Factors affects the performance of red crescent paramedics, Bisha, Saudi Arabia

Sultan A. Alsaeed, Ahmed S. Alkarani

Department of Nursing, Faculty of Applied Medical Sciences, Taif University, Saudi Arabia

ABSTRACT

Context: Saving lives is the ultimate purpose of the Red Crescent paramedics. It is crucial to enable safe, effective, and efficient performance of paramedics globally. In Saudi Arabia, the Red Crescent faces at least over 280,000 cases every year. Aims: Therefore, this study aims to address the factors affecting the performance of the Red Crescent paramedics. Methods and Material: Descriptive qualitative study and all data processed were analyzed using thematic analysis. Settings and Design: In total, 31 paramedic staff in Bisha city were invited to participate in this descriptive qualitative study. Among them, 11 paramedics agreed to participate in an in-depth semi-structured interview. Results: The findings of the research indicated three themes. The first theme was a lack of awareness in society, with three sub-themes: types of emergency calls, the crowd that gathers at the incident location, and people interruptions. Theme 2 was the long distance and road obstacles, and other factors that affect the paramedics were the third theme. Conclusions: Policymakers and the community should obtain a clear understanding of the Red Crescent paramedic interventions to help to create policies, legislation, and guidelines suitable for the needs of paramedics.

Keywords: Ambulance, emergency medical services, paramedics

Introduction

Saving peoples’ lives is the ultimate priority of all ambulance services.[1] This includes the Red Crescent’s responsibility for ensuring adequate ambulance services to mitigate calamities and human suffering (SRCA, 2021).[2,3] The paramedics in the Red Crescent are registered health professionals who are the first responders in the healthcare setting.[1] As paramedics, they face over 280,000 cases every year (SRCA, 2019).[2,3] These frightening numbers include life-threatening conditions, such as strokes, coronary syndrome, sudden births, and injuries involving traffic accidents. In fact, there are over 30,179 road traffic accidents and over 4600 deaths each year in Saudi Arabia.[4] Moreover, statistics have shown that road injuries and sudden stroke are the second and third leading causes of death after ischemic heart diseases.[5] The significance of ambulance services in the early phase of these injuries is critical to enable proper treatment.[6] Therefore, the paramedics’ determination in reducing the response times of those accidents is acknowledged to improve the survival of patients.[7]

It is proven that primary health care and family physicians put effort in providing individuals with medical needs to avoid potential needs of emergency.[8] Furthermore, according to Anderson et al.,[9] providing efficient pre-hospital care and the rapid arrival to hospitals also contribute to the decreasing number of deaths. More than half of heart attack incidents reached the hospital 400 min later than the ideal time of 180 min.[8] It is worth mentioning that every 30-min extension in treatment suspension is associated with a 7.5% higher relative risk of 1-year mortality.[10] The causes of these obstacles vary from road traffic, delays in reporting accidents, and issues with the weather to a lack of ambulance service centers.

Address for correspondence: Dr. Ahmed S. Alkarani, Head of the Nursing Department, Faculty of Applied Medical Sciences, Taif University, Saudi Arabia. E-mail: asakg@live.com

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Studies have also indicated that improving the paramedics’ physical and psychological well-being will lead to a significant improvement in ambulance services.\cite{12} This is because the nature of working in an ambulance involves working with stressful and sometimes helpless situations. This leads paramedics to feel frustrated and overwhelmed during and after the event. Consequently, this can potentially degrade the ambulances’ work.\cite{13} Furthermore, studies have explained that one of the common issues is their locations.\cite{14} A comparison was implemented between the efficiency of emergency medical services and the ambulance response time, and the results showed that the highest demand and slowest response time existed in locations where there is a lack of ambulance centers.\cite{15} Thus, this problem should be recognized and addressed to improve the individuals’ quality of life.

However, there is limited research addressing the elements that limit the paramedics’ critical occupation. Therefore, this study aims to investigate the factors affecting the performance of the Red Crescent in Bisha, Saudi Arabia.

**Subjects and Methods**

This is a descriptive qualitative study. All (31) paramedic staff in Bisha city were invited to participate. Among them, 11 paramedics agreed to participate in an in-depth semi-structured interview. The main aim of the in-depth interviews was to explore the Red Crescent paramedics’ perspectives in terms of potential factors that may affect paramedics in Bisha, Saudi Arabia. Open-ended questions were asked during the interviews to allow the paramedic staff to share their experience, such as “what are the positive things in your work as a paramedic?”; “What are the difficulties and challenges that you face at daily work?”; and “Are there any environmental factors or any other factors that affect your work?” All interviews were done through Blackboard platforms due to the governmental rules imposed due to COVID-19. All paramedics preferred the Arabic language during the interview. Therefore, all data processed were in Arabic; when the data were analyzed, the researchers translated it into English. Thematic analysis was used. The interview durations were 50–60 min. Both researchers were aware of the study’s confirmability, credibility, and transformability. For example, both researchers were listening to the interviews and ensured that the correct meaning was inferred. Also, both researchers participated in analyzing the data and coding, and both agreed about the study’s themes.

This research was approved by the Research Ethics Committee of Taif University, Saudi Arabia (Application code: 42-0040). An information sheet and consent form were distributed to all participants. Consents forms were signed by participants and collected prior. They all understood that participation was voluntary, and they knew that they had the right to skip any question that they wanted. In addition, they were aware that they had the right to stop the interview and withdraw at any stage of the study. This study also ensured that all participants would have anonymized responses in the case of publication.

**Results**

In this study, we enrolled 11 paramedics between 30 and 48 years old. The participants were all from Red Crescent centers in Bisha. Participants’ working experience was from 1 to 23 years [Table 1].

**Theme 1: Lack of awareness among society**

Most of the participants mentioned that there are many behaviors that appear from the community before and during the performance of emergency services that negatively affect performance in their work. Most of the participants attributed these behaviors to the community’s lack of awareness of the role and importance of emergency work to save people’s lives. These issues are types of emergency calls, the crowd that gathers at an incident’s location, and people’s involvement.

**Types of emergency call**

Participants believed that there is a big difference in people calling the Red Crescent Centre regarding the incidents during a notification call. Some of the callers exaggerate the situation as very dangerous when it is not true. Some of them do not give details of the situations of the injured, and others do not give details of the correct location. These issues negatively affect the performance of the paramedics, as quoted below:

> I mean, the person calling the ambulance states that the accident is big, and the condition is serious. The patient’s condition may be a stable normal condition. He says that he is in a state of coma, or not breathing, or such. He wants you to quickly reach the location of the case. But then, you will be surprised when you reach the site and see the person walking on his feet. He is not in a coma; he doesn’t have any issues. I mean, in his mind the Red Crescent is only responsible for transporting him between the place and health services. For example, some of them refuse to do physical examination; he says no, you just carry him. And this is a real problem for us as paramedics when we are delivering the case to the hospital without knowing the case and the details of the health problem. (Participant 2)

**The crowd that gathers at an incident’s location**

All the participants in this study mentioned that one of the most important obstacles they face in emergency work is the crowd that gathers at an incident’s location. Consequently, it is

| Participants | Age  | Family status | Work experience |
|--------------|------|---------------|-----------------|
| 1            | 48   | Married       | 23              |
| 2            | 37   | Married       | 2               |
| 3            | 32   | Married       | 7               |
| 4            | 31   | Married       | 1.7             |
| 5            | 32   | Single        | 1               |
| 6            | 30   | Single        | 5               |
| 7            | 30   | Married       | 7               |
| 8            | 30   | Married       | 6               |
| 9            | 32   | Married       | 10              |
| 10           | 31   | Married       | 5               |
| 11           | 46   | Married       | 8               |

Table 1: Characteristic of the participants
difficult for paramedics to deal with cases, classify them, and transfer them in an easy and smooth manner. This crowd may cause a delay in reaching the place of the incident because the road to the case is closed by a large number of people and cars, as quoted below:

Oh, I worked in the Jizan region, and I worked in Bisha. Here in Bisha, in general, the crowd that occurs at an incident's location is the first obstacle before anything else. This is a very negative point. I mean, you receive a call about an accident, and when you reach the site of the accident, you can see, it will take a long time to get to the cases because of the crowds, because it is necessary to wait on the crowds until you reach to the cases, meaning waiting in the crowd is equivalent to your ride from the center or more. Because many people want to see and know what's happening. (Participant 2)

People interruptions
People stand around the cases and cause crowding, making it difficult for the ambulance team to reach the cases. Moreover, some people interfere in the work of paramedics and suggest what the paramedic should and should not do. However, these people do not have any medical background and are not even in the medical field; this confuses paramedics while providing first aid to cases, as quoted below:

In some cases, when I get off the ambulance, people keep me busy. As a result of that, you do not know what you are supposed to do. Do you focus on them and what they are saying? For example, they ask you to go there, come over here, come here, and come from here. This negatively affects the paramedic's thinking. They don't let the paramedic make his own decisions in the right way. Imagine such people around you! In most of the cases that I pass through, Oh My God help us. (Participant 9)

Theme 2: The long distance and road obstacles
The majority of participants believed that the existence of large areas with long roads leading to other regions without an adequate number of Red Crescent centers to cover this area affects their performance. In addition, the presence of speed bumps in the highways greatly affects the speed of arrival of the ambulance and the difficulty of moving the injured because it causes delays and, if it is not seen by the driver, the patient is greatly affected, as quoted below:

I swear to God, we suffer from roads that stretch 300 km. Sometimes, I mean, we go and come back about 600 km. I swear to God, it's difficult for me. Once in Ramadan, I got a call, and I had to drive almost 90 km. It is not easy. (Participant 1)

Theme 3: Other factors that affect the paramedics
Several paramedics mentioned some of the various factors that affect them physically and psychologically, including carrying obese people, which affects the paramedics physically during their transport; exposure to infection, especially Covid-19; exposure to psychological pressure; and sometimes, violence from the families of the injured, whether this violence verbal or physical, as quoted below:

I swear by God, some cases are overweight, and we need to take them out from the second or third floor. They have no one to support or help them. At times, we are late because we have to call civil defense to help us. Glory be to God, some people have their weight more than normal, it means over a hundred and fifty. (Participant 1)

Although working as a paramedic has many risks and is difficult work from the participant's point of view, all participants expressed that working as a paramedic in the Red Crescent has many advantages which reflect positively on their work and their personal lives. Although it is a job and has a salary as many jobs out there, working as a paramedic has a special motivation. As the majority of the participants mentioned, working as a paramedic has a reward from God; moreover, through good training and cumulative experience, paramedics use their skills and knowledge to deal with emergencies in their work, homes, and with their families at any time where the opportunity comes to provide first aid. Working as a paramedic is great work for a human being because paramedics save people from death, as quoted below:

You are doing a good act. God willing, it is sincere for God's sake first. I mean saving lives is an act of heroic youth. I mean, on the day that you meet an unconscious case, and you seek to help them. Then, we know that the command of God is the first thing and above everything, but you do what is a reason, so life returns with the grace of God first, and this is what makes us happy. This is a positive thing. I mean, we support people to continue to live. It's after the will of God. (Participant 5)

Discussion
This is a qualitative study that investigated factors affecting the performance of Red Crescent paramedics in Bisha, Saudi Arabia. The results indicated that working as a paramedic makes them feel honored regarding the obstacles they face. Saving lives and helping in emergencies helps them believe how important their job is and they feel proud to be a part of it. However, the study identified many causes of disruptions that paramedics experience, which lead to serious consequences. The first obstacle was shown to be the lack of societal awareness about the performance of the Red Crescent. This factor has been split into three aspects. First, the lack of proficiency when calling regarding an emergency, as paramedics have experienced either people exaggerating the incident, or would provide little detail about the incident. This absence of consideration when calling for an ambulance was significant, affecting the overall experience of the paramedics. Second, the paramedics expressed pressure due to the crowds surrounding the incident locations. This obstacle was also represented in the study performed in Jeddah, Riyadh, and Dammam. The study showed that the obstacles that paramedics face during duty are traffic congestion, involvement of bystanders and family members, lack of trust from family members and injured people, an inability to be independent when making decisions, and injured people refusing to be treated. Moreover, studies have indicated that patients' families rely heavily on their family physicians, which causes distrust toward medical professionals in general. Third, the participants reported
interruptions and the interference with paramedic procedures by the crowd to be their biggest challenge. This is especially true when the people who interfere have no medical experience. Similarly, studies have explained that crowding adversely affects the accuracy of care delivery.[19] These complications are mainly caused by the low social awareness of the ambulance and its procedures. A study by Modi et al. (2018)[20] agreed with our findings; they found that there is a general lack of awareness among people regarding the “emergency line” scope and services in India. Furthermore, research has mentioned that the contribution of primary healthcare providers and family physicians’ advanced promotion of social awareness would reduce social ignorance toward emergency procedures.[21] However, it is clear that raising social awareness regarding this topic and restricting policies and regulations can reduce those complications and ease the procedures of the Red Crescent paramedics.[22]

Nevertheless, the majority of participants in this study expressed concern about the long distance and the road quality as Saudi Arabia is a considerably large country.[23] The participants highlighted issues surrounding the lack of Red Crescent centers. Similarly, studies have found a high demand at Red Crescent centers, especially around rural areas.[24] Furthermore, the paramedics brought up the continuous obstacles that they face, including long roads, and the pitfalls that they have to overcome, which affect their safe arrival at the hospital. The results have further shown that the occurrence of speed bumps on highways significantly affects the speed of arrival and increases the patients’ pain. Research has indicated that during ambulance transport, patients recognize vibrations, and the consequences are painful and at times disconcerting.[25] Furthermore, the study has identified additional factors affecting paramedics, including their physical health. The paramedics have explained that lifting people, especially when patients are obese, is considered a factor that causes distress in their work. Moreover, other studies have agreed with these findings as they stated that physical tasks and demands of the role, such as managing heavy patients, equipment, and uncomfortable positions, are significantly related to physical injury due to the unpredictable environment.[26] Additionally, participants have also reported concern about their mental well-being. Current research shows that paramedics face significantly higher rates of depression, anxiety exhaustion, sleep deprivation, post-traumatic stress disorder, and suicide than the general population.[27] Furthermore, studies have shown that physical well-being is significantly correlated with the mental well-being of paramedics.[28] A study was performed to examine the mental health of Saudi and Australian paramedics; the results showed that Saudi paramedics report lower physical functioning than Australian paramedics.[29] Therefore, this is a serious matter that should be investigated and advanced to increase the effectiveness of paramedics and reduce distress as much as possible. Nevertheless, this study invested in finding issues influencing the performance of the Red Crescent paramedics and found that increasing social awareness, advancing policies and procedures, and developing Red Crescent centers can enhance their performance and create a better future for health services.

Conclusion

This study investigated the factors affecting Red Crescent paramedics and the delivery of health care services. This study offers advantageous lessons for policymakers, experts, and academics surrounding challenges that the Red Crescent paramedics in Bisha experience when implementing their service. The main challenge identified was the lack of awareness in society, especially when dealing with distressing situations, the absence of proficiency, and the lack of information when calling for an ambulance. Furthermore, the paramedics also expressed concerns when dealing with the surrounding crowds. Therefore, the need to educate and promote proper behavior when dealing with distressing situations was identified. Moreover, the participants in this study also highlighted the need to develop appropriate roads for ambulance services to reduce road obstacles and ease the trip of the patients to hospitals. Furthermore, the need for more Red Crescent centers was identified.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Contributions

- Research idea and study design: Alsaeed, S & Alkarani A;
- Data acquisition: Alsaeed, S;
- Data analysis/interpretation: Alsaeed, S & Alkarani A
- Supervision: Alkarani A.
- Drafting the work: Alsaeed, S & Alkarani, A.
- Final approval of the version: Alkarani A & Alsaeed, S.

Key messages

Together with the existing literature, this study addresses the factors that limit the paramedics’ critical occupation. The findings will help policymakers in creating policies to improve the quality of ambulance services in the region.

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Conflicts of interest

There are no conflicts of interest.

References

1. Meadley B, Caldwell J, Perraton L, Bonham M, Wolkow A, Smith K, et al. The health and well-being of paramedics: A professional priority. Occup Med (Lond) 2020;70:149-51.
2. Saudi Red Crescent Authority. Saudi Arabia: Annual report [updated 2021]. Available from: https://www.srca.org.
3. Saudi Red Crescent Authority. Saudi Arabia: About the Authority [updated 2021]. Available from: https://www.srca.org.sa/en/About/About. [Last accessed on 2021 Apr 17].

4. Ministry of Health. Saudi Arabai: MOH Statistics and Indications [updated 2021 May 26]. Available from: https://www.moh.gov.sa/en/Ministry/Statistics/Pages/Traffic-accidents.aspx. [Last accessed on 2021 Jun 17].

5. Institute for Health Metrics and Evaluation. Saudi Arabia: Measuring what matters [updated 2020]. Available from: http://www.healthdata.org/saudi-arabia. [Last accessed on 2021 Apr 19].

6. Ibanez B, James S, Agewall S, Antunes M, Bucciarelli-Ducci C, Bueno H, et al. 2017 ESC guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: The task force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European society of cardiology (ESC). Eur Heart J 2018;39:119‑77.

7. Mahama M, Kenu E, Bando D, Zakariah A. Emergency response time and pre-hospital trauma survival rate of the national ambulance service, Greater Accra (January-December 2014). BMC Emerg Med 2018;18:33.

8. Doty MM, Tikkanen R, Shah A, Schneider EC. Primary care physicians' role in coordinating medical and health-related social needs in eleven countries. Health Aff (Millwood) 2020;39:115‑23.

9. Anderson N, Robinson J, Moeke-Maxwell T, Gott M. Paramedic care of the dying, deceased and bereaved in Aotearoa, New Zealand. Prog Palliat Care 2021;2:84‑90.

10. Bhagchandani K, Augustine D. IoT based heart monitoring and alerting system with cloud computing and managing the traffic for an ambulance in India. Int J Electr Comput Eng 2019;6:5068‑74.

11. Borowicz A, Nadolny K, Bujak K, Ciesla D, Gąsior M, Hudzik B. Paramedic versus physician-staffed ambulances and prehospital delays in the management of patients with ST-segment elevation myocardial infarction. Cardiol J 2021;28:110‑7.

12. Lawn S, Roberts L, Willis E, Couzner L, Mohammadi L, Goble E. The effects of emergency medical service work on the psychological, physical, and social well-being of personnel: A systematic review of qualitative research. BMC Psychiatry 2020;20:348.

13. Myers J, Powell D, Aldington S, Sim D, Psirides A, Hathaway K, et al. The impact of fatigue on the non-technical skills performance of critical care air ambulance clinicians. Acta Anaesthesiol Scand 2017;61:1305‑13.

14. Lecknes H, Aartun E, Andersson H, Christiansen M, Granberg T. Strategic ambulance location for heterogeneous regions. Eur J Oper Res 2017;260:122‑33.

15. Azizan M, Go T, Hatta W, Lim C, Teoh S. Comparison of emergency medical services delivery performance using maximal covering location and gradual cover location problems. Int J Electr Comput Eng 2017;5:2791‑7.

16. Booker M, Purdy S, Shaw A. Seeking ambulance treatment for 'primary care' problems: A qualitative systematic review of patient, carer and professional perspectives. BMJ Open 2017;7:e016832.

17. Alanazi A. Emergency medical services in Saudi Arabia: A study on the significance of paramedics and their experiences on barriers as inhibitors of their efficiency. Int J Appl Basic Med Res 2012;2:34‑7.

18. Oguro N, Suzuki R, Yajima N, Sakurai K, Wakita T, Hall MA, et al. The impact that family members' health care experiences have on patients' trust in physicians. BMC Health Serv Res 2021;21:1122.

19. Morley C, Unwin M, Peterson M, Stankovich J, Kinsman L. Emergency department crowding: A systematic review of causes, consequences and solutions. PLoS One 2018;13:e0203316.

20. Modi P, Solanki R, Nagdev T, Yadav P, Bharucha N, Desai A, et al. Public awareness of the emergency medical services in Maharashtra, India: A questionnaire-based survey. Cureus 2018;10:e3309.

21. Toksöz I, Ikizceli I, Koyuncu M, Biberoğlu S, Cakmak F, Öztürk D. Family practice awareness in patients applying to the emergency department and receiving a green triage code. Ankara Med J 2020;20:416‑25.

22. Borg K, Wright B, Sannen L, Dumas D, Walker T, Bragge P. Ambulances are for emergencies: Shifting attitudes through a research-informed behaviour change campaign. Health Res Policy Syst 2019;17:31.

23. General Authority for Statistics. Saudi Arabia: General Information about the kingdom of Saudi Arabia [updated 2021]. Available from: https://www.stats.gov.sa/en/4025. [Last accessed on 2021 Apr 12].

24. Moafa H, Van-Kuijk S, Alqahtani D, Moukhyer M, Haak H. Disparities between rural and urban areas of the central region of Saudi Arabia in the utilization and time-centeredness of emergency medical services. Int J Environ Res Public Health 2020;17:7944.

25. Blaxter L, Yeo M, McNally D, Crowe J, Henry C, Hill S, et al. Neonatal head and torso vibration exposure during inter-hospital transfer. Proc Inst Mech Eng H 2017;231:99‑113.

26. Sheridan S. Paramedic health status, fitness and physical activity: A study on the significance of paramedics and their experiences on barriers as inhibitors of their efficiency. Int J Appl Basic Med Res 2012;2:34‑7.

27. Hansink M, van der Meulen E, van der Heijden J, van der Kolk M, Huisman S, van der Laarse M, et al. Protecting the mental wellness of those behind enemy lines. BJPsych 2021;218:75‑6.

28. Blaxter L, Yeo M, McNally D, Crowe J, Henry C, Hill S, et al. Neonatal head and torso vibration exposure during inter-hospital transfer. Proc Inst Mech Eng H 2017;231:99‑113.

29. Sheridan S. Paramedic health status, fitness and physical tasks: A review of the literature. AJP 2019;16.

30. Awas S, Martins R, Khan M. Paramedics in pandemics: Protecting the mental wellness of those behind enemy lines. BJPsych 2021;218:75‑6.

31. Khan W, Jackson M, Kennedy G, Alslamah A, Alsuwayeh M, Jacksmn S. Sleep and mental health among paramedics from Australia and Saudi Arabia: A comparison study. Clocks Sleep 2020;2:246‑57.