Biomedical and Biopharmaceutical Research
Abbreviation: Biomed. Biopharm. Res.
Volume: 19: Issue: 02 |Year: 2022
Page Number: 44-47

CLINICO-EPIDEMIOLOGICAL STUDY OF BURN PATIENTS IN A TERTIARY CARE HOSPITAL

Dr. Butt Ishfaq Nazir[1]; Dr. Vishal Shivaji Pol[2*]

[1]Assistant Professor, Department of community medicine, Prathima Institute of Medical Sciences, Karimnagar, Telangana

[*2]Assistant professor cum statistician, Department of community medicine, Surabhi medical College, Siddipet, Telangana

Corresponding Author

Dr. Vishal Shivaji Pol

Assistant professor cum statistician, Department of community medicine, Surabhi medical College, Siddipet, Telangana

Article Received: 02-07-2022

Article Accepted: 28-07-2022

ABSTRACT

Background: Burns are a worldwide public health problem. Burn injuries account for a significant number of deaths in India each year. Burn injuries cause substantial medical, social, and psychological problems, as well as significant economic losses for the sufferer and their family. The present was conducted to find out epidemiological features, causes, manners and characteristics of burns.

Materials and Methods: It was a descriptive cross-sectional study conducted at a tertiary care hospital for a period of one year. There were 100 patients with burn injuries. Data was collected from the medical records and reports attached in the file of the patient in the hospital. Data regarding socio-demographic details, etiology of burns, place of burn, manner of burns and percentage of body surface area affected by burns were collected.

Results: Major proportion of burn patients were in the age group between 21 and 30 years. major proportion of burn patients were females. Most of the cases were due to scalds followed by flames. Most of the burns were accidental in nature followed by suicidal burns. Maximum number of patients were burn surface area between 11-20% and maximum number of patients were having 2nd degree grade of burn

Conclusion: The study concluded that higher incidence of burns were among young adults, which were accidental in nature. The mortality, morbidity, and disability associated with burns are contingent upon the quality of care at the hospital, the early initiation of treatment, the appropriate referral, and the expeditious attendance in the health care delivery system. The prevention of fatalities among children can be achieved by implementing safety measures at the household level, such as refraining from using lanterns or kupi and utilizing fuels for cooking.

Keywords: Burns, Demographic characteristics, Epidemiology.

INTRODUCTION

A burn is an injury to the skin or other organic tissue that is produced mostly by heat, radiation, radioactivity, electricity, friction, or chemical contact. Thermal (heat) burns occur when hot liquids, solids, or flames damage part or all of the cells in the skin or other tissues. Burns are a worldwide public health issue, causing an estimated 180000 fatalities per year. [1] They are the fourth most prevalent kind of trauma globally, behind road accidents, falls, and interpersonal violence. [2,3]

The use of open flames or traditional cooking techniques in certain locations increases the risk of burns. Cooking on the ground, using a kerosene stove, and utilizing chulhas are all widespread in rural India and contribute considerably to burn incidents.[4] Fire-related mishaps, including burns, are more common during holidays like as Diwali, which include fireworks and other fire-based activities. Improper handling of pyrotechnics and insufficient safety precautions contribute

to the occurrence of burns at such events.[5] Burns are avoidable. Efforts to prevent and care for victims may greatly decrease burn-related death, morbidity, and disability. The National Program for Prevention, Management, and Rehabilitation of Burn Injuries (NPPMRBI) is a government project that provides preventative, curative, and rehabilitative treatment for burn victims. [6]

Understanding the epidemiology of burn patients at such tertiary care facilities may assist state and municipal governments in developing preventative strategies and enhanced emergency services for this severe disease. The present was conducted to find out epidemiological features, causes, manners and characteristics of burns

MATERIALS AND METHODS:

This descriptive cross-sectional study was conducted in the department of Community Medicine at a tertiary care hospital for a period of one year after receiving clearance from Ethics Committee. There were 100 patients with burn injuries. All burn patients of both gender with age 15 years and above who have attended to the hospital during the study period for seeking opinion or for treatment for burns either on OP basis, inpatient basis or ICU basis.

Data collection: Data was acquired from the medical records and reports connected to the patient's file in the hospital. A data abstraction form was created to extract information from the records such as socio-demographic parameters, etiology of burns, , mode of burns, and percentage of body surface area damaged by burns.

surface area was determined according to the principle of the rule of nine and were graded as; [7].First-degree (superficial) burns only harm the skin's surface layer, the epidermis. Second-degree burns (partial thickness) affect the epidermis as well as a portion of the dermis, the skin's bottom layer. Third-degree burns (full thickness) damage both the epidermis and dermis. Fourth-degree burns penetrate both layers of skin and underlying tissue, as well as deeper tissue, which may include muscle and bone.

Data was entered and analyzed using Statistical Package for Social Sciences. Results are expressed in the form of percentages and represented in tables.

RESULTS:

A total of 100 burn patients were included in the study. it was observed that major proportion of burn patients were in the age group between 21 and 30 years. major proportion of burn patients were females. Majority of the patients were married. Majority of the patients were Hindus as shown in Table 1

Table 1:

BASELINE CHARACTERISTICS

BASELINE CHARACTERISTIC	Frequency (n)	Percentage (%)
Age (years)		
15-20	20	20
21-30	34	34
31-40	22	22
41-50	11	11
51-60	7	7
>60	6	6
Gender		
Male	44	44
Female	56	56
Marital status		
Married	72	72
Unmarried	28	28
Religion		
Hindu	88	88
Muslim	9	9
Christian	3	3

When the etiology for burns were analyzed most of the cases were due to scalds followed by flames Rescue burns Most of the burns were accidental in nature followed by suicidal burns as shown in Table 2.

Table 2: Etiology, and Manner of burn

variables	Frequency (n)	Percentage (%)
Etiology		

Scald	42	42
Flame	40	40
Chemical	14	14
Electrical	4	4
Manner		
Accidental	86	86
Suicidal	14	14

Maximum number of patients were burn surface area between 11-20% and maximum number of patients were having 2nd degree grade of burn as shown in Table 3

Table 3: Characteristics of burn

Characteristics of burn	Frequency (n)	Percentage (%)
Burn surface area (%)		
<10	12	12
11-20	74	74
21-30	6	6
31-40	5	5
41-50	2	2
>50	1	1
Grade of burn		
1st degree	4	4
2nd degree	78	78
3rd degree	10	10
4th degree	8	8

DISCUSSION:

Most of the 100 burn injury patients in this study were between the ages of 21 and 40. This is comparable to study by Chakraborty S et al. [8], Kuiri et al. [9], Chatterjee S et al. [10], and Goswami P et al. [11]. This age group is most often impacted since they participate in both indoor and outdoor activities.

Like the previous studies, the current study found that the majority of burn victims were females. [8–10] The female' involvement in fire-related home tasks may be the cause. The mechanism of burn was found to be mostly accidental in 86% of instances in the current study. Similar findings were made by Kuiri et al. [9] and Moses et al. [12] According to a systematic assessment of accidental burns in Southeast Asia, 80% of burns caused by flame and scald occurred in houses, mostly involving women and children. [13]

The research conducted by Iqbal et al. [14] found that the mean total burn surface area involvement for the hospitalized subgroup of burn patients was 38.4%, whereas the greatest number of patients in our study fell between 11 and 20%. 25.3% of the patients in the research by Chakraborty S et al. [8] had burns that were between 20 and 30% TBSA.

CONCLUSION:

The study concluded that higher incidence of burns were among young adults, which were accidental in nature. The mortality, morbidity, and disability associated with burns are contingent upon the quality of care at the hospital, the early initiation of treatment, the appropriate referral, and the expeditious attendance in the health care delivery system. The prevention of fatalities among children can be achieved by implementing safety measures at the household level, such as refraining from using lanterns or kupi and utilizing fuels for cooking.

REFERNCES:

1.WHO. Fact sheet: Burns, 2018. Available at: https://www.who.int/news-room/fact-sheets/detail/burns. Accessed on 1 April 2021.
2. WHO. Fact sheet: The Global Burden of Disease, 2004. Available at: www.who.int/healthinfo/global_ burden_disease/GBD_report_2004update_full.pdf. Accessed on 1 April 2010.
3. Institute for Health Metrics and Evaluation. The Global Burden of Disease: 2010 Update. IHME, Seattle, 2012. Available at: https://www.uptodate. com/contents/epidemiology-of-burn-injuries-globally. Accessed on 1 March 2021.
4.Cinthia P. PW 1453 Ground level cooking major cause of fire and burn injuries among low socio-economic families. Injury Prevent. 2018;2:234.
5. Tandon R, Agrawal K, Narayan RP, Tiwari VK, Prakash V, et al. Firecracker injuries during Diwali festival: The epidemiology and impact of legislation in Delhi. Indian J Plast Surg. 2012;45(1):97-101.
6.Gupta JL, Makhija LK, Bajaj SP. National programme for prevention of burn injuries. Indian J Plast Surg. 2010;43(Suppl):S6–S10.
7.University Rochester medical center. Fact sheet: Classification of burns. Available at: https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeID=90&ContentID=P09575.
8.Chakraborty S, Bisoi S, Chattopadhyay D, Mishra R, Bhattacharya N, Biswas B. A Study on Demographic and Clinical Profile of Burn Patients in an Apex Institute of West Bengal. Indian Journal of Public Health. 2010;54(1):27–36.
9. Kuiri SS, Ghosh BC, Mandal N, Nandi MM, Saradar TK, Ghosh GC. Epidemiological study of burn injury with special reference to its prevention- A Nine-year retrospective study from a tertiary care hospital of West Bengal, India. Asian Journal of Medical Sciences.2016;7(1):70–75.
10. Chatterjee S, Sardar T, Mohanta T. Epidemiology of Fatal Burn injuries in a Teaching Hospital in West Bengal. International Journal of Health Research and Medico-Legal Practice. 2017;3(2):60–63.
11. Goswami P, Singodia P, Sinha AK, Tudu T. Five year epidemiological study of burn patients admitted in burns care unit. Tata Main Hospital. 2016;24(1):41–46.
12. Moses S, Verma SS, Mathur R. An Epidemiological Study of Burn Cases from a Single Referral Hospital in Indore, Central Part of India and a Proposal for Burn Prevention and Care Program. Indian J Surg. 2021;83:69–771
13.Golshan A, Patel C, Hyder AA. A systematic review of the epidemiology of unintentional burn injuries in South Asia. Journal of Public Health. 2013;35(3):384–396.
14.Iqbal T, Saaiq M, Ali Z, Epidemology and Outcome of Burns: Early Experience at the country"s first National Burn Centre. Burns 2013