

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

SciVerse ScienceDirect

journal homepage: [www.elsevier.com/locate/burns](http://www.elsevier.com/locate/burns)

# Epidemiology of burns in the United Arab Emirates: Lessons for prevention

Michal Grivna<sup>a</sup>, Hani O. Eid<sup>b</sup>, Fikri M. Abu-Zidan<sup>b,\*</sup>

<sup>a</sup> Institute of Public Health, College of Medicine and Health Sciences, UAE University, United Arab Emirates

<sup>b</sup> Trauma Group, Department of Surgery, College of Medicine and Health Sciences, UAE University, United Arab Emirates

## ARTICLE INFO

### Article history:

Accepted 9 August 2013

### Keywords:

Burn  
Scalds  
Flame  
Prevention  
United Arab Emirates

## ABSTRACT

**Purpose:** To study mechanism, risk factors and outcome of hospitalized burns so as to give recommendations for prevention.

**Methods:** Burn patients admitted to Al Ain hospital for more than 24 h or who died after arrival were studied over 4 years. Demographics, burn type, location and time of injury, total body burned surface area (TBSA), body region, hospital and ICU stay and outcome were analyzed.

**Results:** 203 patients were studied, 69% were males and 25% were children under 5 years old. The most common location for burn was home. Women were burned more at home ( $p < 0.0001$ ). 28% of patients were injured at work with more men ( $p < 0.0001$ ) and non-UAE nationals ( $p < 0.01$ ). Scalds from water, tea were the major hazard at home, while majority of burns at work were from gas and flame. Burns caused by gas and flame had larger TBSA and longer ICU stay. Six (3%) patients died and nine (4%) were transferred to the specialized burn center.

**Conclusions:** Safety education for caregivers and close supervision of young children is important to reduce pediatric burns. Occupational safety education of young men could prevent burns caused by gas and flame.

© 2013 Elsevier Ltd and ISBI. All rights reserved.

## 1. Introduction

Burns impose a significant burden on victims, families and societies. Burned patients may undergo many surgical procedures, requiring long hospitalizations. Emotional and physical scars of burns can last lifetime [1,2]. About eleven millions of burns requiring medical care occurred worldwide in 2004. Burns are ranked fourth in all injuries, higher than combined incidence of tuberculosis and HIV infections [1]. The cost of burn treatment is incredibly high [3–6]. United Arab Emirates (UAE) is a fast developing country with a population

of more than 6 million. The proportion of fatal injuries attributable to burns in the UAE was 2.6% in 2000–2008, with mortality incidence rate of 0.7 per 100,000 population [7].

The personal, environmental and product/equipment risk factors for burns considerably vary in different communities [8]. There is need for proper epidemiological analysis of burns in order to introduce tailored preventive measures. There is lack of information on non-fatal burns in the UAE. This information can be useful for prevention. We aimed to study the mechanism of injury, severity and outcome of hospitalized burn-related injuries in the UAE in order to give recommendations regarding their prevention.

\* Corresponding author at: Trauma Group, Department of Surgery, College of Medicine and Health Sciences, UAE University, PO Box 17666, Al Ain, United Arab Emirates. Tel.: +971 3 7137579; fax: +971 3 7672067.

E-mail address: [fabuzidan@uaeu.ac.ae](mailto:fabuzidan@uaeu.ac.ae) (F.M. Abu-Zidan).

0305-4179/\$36.00 © 2013 Elsevier Ltd and ISBI. All rights reserved.

<http://dx.doi.org/10.1016/j.burns.2013.08.010>

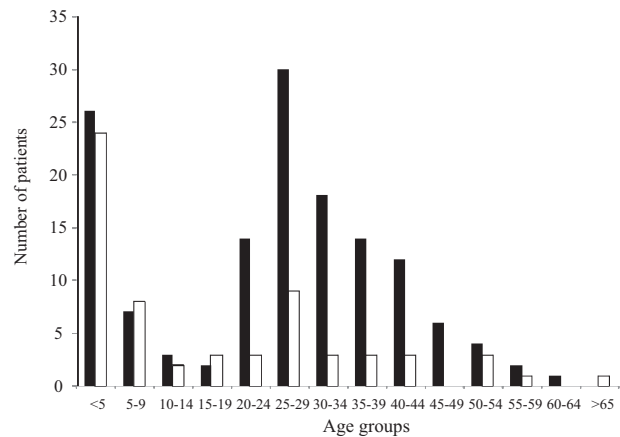
## 2. Methods

All injured patients with burns who were admitted to Al Ain hospital for more than 24 h or who died after arrival to the hospital were studied. Al Ain hospital is one of two major hospitals in Al Ain City, the largest city in the eastern district of Abu Dhabi Emirate, with a population of about 460,000 [9]. Burn patients are usually admitted to Al Ain hospital and if required they are transferred to the national burn center in Al Mafraq hospital in Abu Dhabi located 140 km away from Al Ain Hospital.

Burn patients were admitted and managed according to the ATLS guidelines [10]. Early endotracheal intubation was performed in patients with inhalation injury, severe facial burns, or with suspected airway injury. Indications for admission to the ICU included a burn of more than 40% of TBSA for adults, more than 15% of TBSA for children, inhalation injury, and those who needed endotracheal intubation. We used the higher resuscitation volume of 4 ml/kg/percent of burns in the first 24 h after injury aiming at a urine output of 1 ml/kg/h. Antibiotics were not routinely administered, and were used only to treat established infection. Analgesia was tailored according to the patient's needs. Tetanus toxoid was given routinely. Patients were managed by General Surgeons. First and second degree burns were managed conservatively while those of full thickness were transferred for plastic surgeons, usually after 3 weeks, for delayed skin grafting. Facial burns were exposed while other areas were dressed.

Data were retrieved from Al Ain Hospital Trauma registry. Data of the trauma registry were prospectively collected by a Research Fellow over four years (March 2003–March 2007). Variables studied included age, gender, nationality, burn hazard, location of injury, time, day of the week and month of injury, the percentage of the total body surface area burned (TBSA), affected body region, length of hospital stay, and clinical outcome.

We analyzed data using Statistical Package for the Social Sciences (IBM-SPSS version 19.0, Chicago, IL, USA), by regrouping, frequencies, and cross-tabulations. The Mann-Whitney *U*-test or Fisher's exact test were used as appropriate to compare continuous or categorical data. The Kruskal-Wallis non-parametric test was used to compare continuous or ordered data for more than two groups. Spearman rank correlation test was used to study the correlation of hospital stay with age and TBSA. For analysis of the total hospital stay, we excluded transferred cases and patients who died. Ethical



**Fig. 1 – Age distribution of burn patients by gender (n = 139 males, n = 63 females), males = black bars; females = white bars.**

approval for this study was obtained from Al Ain Health District Ethics Committee (ethical approval No.: RECA/02/44).

## 3. Results

There were 203 patients, 140 men (69%) (male:female ratio was 2.22:1). Mean (SD) age was 22.5 (16.1), majority were children less than 5 years old (25%; n = 50), followed by 25–29 years old (19%; n = 39) (Fig. 1). Asians comprised 48% (n = 97) of burn patients, other Arabs 31% (n = 63), UAE nationals 12% (n = 24), and others 9% (n = 19).

Home was the most common location for burn (66%; n = 134). Patients burned at home were significantly younger ( $p < 0.0001$ ) (Table 1). Women were significantly more burned at home compared with males ( $p < 0.0001$ ) (Table 1). Twenty-eight percent (n = 57) of patients were injured at work with significantly more males ( $p < 0.0001$ ) and non-UAE nationals ( $p < 0.01$ ) (Table 1). Other locations included road, off-road, farm, public area (24%; n = 48).

Scalds from hot water and tea were the major burn hazard (39%; n = 76), followed by burns from gas and flame (38%; n = 74). Scalds from hot liquids were major hazard at home, compared with gas and flames at work. Patients burned by hot water and tea were significantly younger ( $p < 0.0001$ ). Females were more scalded by hot water or tea, males more from gas and flame (Table 2). Eight patients (4%) sustained electrical

**Table 1 – Location of burns by age, gender and nationality.**

Variable	Home	Work	Other	p-Value
Age	12.5 (1–65)	29.5 (20–55)	30.5 (13–60)	<0.0001
Gender	Male	75 (54%)	54 (39%)	<0.0001
	Female	59 (94%)	3 (5%)	
Nationality	UAE	21 (88%)	1 (4%)	0.007
	Non-UAE	113 (63%)	56 (31%)	

Data are presented as median (range) and number (%) as appropriate.  $p$  = Kruskal Wallis test or Fisher's exact test as appropriate.

Download English Version:

<https://daneshyari.com/en/article/6048812>

Download Persian Version:

<https://daneshyari.com/article/6048812>

[Daneshyari.com](https://daneshyari.com)