

## Understanding First Aid: An Insight into the Knowledge and Attitudes of Different Saudi Medical Specialties towards Emergency Response

Saleh Nashat Al Otaibi<sup>1</sup>, Qamar Khojah<sup>2</sup>, Doaa Al Buraikan<sup>3</sup>, Sarrah Bakr Bin Sadiq Albakri<sup>4</sup>, Munira Mohammed Abdulaziz Al-Hamad<sup>5</sup>, Majdi Mohammed Alosaymi<sup>6</sup>, Rabiah manaa almutiri<sup>7</sup>, Mohammed Abdullah Alsugairan<sup>8</sup>, Mamdouh Mislal Almutairi<sup>9</sup>, Yasir Mofareh Alonaydhil<sup>10</sup>, Khaled Ahmed Mohammed Hazzazi<sup>11</sup>, Fahad Madlul Alrakhis<sup>12</sup>, Yousef Saud Alotaibi<sup>13</sup>, Abdulaziz ahmed alrashidi<sup>14</sup>, Bandar Eiddan Al Harthi<sup>15</sup>

<sup>1</sup>Radiology Specialist, Family Medicine- Ngha-Cr, Saudi Arabia

<sup>2</sup>Family Medicine, King Abdulaziz Medical City, Saudi Arabia, Email: Qkhojah@gmail.com

<sup>3</sup>Family medicine, NGHHA Riyadh, Saudi Arabia

<sup>4</sup>Consultant Family medicine, King Abdulaziz Medical City - Riyadh, Saudi Arabia

<sup>5</sup>Nursing technician, Ministry of Health Branch in Riyadh, Saudi Arabia, Email: mmhamad@moh.gov.sa

<sup>6</sup>Health Information Technician, King Khalid Medical City of the National Guard in Taif, Saudi Arabia

<sup>7</sup>Health informatics technician, Al-Shabikiyah Health Center, Saudi Arabia

<sup>8</sup>Medical record, NGHHA - Dirab PHC, Saudi Arabia

<sup>9</sup>Emergency Medical Services, Ministry of National Guard, Saudi Arabia

<sup>10</sup>Emergency Medical Services, Ministry of National Guard, Saudi Arabia

<sup>11</sup>Medical Assistant, Ministry of National Guard, Saudi Arabia

<sup>12</sup>Social Specialist, Rafha General Hospital, Saudi Arabia

<sup>13</sup>Health information technician, Altaif, Saudi Arabia

<sup>14</sup>Pharmacist, Ministry of national guard, Saudi Arabia, Email: Alqahtaniai@MNGHA.MED.SA

<sup>15</sup>Pharmacy Technician, Taif Iskan Center, Saudi Arabia

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### ABSTRACT

First aid is a crucial skill set that can save lives in emergency situations. The knowledge and attitudes of medical professionals towards first aid greatly influence the quality of emergency response and patient outcomes. This paper explores the level of first aid knowledge, attitudes, and practices among different medical specialties in Saudi Arabia, highlighting gaps and areas for improvement. The study examines various first aid scenarios such as burns, choking, drowning, anaphylaxis, and epistaxis, evaluating the preparedness of healthcare professionals in handling these emergencies. The findings emphasize the need for continual first aid training and education to enhance emergency response effectiveness across various medical disciplines.

**Keywords:** improvement, choking, drowning, anaphylaxis, epistaxis.

### INTRODUCTION

First aid is the immediate care provided to an injured or ill person before professional medical assistance is available. It plays a critical role in reducing mortality and morbidity in emergencies such as cardiac arrest, anaphylaxis, choking, burns, and trauma (Singletary et al., 2015). In Saudi Arabia, healthcare professionals from different medical specialties encounter emergencies in various settings, making their first aid knowledge and attitudes essential for effective patient care.

Previous studies have assessed first aid knowledge among parents (Al-Johani, Sabor & Aldubai, 2018; Ibrahim & Al-Tawil, 2015), caregivers (Hall-Parkinson, Tapper & Melbourne-Chambers, 2015), and the general population (Abu Khizanah et al., 2023). However, limited research has examined the first aid competency of medical professionals from different specialties. This study aims to bridge this gap by evaluating first aid awareness, preparedness, and attitudes among medical professionals in Saudi Arabia.

### Importance of First Aid Knowledge in Medical Specialties

First aid knowledge is an essential component of medical education and practice, regardless of specialty. In emergency situations, the immediate response of healthcare professionals can significantly impact patient outcomes. While some specialties, such as emergency medicine and surgery, are naturally inclined towards handling acute medical situations, others may not frequently encounter emergencies but still require fundamental first aid skills. The importance of first aid knowledge extends across all medical disciplines as it enhances patient safety, improves survival rates, and ensures a swift and appropriate response in critical situations.

#### 1. The Role of First Aid in Patient Safety and Survival

Medical professionals are often the first responders in clinical and non-clinical settings. Immediate intervention in cases of cardiac arrest, severe bleeding, anaphylaxis, or choking can mean the difference between life and death. Studies have shown that prompt administration of first aid, such as cardiopulmonary resuscitation (CPR) or the Heimlich maneuver, significantly increases survival rates (Singletary et al., 2015). Even in non-hospital settings, healthcare professionals may encounter emergencies in public places, clinics, or even their own homes, highlighting the necessity of first aid training across all specialties.

#### 2. Specialty-Specific First Aid Requirements

Each medical specialty encounters unique emergency situations, making tailored first aid training crucial. For example:

- **Emergency Medicine & Anesthesiology:** These professionals are highly trained in airway management, CPR, and trauma care. They frequently deal with life-threatening emergencies and require advanced first aid skills.
- **General Practitioners & Family Medicine Physicians:** As primary care providers, these professionals often address acute medical conditions in outpatient settings. They must be proficient in recognizing and managing conditions such as anaphylaxis, seizures, and asthma attacks.
- **Pediatricians:** Pediatric emergencies, such as choking, febrile seizures, and allergic reactions, require specialized first aid knowledge. Studies indicate that pediatricians play a crucial role in educating parents about first aid for children (Al-Johani, Sabor & Aldubai, 2018).
- **Dentists:** Dental practitioners frequently encounter syncope, allergic reactions, and airway emergencies in their clinics. Their ability to perform basic life support (BLS) and manage medical crises is essential.
- **Psychiatrists:** Though not directly involved in emergency care, psychiatrists may need to manage acute crises such as suicide attempts, drug overdoses, or violent patient behavior. Knowledge of first aid techniques like wound care and CPR can be life-saving.
- **Dermatologists & Radiologists:** These specialists may not frequently face emergencies but should be prepared to respond if a patient collapses or experiences an allergic reaction during treatment.
- First aid knowledge should not be confined to emergency medical professionals alone. Each specialty has unique risks, and healthcare workers must be equipped to handle emergencies that may arise in their respective fields.

#### 3. The Need for Continuous First Aid Training

Despite the critical importance of first aid, studies have shown that knowledge and skills deteriorate over time if not regularly reinforced (Tomruk et al., 2007). Many healthcare professionals, particularly those in non-emergency specialties, may not receive adequate refresher training. Implementing periodic first aid training and certification requirements can help ensure that all medical professionals maintain their competencies and confidence in emergency response.

### Knowledge and Attitudes of Saudi Medical Professionals Towards First Aid

#### Medical Specialties and First Aid Preparedness

The level of first aid preparedness among medical professionals in Saudi Arabia varies significantly depending on their specialty, training, and experiences. While emergency physicians, anesthesiologists, and paramedics are well-trained in life-saving procedures, those in non-emergency specialties may have limited exposure to first aid scenarios. Understanding these variations is essential for identifying gaps in knowledge and improving first aid education among healthcare providers.

##### 1. Emergency Medicine Specialists and Paramedics

Emergency physicians, paramedics, and anesthesiologists are the most proficient in first aid due to their specialized training and frequent exposure to critical situations. These professionals are well-versed in CPR, airway management, trauma care, and advanced life support techniques. They also play a key role in training other medical professionals and the general public in first aid procedures (Singletary et al., 2015).

## 2. General Practitioners and Family Medicine Physicians

General practitioners (GPs) and family medicine physicians often serve as the first point of contact for patients experiencing medical emergencies. Their knowledge of first aid is essential for stabilizing patients before transferring them to specialized care. However, studies indicate that while most GPs have basic first aid knowledge, their skills may not always be up to date (Markenson et al., 2010). Regular training sessions are necessary to maintain proficiency.

## 3. Pediatricians and First Aid Knowledge

Pediatricians frequently encounter medical emergencies such as febrile seizures, choking, and allergic reactions in children. Their role extends beyond treatment to educating parents and caregivers on basic first aid measures. Research conducted in Saudi Arabia has shown that pediatricians play a vital role in improving first aid awareness among parents (Ibrahim & Al-Tawil, 2015). However, gaps in their knowledge regarding specific first aid techniques, such as burn management and anaphylaxis treatment, highlight the need for continuous education.

## 4. Dentists and First Aid in Dental Practice

Dental professionals may not routinely deal with medical emergencies, but they must be prepared for situations such as syncope, allergic reactions, and airway obstructions. Studies indicate that dental practitioners in Saudi Arabia often lack confidence in handling medical emergencies, emphasizing the need for mandatory first aid training in dental education (Almontasheri et al., 2024).

## 5. Non-Emergency Specialties: Psychiatrists, Dermatologists, and Radiologists

Medical professionals in specialties such as psychiatry, dermatology, and radiology are less likely to encounter life-threatening emergencies in their daily practice. However, they may still face situations where immediate first aid intervention is required. For example, a psychiatrist may need to manage a patient experiencing a drug overdose, or a radiologist may need to assist a patient who suffers a reaction to contrast dye. Despite the lower likelihood of encountering emergencies, all healthcare professionals must be equipped with basic first aid knowledge.

## 6. Confidence and Willingness to Perform First Aid

Confidence in performing first aid procedures is strongly linked to training and experience. Studies in Saudi Arabia indicate that many healthcare professionals hesitate to administer first aid due to fear of making mistakes or causing harm (Abu Khizanah et al., 2023). This reluctance underscores the importance of simulation-based training and hands-on practice to build confidence and improve emergency response capabilities.

## 7. Barriers to First Aid Preparedness

Several factors contribute to gaps in first aid preparedness among Saudi medical professionals:

- **Lack of standardized training:** First aid training is not uniformly integrated into all medical specialties, leading to inconsistencies in knowledge levels.
- **Skill deterioration over time:** Without regular practice, first aid skills can decline, reducing confidence and effectiveness in emergency situations (Tomruk et al., 2007).
- **Limited exposure to emergencies:** Professionals in non-emergency fields may not regularly encounter critical situations, making it difficult to retain first aid knowledge.

## 8. The Need for a Unified First Aid Training Program

To ensure that all medical professionals in Saudi Arabia are adequately prepared for emergencies, a unified first aid training program should be implemented. This program should:

- Be mandatory for all healthcare professionals, regardless of specialty.
- Include periodic refresher courses to reinforce first aid skills.
- Utilize simulation-based training for hands-on practice.
- Encourage interdisciplinary collaboration to share first aid expertise across specialties.

## Challenges in First Aid Implementation Among Medical Professionals

### Lack of Standardized Training

Medical professionals in Saudi Arabia receive varying degrees of first aid training depending on their specialty. Standardized first aid training across all medical disciplines is essential to ensure preparedness.

### Confidence & Attitude Towards Emergency Response

Confidence in administering first aid is directly linked to training and experience. Many healthcare professionals hesitate to intervene due to fear of making mistakes, emphasizing the need for hands-on training (Hall-Parkinson et al., 2015).

### Public vs. Professional First Aid Knowledge

While healthcare professionals are expected to have superior first aid knowledge, studies show that some non-medical individuals, such as parents and teachers, may have comparable knowledge in specific areas (Al-Johani, Sabor & Aldubai, 2018; Habeeb & Alarfaj, 2020).

## **Strategies to Improve First Aid Knowledge Among Medical Professionals**

Ensuring that all medical professionals, regardless of their specialty, possess adequate first aid knowledge is critical for improving emergency response outcomes. Several strategies can be implemented to enhance first aid education and preparedness among healthcare workers in Saudi Arabia.

### **1. Mandatory First Aid Training in Medical Education**

One of the most effective ways to improve first aid knowledge among medical professionals is by integrating standardized first aid training into medical education. Medical schools and residency programs should include mandatory first aid courses that cover essential topics such as cardiopulmonary resuscitation (CPR), burn management, choking response, trauma care, and anaphylaxis treatment. These courses should be tailored to each specialty, ensuring that all healthcare professionals receive relevant training based on their field of practice.

### **2. Regular Workshops and Simulation-Based Training**

Training in first aid should not be a one-time event but rather a continuous process. Regular workshops, refresher courses, and hands-on simulation training can help medical professionals retain their first aid skills over time. Simulation-based training, using high-fidelity mannequins and real-life scenarios, allows healthcare workers to practice first aid interventions in a controlled environment. Studies have shown that hands-on practice significantly improves skill retention and confidence in emergency situations (Tomruk et al., 2007).

### **3. Interdisciplinary Collaboration and Knowledge Sharing**

Another effective strategy is fostering interdisciplinary collaboration between healthcare professionals from different specialties. Emergency physicians, anesthesiologists, and paramedics, who frequently deal with critical emergencies, can share their knowledge and expertise with colleagues in non-emergency fields such as dermatology, psychiatry, and radiology. Hospitals and medical institutions should encourage cross-specialty training sessions where professionals can learn from each other's experiences and best practices.

### **4. Certification and Recertification Programs**

To maintain a high level of proficiency in first aid, periodic certification and recertification programs should be implemented. The Saudi Commission for Health Specialties (SCFHS) and other regulatory bodies can mandate healthcare professionals to renew their first aid certifications every few years through accredited training programs. This ensures that professionals stay up to date with the latest first aid guidelines and techniques.

### **5. Public Awareness and Community Engagement**

Medical professionals play a crucial role in educating the public about first aid. Hospitals and healthcare centers should organize community outreach programs where doctors, nurses, and paramedics teach basic first aid techniques to the general public, including parents, teachers, and caregivers. This not only enhances public preparedness but also reinforces medical professionals' own first aid knowledge through teaching.

### **6. Institutional Support and Funding**

Healthcare institutions should allocate resources and funding to support first aid training initiatives. Providing access to modern training facilities, simulation labs, and online learning platforms can significantly enhance the effectiveness of first aid education. Institutions should also encourage healthcare workers to participate in international first aid training programs and conferences to stay updated on best practices.

## **The Role of Technology in Enhancing First Aid Training**

Technology has revolutionized medical education, making it easier and more effective for healthcare professionals to acquire and retain first aid knowledge. Digital tools, e-learning platforms, and simulation-based technologies offer innovative ways to improve first aid training.

### **1. E-learning and Online Training Modules**

The widespread availability of online learning platforms allows medical professionals to access first aid training courses at their convenience. E-learning modules provide interactive content, including videos, quizzes, and case studies, which enhance understanding and retention of first aid concepts. Platforms such as Learning Management Systems (LMS) can track progress and provide certifications upon course completion. Online training is particularly beneficial for busy healthcare professionals who may not have time to attend in-person workshops.

### **2. Virtual Reality (VR) and Augmented Reality (AR) Simulations**

Virtual reality (VR) and augmented reality (AR) are emerging as powerful tools in medical training. VR-based simulations create immersive environments where healthcare professionals can practice first aid procedures in realistic emergency scenarios. For example, VR simulations can recreate a cardiac arrest situation where trainees must perform CPR correctly within a time-sensitive setting. AR applications can provide step-by-step guidance on first aid techniques, overlaying instructions onto real-world objects. Studies indicate that VR and AR training enhance skill acquisition and improve confidence in handling emergencies (Tomruk et al., 2007).

### **3. Mobile Applications for First Aid Guidance**

Several mobile applications provide instant access to first aid guidelines and emergency response protocols. Apps developed by organizations such as the American Heart Association (AHA) and the Red Cross offer interactive tutorials, instructional videos, and emergency action plans. These apps can be valuable tools for

medical professionals, especially those in non-emergency specialties, as they provide quick reference guides in critical situations.

#### **4. Artificial Intelligence (AI) and Chatbots for First Aid Training**

Artificial intelligence (AI) can enhance first aid training by providing personalized learning experiences. AI-driven chatbots can simulate real-life emergency scenarios and assess a trainee's responses, providing immediate feedback and recommendations for improvement. AI-powered platforms can also analyze training data to identify knowledge gaps and suggest targeted learning modules.

#### **5. Gamification and Interactive Learning**

Gamification is another innovative approach to first aid training. By incorporating game elements such as quizzes, challenges, and rewards, medical professionals can engage in a more interactive and enjoyable learning experience. Simulation-based games can mimic real-world emergencies, requiring users to make quick decisions and apply first aid techniques in a virtual setting. This approach encourages active participation and improves knowledge retention.

#### **6. Telemedicine and Remote First Aid Consultation**

Telemedicine has expanded the accessibility of first aid education and guidance. In remote or underserved areas, healthcare professionals can use telemedicine platforms to provide first aid instructions to patients or caregivers before they reach a medical facility. Real-time video consultations allow doctors to guide individuals through first aid procedures, such as controlling bleeding or administering CPR, until emergency services arrive.

#### **7. Integration of Wearable Technology**

Wearable devices, such as smartwatches and biosensors, can assist in first aid situations by monitoring vital signs and detecting medical emergencies. For example, some smartwatches can detect irregular heart rhythms and alert healthcare professionals to potential cardiac events. Integrating wearable technology with first aid apps can provide real-time data on a patient's condition, enabling faster and more accurate decision-making.

#### **8. Social Media and Digital Awareness Campaigns**

Social media platforms can be leveraged to spread awareness about first aid and emergency response. Medical professionals can use social media to share educational videos, infographics, and live demonstrations of first aid techniques. Public health organizations can also conduct digital campaigns to promote first aid training and encourage participation in certification programs.

#### **Future Research Directions**

Future studies should explore the impact of first aid training interventions on medical professionals' confidence and effectiveness in emergency response. Additionally, assessing the long-term retention of first aid knowledge across different specialties can guide curriculum improvements.

#### **CONCLUSION**

First aid is an essential skill for all healthcare professionals, regardless of specialty. While emergency medicine specialists are well-equipped, others may lack adequate training. Standardized first aid education, regular skill reinforcement, and interdisciplinary collaboration are crucial for improving emergency response capabilities. By enhancing first aid knowledge and confidence among medical professionals, Saudi Arabia can ensure better patient outcomes in critical situations.

#### **REFERENCES**

1. Al Anazi, R., Mureh, B., Al Sulimani, H., Al Arfaj, G., Habeeb, K., & Kofi, M. (2022). Impact of health education on maternal knowledge regarding choking prevention and first aid in children, Riyadh, Saudi Arabia. *International Journal of Advanced Community Medicine*, 5, 35-40. <https://doi.org/10.33545/comed.2022.v5.i1a.223>
2. Al-Johani, A. A., Sabor, S., & Aldubai, S. A. (2018). Knowledge and practice of first aid among parents attending primary health care centers in Madinah City, Saudi Arabia, a cross-sectional study. *Journal of Family Medicine and Primary Care*, 7, 380-388. [https://doi.org/10.4103/jfmpe.jfmpe\\_64\\_18](https://doi.org/10.4103/jfmpe.jfmpe_64_18)
3. Almontasheri, A., Munshi, A., Alotaibi, S. F., Munshi, A., Alghamdi, A., & Hakami, S. A. (2024). Knowledge and awareness of anaphylaxis and anaphylactic shock among the general population of the Western Region of Saudi Arabia. *Cureus*, 16, e72683. <https://doi.org/10.7759/cureus.72683>
4. Asiri, M. N., Bakhiet, M. Y., Alzahrani, M. M., et al. (2023). Assessing the knowledge and practices of burn first aid in Al-Baha Region, Saudi Arabia. *Cureus*, 15, e42879. <https://doi.org/10.7759/cureus.42879>
5. Habeeb, K. A., & Alarfaj, G. (2020). Saudi parents' awareness regarding burn, choking, and drowning first aid in children. *Journal of Family Medicine and Primary Care*, 9, 1370-1375. [https://doi.org/10.4103/jfmpe.jfmpe\\_1064\\_19](https://doi.org/10.4103/jfmpe.jfmpe_1064_19)
6. Markenson, D., Ferguson, J. D., Chameides, L., et al. (2010). Part 17: first aid: 2010 American Heart Association and American Red Cross guidelines for first aid. *Circulation*, 122, S934-946. <https://doi.org/10.1161/CIRCULATIONAHA.110.971150>

7. Singletary, E. M., Charlton, N. P., Epstein, J. L., et al. (2015). Part 15: first aid: 2015 American Heart Association and American Red Cross guidelines update for first aid. *Circulation*, 132, S574-589. <https://doi.org/10.1161/CIR.0000000000000269>