



Original Article

Presentation and Comparison of Unnatural Deaths Due to Different Types of Accidents in the Rajshahi District of Bangladesh

Md. Kafil Uddin,¹ Md. Akhtar-Uz-Zaman,² Manasi Saha,³ Mir Md Raihan⁴

Abstract

Background: Accidental deaths are the object of public health issues. This study was designed to explore and compare the statistics of all types of accidental deaths that occurred in the Rajshahi district in 2019 and 2020.

Materials and methods: The data presented here were accumulated from the forensic examination of the corresponding dead bodies, which were submitted by police from the different police stations in the Department of Forensic Medicine & Toxicology (DFMT) at RMC for postmortem examination. This study confirms and explores the number of accidental deaths based on the observation, which were analogous with corresponding signs of studied accidental events.

Results: According to the data, road traffic accident (RTA) was the most prevalent cause of unnatural accidental death in both years. In 2019, the number of deaths due to unwanted bomb explosions was the lowest. But, in 2020, the lowest number of deaths were observed due to alcohol overdose. The numbers of deaths due to other accidents were almost equal.

Conclusion: This study suggests taking preventive measures that may reduce accidental deaths.

Keywords: Unnatural Death, Accident, Rajshahi, Bangladesh.

TAJ 2021; 34: No-1: 70-74

Introduction

An accident is usually being defined as an unplanned episode that sometimes has inconvenient or unwanted consequences.¹ Again, accidental death is an unnatural death that is the result of an accident such as road traffic accident (RTA), slip and fall, electrocution, accidental burning, unwanted poisoning, drowning, and so on.² Accidental deaths are the consequences of numerous events, including carelessness,

unawareness, ignorance, or a combination of causes and happen under the unforeseen and unintentional incident.² But, any accidental death can be measured as homicide or suicide if someone is the unintended cause.³ Therefore, accidental deaths should be classified and separated from natural death (the result of disease) and from homicides and suicide. Distinguishing how someone died (by natural causes, accident, suicide, homicide, or an undetermined cause), referred to as the manner of death (MOD), is an

¹ Assistant Professor, Department of Forensic Medicine & Toxicology, Rajshahi Medical College, Rajshahi, Bangladesh.

² Lecturer, Department of Forensic Medicine, Rajshahi Medical College, Rajshahi, Bangladesh.

³ Lecturer, Department of Forensic Medicine, Rajshahi Medical College, Rajshahi, Bangladesh.

⁴ Assistant Professor, Department of Forensic Medicine, Khulna City Medical College, Khulna, Bangladesh.

important public health issue that requires an expert forensic pathologist who is the responsible person to perform autopsy/postmortem examination to determine the actual cause of death.³

According to administrative and judiciary guidelines of Bangladesh, all unnatural deaths have to be reported to the police and should be subjected by the police for forensic investigation. The forensic aspect of medical service in this country includes clinical forensic medicine and forensic pathology. The service is being provided by the government doctor of the states through the ministry of health. In most countries, the decision on the MOD is reserved by a legal bureaucrat, not by a doctor.⁴ But, in our country, forensic pathologists are responsible person to determine the MOD and deliver the medico-legal report to the legal authority who will take the necessary step according to jurisdiction.

Rajshahi is one of the major divisions in Bangladesh. This is an area of 18,174.4 square kilometers, and around 20,000,000 people live here. Rajshahi division comprises of 8 districts, including Bogra, Chapainawabganj, Joypurhat, Naogaon, Natore, Pabna, Rajshahi, and Sirajgonj. Rajshahi is one of the major districts of the Rajshahi division. Around 30,00,000 people live

here. But, there is a lack of continuous exploration about the accidental deaths in this district. Therefore, this study was designed to explore and compare the data of all types of accidental deaths that occurred in the Rajshahi district in 2019 and 2020.

Materials and methods

Study subject

The data were gathered from the Department of Forensic Medicine & Toxicology, Rajshahi Medical College, Rajshahi, Bangladesh. All of the information was collected from the forensic examination of the corresponding dead bodies, which were submitted in the Department of Forensic Medicine & Toxicology (DFMT) at RMC for postmortem examination.

Statistical analysis

Statistical analysis was performed in Microsoft Excel (version 2007).

Results

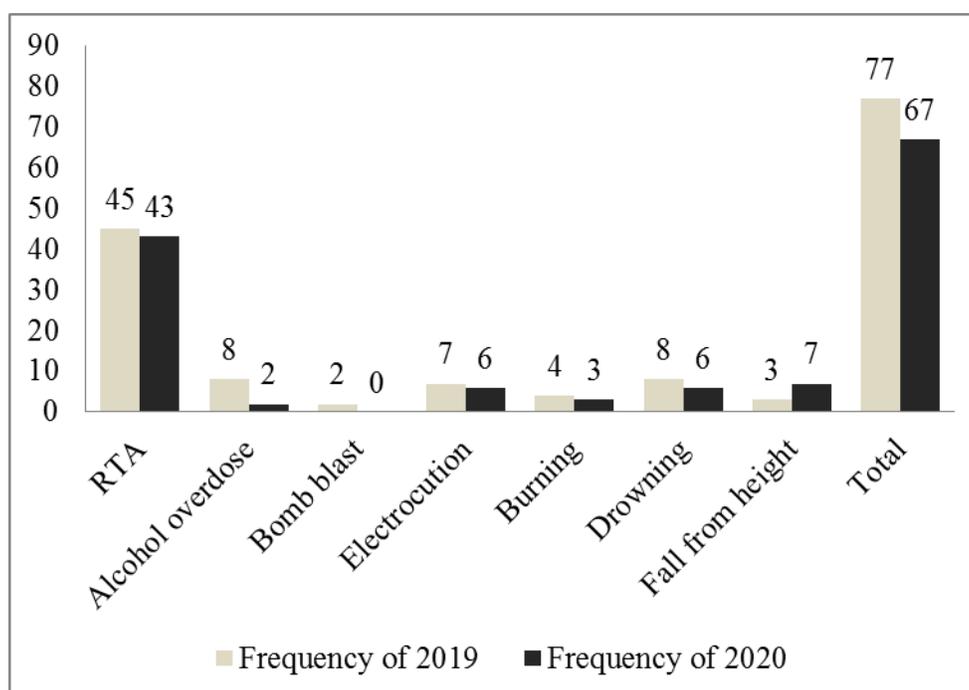
According to the data of 2019 (Table I), a total of 77 accidental deaths were occurred consisting of deaths by RTA (58.44%), alcohol overdose (10.39%), bomb blast (2.60%), electrocution (9.09%), burning (5.19%), drowning (10.39%), and fall down from height (3.89%).

Table I: Number and percentage of unnatural deaths occurred due to different accidents in 2019

Accident type	Frequency	Percentage (%)
RTA	45	58.44
Alcohol overdose	8	10.39
Bomb blast	2	2.60
Electrocution	7	9.09
Burning	4	5.19
Drowning	8	10.39
Fall from height	3	3.89
Total	77	100

Table II: Number and percentage of unnatural deaths occurred due to different accidents in 2020

Accident type	Frequency	Percentage (%)
RTA	43	64.18
Alcohol overdose	2	2.99
Electrocution	6	8.95
Burning	3	4.48
Drowning	6	8.95
Fall from height	7	10.45
Total	67	100

**Figure I: Comparative presentation of unnatural death frequency occurred due to different type of accidents in 2019 and 2020**

In the case of 2020, total accidental deaths were 67, comprising 64.18% RTA, 2.99% alcohol overdose, 8.95% electrocution, 4.48% burning, 8.95% drowning, and 10.45% fall down from height (Table II).

Discussion

Unnatural deaths resulted from different accidents are increasing at an alarming rate day by day in Bangladesh. Among numerous accidental MOD, the percentage of deaths due to RTA is the highest.⁵ Rajshahi is one of the most crucial cities in Bangladesh where RTA frequently occurs.

Many people die and are seriously injured every year in Rajshahi due to RTA. Based on data from police stations, a prior study⁶ reported a total of 51 deaths from RTA in Rajshahi between 2011 and 2013. But, in our case, we found 45 and 43 deaths in 2019 and 2020, respectively. Compared to data showed by Mamun *et al.*⁶, the number of accidental deaths has been markedly increased in Rajshahi in recent years. However, according to this finding, 58.44% and 64.18% of unnatural deaths were occurred from RTA in the Rajshahi district in 2019 and 2020, respectively, which were the highest among all accidental MOD. Therefore, the result of this study is supported by the findings of Hossain and Faruque.⁵ From the last few years, an average of nine deaths are occurring daily in Bangladesh due to RTA.⁵ In 2017, the highest percentage of deaths (32%) due to RTA was noted in the Dhaka division while the lowest percentage of deaths (3%) due to RTA was found in the Barisal division, whereas 25% of deaths occurred in the Rajshahi division and this was the second-highest value.⁵

Another unnatural accidental MOD is alcohol overdose or poisoning. In 2019, 10.39% of accidental deaths resulted from alcohol poisoning. In 2020, there was a sharp reduction in terms of number, and only 2.99% of deaths were the consequences of alcohol overdose. Usually, alcohol use can cause severe danger to human health and is responsible for inducing numerous diseases.^{7,8} Around 3.3 million deaths are occurring yearly worldwide due to alcohol consumption.^{7,8} In our country, people with diverse ethnic, cultural, and religious backgrounds are living. According to a report on health conditions in Bangladesh, alcohol use was measured to be significantly lower compared to the global average and western countries.⁹ Usually, alcohol consumption and associated problems are low here due to religious or social backgrounds, but there is a lack of legal action to control alcohol abuse for some specific class of people.¹⁰⁻¹² Recently, alcohol consumption is increasing in Bangladesh.¹³ The young adults and early middle-aged people comprise the major proportion (42.1%) of alcohol users in

Bangladesh.¹³ Among them, 7.1% are university students.¹⁴ As we noticed, the maximum victims who died from alcohol poisoning were young adults and early middle-aged.¹³ Problems that people face after alcohol consumption may be either reluctant to attend rehabilitation clinics or simply goes unnoticed, which might be the cause of death from alcohol poisoning.¹³

In the last few years, bomb explosions became almost daily unwanted incidents in Bangladesh. Bomb explosion is common during and to create political violence, which is the main issue here.¹⁵ However, the victims who died from the bomb explosion were died due to an unintended explosion while making a bomb. Only 2.6% of deaths were occurred due to the bomb explosion in 2019. In 2020, there was no record of deaths due to the accidental bomb explosion.

Electrocution is another crucial accidental MOD that contributes to increasing the number of unnatural deaths. Almost one-tenth of unnatural deaths were occurred by accidental electrocution in Rajshahi each year.

The number of deaths from a fire burning in Rajshahi city is very limited compared to other accidental MOD. As it was found, only four deaths were happened in 2019, whereas only three deaths were occurred in 2020 due to burning. Burn injuries usually occur as a consequence of transferring heat from hot liquids (scalding), flames, and sometimes due to exposure to chemicals and ionizing radiation.¹⁶

Rajshahi is a city situated on the bank of the Padma river, which is one of the major rivers in Bangladesh. Drowning cases are another common unnatural MOD in this district because individual drowning and boat drowning with people are occurring in the Padma almost every month of a year. However, eight people were died by drowning in 2019, and seven died in 2020.

Falling down from height is another cause of accidental death. People working in construction sites commonly die accidentally. Sometimes, people fall down from a tree and get severe injuries that lead them to death. However, a total

of ten deaths were occurred, comprising 3 in 2019 and 7 in 2020.

Conclusion

Overall, this study presents the unnatural deaths that occurred by a different type of accident in the Rajshahi district. The number of death due to road traffic accidents was significantly serious compared to other accidental death. Though the deaths from other accident are low, these are also a public health issue and require proper insights of all concerned people including administrative bodies and social workers to minimize the accident and injuries that lead people to death.

Conflicts of Interest

None.

References

- Hogarth J. Glossary of Health Care Technology. World Health Organization (WHO), Copenhagen. 1978
- Al-Azad MA, Ahmad M, Rahman MZ, Ali M, Islam SM. Determination of manners of death: an analysis of 3012 postmortem cases. Journal of Armed Forces Medical College, Bangladesh, 2013; 9(2), 19-25.
- Stone DM, Holland KM, Bartholow B, E. Logan J, LiKam Wa McIntosh W, Trudeau A, Rockett IR. Deciphering suicide and other manners of death associated with drug intoxication: a Centers for Disease Control and Prevention consultation meeting summary. American Journal of Public Health 2017; 107(8), 1233-9.
- Rahman KG, Osman MK, Mahmud S. Forensic Medicine: Bangladesh Perspective. Journal of Dhaka Medical College 2010; 19(1), 61-64.
- Hossain MS, Faruque MO. Road Traffic Accident Scenario, Pattern and Forecasting in Bangladesh. Journal of Data Analysis and Information Processing 2019; 7(2), 29-45.
- Mamun MM, Miah MM, Islam MI. Present condition of road traffic accident: A Case study of Rajshahi City, Bangladesh. International Journal of Computer Applications 2015; 111(7).
- Afshari R. International Health Problems Related to Alcohol Abuse. Asia Pacific Journal of Medical Toxicology 2014; 3(Supplement 1),1-1.
- Rehm J, Baliunas D, Borges GL, Graham K, Irving H, Kehoe T, Parry CD, Patra J, Popova S, Poznyak V, Roerecke M. The relation between different dimensions of alcohol consumption and burden of disease: an overview. Addiction 2010;105(5), 817-843.
- Nahar N, Wu B, Kandarina BJI, Kinsman J. The INTREC Bangladesh Country Report 2012. World Health Organization: IN-DEPTH Training and Research Centres of Excellence (INTREC). 2012
- Department of narcotics control (DNC), Ministry of Home Affairs, Government of Bangladesh. Annual Drug Report of Bangladesh 2012. Dhaka, Bangladesh: DNC.
- Department of narcotics control (DNC), Ministry of Home Affairs, Government of Bangladesh. Annual Drug Report of Bangladesh 2011. Dhaka, Bangladesh: DNC.
- Department of Narcotics Control (DNC), Ministry of Home Affairs. Annual Drug Report of Bangladesh. 2010. Dhaka, Bangladesh: DNC.
- Dewan G, Chowdhury FR. Alcohol use and alcohol use disorders in Bangladesh. Asia Pacific Journal of Medical Toxicology 2015 ; 4(2), 83-90.
- Akhter J. Prevalence of Substance Abuse among Female Residential Students of Dhaka University. ASA University Review 2012; 6(1).
- Azad TA, Hasan I, Ahmmed R, Saha MK, Moni SJ, Chowdhury S. Anthropogenic Disaster: Petrol Bomb Explosion Consequences Analysis in Bangladesh. American Journal of Renewable and Sustainable Energy 2018; 4(4), 64-76.
- Forjuoh SN. Burns in low-and middle-income countries: a review of available literature on descriptive epidemiology, risk factors, treatment, and prevention. Burns 2006; 32(5), 529-537.

All correspondence to
Dr. Md. Kafil Uddin,
 Assistant Professor & Head
 Department of Forensic Medicine & Toxicology
 Rajshahi Medical College, Bangladesh
 E-mail - mdkafiluddin1982rnc@gmail.com