



Identification and Description of 1-1-5 Emergency Operators' Experiences in Kerman, Iran (2019); a Qualitative Research

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Citation: Motamed-Jahromi M, Jalali T, Mirzaei T. Identification and Description of 1-1-5 Emergency Operators' Experiences in Kerman, Iran (2019); a Qualitative Research. JOHE 2020; 9(1):27-34.

Article Info

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Article history

Received: Feb 2020

Accepted: May 2020

 10.29252/johe.9.1.27

Print ISSN: 2251-8096

Online ISSN: 2252-0902

Peer review under responsibility of Journal of Occupational Health and Epidemiology

Abstract

Background: Emergency operators are responsible for determining the nature of callers' problems, responding to them, and dispatching an appropriate rescue team. In addition, they provide instructions on cardiopulmonary resuscitation, bleeding control, airway management, and other life-saving procedures. Emergency operators are often faced with difficult situations. This study aims to highlight novel aspects of emergency operators' professional life and to achieve a deep understanding of their experiences of difficult conditions as well as the way they manage them.

Materials and Methods: This qualitative study was carried out using a phenomenological method. Purposeful sampling was used to select 12 individuals of 1-1-5 emergency operators in Kerman in 2019. Data were collected using in-depth and semi-structured interviews.

Results: The participants were 8 males and 4 females who had been working as a dispatcher for 3-17 years. As many as 13 subthemes were elicited and categorized into 3 themes. The main themes were uncertain conditions, caller communication problems, and organizational constraints. Coping skills and communication skills were found out to be effective in managing such problems.

Conclusion: According to the findings of this study, 1-1-5 emergency operators in Kerman, with the responsibility of saving patient life, try to solve problems in the best way. Governmental officials are expected to provide service trainings to increase operators' theoretical and practical knowledge and to harness their communication skills so as to provide more efficient services to patients.

Keywords: Emergency Medical Services, Emergency Responders, Qualitative Research.

Introduction

Prehospital emergency cares include skillful treatment and first aids provided on site or when transferring the injured to the hospital [1,2]. The purpose of these measures is to provide early care and to transfer the injured so rapidly as to reduce death and disability rates after accidents or illnesses [3]. These cares include medical

treatment, emergency cares, the transfer of the ill or the injured to the hospital, and rescue activities at the scene of accidents [4,5]. The main components of prehospital emergency includes organization, training, human resources, transportation, and communications [6]. Therefore, the first respondents to prehospital emergency cases should receive extensive trainings in scene management as well as patient rescue,

stabilization, and safe transfer to the hospital [3]. Emergency calls at these centers are an integral part of prehospital emergency care.

Since 1976, 1-1-5 has been the emergency telephone number connecting callers to emergency dispatch centers all over Iran. This number has been planned to be used only in emergency incidents, and the operators of 1-1-5 emergency call centers are usually the first people contacted when emergency assistance is needed. In such conditions, they dispatch the closest ambulance to the scene of the call for help. Thus, the operators' response to calls is the start point in each rescue operation [1].

Emergency operators are responsible for determining the nature of callers' problems and responding to them, dispatching appropriate rescue teams, giving real-time instructions and consultations to callers on cardiopulmonary resuscitation (CPR), bleeding control, airway management, and other life-saving procedures [7, 8]. Therefore, operators need to ask questions clearly and interpret the answers correctly to support patients [4]. Operators should be able to make decisions within a few seconds [9, 10], prioritize reported cases, and contact the police as well as firefighting or ambulance services [8, 11].

In Iran, nurses often play the role of operators. Professional experience and scientific knowledge are the basic requirements for being selected as an operator. Unfortunately, emergency operators work under stressful conditions and encounter complex situations difficult to control. The findings of a study show that emergency dispatchers are exposed to psychological distress and job burnout [12]. A stressful work environment could increase cortisol, thereby exerting harmful effects on the health and cognitive performance of medical staff [13-15]. A qualitative study in Sweden draws a conclusion that operators' problems are lack of trust, communication problems, and resource constraints [16].

In Iran, several studies have been conducted on the quality of work-life (QWL), organizational commitment, and job stress in emergency medical technicians [17-20]. An in-depth study of relevant past research shows that no quantitative or qualitative research has yet been done on the working conditions of 1-1-5 emergency operators. This study tries to explain novel aspects of professional life among emergency operators, highlight their professional work conditions, and determine coping mechanisms employed by operators under such conditions. Therefore, this study aims to explore lived experiences of 1-1-5 emergency operators under hard working conditions, and explain the way they react to these

conditions and control them, using a phenomenological qualitative approach.

Materials and Methods

This qualitative study was conducted, within the time span from April to December 2019 in Kerman using a phenomenological approach, aimed at understanding the experiences of emergency operators in difficult situations and determining the way they manage difficulties. Phenomenology tries to explain concepts as they exist in real life [21]. It is the analysis of anything that could turn into an experience. Not only does it deal with physical objects, but it also includes a range of abstract concepts. Such an experience could include thoughts, pains, emotions, memories, music, math, and the like [22].

There exists an emergency medical dispatch center (1-1-5 center) in Kerman in southeastern Iran, which provides services to 750,000 people and receives 30,000 phone calls annually.

There are a total of 20 emergency operators employed at this center. Participants in this research included 12 emergency operators, 8 females and 4 males, who were chosen via purposive sampling and agreed to participate in the study. The inclusion criteria were having a BSc in nursing, working full-time, having at least 6 months of work experience as an emergency operator, and being willing to participate in this research. The exclusion criteria included having no recent history of mental illnesses and substance abuse.

All participants were informed of the objective and design of the study, and a written consent form was obtained from them for interviews and the use of an audio tape recorder. In addition, participation was voluntary, and confidentiality was ensured. It was also emphasized the participants could quit the study at any time without any reason. The study received approval from the ethics committee (IR.RUMS.REC.1394.1)

Data collection was conducted in about 3 months from April 1st to June 31st 2019. Individual interviews were conducted by one of the researchers in a quiet room at the emergency dispatch center. The interviews were tape-recorded and lasted for 30-45 minutes. The data were collected using in-depth and semi-structured interviews with wide-ranging and open-ended questions. The participants were encouraged to speak freely and were not interrupted.

The participants were requested to explain their experiences of difficult situations while working as emergency operators from both personal and professional perspectives. In addition, they were

asked to talk about their reactions and the way they controlled the situations. Every operator explained from one to five situations. The interviews continued until they reached the saturation point. The tape-recorded narratives were transcribed verbatim.

The first question was, "Could you please explain one or more difficult situations you experienced while working as an emergency operator?" The follow-up questions clarified the situations explained by the participants (Table 1).

Table 1. Open-ended questions of this study

Could you please explain one or more difficult situations you experienced while working as an emergency operator?
Could please tell more about this situation?
How did you feel after the situation?
How did you deal with the situation?
What are the skills required for managing this situation?

The Colaizzi's seven-step method was chosen for analyzing the collected data [23]. In the first phase, the data were transcribed. During the second phase, significant statements were extracted. In the third phase, formulated meanings were created from the significant statements. In the fourth phase, the formulated meanings were sorted into categories, clusters of themes, and themes. Next, a detailed description of the phenomenon was provided, and after that, the fundamental structure of the phenomenon was described. In the end, it was returned to the participants for the validation of the findings to compare the researcher's descriptive results with their experiences [24]. To assess data validity, common methods of qualitative research, including Guba and Lincoln's (1994) methods, were utilized [25]. To ensure credibility, a combination of data collection methods, including semi-structured interviews, field notes, writing notes, participant reviews, as well as the revision of codes and classes by professors were used. To ensure data reliability, an extended description of the research was used so that it could be checked by external observers. To assess reproducibility, all stages, including data collection, code analysis and extraction, and the classes were described so that others could be able to judge well by reading them. To ensure

generalizability of the study findings, the results were provided to three nurses who did not participate in the study, and their experiences were compared to the findings.

Results

This study was conducted with 12 emergency operators, including 4 males (33.3%) and 8 females (66.6%). They had an age range of 24 to 46 with the mean age of 35±10.3. From among them, 10 individuals were married (83.3%), and 2 individuals were single (16.6%) at the time of the study. In addition, they had 3-17 years of experience in the profession (mean =10 ± 1.4 years), and all of them had a BSc in nursing. Besides, they had been formally trained for one month, prior to starting their profession, to work as an operator.

The first structural analysis: After the first structural analysis of the texts of the interviews about the operators' experiences in problematic situations, three main themes emerged from data analysis, including "uncertain conditions", "caller communication problems", and "organizational constraints". Each theme was described using the participants' direct quotations (Table 2).

Table 2. Themes and sub-themes of operators' problems

Theme	Sub-theme	Summary	Meaning components
Uncertain condition	Wrong information	Giving wrong information for dispatching an ambulance	"Sometimes, people want to have ambulances for non-emergency cases. There have been many occasions when people have misguided us intentionally about conditions of their patient just to receive an ambulance. For example, a 22-year old man informed us on Losartan tablets and his chest pains. When the rescue team arrived at his place, they found out the tablets belonged to his grandmother, and he only did that to get an ambulance".
	Patients' unclear conditions	Problems related to patients' uncertain conditions	"Sometimes people pass by an accident site and report the accident to us without telling the exact details of the number of the injured and their conditions".

Caller communication problems	Abusive callers	Prank calls	"Many kids or adults make prank calls during a day. These calls confuse us and take our time of dealing with real emergency situations".
	Confused callers	Callers being unable to clearly articulate what the symptoms are	"Sometimes, callers cannot correctly explain the symptoms and problems of their patients. Accordingly, it becomes too difficult for us to measure the depth of a situation. In addition, they sometimes give wrong addresses and our ambulances go to wrong addresses".
	Callers with communication disabilities	Problems related to callers' lack of ability to describe patients' conditions	"Callers are highly stressed and cannot inform us correctly about patients' symptoms and conditions. Occasionally, they cannot even talk. It is also hard for us to understand children and people with mental health disorders. Such calls are among bad experiences we have because we cannot help them".
	Callers with a different language	Problems related to lack of familiarity with callers' accent	"For instance, once we could not understand an Afghan. Similarly, when a person from Mashhad reported an accident in Zarand road, it took us so long to understand what his problem was and where the location of the accident was".
	Hysterical callers	Stress caused by hysteric and nervous callers' insults	"Sometimes people behave offensively. For instance, they ask why the ambulance has not arrived, yet they are under stress and time passes so slowly for them. Thus, they insult us, and it is too hard to control an offensive person".
Organizational constraints	Noisy and busy settings	Stress caused by busy and noisy environments	"The dispatching environment is very busy. You have a lot of conflicts, yet those in charge do not care. We tried to hold excitement and anger management classes, yet they did not allow us to do that. I love my job, but I am overstressed. Generally speaking, nurses might experience harsh conditions at hospitals, but emergency operators deal with far more difficult situations here".
	lack of follow-up by fellow employees	Operators' stress caused by lack of responsibility on the part of their colleagues	"Our job involves teamwork, and final results depend on the performance of all members. If a person fails, the whole work will go awry. For instance, if we receive a mission on time but the ambulance moves late, such a delay will ruin our work".
	Lack of personnel	Heavy workload due to lack of personnel	"We are very busy, and our phones ring all the time. We have a tight schedule, but if we had more personnel, we would be under less pressure".
	Lack of beds	Lack of hospital beds for admitting patients	"Some hospitals are located at the center of the city, which are always full and do not admit patients. We could not guarantee that patients could survive before they reached a farther hospital".
	Lack of ambulances	Problems related to lack of ambulances	"Sometimes, we dispatch an ambulance to a non-emergency situation while at the same time a real emergency situation happens, and there is no ambulance. The lack of enough ambulances is in itself a problem".
	Lack of cooperation on the part of some hospitals	Problems related to not admitting emergency patients in some hospitals	"Two specific hospitals do not cooperate with us at all. They ask us to send profitable patients to them. When a patient refers to the nearest hospital and it does not admit them, we face a serious problem as the patient's conditions grow worse".

Uncertain conditions: Uncertain conditions were among the basic concepts extracted from the data, which included the two subthemes of wrong information and patients' unclear conditions.

Caller communication problems: Another basic concept extracted from the data was communication problems in the operators' workplace. This concept included the five sub-

themes of "abusive callers", "confused callers", "callers with communication disabilities", "callers with different languages", and "hysterical callers".

Organizational constraints: The last theme of the first structural analysis was organizational constraints, i.e. another major problem, the operators were beset with. It was consisted of the six sub-themes of "noisy and busy settings", "lack

of follow-up by fellow employees", "lack of personnel", "lack of beds", "lack of ambulances", and "lack of cooperation on the part of some hospitals".

The second structural analysis: The second structural analysis was done to determine the operators' skills in facing complex situations and controlling them. Two main themes were derived from data analysis, which included "coping skills" and "learned communication skills" (Table 3).

Coping skills: This theme is one of the basic concepts derived from the interviews focusing on problem solving, which included the two subthemes of "stress management skills" and "problem solving skills".

Learned communication skills: Another concept was learned communication skills, which included the three sub-themes of "academic communication skills", "effective communication experience", and "business communication skills".

Table 3. Themes and sub-themes of operators' solutions

Theme	Sub-theme	Meaning components
Coping Skills	Stress management skills	"I may not be able to solve all problems, but I always try to devote myself to patients and to reducing their stress through patience and decent behavior".
	Problem-solving skills	"I am flexible and get accustomed to my job environment pretty soon. When encountering a problem, I rely on self-confidence and try to solve it. I believe I have been born to be an emergency operator".
Learned Communication Skills	Academic communication skills	"Nursing knowledge helps me identify problems and illnesses. If callers report irrelevant signs for a disease, we will understand they lie or exaggerate".
	Effective communication experience	"Sometimes, it is necessary to be patient and silent, and sometimes we need to be precise and even take care of ourselves. I have learnt many ways of controlling difficult situations during my career. Encountering problems increases our experience".
	Business communication skills	"Listening carefully, persuading callers to talk, comforting them, calming ourselves down, and controlling our anger could help us solve our problems when a caller drives us mad. We have had temporary classes on anger management and communication skills".

Discussion

Operators are decision makers in the process of aiding callers. They help callers under stressful and harsh conditions and try to provide callers with the best solutions [16]. Making a decision on the way of helping a patient via phone consultations and sending a rescue team are the responsibilities of operators, which could be fulfilled by asking for the patient's precise conditions [26]. The operators in this study had enough knowledge of guiding callers and did their best to provide assistance in emergency situations; however, they faced problems in some occasions.

According to the results, uncertain conditions, caller communication problems, and organizational constraints are the main problems an emergency operator is beset with. Uncertain conditions usually occur because of the lack of information or inability to identify correct information [27]. Therefore, an emergency dispatcher has to use some strategies to control uncertain conditions. These strategies include clarifying confusing situations, determining patient location, distinguishing between relevant and irrelevant information, making a distinction between emergency and non-emergency situations, and prioritizing emergency situations. Dispatchers have to make the initial decision within

20-40 seconds [16]. Thus, they should have the right skill for diagnosing patients' conditions and making quick and effective decisions, which is one of the necessary skills of an operator. According to the participants, emergency dispatchers' natural personality traits, such as intelligence, speed, ability to understand situations, as well as knowledge and experience in dealing with these situations helped them control circumstances.

Another aspect was communication problems caused by callers' inability to provide information to operators. For instance, a child or a disabled person was sometimes the only person accompanying the injured, and some adults lost their ability to speak clearly and found it difficult to communicate because of the fear and anxiety following the accident. Some callers had a different accent, so the operators could not understand them. Listening well, empathy, and understanding callers' conditions are essential communication skills for operators. Good decision-making requires good communication [28] and listening skills [29]. Effective listening involves the four steps of understanding, remembering, evaluation, and response [30]. Listening skills facilitate the decision-making process and leads to better communications [31]. Although communication skills are acquirable and improve with experience,

perceptions, attitudes, and personality traits are strongly effective in their improvement. Affability, willingness to help others, work conscience, compassion, moral commitment, and responsibility are the characteristics of successful operators in communications.

Another major theme was organizational constraints. Operators sometimes face problems because of constraints in organizational resources. The small number of operators caused a high increase in their workload and tightened their job schedule; as a result, job satisfaction was decreased. In addition, the small number of ambulances and beds for admitting emergency patients caused uncertainties over dispatching aids and rescue teams to patients. Some hospitals, especially those of specific organizations and private hospitals, admitted profitable patients, and if an accident happened in the vicinity of them, the injured would be dispatched to farther hospitals. The operators stated that they could not find a solution to this problem, and that the solution to organizational constraints would be in the hands of high-ranking officials. It seems managing resources and attracting funds even from nonprofit organizations could help overcome organizational constraints. It is also recommended that all hospitals, i.e. public and private ones, be required to admit emergency patients.

Another major problem besetting operators is job stress. The interviewed operators stated they sometimes faced stressful situations, such as threats, insults, and verbal violence on the part of hysterical callers. The resulting stress created a sense of insecurity and fear in them, which intensified the problems they faced. The constant ringing of telephones as well as several operators talking to callers and staff at the same time turned the dispatch environment into a crowded place and increased job stress in the operators. In addition, the operators were sometimes exposed to situations that made their subconscious mind compare some victims with their family members, which caused a lot of stress and anxiety among them. According to the operators, stress and job pressure were doubled by the irresponsibility of some colleagues, both in the dispatch environment and by the ambulance staff, which made the environment unbearable to them. In their study, Weibel et al found high levels of cortisol in emergency operators, which indicated it was better to identify stressful situations quickly and find a way to reduce stress [32]. The operators involved in the study stated they could better control such situations by gaining experience and skills in controlling anger and stress, but they still considered their work stressful. Operators who

were more flexible and calmer were less likely to be affected by job stress. Since stress is an important factor in reducing organizational productivity, increasing absenteeism, as well as reducing service quality and job satisfaction, it makes sense to provide facilities and solutions to reduce job stress among operators [33]. It is also recommended that managers choose operators with less stress and mentally strong when recruiting them.

Based on the information obtained from the interviews, operators as decision-makers, help callers under stressful and vulnerable conditions and try to find the best solution for those in need of help [34]. The operators stated they would use their inherent and learned skills, including good moral qualities, such as cheerfulness, compassion, responsibility, and empathy to overcome problems, which paved the way for better communications with callers. The operators' personal abilities aided their natural skills, and the operators who were more flexible, calmer, and more gentle were angered very late and were less exposed to job stress. In addition, the operators' theoretical and clinical knowledge helped them clarify the ambiguous conditions of some patients and obtain key signs of the disease from callers. Experienced operators could better control serious emergency situations and would use all available resources to save patients. Communication skills were the other subcategory alongside with the operators' knowledge and experience, which were classified as learned skills. Training in communication skills provided to the operators when hiring as well as in-service training helped them control their anger and provide necessary information to help patients. Cloff's research supports this finding by concluding that personal and clinical knowledge as well as intuition experience and insight are involved in the decision-making process among operators [35].

One of the limitations of this study was interviewing operators at only one dispatch center. Perhaps if the staff of centers in other cities were interviewed as well, different results would be obtained. Thus, it is recommended that a similar study be designed and implemented in other cities.

Conclusion

It is concluded that uncertain conditions, caller communication issues, and organizational constraints are the problems most often besetting operators. They try to do their best to solve such problems and use coping and communication skills to manage them. Although there is a scripted protocol on managing difficult situations at

Kerman's 1-1-5 emergency call center, and this center offers training courses on communication and coping skills for operators, we suggest that managers run online courses on coping and communication skills. We also propose psychological tests and interviews be employed when recruiting operators because being relaxed, flexible, patient, and confident with a good temper, ethical commitment, and responsibility should be regarded as the traits of recruited operators. Officials in charge of emergency organizations are expected to identify organizational constraints and reduce them. Hospitals should be monitored more strictly so as to be more committed to their main responsibility that is saving people's lives and helping patients. In the end, it is recommended that interventional studies be conducted on improving operators' situations.

Acknowledgement

We sincerely appreciate all 1-1-5 medical emergency operators of Kerman, without whom this study would not be conducted.

Conflict of interest: None declared.

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