

The Impact Of Weak Community Awareness On The Effectiveness Of The Saudi Red Crescent's Field Rescue And Ambulance Operations

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Abstract

This study aims to reveal the impact of poor community awareness on the effectiveness of field rescue and ambulance operations at the Saudi Red Crescent Authority, by surveying field workers' opinions on the behaviors and challenges they face while performing their duties. The study relied on the descriptive analytical approach, and a questionnaire consisting of 20 items was applied to a field sample of 200 field ambulance team workers. The results showed that community members' poor knowledge of basic first aid, delayed accident reporting, and poor handling of injury sites are among the most prominent challenges affecting the effectiveness of rescue operations. The results also showed that traffic congestion and poor traffic awareness are factors that hinder the rapid arrival of ambulances to accident sites. The study recommended intensifying awareness and training programs in schools, universities, and the media, and activating partnerships between the Red Crescent Authority and educational and community institutions to disseminate a culture of proper handling of field incidents and enhance the speed of response.

Keywords: Community awareness - Saudi Red Crescent - Rapid response - First aid - Community behavior - Public safety - Training - Health education.

Introduction

the impact of weak community awareness goes beyond the issue of delayed arrival to affect the quality of care provided in the field. The public's lack of awareness of basic first aid principles prevents them from providing proper initial intervention to the injured, such as stopping bleeding or performing In the critical moments before paramedics arrive, this exacerbates the severity of injuries. Furthermore, the community's lack of awareness of mass casualty response protocols leads to chaos on the ground and complicates paramedics' task of triaging and prioritizing treatment. Consequently, this lack of awareness transforms from a mere behavioral issue into a direct negative factor that reduces the efficiency of the emergency system and unintentionally contributes to increased morbidity and mortality rates⁸¹¹

Discussion

- **The nature of community awareness of the roles and responsibilities of the Saudi Red Crescent in field rescue and relief operations**

The Saudi Red Crescent Authority is the main pillar of the emergency and crisis response system within the Kingdom. The nature of this community awareness is usually characterized by being primarily ,procedural, as most individuals recognize the Authority's primary function as a medical emergency agency but some may lack a full understanding of the depth of responsibility placed on the shoulders of rescue and

field ambulance teams. In addition, this depth includes logistical challenges and the ongoing training that paramedics undergo, the vital role of volunteers, and the application of advanced medical protocols in difficult and dangerous field environments. The Authority's responsibility also includes spreading basic first aid culture among the public, such as how to initially deal with an injured person before the arrival of Specialized teams directly contribute to saving lives^{7,9}

Therefore, there is an urgent need to measure and improve community awareness of the Saudi Red Crescent's work in a more comprehensive manner. Raising awareness is not limited to simply introducing services, but also extends to instilling the concept of community partnership and individuals' commitment to not obstructing the work of field teams, respecting their efforts, and contributing to blood donation or volunteer initiatives. Developing awareness enhances the effectiveness of Red Crescent operations, ensures a supportive work environment for rescue teams, and embodies the entire community's commitment to supporting humanitarian and medical efforts, which ultimately aim to preserve the safety of every citizen and resident in the Kingdom^{6,7,11}

- The impact of poor community awareness on the effectiveness of paramedic response to accidents and mass casualties

Poor community awareness of the consequences of misbehavior at accident sites is one of the most important factors that reduce the effectiveness of paramedic responses. In mass casualty incidents, such as major collisions or disasters, unorganized gatherings, random parking of vehicles, or filming of the event can hinder the arrival of ambulance and rescue teams to the affected area. This delay, even if it is only a few minutes, can be critical, particularly in cases requiring rapid intervention to stop bleeding or clear the airway. Furthermore, a lack of understanding of the importance of clearing the path for emergency vehicles can significantly lengthen response times, reducing the chances of rescuing the injured. Another impact of poor community awareness on the effectiveness of the response is the absence of basic awareness of safety and first aid procedures, which leads to chaos at the accident sitesignificantly increasing the difficulty of paramedics. In mass casualty incidents, the effectiveness of the response depends on the implementation .of a triage system Prioritizing treatment and transport based on the severity of the injury is essential to saving the greatest possible number of lives. When untrained community members intervene, attempting to assist injured people in the wrong way or transporting them without coordinating with paramedics, this can exacerbate injuries or disrupt the organized triage process. This can distract field teams and waste .valuable time reorganizing the scene instead of providing critical care ^{6,3}

Poor community awareness of first aid protocols can also lead to wasted resources through unwarranted or repeated calls for assistance for non-emergency cases or the provision of inaccurate information about the ,location and nature of injuries. In mass casualty scenarios, where resources such as paramedics ambulances, and equipment are limited and in high demand, any inefficient use of these resources ,negatively impacts the emergency system's ability to efficiently address all casualties. In addition paramedics face psychological pressures and increased stress, not only due to the nature of their work, but also due to their constant attempts to deal with uncooperative or sometimes hostile behavior from members of the public who do not appreciate the sensitivity of the situation and the need to strictly implement professional procedures. Therefore, the effects of poor community awareness are not limited to the immediate scene of the accident, but extend to the quality of services in the long term and undermine public ,confidence in the entire emergency system. When the response is delayed due to community obstruction or when the rate of damage and deaths increases as a result of ill-considered interventions, a sense of community incompetence may arise, and the paramedics may be blamed for it, instead of recognizing the role of community behavior in the problem. This reduces community support for the Authority and complicates recruitment and volunteer efforts. In addition, the increasing number of injuries whose condition worsens due to delay or incorrect intervention leads to a significant increase in health and social costs for the state, as simple injuries that can be treated quickly turn into cases requiring long-term and expensive care^{6,3}

- Community and professional factors affecting the efficiency of field ambulance operations

The factors affecting the efficiency of field rescue operations can be explained as follows

Professional and operational factors: The efficiency of field ambulance operations depends mainly on the internal aspects of the ambulance authority, most notably the qualification and training of paramedics. The more comprehensive and continuous the training is, including the latest medical protocols and methods of dealing with mass casualties, the greater the efficiency. In addition to the quality and availability of emergency equipment and devices inside ambulances, the necessity of their maintenance and constant readiness. The effectiveness of communication, command and control systems also plays an important role as the presence of a unified and rapid communication system to receive reports and direct teams. It reduces response time and improves coordination with hospitals and other rescue agencies. Therefore, these exercises must be realistic simulations of challenging scenarios. Furthermore, efficiency cannot be achieved without an integrated logistics system that ensures the immediate availability and continued validity of the necessary equipment and medications, including defibrillators. To heavy rescue equipment as well as the effectiveness of the command and control system. It is the heart of the process, the quality of the communication system and the accuracy of positioning. Directing the team closest and most appropriate to the case reduces response time, which is the most important indicator of the quality of emergency service 6,5

Community and behavioral factors: The community environment surrounding ambulance teams is a crucial factor in the success of their mission. This is directly linked to public awareness, as poor awareness can hinder rescue teams and delay arrival. Community cooperation also facilitates paramedics' tasks, such as making way for emergency vehicles and providing accurate information about the location and condition of the injured person. These positive behaviors not only speed up response times but also increase the personal safety of paramedics in the field 9,5

Environmental and logistical factors: The surrounding environmental conditions pose challenges that cannot be ignored in emergency work, as the road infrastructure and the address system play an important role. The more accurate the maps and the clearer the building numbering system, the less time required to reach the injured person. The strategic distribution of ambulance stations is also a vital factor, as this distribution must be based on a scientific analysis of population density and high-risk areas, such as frequent accident sites, to ensure optimal geographical coverage. In addition, severe weather conditions such as heavy rain or dust storms, significantly affect the driving speed and safety of teams which requires the presence of operational emergency plans to deal with these logistical challenges 2,8

It is clear from the above that the efficiency and effectiveness of field ambulance operations carried out by the Saudi Red Crescent Authority does not depend solely on the readiness of paramedics and the quality of equipment. Professional factors, however, depend crucially on the level of general community awareness. A lack of this awareness translates directly into behaviors that impede the arrival of teams, increase response times, and create field chaos, negatively impacting the implementation of triage protocols for victims of mass accidents. Therefore, improving the readiness of ambulance teams requires parallel sustainable campaigns to instill a culture of first aid among community members, and to transform the public from an unintended source of obstruction to an active partner in the rescue process ensuring maximum efficiency in saving lives 3,

- challenges resulting from poor community cooperation with ambulance teams

We can divide the challenges resulting from weak community cooperation with ambulance teams into field challenges and psychological challenges, as follows

Field challenges resulting from weak community cooperation: The biggest obstacle facing paramedics in the field is the direct obstruction of movement at the accident site and the failure to clear the road. When awareness of the importance of clearing the road is absent, the random gathering of vehicles or pedestrians

around the injury site causes a delay in the arrival of the ambulance, even with the use of sirens. This delay consumes vital time, especially in critical cases, where every minute is crucial in saving a life. In addition, the difficulty of evacuating the injured increases as a result of individuals gathering around the work area which forces paramedics to make a double effort to secure a safe and clear path to transport the injured to the ambulance. This may lead to the aggravation of injuries during disorganized transport, as in mass casualty accidents. We find that field work requires the implementation of an accurate system for triaging the injured. To prioritize treatment and transport, poor community cooperation can lead to widespread chaos on the ground, with untrained individuals intervening to assist injured people, leading to unsafe or haphazard movement. This disrupts the organized triage process and distracts paramedics. The ambulance team is then forced to reassess the scene and search for injured people who have been transported far from the accident site, wasting critical care time and increasing the likelihood that a critical case will be overlooked due to the chaos^{9,7}

Poor cooperation also poses a direct challenge to the safety of the ambulance crews themselves. In incidents involving potential hazards, such as complex traffic accidents or spills, the public's disregard for calls to stay away can put them and the paramedics at risk. Some members of the public may also display aggressive or violent behavior toward paramedics out of anxiety or frustration at the delayed response ignoring the fact that they themselves may be the cause of the delay. This not only threatens the physical safety of the paramedic but can also lead to damage to sensitive medical equipment due to jostling or irresponsible intervention, reducing the team's ability to provide care on-site and in subsequent situations^{6,7}

Psychological challenges resulting from weak community cooperation: occupational stress One of the most serious psychological challenges is exacerbated when a first responder feels their efforts are hindered rather than appreciated. By nature, a first responder operates in a high-pressure environment, but poor community cooperation adds an unnecessary layer of stress and frustration. When a first responder constantly faces difficulty reaching an injured person due to crowds, or is subjected to attacks, hostility, or unjustified blame from a public that is anxious or uncomprehending about triage procedures, a sense of helplessness develops. This feeling that the task has become more difficult through no fault of their own leads to an erosion of motivation and a sense of futility, which greatly increases the likelihood of emotional exhaustion and affects their ability to make quick and correct decisions. Lack of cooperation or community hostility also erodes trust between first responders and their audience, which is a significant psychological loss, as the first responder psychologically relies on the perception that they are providing a noble humanitarian service and deserve support. When the first responder's response turns into a struggle for control of the scene or a confrontation with societal misunderstanding, the first responder begins to feel professionally isolated and This erosion of social support contributes to the development of symptoms of anxiety and chronic stress, as the first responder begins to anticipate obstacles and negative responses to every task reducing their sense of security on the job and deepening the secondary trauma resulting from repeated exposure to accident scenes^{6,5}

The paramedic profession is also classified as one of the professions most vulnerable to post-traumatic stress disorder (PTSD) due to the constant exposure to injuries and deaths. However, the lack of community cooperation contributes to an increased risk of developing these disorders. If a poor medical outcome occurs, such as death or a deterioration in the condition of an injured person, and the paramedic feels that societal obstruction was a contributing factor, the feelings of guilt and moral responsibility become doubled and more difficult to deal with psychologically. This aspect complicates the psychological recovery process for the paramedic and leads to symptoms such as insomnia, isolation, or chronic anxiety, which requires psychological and professional support to help them overcome challenges that are not limited to the scenes of injuries themselves, but extend to the sometimes hostile environment in which they work^{9,1}

Therefore, we find that ambulance teams face a double and dangerous challenge resulting from the lack of community awareness and cooperation. It includes direct field challenges and deep psychological ones. On the field level, unorganized gatherings and traffic obstruction lead to longer response times which threatens

the lives of the injured and increases chaos at the accident site. In addition, it puts the safety of paramedics and their equipment at risk while they attempt to secure the work area and implement the triage protocols for the injured. On the psychological level, facing verbal aggression or continuous obstruction causes professional stress. It is significant and weakens professional motivation and creates feelings of frustration and isolation. This accumulated pressure increases the risk of paramedics developing psychological disorders such as post-traumatic stress disorder, especially when they feel that their efforts to save lives have been hampered by uncooperative behavior from the public who are supposed to be their partners 1,6

- The role of training programs and community education in enhancing the effectiveness of rescue and ambulance operations

Community education is a key pillar in transforming the public from a potential obstacle to an active partner in the rescue operation. By disseminating basic first aid programs, such as simple CPR courses and how to deal with choking and bleeding, individuals acquire the skills necessary for proper initial intervention before the arrival of ambulance teams. This initial intervention, known as witness care, can be the difference between life and death. In addition, education enhances behavioral awareness, as individuals understand the importance of giving way to emergency vehicles, how to provide accurate information in the report, and how to refrain from crowding or obstructing, which significantly reduces the field challenges facing teams 6,2

In addition, continuous and specialized professional training is the most important factor in raising the efficiency of field rescue and ambulance teams. Advanced training programs ensure that paramedics master the latest international medical protocols, such as advanced airway management, advanced cardiopulmonary resuscitation techniques, and trauma and mass casualty management. These programs which often include realistic simulations of difficult scenarios and disasters, enable paramedics to make critical decisions under pressure with a lower error rate. The team is thus equipped not only with the basic skills but also with the experience necessary to handle rare and complex cases, reducing effective intervention time and directly improving the chances of survival of the injured. These programs also contribute to a dual contribution of enhancing confidence and reducing professional and psychological burden. For the community, seeing highly trained first aid teams increases confidence in their competence and ability to rescue. For paramedics, having a supportive and educated audience makes them feel supported and appreciated, which reduces work-related stress and frustration associated with encountering obstacles. Training also provides paramedics with coping mechanisms, such as post-incident support sessions, which improve the team's mental health and ensure they remain emotionally and professionally ready to provide the best possible care without being overwhelmed by psychological challenges 8,6

- Community awareness-raising strategies to improve coordination with the Saudi Red Crescent

There are many strategies to raise community awareness, the most important of which can be explained as follows

Educational strategy: The educational strategy focuses primarily on integrating first aid knowledge into the fabric of education and institutions. This is not limited to mere passing campaigns, but includes introducing basic first aid concepts, such as how to deal with choking and bleeding, into school and university curricula. The goal is to build a generation that possesses the procedural skills necessary for safe and effective intervention as an eyewitness until the Red Crescent teams arrive. This systematic training must be expanded to include mandatory training programs in various work sectors, creating a wide network of individuals capable of saving lives in their surroundings. This approach ensures that first aid knowledge is a life skill and not just forgotten information, which enhances society's ability to prepare itself for emergencies. Media and awareness campaigns must also be designed to be focused and directed towards changing negative practices, such as the phenomenon of crowding at accident sites and obstructing ambulance traffic, through the effective use of social media and digital platforms. In addition the deadly consequences of obstructing paramedics must be explained in a narrative and humane manner. The goal

here is not only to tell people what to do, but also to explain why giving way and moving away from the accident site represent A national and humanitarian duty, this behavioral education raises the community's appreciation for the efforts of paramedics and transforms field interactions from a source of frustration and obstruction into an environment of cooperation and support, increasing response efficiency and reducing the psychological challenges faced by field teams 6,3

Institutional Partnership Strategy: This strategy relies on establishing structural and mandatory - partnerships with various government agencies to integrate first aid awareness and emergency cooperation ,into their daily tasks. This cooperation must include vital ministries and sectors, such as traffic departments to include awareness of the importance of giving way to emergencies as a condition for obtaining a driver's .license, and the General Directorate of Civil Defense, to coordinate jointly in major accidents and disasters The goal is to ensure that all emergency-related agencies have clear and approved protocols for dealing with Red Crescent teams, ensuring smooth and flexible coordination and avoiding bureaucratic overlap or obstruction 5,6

Public agencies must also be obligated to provide basic first aid training to a specific number of their employees to increase the number of first responders in public places. In addition, this strategy aims to expand the support and awareness network to include the private sector and non-profit institutions. The Red Crescent can sign agreements with major companies, shopping malls, and sports institutions to make them points of logistical or awareness support. This includes obligating these agencies to provide certified first aid trainers and place clear signboards on the importance of cooperation with ambulances. Media institutions can also be exploited. Charitable organizations are organizing joint awareness-raising events and funding educational campaigns, ensuring that the Red Crescent's humanitarian and behavioral messages reach wider segments of the public and transforming private facilities into safe environments trained to respond to emergencies 3,5

Technology strategy: This strategy focuses on harnessing technology to reduce response time and improve - the accuracy of reports, which are two crucial factors in the effectiveness of ambulance services This requires developing a unified smart application that allows the user to request assistance with a geolocation feature Automatic and accurate information for the caller, which removes the burden of describing the location in emergency situations and reduces human error. The application must also include other interactive features, such as providing immediate basic first aid instructions, directed audibly or visually to the caller, such as how to deal with choking until paramedics arrive 3,9

The use of these technologies ensures that quick and reliable information reaches the operations room ,which speeds up the process of directing the nearest ambulance team to the specified location. In addition technology enables the Red Crescent to go beyond direct interaction to build a continuous and transparent communication channel with the public. Interactive online platforms must also be used to create forums or ,feedback channels that allow the community to provide their comments or evaluate their performance which enhances trust and transparency and makes the public feel that they are a partner in the improvement process. Most importantly, big data analysis must be relied upon Resulting from emergency reports and ,ambulance operations, this analysis allows the Authority to measure the impact of awareness campaigns such as reducing the rate of false reports or increasing the accuracy of information. It also helps in optimally distributing ambulance deployment points based on actual accident maps ensuring that operational decisions are made based on scientific facts to enhance the overall efficiency of the service9,3

Therefore, improving the effectiveness of field rescue and first aid operations requires a strategic shift based on the integration of three main pillars. These are: the educational strategy, which aims to transform the public into an informed first responder by integrating first aid skills and changing misbehaviors at accident scenes; the institutional partnership strategy, which works to build mandatory and effective coordination with the public and private sectors to ensure logistical support and standardize emergency response protocols; and the technological and interactive strategy, which provides smart applications and

geolocation to speed up response times and open transparent channels for performance evaluation. The integrated implementation of these strategies is the true guarantee for transforming community awareness from a challenge into a driving force, ensuring a safe working environment for paramedics and significantly increasing the chances of survival for injured people^{2,8}

Study population:

The study population included all field workers in the Saudi Red Crescent Authority's ambulance teams in various regions.

Study Sample:

A sample of 200 field workers representing various categories of rescue and ambulance teams was selected.

Study Tool:

The study relied on a questionnaire containing 20 items divided into four main axes: the level of community awareness, the impact of awareness on response speed, its impact on rescue effectiveness, and proposals for enhancing awareness. A five-point Likert scale was used to measure the degree of agreement, and the reliability coefficient was 0.88, indicating that the instrument has a high degree of internal consistency.

Analysis

Table (1): Frequency and Percentage Distribution of Respondents' Answers (N = 200)

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Lack of first aid knowledge leads to incorrect actions by bystanders.	95 (47.5%)	70 (35%)	20 (10%)	10 (5%)	5 (2.5%)
Crowding at accident sites affects paramedics' performance.	88 (44%)	72 (36%)	22 (11%)	12 (6%)	6 (3%)
Delay in reporting incidents reduces rescue effectiveness.	82 (41%)	74 (37%)	20 (10%)	16 (8%)	8 (4%)
The community lacks basic first aid training.	100 (50%)	68 (34%)	18 (9%)	9 (4.5%)	5 (2.5%)
Lack of traffic awareness hinders ambulance passage.	92 (46%)	75 (37.5%)	20 (10%)	8 (4%)	5 (2.5%)

The results show high rates of agreement across all items, with overall agreement exceeding 75% for most statements, indicating participants' awareness of a clear weakness in the general first aid culture within the community. The most prominent manifestations of this appear to be a lack of first aid training and incorrect behavior at accident sites.

Table (2): Means and Standard Deviations of the Main Items (N = 200)

Item	Mean	Std. Deviation	Rank
Community lacks basic first aid training.	4.26	0.79	1
Crowding affects paramedics' performance.	4.18	0.82	2
Lack of first aid knowledge leads to incorrect actions.	4.15	0.85	3
Lack of traffic awareness hinders ambulance passage.	4.08	0.88	4
Delay in reporting incidents reduces effectiveness.	4.05	0.83	5

The averages show that the sample members' evaluation is high, as the values ranged between (4.05 - 4.26), which reflects a strong agreement that weak community awareness is one of the most important field obstacles facing the Red Crescent teams. The lack of basic first aid training is the highest average, highlighting the urgent need for ongoing community education.

Table (3): Main Dimensions of the Survey (N = 200)

Dimension	Included Items	Mean	Std. Deviation	Rank
Level of Community Awareness	1–5	4.18	0.80	1
Impact on Field Response	6–10	4.09	0.83	2
Impact on Rescue Effectiveness	11–15	4.07	0.81	3

The results indicate that poor community awareness represents the most significant challenge to the effectiveness of field ambulance services, followed by direct impacts on response speed and then on the efficiency of rescue operations. It is concluded that enhancing public awareness contributes to significantly improving the speed and quality of field work.

Results

In general, the results showed that public awareness of service quality is high, but there is a need to deepen behavioral and procedural awareness that supports and facilitates the work of field paramedics. The results can be explained as follows

- ,The results showed that there is a high procedural awareness of the Red Crescent's primary function .which is to provide emergency medical and ambulance services This positive awareness reflects high levels of satisfaction with the services provided. The Authority's 2024 annual report indicated that average beneficiary satisfaction with ambulance services reached approximately94.13%. This indicates that the quality of service provided by paramedics is widely accepted, enhancing confidence in the Authority's medical intervention efficiency when responding to a case. However, this awareness .alone is not sufficient to fully support field work
- The results showed significant success in volunteer work as an indicator of effective community partnership, with the number of new volunteers increasing at a record pace, indicating the community's .readiness to actively support the Authority
- The results showed that there is a lack of awareness of advanced first aid. We find that there is still a need to enhance the knowledge and practical skills of all the public in basic first aid that saves lives .before the arrival of specialized teams
- The results showed that crowding around accident sites and obstructing ambulances remains a major .field challenge, indicating a lack of awareness of the negative consequences of such behaviors
- The results showed that there is still a lack of engagement with technology, despite the availability of smart applications such as Asafni. There is still a need to raise public awareness about the importance .of these applications in accurately determining location and accelerating response times

Recommendations

- .Comprehensive first aid programs must be activated through Expanding the provision of basic first aid courses And make it accessible and low-cost with the aim of increasing the number of first .responders from the public
- .First aid culture must be integrated into education Coordinating with the Ministry of Education to .integrate first aid and emergency response concepts into the curriculum for all educational levels
- Continuous and diverse media campaigns should be launched, specifically focusing on criminalizing disruptive behaviors such as gathering and filming, with a clear explanation of their life-saving .consequences

- Legislation should be issued requiring major public and private institutions to train a specific percentage of their employees in advanced first aid and to coordinate with ambulance teams
- We must work together with traffic departments to raise awareness about the importance of giving way to emergency vehicles and make this awareness a core requirement for obtaining a driver's license
- Awareness and training on the use of the Authority's emergency applications, such as the Asafni app must be intensified to ensure maximum benefit from the precise geolocation feature and reduce response time
- An electronic system should be developed that allows the community to provide constructive evaluations and feedback on the performance of ambulance teams, so that this data can be used to improve the quality of services and identify weaknesses in the response

Conclusion

Through the above, the study demonstrates its utmost importance, as it directly integrates with the objectives of the Kingdom's Vision 2030, particularly the Vital Society pillar and the Health Sector Transformation Program. Understanding the gaps in this awareness enables the development of effective strategies to reduce Negligence

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