

## Epidemiology of Burns Patients Admitted to Tertiary Hospital in Al-Hudiedah City in Yemen

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### Abstract

**Background:** The World Health Organization (WHO) global burden of disease data, updated in 2008, reports that approximately 11 million people per year sustain burns requiring medical attention while Studies pertaining to burns are lacking in Yemen. The aim of this study is to contribute to the international and local literature, by describing characteristics of burn victims treated at the Burn center in Tertiary hospital in Al-Hudidah in Yemen.

**Methods:** A record based study was conducted as all records of patients admitted to the burn center in the Al-Thowrah hospital authority in Al-Hudidah city in during the year 2017 were reviewed.

**Findings:** The burns patients are 122 males (66%) and 73 females (34%) while children less than 15 years are 54 patients (29%) and adults at age 15 years and more are 131 patients (71%). The deaths due to burn are 28 deaths out of 185 burn patients (15%). the most reasons are exposure to petrol (32%), gas (15%) and kerosene (12%).

**Conclusion:** The most reasons of burn are exposure to petrol, gas or kerosene as a result of lack of electricity leading many families using these inflammable liquids for multiple purpose including electricity generation.

**Keywords:** Burn; Yemen; Hospital

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### Introduction

Burn injury is an important public health problem and is largely preventable. Burn injuries could lead to lifelong disability and disfigurement. Most of these cases are reported from low- and middle-income countries. However, there is insufficient data available about the burden of burn injuries.

The World Health Organization (WHO) global burden of disease data, updated in 2008, reports that approximately 11 million people per year sustain burns requiring medical attention. The report places burn as the fourth most common substantial injury after road traffic accidents, falls and interpersonal violence. [1]

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On a global scale, 90% of all burns occur in low and middle income countries.<sup>1</sup> There is a growing international literature regarding the epidemiology of burns in the US, Europe and Asia. [2, 4-6] Pakistan, Turkey and Iran have contributed to the database of burn patients in the Levant region [7-9] with studies reporting on burn patients that present to emergency departments and not just to dedicated burn centers.

Burn injuries are more common in developing countries like Yemen due to various socio-cultural factors, namely, poor living and housing conditions, poverty, poor substandard electrical wiring. In Yemen; the current humanitarian crises is an additional challenges that affecting all social services including lack of electricity making people use other sources like electric generators which operated by petrol, gas or kerosene or other inflammable liquids. The daily production of domestic electricity by these sources expose people to burn. Studies pertaining to burns are lacking in Yemen. This study was conducted in a tertiary care center in Al-Hodiedah city at western Yemen to contribute to the international and local literature, by describing characteristics of burn victims treated at the Burn center.

## Methodology

This is a record based study; all records of patients admitted to the burn center in the Al-Thowrah hospital authority in Al-Hodiedah city during the year 2017 were reviewed. Data extracted based on pre-designed checklist including the main demographic variable (age, sex and address), time (by month), prognosis (cure, death or transfer) and the direct cause of burn. Data were entered and analysis by using excel program. Accordingly tables and graphs are designed.

## Findings

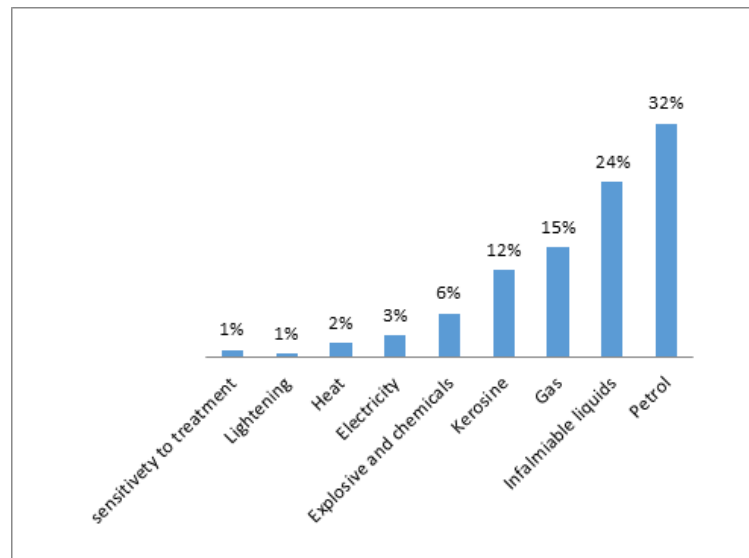
The Total patients admitted to the Al-Thowrah hospital authority in 2017 was 11997 patents (4505 males and 7492 females) while 49292 patients were presented in the emergency departments out of them 3438 patients have accidents. The total burn's patients referred to Burn center in the hospital during 2017 are 185 patients who are the study subjects of this work. The burns patients are 122 males (66%) and 73 females (34%) while children less than 15 years are 54 cases (29%) and adults at age 15 years and more are 131 patients (71%). Most of cases were admitted in January and April 2017 (25/185, 13.5% for each month) followed by February and June 217 (17/185, 9% for each month)

The deaths due to burn is 28 deaths out of 185 burn patients (15%). Burn related deaths in children less than 15 years is 11% (6/54) while in adults is 16.8% (22/131). Regarding to the gender, burn related death in males is 13% (16/122) while in females is 16% (12/73).

The investigator be able to identify the main reasons behind the 133 burns; the most reasons are exposure to petrol (32%, 43/133), gas (15%, 21/185), kerosene (12%, 17/133) or other inflammable liquids (24%, 32/133). Exposure to explosions and chemicals also was reported by nine burn patients (6%).

Outcome	No of burn patients	%
Cure	126	68%
Death	28	15%
Transfer to Sana'a (Capital of Yemen)	15	8%
Transfer to other department in the hospital	3	1.6%
Discharge against medical advice (DAMA)	11	6%
Still under treatment in the centre	2	1.4%
Total	185	100%

**Table 1:** Outcomes of patients treated in Burns center, Al-Thwarh hospital authority in Al-Hiedidah city, Yemen, 2017.



**Figure 1:** Reasons behind burns among patients admitted to Burn Center, Al-Thwarah hospital Authority, Al-Hudiedah city, Yemen, 2017.

## Discussion

Yemen facing the worst humanitarian crises in the world since 2015 due to war and other socio economic and political factors. The burden of this situation be clear on the health and the electricity sectors. Al-Hudiedah governorate with population of one million who living without electricity since three years make people use petrol and gas and other inflammable materials for getting electricity and running refrigerators and other electronic equipments. Also the complexity of emergency situation affected negatively on the capacity of the health system in providing a quality health services especially for emergency cases like burns. This analysis answer the questions why the most common causes of burns in Al Hieddah due to exposure to petrol, inflammable liquids and gas.

Transfer of burn's patient to another hospital in Al-Hodiedah is more than what were reported from one tertiary hospital in Lebanon [10] because the capacity of the studied hospital in Al-Hodiedah was affected by the war and being provide the services that is within the available capacity.

Although the shortage of medicines, but the death related burns among patients treated in the burn center in Al-Hodiedah is acceptable if it compare with burn related hospital mortality among elders in USA (30%) [11], in Nigeria (20%) [12]

Achieving excellent clinical outcomes related to good burn management is not so difficult in developing countries like Yemen, Hussein Fadaak concluded that experience confirms the believe that, given initiative and efficient organization of available resources, developing countries such as the Yemen can also achieve better burn management [13]

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