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Pre-hospital burn mission as a unique experience: A qualitative study

Razieh Froutan [a], Hamid Reza Khankeh [a,b,*], Masoud Fallahi [a], Fazlollah Ahmadi [c], Kian Norouzi [a]

[a] University of Social Welfare & Rehabilitation Sciences, Tehran, Iran
[b] Department of Clinical Science and Education, Karolinska Institutet, Stockholm, Sweden
[c] Department of Nursing, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran

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ABSTRACT

Introduction: A thorough understanding of experiences related to pre-hospital emergency care of burns is a prerequisite of skill promotion for medical personnel. The aim of the present study was to evaluate the experiences of pre-hospital emergency personnel during burn accidents.

Methods: The present qualitative study was performed using a content analysis method. In total, 18 Iranian emergency care personnel participated in the study. A purposeful sampling method was applied until reaching data saturation. Data were collected using semi-structured interviews and field observations. Afterwards, the gathered data were analyzed through face content analysis.

Results: By analyzing 498 primary codes, four main categories; the nature of burn care, tension at the accident scene, gradual job 'burnout', and insufficient information, were extracted from the experiences of pre-hospital emergency personnel during burn care. These categories each included several sub-categories, which were classified according to their significant characteristics.

Conclusion: This study showed that different factors affect the quality of pre-hospital clinical services for burns. Authorities and health system administrators should consider the physical and psychological health of their staff, and assign policies to improve the quality of pre-hospital medical care. According to the present results, it is recommended that the process of pre-hospital emergency care for burns be investigated further.

1. Introduction

Pre-hospital emergency medical services (EMS) are faced with the full spectrum of human suffering. This service is an important part of health care systems [1], and it is considered to be a main component of emergency treatment. In Iran, EMS are mainly based on basic life support (BLS) [2], and a combination of French-German and American–English models, similar to the Anglo-Franco model. All EMS ambulances in Iran are Type-B, which are designed for; transportation, primary treatment, and monitoring of the patients [3]; however, in 2012, some of the ambulances were equipped with defibrillators/DC shocks and portable ventilators, and operated in the presence of physicians [4].

Due to the unpredictable nature of EMS, ambulance personnel face serious challenges, along with a considerable

* *Corresponding author*. Tel.: +98 021 22180036.
E-mail addresses: Froutanr@mums.ac.ir (R. Froutan), hrkhankeh@hotmail.com, hamid.khankeh@ki.se (H.R. Khankeh).
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number of job stressors [5]. Given the critical nature of burns, care provision in these situations is considered exhausting and challenging by many health care professionals [6].

Severe burns are included in the category of serious trauma, as it may lead to patient's death [7]; therefore, providing care and treatment for these patients is quite challenging for staff [6,8]. According to many pre-hospital emergency staff, their greatest fear is providing care for burn victims [9].

The working environment of pre-hospital emergency personnel has special characteristics; therefore, it is quite different with regard to a number of different aspects [10]. Despite the importance of pre-hospital care for burns, few studies have investigated the personnel's casualty-related experiences [11].

According to some studies [12], constructing an environment of mutual debate in which pre-hospital emergency staff can express their feelings and experiences about emergency cases, such as burn events, can be an effective way to determine influential factors related to the quality of clinical services.

Pre-hospital care in general is unpredictable and stressful, especially in the case of burns. Large burns are widely considered the most distressing to deal with around the world. In Tehran, a city of 13 million, there are about 75 contacts to EMS services related to a burn injury every day [13].

Without conducting effective studies on pre-hospital care, this type of medical service can be quite difficult to manage and might lead to psychological distress. Little is known about the psychological and emotional impact of managing such cases on EMS personnel. This study aimed to understand pre-hospital emergency personnel experiences during burn events in Tehran, Iran.

2. Methods

2.1. Study design

In the present study, a qualitative content analysis was considered appropriate to attain a condensed and broad description of EMS staff experiences; the outcomes of the analysis were concepts or categories describing their experiences.

In this study, data were gathered directly from the participants without assuming any pervious hypothesis. The obtained data were based on the participants' point of view. Codes and categories were derived using the inductive process, conceptually ordered considering properties and dimensions were developed [14,15].

2.2. Study setting

This study was conducted among pre-hospital care professionals, mainly from Tehran, the largest city in Iran, and the nation's capital, with a population of around 13 million people [16]. Tehran is served by a large number of EMS vehicles based in stations located around the city and pre-hospital personnel are dispatched from a central call center as required. All severe burn victims (>20%) are transferred to the Motahari Burn Center Hospital.

2.3. Data collection and analysis

The present qualitative study used content analysis as the research method for subjective interpretation of the interviews' content, through a systematic classification of coding and identifying the concepts or patterns.

The selection of participants was determined using a purposeful sampling method. The participants were included if they had previous experience regarding burn injury care. The subjects were from a range of age groups, had different education levels, working experiences, and organizational roles. The researcher attended the emergency department (ED) of Motahari Burn Center Hospital, and observed the interactions between emergency medical personnel who delivered care for burn patients and hospital staff.

Eighteen interviews were conducted with experts and managers of Iran's pre-hospital emergency system including 11 emergency technicians, 1 emergency care support worker, 1 anesthesiology assistant, 4 nurses. The subjects were within the age range of 26–43 years, with a mean age of 34.28 ± 4.8 years, and a mean working history of 11.28 ± 3.4 years (Table 1). Semi-structured interviews and field observations were used as the research instruments. All of the participants had more than a five years' experience of dealing with burns and performing pre-hospital emergency care.

Purposeful sampling continued until we reached the saturation point of each concept, and further data collection failed to provide additional information; the sample size was determined by data saturation. On average, each interview lasted between 40 and 60 min, and they were conducted in Persian by the same interviewer; they were transcribed verbatim, and then translated into English.

The content analysis was performed on the data written in Persian, before translation. The interview guide included a short list of general questions this was used as a tool for initiating the interviews. During each interview, more specific questions were asked. Examples of the questions are: ''Please talk about your experience of burn care?'', ''What problems do

Table 1 – Participant charcteristics.

No	Age (years)	Position	Working history (years)
1	28	Emergency Technician	7
2	29	Anesthesia Technician	9
3	32	Emergency Technician	10
4	42	Emergency Technician	16
5	33	Rescue	9
6	33	Nurse	9
7	35	Emergency Technician	12
8	26	Emergency Technician	6
9	37	Emergency Technician	13
10	35	Emergency Technician	11
11	38	Emergency Technician	15
12	26	Nurse	5
13	43	Emergency Technician	16
14	36	Emergency Technician	14
15	38	Emergency Technician	15
16	38	Emergency Technician	14
17	33	Nurse	10
18	35	Nurse	12