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Public Awareness of the Saudi Red Crescent Ambulance service (SRCA); Do we need to provide public with unified access for emergency services?

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Abstract

Background: Early activation of an emergency response system can improve the chances of survival for individuals, experiencing medical emergency conditions. Saudi emergency response system is accessed through multiple service numbers. The Saudi Red Crescent ambulance service (SRCA), the main responder for medical emergencies is accessed through 997. There are other service numbers in place (e.g 993 for traffic accidents, 998 for civil defence and 999 for police). The availability of different service numbers can lead to public confusion at time of calling help. We aim to understand the public awareness about calling providers, during medical emergencies.

Objectives: To assess the public awareness about emergency services, knowledge of the SRCA helpline and experience about its service. We also explored public opinion about having a unified helpline for all emergency services.

Design: A cross-sectional observational Study.

Setting: Riyadh City, Saudi Arabia (SA).

Methods: We designed a survey form for data collection, which included sections about participants' awareness, knowledge, experience, and opinion about emergency services.

Inclusion criteria: Adults living in Riyadh city, who consented to participate in survey.

Results: 555 participants took part in the survey with males representing 68% of the respondents. Fifty-five percent of the respondents had graduate and above education level. Seventy percent would call the SRCA, if they witnessed a medical emergency. Sixty-eight percent were aware of the SRCA helpline number in case of a medical emergency. Eighty-five percent preferred having a single unified number to call all emergency services.

Conclusion: Public awareness about the existing emergency services needs to improve. A single helpline can be a gateway to all emergency services and make it convenient for the consumers. Response times and service provision of the local emergency ambulance services should match international standards.

Introduction

Emergencies require immediate access to an emergency system. Availability of a responsive emergency system and knowledge of its operability are both important links for timely medical care.

A single unified emergency phone number (which is easy to remember) is commonly practiced internationally. Countries like USA and UK have 911 and 999 respectively. Call to these unified numbers provides access to all emergency services including medical, fire and police emergencies.

SRCA is the main government-funded ambulance service provider in major cities of SA, which is accessed by the public through a 997-service number. Police and fire emergencies respond through different service numbers. Similarly, traffic accidents have a separate service number.

Variance in phone numbers for different services causes confusion amongst the public, which can lead to not only delay but also calling an inappropriate service.

Riyadh is the capital and most populated city in the Kingdom of SA with a population of over 7.5 million [1], hence the need for emergency public service is rising. Emergency services are obviously kept very busy here round the clock.

Whilst the number of calls to SRCA are increasing by the day, there are lot of accidents, which are brought to the emergency departments

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Table 1. Demographics

Age	16-30	205 (37)
	31-45	189 (34)
	46-60	124 (22)
	>60	37 (7)
Gender	Male	380 (68)
	Female	175 (32)
Education	Illiterate	6 (1)
	Elementary school	13 (2)
	Middle school	35 (6)
	High school	197 (35)
	Graduate and Above	304 (55)
Profession	Student	117 (21)
	Retired	99 (18)
	Non- medical profession	272 (49)
	House wife	67 (12)

Table 2. General knowledge of what to do in case of medical emergency

What would you do if you witness someone is experiencing a medical emergency?	Take person to Emergency in your car.	92 (17)
	Call the Saudi Red Crescent.	386 (70)
	Call the people standing nearby.	70 (13)
	Call the police.	7 (1)

on private cars or public transport [2]. Informal inquires highlighted, lack of awareness about the SRCA, inability to connect to the service number and in some cases dialling a wrong number.

One study assessing public awareness of the emergency medical system (EMS) was conducted in Jeddah, SA. The study surveyed 1534 local residents; 33% were unaware of the service number, in case of a medical emergency.

We wanted to conduct a survey to assess public awareness, regarding calling help during emergencies in Riyadh city of Saudi Arabia.

Methods

We used a questionnaire asking participants their awareness, knowledge & experience in contacting SRCA. The participants also gave opinion about having a unified phone number to call emergency services.

The questionnaires were distributed to the citizens/residents based in Riyadh city. Our intention was to do all face-to-face (F2F) survey encounters, by approaching the participants in public places but we had to distribute 250 (45%) of our survey forms on line (due to Covid-19 pandemic). All participants were explained the purpose of the survey & provided with an information leaflet.

The questionnaire had four sections:

Demographical data (age, gender, education, and profession).

Participant's knowledge (as what to do) in case of a medical emergency.

Awareness of the SRCA service number, reason for calling SRCA, response time of SRCA and a unified number for accessing emergency services.

Participants' experience with SRCA.

The collected data was analyzed using Microsoft access database and results were expressed as frequency and percentages.

Results

Five hundred and fifty-five (555) participants were surveyed over a period of seven months from January-August 2020. Three hundred and four (55%) participants filled in the survey forms during a face-to-face (F2F) encounter and two hundred & fifty-one (45%) were surveyed online (due to Covid-19 restrictions).

Two hundred and five (37%) participants were in 16-30 yrs. age group, with predominance of male respondents (68%). Three hundred and four (55%) participants were graduate (or above) degree and 272 (49%) belonged to a non-medical profession [Table 1].

Three hundred and eighty-six (70%) of the survey respondents would call the SRCA on witnessing a medical emergency [Table 2].

Three hundred and seventy five (68%) participants were aware of the toll free SRCA dispatch number and 473 (85%) suggested having a unified number to be available to call for all emergencies [Table 3].

One hundred and ninety nine (36%) had previously called an ambulance for variety of medical reasons, predominantly road traffic accidents (24%). Thirty-two (16%) had to call a friend/family member to get the ambulance number. 13 (7%) had to ring the national directory to find the ambulance calling number [Table 3].

Table 3. Participants' awareness of the emergency services number

1- Are you aware of the toll- free number to call in case of a medical emergency?	Yes	375 (68)
	No	180 (32)
2- Which number is the toll-free number to call in case of a medical emergency?	993	59 (11)
	997	311 (56)
	998	55 (10)
	I do not know	130 (23)
3- Do you think that having a unified number to call in case of an emergency (medical or non-medical) is better?	Yes	473 (85)
	No	82 (15)
4- Have you ever called/asked for an ambulance?	Yes	199 (36)
	No	356 (64)
Participants who called/asked for an ambulance (n=199)		
5- If yes to Q4: What was the medical emergency?		
	Decrease level of consciousness	41 (21)
	Chest pain	12 (6)
	Difficulty in breathing	23 (12)
	Seizure	14 (7)
	Severe bleeding	4 (2)
	Delivery (Baby birth)	7 (4)
	Cardiac arrest	11 (6)
	Accident	47 (24)
	Trauma	5 (3)
	Other. Please specify:	35 (18)
6- How did you get the ambulance number?	I already know it	108 (54)
	I called a friend/ family member	32 (16)
	I called 905 (Telephone Directory)	13 (7)
	Other. Please specify:	46 (23)
7- How long it took you to find out ambulance dispatch number.	Immediately, I already know it.	108 (54)
	1 minute	39 (20)
	2 minutes	13 (7)
	3 minutes	5 (3)
	4 minutes	3 (2)
	5 minutes	7 (4)
	> 5 minutes	24 (12)

Table 4. Participants' experience and opinion of the SRC

1- Did you receive appropriate instructions to take care of the patient by the SRC recipient of the call?	Yes	96 (48)
	No	103 (52)
2- How long did it take the SRC ambulance to arrive?	10 minutes	63 (32)
	20 minutes	76 (38)
	30 minutes	31 (16)
	40 minutes	8 (4)
	50 minutes	7 (4)
	1 hour	6 (3)
	> 1hr	7 (4)
	other	1(1)
3- What do you think the SRC paramedic's duty is?	treat patients at the scene	44 (22)
	Transport patients to nearest hospital.	18 (9)
	Treat patients at scene and transport them to nearest hospital.	120 (60)
	I do not know.	17 (9)
4- Do you think that the current Saudi Red Crescent – Emergency Services coverage for Riyadh city is adequate.	Yes	92 (46)
	No	107 (54)
5- What do you think of the current EMS service overall?	Excellent	100 (50)
	Good	91(46)
	Poor	8 (4)

Twenty-four (12%) participants had to spend >5 minutes searching for the ambulance helpline. On connecting to the ambulance service 103 (52%) participants reported inappropriate instructions given to them about the patient, they were calling for [Table 4].

Discussion

Emergency systems are designed to deliver a timely standardized care to people. The chain starts from public awareness about the available services (when, where and how to call for help) and a reasonable expectation of care provision in response. The providers have a duty to deliver a proportionate emergency response, tailored around the individuals' need.

In the Saudi Arabian capital city of Riyadh, the access to emergency system is non-unified, with various phone numbers for different emergency services, e.g. traffic accidents helpline is 993, SRCA 997, civil defence 998, police 999. This can be confusing to the public users and leads to delay in calling urgent help. A study in western SA, reported only a third of the local population was aware of the emergency helpline [1, 2, 3].

Having access to a unified number to call emergency services reduces the response time of the appropriate services [4]. A study conducted in Pennsylvania concluded short-term survival rates for patients with cardiac conditions was increased significantly, when the emergency calls came through the unified helpline [5].

Our cross-sectional survey used a 4-part questionnaire to assess the awareness of the public about the local emergency systems, in various domains. Although our survey response rate was 55%, a wider section of the community was represented. The age group 16-30 yrs. constituted 37% of the survey respondents with 31-45 yrs. (34%), the second highest age group. This is proportionate with the SA population, which in the recent census is predominantly a younger population [6].

The male gender represented 68% of the respondents. Graduate (and above) (55%) was the most prevalent education level amongst the participants, followed by high school level (35%). Non- medical profession (49%), student (21%), retired (18%) and homemaker (12%) was the professional status of the participants in descending order [Table 1]. This also corresponds with the national literacy rate [7].

There were some discrepancies in our survey. One hundred and forty five participants completed the section of not calling an ambulance (table 3, question 4) but went on to answer the latter questions, about the experience of calling the SRCA [Table 3-4].

Seventy percent of the survey respondents said they would call the SRCA if they witness someone experiencing a medical emergency condition, 17% will take the person to the ED in their car, 13% will ask the people standing nearby, and 1% will call the police [Table 2]. A significant percentage of participants in our survey will have no communication with SRCA about a medical emergency and will use local help. This reflects lack of public awareness and understanding [8, 9].

Sixty-eight percent stated they were aware of the toll-free number to call in emergency & 56% knew the SRCA dispatch number. Eight-five percent expressed having a single unified number for all emergency services.

One hundred and ninety-nine (30%) participants had the experience of calling the SRCA for various reasons (24% calls for accidents, 21% for decreased level of consciousness, 12% for breathing difficulty, 6% for chest pain, 7% for seizure, 6% for cardiac arrests, 4% for labor pains etc.). Although our survey questions had medical symptoms and diagnosis incorporated, participants had no difficulty understanding the reasons for their call, due to the explanation given verbally (by the surveyors) and through the information leaflet. This also reflects heightened knowledge and awareness of the local public about medical conditions. Patients internationally have acquired more knowledge and understanding of their medical conditions, before presentation to hospital [10-12].

When asked about the SRCA calling number, 54% already knew it, 16% would call friend/family to find out, 7% will call 905 (national phone directory helpline), and 23% will use other resources (calling police, google browser, and SRCA Mobile App "ASAFNY"). Twenty percent of the participants could search the emergency helpline number in one minute, whilst 12% took >5 minutes [Table 3]. In our survey, approximately half of the participants did not know emergency ambulance helpline number and spent unnecessary time, which could delay dispatching medical help.

Forty-eight percent participants did not receive appropriate instructions (about on scene management of the patient) from the SRCA recipient during the emergency phone call. This could be due to lack of communication skills of personnel operating the helpline desk. There is a lot of variability in answering emergency phone calls made by public, as observed in multiple call centers.

Lack of understanding and interpretation of the receiver could also be contributory. Public confidence can be seriously undermined on emergency services, if the calls are not handled professionally [13]. The consumers will also be inclined to use inappropriate resources [14, 15].

Ambulance arrival times was also a concern for the participants in our survey. Thirty-eight percent had to wait 20 minutes for the SRCA to arrive at the scene, 16% had to wait 30 minutes, 4% waited 40 minutes and another 4% had to wait >50 minutes. The longest wait for ambulance was > one hour. One participant did not wait for the ambulance and took the patient to the ED on his car. These times are not comparable with the international ambulance response times, which have a targeted response time [16, 17].

Our survey participants had diverse opinions, regarding the role of SRCA. According to sixty percent, SRCA treated patients on the scene and transported them to the nearest hospital whilst 22% thought it only treated patients on the scene. Nine percent participants had the understanding of SRCA as a patient carrier to the hospital and remaining 9% did not know its role.

Fifty-four percent reported SRCA coverage for Riyadh city was inadequate. Fifty percent marked the overall SRCA service as excellent, 46% good, and 4% labelled it poor [Table 4].

Conclusion

Our survey results suggest public awareness is sparse about accessing emergency services. There is potential to improve the SRCA coverage and response times. A single unified number for emergencies in the Riyadh region could be an easier and better way of calling help in emergencies.

Limitations

Limited number of participants were involved in our survey from one SA city.

Conflict of interest

None.

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