

# Saudi Arabia's emergency medical Technician: Features and distribution

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**Abstract - Background:** Emergency medical services (EMS) are a vital gateway to the healthcare system on a global scale. Gaining knowledge on the EMS workforce's professional, educational, and demographic characteristics is crucial. **Aim:** Examining the characteristics and distribution of the EMS workforce as well as the sociodemographic and educational backgrounds of Saudi Arabia's certified EMS providers are the goals. **Methods:** We included all Saudi Arabian EMS providers with licenses to the SCFHS database. **Sociodemographic data, certification status, and employment associations were gathered and organized.** **Result:** Most graduates with an EMT diploma or less come from private, military-affiliated, overseas, and SRCA institutions and academies. On the other hand, the majority of public college graduates have a bachelor's degree. **Conclusion:** Achieving a suitable EMS provider-to-population ratio depends on the EMS workforce growing, particularly the hiring of more females and EMS experts relative to EMS technicians and health aides.

**Keywords - Emergency medical Technician, Features, Distribution, Saudi Arabia**

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## INTRODUCTION

Emergency Medical Technicians (EMTs) and paramedics are the primary members of staff that respond to a medical emergency that takes place outside of a hospital setting. In situations like these, the primary objective of emergency medical services, which are more often referred to as EMS, is to provide care to victims. When it comes to time-sensitive or urgent medical concerns that take place outside of hospitals, the area of emergency medical services (EMS) is generally acknowledged as being the first line of defense. The field of emergency medicine is one that is still in its infancy in the Kingdom of Saudi Arabia, despite the fact that the Emergency Medical Services (EMS) was established there in 1934. In 2005, in order to formally recognize emergency medicine as a field of expertise in Saudi Arabia, the Saudi Board of Emergency Medicine was founded. [2, 3] The Saudi Red Crescent Authority (SRCA) is the body that is responsible with the management of the numerous emergency medical services that are provided across the nation. The Saudi public is able to get access to the service by dialing the number 1997, which is a number that is given by a third party which is utilized. [4] The Emergency Medical Services (EMS) receive funding from the government, and the State and Local Regulatory Agencies for Ambulance Services (SRCA) estimated that there were more than 2000 ambulances in service throughout the nation as

of the year 2016. [5, 6] At the moment, the Emergency Medical Services (EMS) model in Saudi Arabia is supervised by the Ministry of Health, which is responsible for both public and private hospitals. There are few opportunities for participation by the private sector in prehospital settings dealing with outpatient patients.

The practice of emergency medicine in the nation is characterized by a number of obstacles, one of which is the provision of emergency medical care that is less than ideal, as stated by the results of a research that was carried out by Khattab et al. [7]. In addition, the provision of emergency care is made more challenging as a result of an excessive demand in certain regions, a dearth of suitable medical supplies and medications, and a lack of paramedical experts of both sexes. [8] A number of women have recently joined the field of emergency medical services (EMS), with the goal of improving and bolstering the EMS systems at the hospitals in where they are already employed around the nation. In the past, men have been the only ones in SRCA in the Kingdom when it comes to the delivery of EMS; however, in recent years, some female paramedics have entered the sector. Historically, males have been the only ones in SRCA in the Kingdom when it comes to the delivery of EMS. This change was made in line with Saudi Arabia's Vision 2030, which lays a high focus on the need of hiring

more women to work as paramedics in the country's hospitals. This modification is in conformity with that requirement.<sup>[9,10]</sup>

Acute medical treatment for many major crises, such as allergic reactions, drug and chemical poisoning, fractures from accidents, heart or respiratory failure, child abuse, and other disorders, is provided by emergency medical services<sup>[11]</sup>. The emergency medical services team is made up of paramedics, firefighters, ambulance drivers, and experts in emergency medical services. Three categories make up the degree of services: advanced life support, care provided by medical experts, and basic life support. It is unusual that doctors and nurses are available to give pre-hospital emergency treatment. In addition to the paramedics, other individuals who handle many crises include the technician and the driver<sup>[12]</sup>.

The qualified medical personnel who attend to people in a medical emergency are known as paramedics. In addition to inpatient care, they provide evaluation services in addition to care and therapy. The employing authority decides how much paramedic practice is allocated up to the designated care level. There are many degrees of paramedic practice. The paramedics get the necessary training for the duties they must do. However, they may encounter many challenges and impediments in carrying out their responsibilities<sup>[13]</sup>.

As the first point of contact for patients receiving pre-hospital emergency treatment, emergency medical services (EMS) are essential to the functioning of the healthcare system as a whole. While various studies have examined the demographic profiles of EMS patients for epidemiological purposes<sup>[14]</sup>, the professional and demographic profiles of EMS providers are crucial for a variety of reasons, including benchmarking, research development specifically for the EMS industry, and comprehension of competency perception. An illustration of this can be found in the study<sup>[15]</sup>, which calculated the likelihood of passing the national certification exam for paramedics in the US and discovered significant relationships between exam success and national program accreditation, lead instructor qualification, educational background, and demographics. In<sup>[16]</sup>

Research on the professional and demographic characteristics of the emergency medical services (EMS) personnel is often lacking, particularly in Saudi Arabia. Despite the fact that businesses often gather data about their personnel, this information is frequently withheld, particularly when it comes to nationality, gender, age, education, experience, and medical specialization. Therefore, it is also unclear how EMS stakeholders see the needs of the educational core competence framework.<sup>[17]</sup>

As first responders to medical emergencies, Saudi Arabia's Emergency Medical Technicians (EMTs) are essential to the nation's healthcare system. EMTs are

prepared to manage a wide variety of medical problems since they have received specialized training and are trained to act as the first responders to crises. The purpose of this article is to examine the characteristics and geographic distribution of EMTs in Saudi Arabia and to emphasize their importance to the nation's healthcare system.

### **Features of Saudi Arabia's Emergency Medical Technicians:**<sup>[17]</sup>

**Specialized Training:** EMTs in Saudi Arabia undergo rigorous and specialized training programs to equip them with the necessary skills to handle medical emergencies. This training includes comprehensive courses in basic life support, advanced cardiac life support, trauma management, and other critical medical procedures.

**Advanced Medical Equipment:** EMTs in Saudi Arabia are provided with state-of-the-art medical equipment to ensure they can efficiently assess, stabilize, and transport patients to medical facilities. This includes defibrillators, oxygen delivery systems, advanced airway management devices, and other essential tools needed for effective emergency care.

**Multidisciplinary Expertise:** EMTs possess a diverse skill set that enables them to handle a wide range of medical emergencies, including trauma, cardiac arrest, respiratory distress, and other critical conditions. Their expertise extends to administering emergency medications, providing pre-hospital care, and effectively communicating with medical professionals in hospital settings.

**Rapid Response Capabilities:** Saudi Arabia's EMTs are trained to respond quickly to emergency calls, ensuring that timely medical intervention is provided to those in need. Their ability to assess and stabilize patients at the scene of an emergency significantly increases the chances of positive patient outcomes and reduces the risk of complications during transportation to healthcare facilities.

### **Distribution of Saudi Arabia's Emergency Medical Technicians:**<sup>[18]</sup>

**Urban Centers:** EMTs are predominantly concentrated in major urban centers across Saudi Arabia, where population density and the frequency of emergencies necessitate a robust emergency response infrastructure. Cities such as Riyadh, Jeddah, and Dammam have well-established networks of EMTs stationed strategically to ensure prompt response times.

**Rural Areas:** Efforts are being made to extend the reach of EMT services to rural and remote areas of the country. Mobile medical units and ambulances equipped with EMT personnel are deployed to

ensure that even residents in remote regions have access to timely emergency medical care.

**Integrated Healthcare System:** Saudi Arabia's EMTs are integrated into the broader healthcare system, collaborating closely with hospitals, clinics, and other medical facilities. This integration facilitates seamless coordination between pre-hospital emergency care and specialized medical treatment, thereby ensuring a continuum of care for patients.

Saudi Arabia's Emergency Medical Technicians are indispensable components of the country's healthcare infrastructure, providing timely and effective emergency medical care to the population. With their specialized training, advanced medical equipment, and rapid response capabilities, EMTs play a crucial role in saving lives and improving patient outcomes. The strategic distribution of EMT services, both in urban centers and rural areas, underscores the commitment of the Saudi Arabian healthcare system to ensure equitable access to emergency medical care for all its citizens.

Therefore, the purpose of this research is to investigate the sociodemographic and educational traits of Saudi Arabia's licensed EMS providers as well as the characteristics and distribution of the EMS workforce.

**METHODS**

**Design of the Study**

This cross-sectional research looked at the professional and sociodemographic characteristics of Saudi Arabia's licensed EMS providers. The Saudi Commission for Health Specialties (SCFHS) provided the data.

**Participants**

We gathered their employment connections, type of academic institution from which they graduated and received their SCFHS classification, and sociodemographic data. Age, gender, clinical profession categorization, and academic qualification were used to categorize the licensed emergency medical services providers. Based on the type of academic institution from which each licensed EMS provider graduated, the various academic degrees they held were further articulated. Additionally, a more thorough analysis of licensed EMS professionals was conducted based on their employer, affiliation, and practice location.

**Instrumentation**

The SPECS instrument's professional profile aspect, which included seven demographic questions about gender, age, qualification, experience, medical discipline, professional role, and nationality, is the only component directly related to this study.

**Data Analysis**

With SAS version 9.4, descriptive statistics utilizing percentages and frequencies were quantified three times. The five validated SPECS model factors were compared to the independent professional variables.

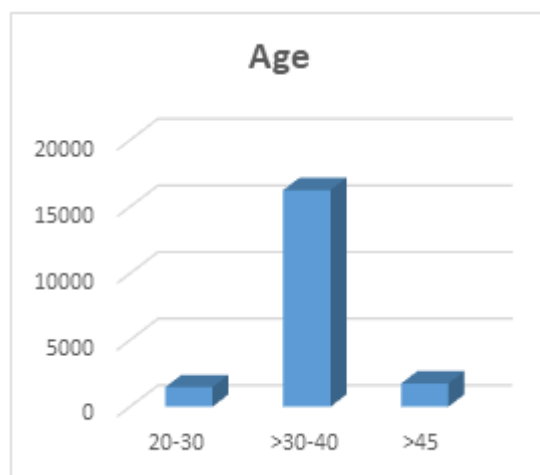
**RESULTS**

There were 19477 authorized EMS providers in Saudi Arabia as of November 25, 2022.

**Age of the EMS providers**

The study's conclusions show that the majority (91.1%) were between the ages of 25 and 45.

Age	No. of Respondent	Percentage
>20-30	1475	7.6
>30-40	16257	83.5
>45	1745	9



**Figure 1: Age of the EMS providers**

The percentage of female EMS professionals was just 3.46%.

Gender	No. of Respondent	Percentage
Male	19477	96.54
Female	675	3.46

Male	18795	96.5
Female	682	3.5

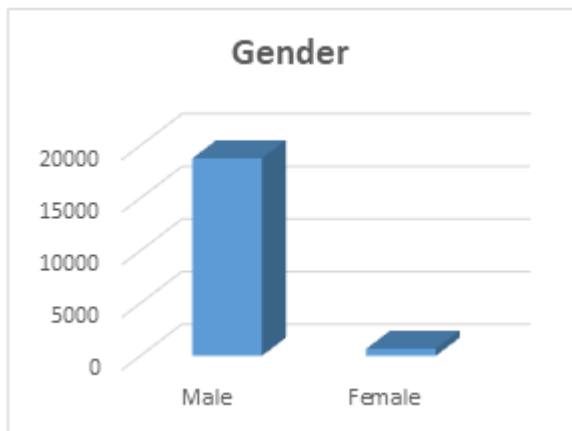


Figure 2: Gender of the EMS providers

The SCFHS classifies around 76% of EMS professionals as technicians or health assistants.

Table 3: Clinical career classification of the EMS providers		
Clinical career classification	No. of Respondent	Percentage
Health assistant	9933	51
Technician	6427	33
Specialist	3117	16

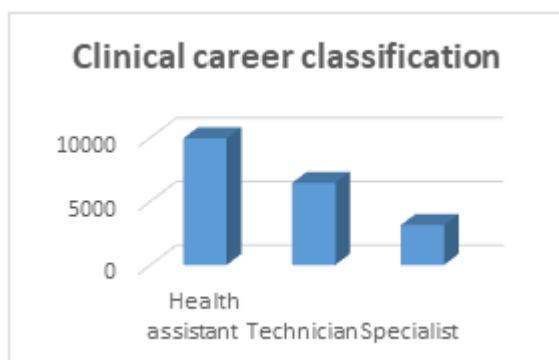


Figure 3: Clinical career classification of the EMS providers

Only 3.8% of EMS providers have a postgraduate degree, whereas the vast majority have only an

emergency medical technician (EMT) accreditation at the undergraduate level.

Table 4: Academic qualifications of the EMS providers		
Academic qualifications	No. of Respondent	Percentage
Basic EMT Training	2707	13.9
Diploma	11608	59.6
Bachelor of Science	4362	22.4
Master of Science	740	3.8
Doctor of Philosophy	58	0.3



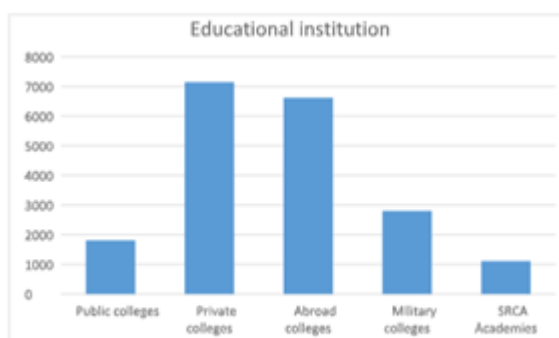
Figure 4: Academic qualifications of the EMS providers

The majority of those who have graduated from private, military-affiliated, overseas, and SRCA colleges and academies have earned an EMT diploma or lower. This percentage is more than fifty percent. On the other hand, the majority of people who earned their degrees from public universities have a bachelor's degree.

Table 5: Educational institution of the EMS providers		
Educational institution	No. of Respondent	Percentage
Abroad	6622	34



colleges		
Military colleges	2804	14.4
Private colleges	7148	36.7
Public colleges	1811	9.3
SRCA Academies	1110	5.7



**Figure 5: Educational institution of the EMS providers**

## CONCLUSION

In Saudi Arabia, the number of persons who are employed in emergency medical services (EMS) has been steadily growing over the last ten years. However, in view of Saudi Arabia's 2030 goal for the reform of the health sector, it has become an essential problem to increase the number of Saudi women joining the emergency medical services workforce and to recruit more EMS professionals rather than EMS technicians and health assistants.

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