recent years due to the accessibility of suicide-related content in digital media. Additionally, children believe that committing suicide is an easy way to deal with their problems. Accidental deaths can be easily avoided if children take proper safety precautions while driving, and household poisons should be kept out of the child's reach. Since there were no drowning cases in our analysis, we may conclude that the most frequent risk factors for children in our community are RTA, Hanging & Burn, and Accidental Poisoning. All of them can be fully avoided if poisonous substances are handled correctly, traffic laws are observed, and mental wellness is present.

Conclusion

The analysis of Paediatric unnatural fatalities was an effort to elucidate the various aspects of paediatric deaths and establish the profile of paediatric deaths in the city. Prevention requires both effective techniques and education, especially when combined with technology and regulation. There is an immense responsibility for the parents and caregivers in supervising their children. If the incident cannot be prevented, the victim should receive immediate care right away in order to save their life.

Source of funding: Self-Generated.

Ethical approval: From the institutional ethical committee.

Conflict of interest: Nil

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