

Autopsy Study of Unnatural Deaths among Youth Population Conducted at Government Thoothukudi Medical College and Hospital

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ABSTRACT

Background: The incidence of premature deaths has been increasing among the youth. Thus, this study was intended to assess the frequency of such deaths the situation surrounding their occurrence and the causation thereof. The unnatural deaths can either be induced by unintentional or deliberate injuries. The primary cause of unintentional injuries is accidents while that of intentional-directed injury is mainly attributed to suicides and homicides. This research aims to explore the occurrence of unnatural deaths in the age group from 15 to 24 years. According to age, sex and cause and manner of death among young people who fell victim to such forms of death.

Methods: This study is a retrospective study which discussed the unnatural death cases that autopsied at Government Thoothukudi Medical College Hospital, Thoothukudi for a period of 12 months from December 2023 to November 2024.

Results: During the period of the study, there were post mortem brought up to 1003 cases, out of which 753 constituted deaths from unnatural causes (75.1%). Among 753 cases, 118 deaths were recorded as belonging to the youth age group 15 to 24 years (15.67%).

Conclusion: Youth represents a critical phase in human development. The loss of life during this period poses significant implications for families and society, serving as an indicator of the socioeconomic and healthcare conditions at both national and regional levels. Every institution performing autopsies must undertake similar research to accurately portray the extent of unnatural youth deaths.

Key-words: Forensic, Unnatural Death, Hanging, Burns, World Health Organization

INTRODUCTION

The WHO's definition of youth aligns with the age range of 15 to 24 years old ^[1]. This is a transitional phase from education towards the beginning of human activity and youth are expected to respond to social issues and express their opinions.

Local authorities need to encourage youth participation in community initiatives and developmental programs. Every year, many youths die due to unnatural causes, with an increasing trend in homicide. In today's youth, patterns have shifted from diseases to social issues in recent decades. The vulnerability of children and adolescents to the threats of injury and violence appears to be increasing and is expected to grow further in the future. Therefore, there is an urgent necessity to address those difficulties; otherwise, the processes currently instigating change in our world are likely to intensify the problem ^[2]. On the other hand, this is the part of society

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which is commonly required to build the future of our country.

Accidental and suicidal damages are the leading cause of death in young people of the accidental death that can be the outcome from accidental injuries. Accidental injuries are the majority of accidents and homicides. The process of motorization also affects child injury risk ^[3,4]. Road traffic accidents and poisoning are major problems worldwide. Suicidal deaths include drowning, poisoning, hanging, falling from heights, etc. Most deaths of this nature, such as snake bites, electrocution, and anaphylactic deaths, are classified as "others". The absence of proper infrastructure facilities for the timely management of such patients in this part of the world results in a huge number of such unnatural deaths. Unattended sudden deaths are described under doubtful settings and inquest records started by the police. In addition, it is also described during postmortem investigation that the common of such cases. Again, it also has the illness growth as their cause of death ^[5,6]. Little is known about young people who die, particularly from emerging nations with variable disease registration systems. This needs the usage of other data sources to determine the cause of death in adolescents and young adults. Police investigation records are an important source of evidence about the measures surrounding a person's death. In addition, it is the analysis of these records and autopsy analysis that can help us understand causal pathways, possible location intervention and clarification of social systems ^[7].

The purpose of this study is to examine the mortality due to unnatural causes among youth in Thoothukudi. The study results will help in reviewing and developing mortality mitigation measures among the youth.

MATERIALS AND METHODS

Research Design- This retrospective study was conducted on unnatural deaths in the age group 15 to 24 years which was brought for medico-legal autopsy government of Thoothukudi Medical College and Hospital, Thoothukudi. The study period was for a period of 12 months from December 2023 to November 2024. Decomposed dead bodies of the age group 15 to 24 years and unidentified bodies were excluded from the study. Details of these cases were obtained from the Police records and Hospital records.

Inclusion Criteria

- ❖ All unnatural deaths of individuals aged 15 to 24 years.
- ❖ Cases with detailed police investigation records and hospital documentation.
- ❖ Deaths are categorized as accidental, suicidal, or homicidal, and those falling under "others," such as electrocution, snake bites, and anaphylactic reactions.

Exclusion Criteria

- ❖ This study excluded decomposed dead bodies within the age group of 15 to 24 years.
- ❖ Unidentified bodies of persons within the age group from 15 to 24 years.
- ❖ Cases with incomplete records or missing crucial data are required for analysis.
- ❖ Deaths determined to be natural upon post-mortem examination.

Statistical Analysis- This study used Microsoft Excel to calculate frequencies and percentages of unnatural deaths by type, age, sex, and cause of death.

Ethical Approval- This study was attained from the Institutional Ethics Committee (IEC) of the Government Thoothukudi Medical College and Hospital before starting the study.

RESULTS

During the study period 1003 cases were carried for post-mortem check out of which 753 deaths (75.1%) were due to unnatural causes. Out of 753 cases of unnatural deaths 118 deaths (15.67%) were of the youth age group 15 to 24 years. Out of 118 cases of unnatural youth deaths, 100 were males and 18 were females (Table 1 & 2).

Table 1: Type of Deaths

Type of Deaths	Male	Female	Total
Unnatural Death	99	17	116
Undetermined Death	1	1	2
Total	100	18	118

Table 2: Manner of Deaths

Manner of Deaths	No of Deaths
Accident	44
Suicide	65
Homicide	7
Undetermined	2
Total	118

Table 3 describes that among the 118 cases, 46 cases (39.1%) were due to hanging, 34 cases (28.8%) were due to road traffic accidents, 11 cases (9.3%) were poisoning deaths, 07 cases (5.9%) were due to drowning and murder, 4 cases (3.4%) were due to Electrocutation, 2 cases (1.69%) due to Railway injuries and 1 case (0.85%) of Explosive death.

Table 3: Type of Unnatural Deaths

Unnatural Death	Male	Female	Total
Hanging	34	12	46
Road Traffic Accidents	34	0	34
Accidental fall	3	0	3
Drowning	4	3	7
Burns	1	0	1
Railway Injuries	2	0	2
Electrocutation	4	0	4
Poisoning	10	1	11
Murder	6	1	7
Explosive death	1	0	1
Undetermined death	1	1	2
Total	100	18	118

DISCUSSION

A considerable number of youth populations have lost their lives annually due to unnatural causes [5]. This age group is in a delicate stage of development, transitioning from childhood to adulthood. This period frequently involves exploring their boundaries, which may manifest in behaviors such as rash driving, experimenting with drugs and alcohol, and engaging in alcoholic drinking and

driving. Additionally, they face psychological stressors, including academic challenges, love failures, and bullying. As the pressures whether perceived or actual intensify, these vulnerable individuals may resort to self-harm, and in the most severe instances, it may lead to suicide [6].

Unnatural deaths significantly impact global mortality rates, with vehicular accidents being a major portion. The rate of traffic accidents per thousand vehicles is higher in developing nations compared to developed countries. In India, 1 person dies in a motor accident every 5 minutes, with an accident rate of 24.3 per 100,000 people [4,7].

The rising pace of mechanization, the growing number of fast-moving cars, inexperienced or semi-skilled drivers, drunken drivers, and India's completely inadequate road system have all contributed to this man-made prevalence. Ignorance and deliberate breaches of traffic regulations, together with the obstruction of roadways by vendors, hawkers, and stray animals, significantly contribute to the rise in automobile accidents [5,8].

Poisoning constitutes a significant global issue; however, the specific type of poison and the related morbidity and death differ by location and fluctuate over time. The application of toxins for suicidal and homicidal intentions originates from the Vedic period in India. The precise occurrence of this issue in India is indeterminate; nonetheless, it is believed that 1 to 1.5 million poisoning cases occur annually, resulting in approximately 50,000 fatalities. The final quarter of the century has witnessed significant advancements in agricultural, industrial technologies, and medicinal pharmacology. These advancements have coincided with significant alterations in the patterns of acute poisoning in developing nations, particularly India [10-13].

Fire and its intense cleansing qualities have been both revered and feared in the Indian psyche. This encompassed the purification and sanctification of human connections and relationships associated with it. Even Shushruta's ancient medical treatise gave it the final sterilizing/cleaning authority. From this background, setting oneself on fire may have been arrived at, as an Indian means of honourable suicide [14-16]. The burn fatalities in India go beyond the meaning implied in the term „accident“ and the impact they cause no longer remains confined to the family but spreads far wide to be aptly termed as a „Social Calamity“ [9].



The present system of dowry, which is mainly to blame for all these deaths, is a result of social inequality caused by excessive shopping and the black-market economy. Its rising frequency is a sign that women's rights in independent India are still being eroded and devalued [17].

Other moods of abnormal deaths comprise hanging, drowning, and jumping from heights which are unhappy. This is so because approaches employed by persons who anticipate self-destruct depend on the obtainability of mortal tools [18]. Apart from snake bites, electrocution, anaphylactic deaths, and others., that fall under "others" On the other hand, the number of. Persons die from abnormal causes in this portion of the globe due to the poor infrastructural amenities to accomplish such patients in time. In addition, undiagnosed and unexpected deaths are recorded to be under suspicious situations for which examination records are introduced by the forces only to explore on post-mortem examination that, in most of such cases, a disease was accountable for the death. Furthermore, the crime amount in a specific community is in direct relationship with the poverty and illiteracy rate [12]. The crime rate, although disproportional to some extent, contributes significantly towards unnatural death in a developing country such as India, which has a high spiral rate of unemployment and illiteracy among its populace [19].

CONCLUSIONS

In youths, the incidence of unnatural deaths is notably higher. The predominant methods of suicide include hanging, burning, poisoning, and falls from significant heights. The underlying causes of these suicides are often mental health disorders, romantic relationships, family issues, academic failures, and dowry-related concerns. The youths are in critical phases of development. The occurrence of death within this demographic poses a significant risk of potential life loss for both families and society, and it also serves as an indicator of the socioeconomic and healthcare conditions at the state and local levels. It is imperative to create a protective outline and improve educational opportunities for youths to mitigate the risk of unnatural deaths. Furthermore, it is crucial to measure the public well-being effect of all unnatural deaths to notify policy decisions and use essential interventions efficiently.

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