

# Emergency Medical Services and Quality of Care in Emergency Departments: Knowledge, Attitude and Practices among General Population in Rawalpindi, Pakistan

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## ABSTRACT

### BACKGROUND

Emergency medical services prove to be the backbone of a healthcare system for efficient management of emergencies. The quality of care is dependent on the training of healthcare professionals and proper infrastructure to deal with such emergencies. These services can only be effective if the general population has enough knowledge of the services and a positive attitude which may result in a change of their practices. This study aims to investigate the knowledge, attitude, and practices regarding Emergency Medical Services (EMS) and quality of care in Emergency Departments among general population in Rawalpindi, Pakistan.

### METHODS

A cross sectional study was carried out at various public places in Rawalpindi using a self administered, validated 15-item questionnaire from 5th June 2018 to 31st July 2018. All participants above the age of 18 were included through convenience sampling.

### INTRODUCTION

Emergency medical care is defined as the care provided for a condition in which a delay in treatment is likely to result in the recipient's death or permanent impairment.<sup>1</sup> Emergency situations are often time-critical, and this is more pronounced in low and middle-income countries where it is stated that at least 45% of deaths and 36% of the burden of disease require urgent care.<sup>2</sup> Enhancing pre-hospital care for patients that have suffered for trauma as well as the training of community and hospital providers in control of bleeding and other basic lifesaving skills for trauma can help in reducing morbidity and mortality.<sup>3-4</sup> Due to lack of a standardized system of basic health care in developing countries, most people are unaware of their underlying comorbidities and their first presentation to

### RESULTS

Out of 191 people who completed the questionnaire, 66% were females (n=127) with the mean age of 30 years  $\pm$ 13. Most knew about the presence of an emergency helpline (70.15%), the specific number to call (74.35%), early transport of a serious patient to hospital (65%) and recognition of paramedics in an ambulance (61%). However, there was a general agreement on better transport through personal conveyance as compared to ambulances (40%), lack of trained paramedics in ambulances (39.7%), and provision of poor quality of care by medical staff in emergency departments (42%).

### CONCLUSION

This study revealed that even though there is a good knowledge among members of the population, this knowledge has not significantly affected the attitude and practices of emergency medical services and care.

### KEY WORDS

Emergency Medical care, KAP, Pakistan

## Original Article

Pakistan is a developing, lower-middle income country with an estimated population of over 207 million inhabitants and a total meagre expenditure of 2.6% of GDP on health services.<sup>7-8</sup> There is no specific allocation of health budget towards emergency medical services. The ambulances services are mostly run by private organizations and there is no state-run system of pre-hospital care. In the largest province by population, Punjab, provincial government has taken an initiative to start a rescue service 1122 which provides a helpline to call and has paramedics in ambulances.<sup>9</sup> In last 14 years, the number of calls received were 5.3 million out of which 1.9 million emergency calls were about road traffic accidents which shows a huge burden of injury related emergencies.<sup>9</sup> Injuries are regarded as one of the top fifteen causes of preventable deaths in Pakistan along with diarrhea, septicemia, lower respiratory tract infections and ischemic heart disease etc.<sup>10</sup> Another study from Karachi, the largest metropolitan city of the country, implicates circulatory disorders, road traffic accidents, burns and pregnancy complications as the main causes of adult deaths.<sup>11</sup> These studies show that an efficient pre-hospital care along with dedicated hospital emergency care system is desperately needed in the country to ensure better health-care facilities.<sup>11-12,13</sup>

Most studies that have been conducted in Pakistan have been geared towards assessing the knowledge, attitude and practices of the health care professionals dealing emergencies. Junaid et al conducted a pilot study in two districts of Pakistan where they collected data from rural and urban healthcare setups showing high percentage of dissatisfaction (98%) among the community participants regarding emergency medical services.<sup>14</sup> To the best of our knowledge, this is the first KAP study of emergency medical care in Pakistan. The main objective of this study to assess the knowledge, practice, and attitude of the general population regarding emergency medical services and quality of care in Emergency Departments in an urban city of Pakistan.

## METHODS AND MATERIALS

### Study Design

This was a cross-sectional study carried out between 05th June 2018 to 31th July 2018 in Rawalpindi, Pakistan.

### Study Population and Settings

All adults (>18 years) were included in the survey through convenience sampling. A validated questionnaire was distributed among the participants, after verbal consent, at various public places including bus-stops, public parks, hospitals, colleges, restaurants etc.

### Study Tool

A validated questionnaire was used which consisted of 15 items. The first 6 questions assessed knowledge whereas the second 5 questions were designed to gain insight about attitude. The last 4 questions were developed to indicate current practice. Variables such as age and gender of each participant were also recorded.

### Ethical Approval

Informed consent was secured from each participant before administering the questionnaire. The study was approved by the Institutional Review Board of Poonch Medical College, Rawalakot, Azad Kashmir.

### Data Collection and Analysis

The data was collected by two medical students who distributed and collected the questionnaires. Frequencies and percentages were calculated. All statistical analysis was done using SPSS version 23 (IBM, Armonk, NY, USA).

## RESULTS

One hundred and ninety-one people participated in the survey out of which two-thirds were females (n=127, 66%) and one-third were males (n=64, 33.51%). Respondents varied in age from 18 to 67 years with a mean age of 30 years  $\pm$  13 SD. The component of the questionnaire showing knowledge of the respondents is shown in table 1, attitude in table 2 and practice in table 3.

## DISCUSSION

Emergency medical services are still at their infancy in the country and mostly private and volunteer organizations are sharing the burden to transport patients to emergency departments. The largest voluntary ambulance organization, EDHI foundation, that covers all the country boasts over 1800 vehicles and 2 air-ambulance aircrafts.<sup>15</sup> Another private initiative is Aman foundation, which has around 80 ambulances, a command and control center with real time tracking and a response time of 18 minutes but only covers one province of the country.<sup>16</sup> Rawalpindi is an urban city of Pakistan with a population of over 5.3 million.<sup>8</sup> It is a developed city with good access to hospitals and the presence of a government authorized emergency response service. This survey was carried out to see the knowledge, attitude, and practices of the general population regarding emergency medical services. In our study, there was a female preponderance and the age distribution excluded the two age extremes. It also did not investigate the causes of poor emergency medical services; however, it was able to establish that there was a lack of trust among members of the population on the quality of emergency services and care that were available to them.

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**Table 1: Knowledge of emergency medicine care among all respondents (n = 191)**

| Items   | n   | %     |
|---|-----|-------|
| <b>Is there a number to call for emergency medical assistance?</b>      | 57  | 29.84 |
| ○ No  | 134 | 70.15 |
| ○ Yes   |     |       |
| <b>Do you know the number to call for emergency medical assistance?</b> | 49  | 25.65 |
| ○ No  | 142 | 74.35 |
| ○ Yes   |     |       |
| <b>For serious injury, how soon should you go to a hospital?</b>        | 126 | 65.97 |
| ○ Within 1 hour   | 44  | 23.04 |
| ○ 1-3 hours   | 10  | 5.23  |
| ○ > 3 hours   | 05  | 2.61  |
| ○ Do not go to a hospital   | 06  | 3.14  |
| ○ Don't know  |     |       |
| <b>Do ambulances provide benefit to sick or injured individuals?</b>    | 144 | 75.39 |
| ○ No  | 47  | 24.61 |
| ○ Yes   |     |       |
| <b>Is there a benefit in having trained paramedics in ambulances?</b>   | 67  | 35.07 |
| ○ No  | 124 | 64.92 |
| ○ Yes   |     |       |
| <b>Can you recognize paramedics in ambulances?</b>                      | 73  | 38.22 |
| ○ No  | 118 | 61.78 |
| ○ Yes   |     |       |

The survey was carried out in a city where there is a developed emergency response system and the respondents showed a good knowledge about these services. However, around 30% of the respondents were still unaware of the presence of a number for emergency medical assistance. There could be difference in education level of these people which led to this difference, but this reflects that mass programs are needed for creating awareness about the services that are available to the people. The critical nature of emergencies was also understood by the participants as shown by their positive response for early transfer to hospital. A study shows that for every 10 kilometers distance from the hospital, the mortality increases up to 1% so early transfer is of paramount importance.<sup>17</sup>

Although 33% of the respondents strongly agreed that ambulances are an efficient way to be taken to a hospital, 75% of the people saw no benefit in transporting patients through ambulances. In a surveillance study carried out in seven Emergency Departments of tertiary care hospitals, Zia et al showed that only 4.1% of the people utilized ambulance services mostly for injuries and elderly patients.<sup>18</sup> Another study highlighted various reasons for not utilizing ambulance services such as stable condition of the patient as perceived by the attendants(45%), delay in response by the ambulances (23%), not having enough

knowledge to call one (23%) and high expenses (8%).<sup>19</sup> Our study shows a similar response in participants not preferring an ambulance, but further studies are required to ascertain the reasons behind it.

One third of the participants thought that an ambulance would take 1-2 hours to arrive which may explain why majority of respondents (40.31% while at home and 84.29% while outside their homes) insist that they would use a private car or taxi to transport their family member to the hospital. This correlates well with another study which showed that taxis (45%) and private cars (23%) are most frequently used to transport sick patients.<sup>19</sup>

The division of gender while dealing with emergencies as shown in Fig.1 is a noteworthy result from this study. The respondents were divided into three main categories with 86 people in agreement, 67 people in doubt and 38 people in disagreement with male paramedics dealing with female patients. There was also a difference in gender-based response with 73.12% of male respondents saying they were unsure while most females (75.56%) agreed; a comparison that was statistically significant with P-value of <0.001. This might reflect the cultural norms, religious inclination, or educational practices but further studies are required to evaluate this effect

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Regarding quality of care, 68% of the participants felt that paramedics are not trained enough to treat patients. Mostly, ambulances are just a mode of transport to and from the hospital with a driver and no additional paramedic staff.<sup>20</sup> Even if they are present, no additional management is done until the patient reaches a healthcare setup so there is a significant delay in the institution of correct emergency treatment leading to further increase in morbidity and mortality especially in patients of acute coronary syndromes, strokes and trauma etc.<sup>21</sup>

The respondents further showed distrust with the treatment being provided in the emergency departments with

31% disagreeing and 6% strongly disagreeing. This is supported by two studies that show poor public perception of emergency health services in Pakistan.<sup>22,23</sup> The factors that could possibly be responsible for this were however not considered in this study, but other studies have suggested factors like poorly equipped facilities, lack of capable staff, and lack of proper care as well as poor road infrastructure.<sup>23,24</sup> This is in stark contrast to a similar survey done in Iraq where, although it is conflict-ridden, majority of the people trusted their system to provide good quality care in case of emergency.<sup>25</sup>

**Table 2: Attitude regarding emergency medical care among all respondents (n = 191)**

| Items   | n  | %     |
|---|----|-------|
| <b>If you called for an ambulance, how long do you think it would take to arrive?</b>               |    |       |
| 5-30 mins   | 09 | 4.71  |
| 31-60 mins  | 61 | 31.93 |
| < 5mins   | 07 | 3.67  |
| 1-2 hours   | 57 | 29.84 |
| 2-3 hours   | 33 | 17.27 |
| Will not arrive   | 19 | 9.95  |
| Don't know  | 05 | 2.61  |
| <b>Ambulances are an efficient way to be taken to a hospital?</b>                                   |    |       |
| Strongly agree  | 64 | 33.50 |
| Agree   | 47 | 24.61 |
| Unsure  | 35 | 18.32 |
| Disagree  | 23 | 12.04 |
| Strongly disagree   | 22 | 11.52 |
| <b>Paramedics on ambulances trained enough to treat patients?</b>                                   |    |       |
| Strongly agree  | 14 | 7.33  |
| Agree   | 17 | 8.90  |
| Unsure  | 29 | 15.18 |
| Disagree  | 76 | 39.79 |
| Strongly disagree   | 55 | 28.79 |
| <b>Is it acceptable for male paramedics to treat injured females during emergency?</b>              |    |       |
| Strongly agree  | 41 | 21.47 |
| Agree   | 45 | 23.56 |
| Unsure  | 67 | 35.06 |
| Disagree  | 21 | 10.99 |
| Strongly disagree   | 17 | 8.90  |
| <b>The medical staff in hospital emergency departments provides good quality care for patients?</b> |    |       |
| Strongly agree  | 38 | 19.89 |
| Agree   | 41 | 21.46 |
| Unsure  | 09 | 4.71  |
| Disagree  | 81 | 42.41 |
| Strongly disagree   | 22 | 11.52 |

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**Table 3: Practice emergency medicine care among all respondents (n = 191)**

| <b>Items</b>  | <b>n</b>  | <b>%</b>     |
|---|-----------|--------------|
| <b>If a family member were severely ill/ injured while at home, how would you seek medical care??</b>   |           |              |
| Keep comfortable  | 02        | 1.05         |
| treat at home   | 29        | 15.18        |
| Wait for a doctor to arrive   | 11        | 5.75         |
| Transport to the hospital via private car or taxi   | 77        | 40.31        |
| Call for an ambulance   | 49        | 25.65        |
| Don't know  | 23        | 12.04        |
| <b>If a family member were severely ill/ injured while outside the home, how would you seek medical care?</b>   |           |              |
| Keep comfortable  | 07        | 3.66         |
| treat at home   | 12        | 6.28         |
| Wait for a doctor to arrive   | 161       | <b>84.29</b> |
| Transport to the hospital via private car or taxi   | 08        | 4.18         |
| Call for an ambulance   | 03        | <b>1.57</b>  |
| <b>If a family member were severely ill/ injured, needed immediate care, and an ambulance had arrived, I would allow paramedics to care for him/her</b>   |           |              |
| Strongly agree  | 88        | 46.07        |
| Agree   | 67        | <b>35.07</b> |
| Unsure  | 14        | <b>7.32</b>  |
| Disagree  | 19        | <b>9.94</b>  |
| Strongly disagree   | 03        | <b>1.57</b>  |
| <b>If a family member were severely ill/ injured, needed immediate care, and we had just arrived at the hospital, I would trust the medical staff in the emergency department to provide good quality care?</b> |           |              |
| Strongly agree  | 42        | 21.99        |
| Agree   | <b>49</b> | <b>25.65</b> |
| Unsure  | <b>28</b> | <b>14.65</b> |
| Disagree  | <b>61</b> | <b>31.93</b> |
| Strongly disagree   | <b>11</b> | <b>5.75</b>  |

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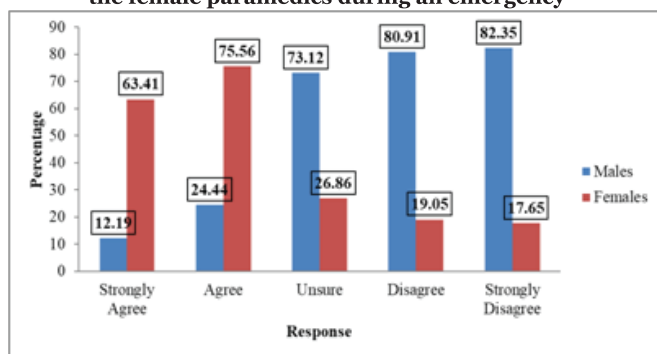
Public confidence building measures are required to allay their fears and address their concerns regarding treatment in emergency departments along with a detailed investigation in factors leading to the perceived poor quality of care. Training of healthcare professionals and availability of life saving equipment and medicines should also be ensured for better care.

The limitation of our study includes small sample size as it is a pilot study which might not be representative of the general population. Further studies are required in different cities so that a more representative sample can be achieved.

**CONCLUSION**

Good emergency medical services and medical care are mandatory to improve the healthcare of a nation. Currently the knowledge regarding emergency medical services is adequate but the attitudes and practice is far from what is essential. We propose that public education regarding emergency medical services, government initiative in establishing credible pre-hospital care and training in pre-hospital and emergency care can help in improving the current situation. Further studies are required to establish the causes behind such attitudes and practice.

**Figure 1: Comparison between responses of males and females that male paramedics can treat the female paramedics during an emergency**



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