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A clinico epidemiological study of cut throat patients – An observational retrospective study at tertiary care hospital in Jharkhand, India

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ABSTRACT

Background: Cut throat injury is an incised wound in the neck that may be superficial or deep and is usually caused by sharp objects. These wounds may be from homicide, suicide, or accidental. **Aims and Objectives:** The purpose of this study was to assess cut throat injury in terms of age, sex, site of injury, and triggering factors for suicidal cut throat injury. **Materials and Methods:** This retrospective study was carried out in the Department of ENT, Rajendra Institute of Medical Sciences. The study included 35 cut throat patients who were admitted and managed in the ENT department. Data were analyzed with detailed history as age, sex, cause, site of injury, sociodemographic pattern, and history of substance abuse, psychiatric problem, and duration of hospital stay. **Results:** Out of 35 patients, 32 were male and three were female. The majority of the patients 21 (60%) were young adults. Causes of cut throat were suicidal 77.14% followed by homicidal 20%. The majority of patients had Zone II injuries. In general, the patients belonged to the lower middle socioeconomic class. About 77.8% of patients with suicidal cases were found to be addicted to one more substance and 22.2% were having some psychiatric illness. The most common substance abuse was indigenous rice beer *Hadia mahua*. **Conclusion:** Young adults of the low socioeconomic class were most vulnerable to cut throat injury with a majority having zone II injury. Suicide was the most common cause with substance abuse proving to be a major provoking factor in addition to unemployment, illiteracy, and poverty.

Key words: Cut throat injury; Homicide; Socioeconomic status; Substance abuse; Suicide

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INTRODUCTION

The neck contains many vital structures and is a relatively unprotected area of the body. Injuries in the neck are generally considered life-threatening and need to be treated immediately.[1]

Cut throat injuries are incised neck wounds that can be superficial or deep and are typically caused by sharp objects such as knives, razor blades, and broken glass, along with gun-shot wounds and puncture wounds.[2] The reason for cut throat injuries may be the result of homicidal, suicidal, or accidental behavior.

The severity of neck injuries can be determined by examining the structures in the neck that are affected. Classification of neck injuries by Roon and Christensen[3] in zones helps in determining the severity of injuries. As per this classification, Zone I covers the region between the clavicles and the inferior margin of the cricoid cartilage. The vertebral and proximal carotid arteries, major thoracic vessels, superior mediastinum, lungs, esophagus, trachea, thoracic duct, and spinal cord are among the organs located in this region. Zone II reaches the angle of the mandible from the inferior edge of the cricoid cartilage. This includes the carotid and vertebral arteries, jugular veins, esophagus, trachea, larynx, and spinal cord, and Zone III is situated between the angle of the jaw and the base of the skull. It contains the spinal cord, pharynx, and carotid and vertebral arteries.[3]

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The majority of deaths of cut throat patients were due to asphyxia, shock, and hemorrhage. The lives of most of them can be saved with a multidisciplinary approach including otolaryngologists, vascular surgeons, anesthesiologists, and psychiatrists.[4]

In the previous studies, it was recorded that approximately 5–10% of all traumatic injuries worldwide were slashed throats, whereas 30% of the patients had many structural injuries.[1,5] It was also noticed that the incidence is rising very fast in developing nations, in part, may be because of escalating conflict over limited resources, low socioeconomic levels, poverty, unemployment, alcohol and drug misuse, and rising crime rates. Cut throat injuries can be avoided through increased social responsibility, economic progress, and increasing literacy rate among such human folk. These elements compel us to carry out a study on the demographic situation of cut throat injuries.

Aims and objectives

This study aims to analyze patients with cut throat injuries in terms of location, age, sex, socioeconomic level, and substance abuse and the objectives are to study the sociodemographic trends in cut throat injuries, to study the most typical reason and injuries location and extent along with mental status and the precipitating factors associated with suicidal cases.

MATERIALS AND METHODS

The study was conducted at Rajendra Institute of Medical Sciences, a tertiary care hospital in Ranchi, Jharkhand, India. The periods of the study were from January 1, 2021 to June 30, 2022, that is, 18 months. It is a type of retrospective study on cutthroat patients. A total of 35 cases of cut throat injuries that were admitted and managed in the ENT department were considered for the study. Data were collected from information provided in (inpatient department) registration and (operation theatre) registers. The study was pre-approved by the Institutional Ethics Committee. In this study, we have considered age, sex, and address to know the locality, causes of injury, place of injury, socio-demographic pattern, history of substance misuse, psychiatric problem, and length of hospital stay of patients, and data were analyzed using several parameters. Modified Kuppusamy's classification[6] based on employment, education, and monthly family income were chosen to determine the socioeconomic category. In this scale, in terms of socioeconomic classes, a score of 26–29 indicates upper class, 16–25 upper middle class, 11–15 middle class, 5–10 lower middle, and 0–5 lower socioeconomic class.

In a study, by applying advanced trauma life support, cut throat patients were assessed that started with an initial survey that emphasizes the importance of the airway, breathing, and circulation.[7] It was taken into account to secure airways when tracheostomy was very essential. After tracheostomy, important secondary surveys were conducted after stabilization that includes a comprehensive physical examination along with detailed history and background of patients. To maintain aseptic procedures, superficial cut injuries were treated with local anesthetic and layer-by-layer wound closure procedures were performed. Those patients that have deep tracheal, laryngeal, or pharyngeal wounds were managed under general anesthesia followed by tracheostomy and the wound was closed in two layers with vicryl and nylon threads. The soft tissue, mucus membrane, and muscles were repaired with 3-0 vicryl, and finally, the wound was stitched closed with 2-0 proline. Those patients that have laryngeal and pharyngeal injuries were treated by Ryles tube insertion. It was recorded that the typical length of hospital stays for patients was about 3 weeks.

RESULTS

A total of 35 cases of cut throat injury patients were included in the study. The ratio of male to females was 10.6:1. As per our record, the number of males was 32, that is, 91.43%, whereas the number of female patients was 03, that is, 8.57% as shown in Table 1 and Figure 1.

It was noticed that the majority of the patient were young adults and the ranges along with their frequencies were

Table 1: Sex distribution of cut throat patients

Sex	Number	Percentage
Male	32	91.43
Female	3	8.57

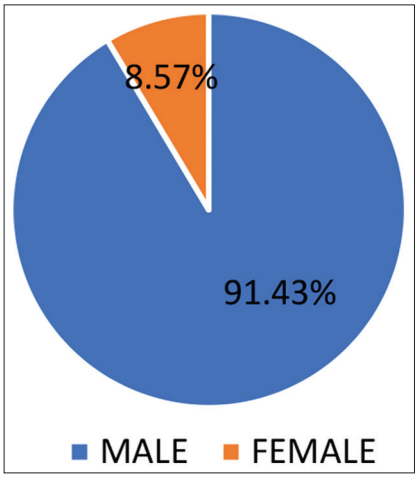

Figure 1: Sex distribution of cut throat patients

10–20 years of age were 05, that is, 14.28%, 21–40 years of age were 21 in numbers, that is, 60%, as presented in Table 2 and Figure 2.

It was recorded that the most common cause of cutthroat is suicide, that is, 77.14% followed by homicide 20% and accidents 2.85% as depicted in Table 3 and Figure 3.

As per anatomical classification based on cut sites, none of the patients was found in Zone I, whereas it was recorded that most of the patients were categorized in Zone II, that is, 77.14% followed by 22.85% as shown in Table 4 and Figure 4.

When the data were analyzed on the ground of socioeconomic background, it was found that the majority of patients belonged to the lower middle class (54.28%) as presented in Table 5.

Psychiatrist consultation was obtained in all cases and it was noted that 27 patients were mentally sound and eight patients have some mental illness. When proper mental and psychosocial history of suicidal cases were taken into account, it was found that 77.8% were addicted to one more locally available substance, whereas psychiatric illnesses were 22.2%, as shown in Table 6.

It was also recorded from the patient's history that the most common substance abuses were home-brewed alcohol such as Mahua liquor from Mahua flower and Hadiya rice beer, cannabis, and tobacco.

Table 2: Age distribution of cut throat patients

Age group in years	Male	Female	Total	Percentage
10–20	05	00	05	14.28
21–40	20	01	21	60.00
41–60	06	02	08	22.85
61–80	01	00	01	2.85

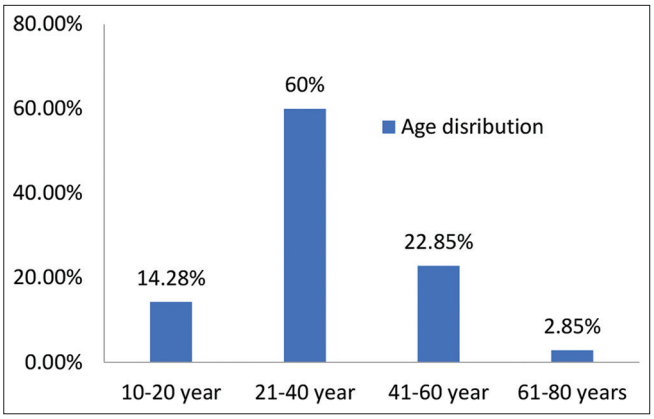

Figure 2: Age distribution of cut throat patients

As per the record, it was noticed that the total duration of hospital stay on average was <3 weeks. About 42.85%, patients were stay <10–15 days, 51.42% stayed for 10–20 days. During hospitalization, it was noted that the most common causes were wound infection, change in voice, and neck mobility limitation

DISCUSSION

It was found that cut throat injuries constitute 5–10% of all trauma cases.[7,8] According to the latest estimates from the WHO, injuries cause the deaths of more than 5 million people worldwide each year. In this study, the sociodemographic data, motives of trauma, and structures injured were considered and treatment was given at our hospital, of which 35 cases with cut throat injuries were analyzed. Male to female ratio was recorded at 10.6:1, where most of them were unemployed and young adults in the range of 21–40 years of age, that is, 60% of patients. Moreover, it was noticed that our findings were consistent with some previous studies. In a study, Nason and colleagues[9] investigated 130 cases of cut throat patients, of which 109 were male and 21 were female, ranging in age from 4 to 74 years.

In our findings, we have noticed the most frequent causes of cut throat were suicidal (27 in number, 77.14%) followed by homicidal (07, 20%), and accidental (01, 2.85%). This was contrary to most of the other research conducted in developing nations, where homicide was found to be the most frequent reason for cut throat injury.[10] However,

Table 3: Mode of injury of cut throat patients

Mode of injury	Number of patients	Percentage
Homicidal	07	20
Suicidal	27	77.14
Accidental	01	2.85

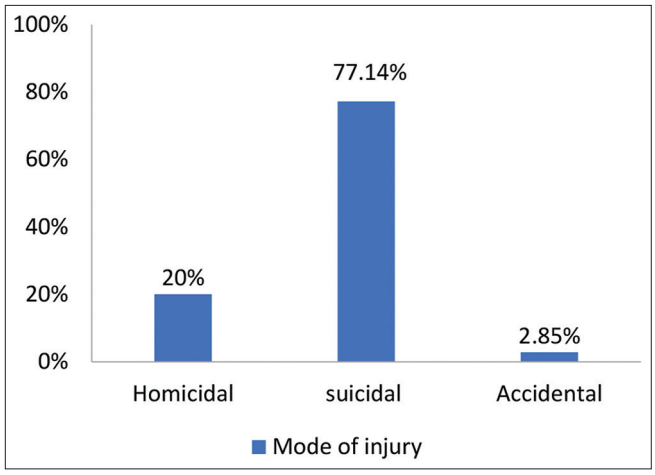

Figure 3: Mode of injury of cut throat patients

Table 4: Anatomical sites (zones) of injury of the patients

Zone	Number of patients	Percentage
Zone I	0	0
Zone II	27	77.14
Zone III	8	22.85

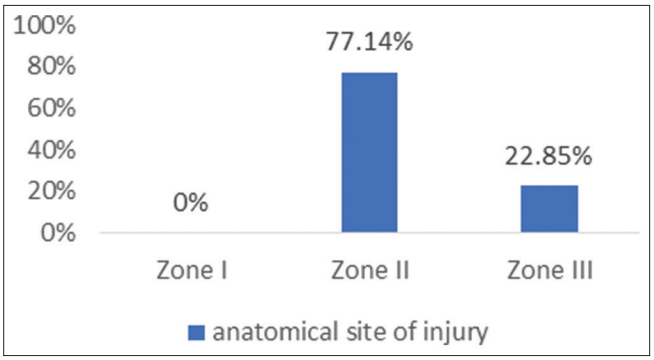

Figure 4: Anatomical sites (zones) of injury of the patients

in developed countries, suicide was the most common cause.[11] Moreover, suicides are reported to be the second highest cause of mortality in the age group of 15 and 34 throughout the world.[12] It was found that due to such types of injuries, nearly 8,00,000 deaths have occurred per year.[13] In our analysis, self-inflicted cutting injuries were one of the most frequently used methods of suicide.

We discovered a substantial association between suicide cases and psychosocial elements and substance addiction after getting a thorough medical history from the patient's attendants. In our study, indigenous alcohol abuse has been identified as one of the major substance abuse. In a previous study, it was observed that alcohol abuse was found to be the major substance abuse and area of concern in public health in the Jharkhand state.[14] Substance misuse and abuse were found to be mostly associated with physical mental and psychological stress, unemployment, and poverty. It was noticed that majority of Jharkhand's indigenous population has easy access and cheap locally manufactured alcohol such as Hadia (made from fermented rice) and Mahua (prepared from *Madhuca longifolia* mahua) flower. These locally prepared drinks have very rich in fermentable sugars (glucose, fructose, and maltose) and are the most popular types of indigenous alcohol.[15] The tribal folk people generally prepared country liquor ("mahuli") from these flowers by typical yeast (*Saccharomyces cerevisiae*) fermentation.[16] The tree of Mahua is considered to be a boon by the forest dwellers people of the tribal community who also consider the Mahua tree and the Mahua drink as a part of their cultural heritage.[17] They collected and stored dried Mahua flowers because it has an attractive source of fermented products due to their high sugar content. The excessive consumption of indigenous alcohol, when

Table 5: Mental status and precipitating factors (substance abuse) in suicidal cases total suicidal case 27

Factors	Number	%
Substance abuse	21	77.8
Psychiatric illness	06	22.2

Table 6: Socioeconomic class-wise distribution of patients

Socioeconomic class	Number	%
Upper	0	0
Upper middle	0	0
Middle	11	31.42%
Lower middle	19	54.28%
Lower	05	14.28%

combined with the other triggering factors such as poverty, a lack of alternative leisure activities, and unemployment leads to physical, mental, and emotional stress, mental instability, psychological breakdown, physical sickness, and finally drags toward suicide.

It was analyzed and found that the most common site of injury involved in Zone II (77.14%) was similar to and aligned with other previous studies conducted globally. A study conducted by Sriussadaporn et al.,[18] found that the major location of injury was in Zone II. This similarity may be due to the susceptibility of this zone to neck trauma as it is not protected by bone as compared to Zone I and Zone II. In our study, primary repair of the wound, tracheostomy, laryngeal, and hypopharyngeal repair was frequently used to treat patients.

The hospital stay on average was 15 days, which is comparable to research by Manilal et al.,[19] in which 73.13% of patients were released from the hospital within 14 days.

Limitations of the study

Limitations of the study: The sample size was small Author had to rely on the history given by the patients and attendants and many times they give false information regarding substance abuse and addiction.

CONCLUSION

Cut throat crime is a common issue in our society, especially in underdeveloped and developing nations. Its causes can be an intentional homicide, suicide, or even accidental. According to our study, the most common cause of cut throat injury is suicide in young unemployed adults of low socioeconomic class having an addiction to one or more substances such as alcohol and cannabis. The prevalence of nutritional and infectious diseases, social and economic

deprivation, hazardous and accident-prone environment, and lack of organized systems are the other triggering factors for substance abuse in society.

If properly addressing the root cause of cut throat injury such as poverty, illiteracy, unemployment, and substance abuse can reduce the incidence of cut throat injury in our society.

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