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Original Research Article

Pervasiveness of ambulance etiquette and knowledge in general population: a perspective from Pakistan

Fatima Tuz Zehra, Diya Nisar, Abeeha Zehra, Mahnoor Javed, Mahnoor Usman, Syed Uzair Mahmood*

Department of Research, Jinnah Sindh Medical University, Karachi, Pakistan

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***Correspondence:**
Dr. Syed Uzair Mahmood,
E-mail: uzair.hbb@gmail.com

ABSTRACT

Background: Ambulance ethics refers to the principles of moral conduct that make the journey of an ambulance safe, convenient whereby ensuring provision of effective pre-hospital care to the patient. It concerns three sets of population: the paramedical staff, the patient and family and also the general population.
Methods: Cross-sectional comparative study, conducted from February to May 2018. A questionnaire consisting of 25 questions was filled by 412 participants who were older than 15 years of age and their responses were collected via a 5-point likert scale. Chi-square analysis was done to compare the responses of medical and non-medical participants.
Results: Vast majority of individuals agreed that they should give way to ambulances by switching their lanes or by breaking the signal. Half of the individuals were of the idea that ambulances should maintain their speed limit while some favored disregarding the speed limit if it meant saving someone's life, while others remained neutral. A large percentage of participants agreed that a vehicle must meet certain standards in order for it to act as an ambulance. A number of participants agreed that an ambulance should have basic life support (BLS), the ambulance staff should be skilled enough to give cardiopulmonary resuscitation (CPR) en route to the hospital.
Conclusions: The general population supports the idea that ambulances should have a hassle-free route to transport the patient to the hospital and to hasten the treatment even if that means breaking signals, switching lanes and exceeding speed limit.

Keywords: Emergency medicine, Ambulance ethics, CPR

INTRODUCTION

In today's modern world, healthcare is a complex mechanism in which a lot of independent systems work together to form an integrated health care management system, which plays a vital role in prosperity of our society. An ambulance plays the most crucial role in this whole system, as it serves as the first contact with the victim/patient. Ambulance presents in the front line of emergency response system. So, there is a dire need of application of values and moral rules to ambulances' operation, so that any patient in need of quick medical attention is cared for as efficiently as possible.[1]

Ambulance ethics must be conveyed to general population, as they also become a part of an emergency situation, when they are bound to call an ambulance for minimizing human loss during an accident. There are numerous challenges, for both medical and non-medical personal, for tending to the patient's need before they

reach a hospital. These challenges include dealing with reluctant and non-cooperative patients, society norms, public mind-set, traffic conditions, emergency preparedness and many others. General principles which a person, while providing emergency response services, should keep in mind are that he should not discriminate on the patient's background, he should have patient's best interest in mind and he should also honor patient's wishes.[2]

If we focus only on the patient-transportation part of prehospital medical services, then around the world and particularly in Pakistan, general knowledge about ambulance ethics does not extend beyond making way for an ambulance on roads. For example, there exists confusion in the general population with regards to abiding by the traffic law or to provide a streamline pathway for the ambulance. Also, there is need for educating people regarding patient's consent for availing medical services like Do-Not-Resuscitate (DNR) orders. If we move our interest to the problems faced by persons catering to medical emergency needs, then one of the major concerns is their safety. A study has found that, in Karachi, almost two third of medical emergency respondents had experienced or witnessed violence in a year and one third had experienced.[3] On a different note, decision making on the part of ambulance service staff is of vital importance as it deeply impacts patient safety. The parameters which influence their decision are available resources, training, education, effective communication, their own safety.[4]

Pre-hospital services encompasses not only patient and ambulance staff, it also demands cooperation from the civilians. Research on these services (including ambulances) is a relatively new but rapidly evolving field. Our objective is to bridge the knowledge gap between medical and general population about ambulance ethics and focus on general bioethical issues, especially on the perception of Pakistanis towards our ambulance system, the basic mind-set about emergency medical services and view on its improvement.

METHODS

Since this was a population-based research aimed at finding the prevalence of awareness in the general population, a cross-sectional questionnaire served as the tool for collecting data. The highest sample size was 377 with a confidence level of 95% and an error of 5%. As there was no risk associated with this study, approval from the university was taken to conduct the study.

The questionnaire composed of two parts. The first part asked for the respondent's biodata (demography): age, gender, and whether they went to a medical university, a non-medical university or none. Respondents could choose if they wanted to include their name or not; anonymity regarding all biodata was assured. Collecting the demography helped us compare the responses of different age groups, to judge whether or not there was a correlation between the type of university individuals went to and their level of awareness and to check for any male or female preponderance.

The second part was composed of 25 questions designed to judge the respondent's knowledge of ambulance function and ethics; the Likert scale was used for each question. The questions concerned the respondent's personal use of ambulances, their knowledge about the types of ambulances and their functions, their views and opinions regarding ambulances in Pakistan and how they thought conditions could be improved.

The questionnaire was distributed to the general population that fit the inclusion criteria. Individuals above the age of 15 years, currently enrolled in an educational institute were selected to be a part of this study. It took an approximate of 15 minutes for each respondent to fill and submit the questionnaire. Responses were collected over a period of 3 months, starting from March 2018 to May 2018 at the Sindh Medical College, Karachi, Pakistan.

412 responses were obtained but since it was an online questionnaire, response rate couldn't be determined. The results were analyzed using SPSS (statistical package for social sciences). The chi square test was used to compare results, a p value of <0.05 was considered significant.

RESULTS

The data was collected from 412 individuals out of whom 25.7% were male whilst 74.3% were female respondents. 203 (49.3%) medical and 209 non-medical (50.7%) responses were obtained. The mean age of the participants was 22±5.

Overall analysis of our data showed that approximately half of the respondents (50.2%) think that accessing ambulances in Pakistan is difficult and around two-third of them are more likely to use their private transport in cases of emergency ($p<0.01$).

Furthermore, people recommended that ambulances in Pakistan should be equipped with the updated tools required for providing basic life support (BLS) ($p<0.01$), and the staff should be well-trained to handle emergency situations ($p<0.01$). Most people suggest that different types of ambulances (bariatric, helicopter, motorcycle etc.) should be made available in Pakistan, and about 79% of people think that animal powered ambulances should be used in areas of poor infrastructure.

Furthermore, approximately 53% of the respondents believe that ambulances should not follow the general speed limit guidelines if necessary. 51.3% of the respondents disagreed when asked if paramedics should risk their life to save a patient.

Table 1: Response of the participants to ambulance etiquettes and knowledge (Q1).

Questions	Positive response (%)	Negative response (%)	P value
How likely are you to call an ambulance in case of a medical emergency?	257 (62.4)	75 (18.2)	<0.01
Accessing ambulances in Pakistan is difficult.	207 (50.2)	77 (18.7)	<0.01
Our traffic conditions are one of the biggest hurdles in the transportation of patients to the hospital.	400 (97.1)	0 (0.0)	<0.01
In cases of emergency, rather than calling an ambulance, you would use private transport.	273 (66.3)	48 (11.7)	<0.01
One should move their cars to the other lane in case of an ambulance behind them.	398 (96.6)	4 (1.0)	<0.01
One should break the traffic signal to give way to an ambulance.	274 (66.5)	56 (13.6)	<0.01
Ambulances should be driven within the speed limit.	149 (36.2)	171 (41.5)	>0.05
Ambulances should use sirens and flashing lights (even before they can be seen) to alert people on the road.	390 (94.7)	5 (1.2)	<0.01
Different types of ambulances such as bariatric ambulance, patient transport ambulance, emergency ambulance etc. should be used in Pakistan.	384 (93.2)	6 (1.5)	<0.01
Apart from vans, other vehicles can also act as ambulance such as boats, ships, helicopters, motorcycles etc.	291 (70.6)	48 (11.7)	<0.01
Animal powered ambulances should be used especially in areas that lack a high level of infrastructure.	182 (44.2)	48 (11.7)	<0.01
Different types of ambulances (emergency and non-emergency) should be distinguishable from one another.	353 (85.7)	21 (5.1)	<0.01
There are certain standards that a vehicle must meet in order for it to be used as an ambulance such as crash resistance, its exterior marking and equipment levels.	370 (89.8)	2 (0.5)	<0.01
An ambulance should be fitted with a range of equipments in addition to those required for treating patients such as AC, mobile data terminal, evidence gathering CCTV etc.	327 (79.4)	22 (5.3)	<0.01
There should be basic life support system in Edhi and Chipa ambulances.	243 (59.0)	47 (11.4)	<0.01
Ambulance staff should be qualified to give CPR (cardiopulmonary resuscitation).	394 (95.6)	2 (0.5)	<0.01
Paramedics should risk their own life for injured individuals.	124 (30.1)	131 (31.8)	>0.05
Paramedics should treat the patient even if he/she refuses.	238 (57.8)	62 (15.0)	<0.01
Only one family member should be allowed in an ambulance with the patient.	310 (75.2)	39 (9.5)	<0.01
Paramedical staff should consider the opinions of family members of the patient (what treatment to give, which hospital to go to etc.)	275 (66.7)	50 (12.1)	<0.01
Ambulances should have an installed map which informs them about congested areas.	398 (96.6)	5 (1.2)	<0.01
Motorcycle ambulances should be used considering the gridlock in Pakistan.	192 (46.6)	95 (23.1)	<0.01
There should be a separate lane for ambulances.	335 (81.3)	25 (6.1)	<0.01
Beggars should be recruited (paid) to work as scouts in order to clear traffic congestion.	301 (73.1)	54 (13.1)	<0.01
There should be awareness programs to educate people about when to call the ambulance.	397 (96.4)	2 (0.5)	<0.01

Moreover, according to respondents, treatment should be given to the patient even if he or she refuses (p<0.01), and opinions of family members should be considered in this regard (p<0.01) as shown in (Table 2).

Most people suggested that steps should be taken to improve ambulance services in Pakistan, and awareness programs should be conducted when needed (p<0.01).

Table 2: Response of the total participants pertaining to ethics.

Questions	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	P value
Paramedics should risk their own life for injured individuals.	36 (8.7)	88 (21.3)	157 (38.1)	106 (25.7)	25 (6.1)	>0.05
Paramedics should treat the patient even if he/she refuses.	60 (14.6)	178 (43.2)	112 (27.2)	53 (12.9)	9 (2.2)	<0.01
Only one family member should be allowed in an ambulance with the patient.	113 (27.4)	197 (47.8)	63 (15.3)	35 (8.5)	4 (1.0)	<0.01
Paramedical staff should consider the opinions of family members of the patient (what treatment to give, which hospital to go to etc.)	69 (16.7)	206 (50)	87 (21.1)	44 (10.7)	6 (1.4)	<0.01
Ambulances should be driven within the speed limit.	37 (9.0)	112 (27.2)	92 (22.3)	128 (31.1)	43 (10.4)	>0.05

DISCUSSION

The data highlighted the limited sphere of knowledge pertaining to ambulance ethics, which according to majority of the participants- irrespective of their medical background- went only as far as giving way to an ambulance either by breaking the signal or by changing lanes. They failed to show insight when faced with daunting ethical conflicts like autonomy of a patient, as 57.8% of the respondents supported the waiver of a pre-hospital ethical right, which states the right to refusal of a treatment by an 'adult' patient with 'capacity'. Whereby, adult means any individual who is old enough to make decisions pertaining to his life- which in most countries is 18 years of age and more; whereas capacity encompasses the mental ability of the patient to grasp his condition and the consequences following the refusal of treatment.[5] Notably, this could be attributed to insufficient knowledge amongst the general population of Pakistan regarding the law and medical ethics, which states that before initiating any treatment except in medical emergencies, an informed or proxy consent (a consent obtained from a kin in case of the patient being unconscious or incompetent to come up with a decision) is required.[6] Or arguably, another significant factor could be the awareness of public regarding the under qualification of the paramedics who serve as mere ambulance drivers. Therefore, assessment of the capacity of an individual in such a short duration of time is quite challenging esp. when the paramedical staff is not trained to make informed decisions and many a times unqualified to give cardiopulmonary resuscitation (CPR), as is the case in Pakistan.[5,7] These predicaments, in which time is of the essence, it is debatable for the paramedics to abide by the rules; for these rules aren't in black and white nor are they made bearing in mind the other hindrances posed in an under developed country with meager resources, poor infrastructure, disappointing civilian co-operation and dwindling literacy rate.

Furthermore, a slightly higher percentage of people were of the opinion for the paramedical staff to break the speed limit (p=0.218), if need arises, but also to ensure their safety as they opposed the notion of a paramedic risking his life for a patient's life (p=0.661), which is quite controversial. This is supported by the traffic rules that "allow" all emergency vehicles from breaking the speed limit but not exempt them from the consequences of reckless driving, which leaves the paramedics with another challenging dilemma at hand: to risk their life and those of others on the street for the safety of a patient teetering on the brink of death.[8] Moreover, there are not any specific guidelines or ethical code of conduct to follow, when met by perilous circumstances like during natural calamities, terrorist activities, war zones etc.[9] The crucial decision to risk his life for his duty again rests on the shoulder of the paramedic which results in inner and ethical conflicts. But the choice of this decision is mainly governed by his perception of duty, altruism and culture.[8]

According to this study, a preponderance of participants irrespective of their educational background opted for using private transportation rather than waiting for an ambulance ($p<0.01$) - a finding that is consistent with previous studies conducted in Pakistan and other developing countries - which reflects poor accessibility and their lack of trust in the timely arrival of an ambulance due to immense traffic congestion.[10] It may also have to do with the fact that most of the ambulances in Pakistan merely serve as commuters, with an exception of Aman Foundation's ambulances (that have an installed advanced life support system), which provokes people to use taxi's or any form of vehicle even an animal cart, esp. in remote areas of Pakistan, rather than going through the hassle of calling an ambulance.[7] This was demonstrated by an overwhelming majority of people wishing to have upgraded ambulances with basic life support system and trained paramedical staff, as conveyance could be provided by them as well.

Even though, the cost of hiring an ambulance has not been explored in this study, there is consilience that it could possibly be a barrier, amongst the many others, to the usage of an ambulance in Pakistan. This could be overcome by setting up a cost effective pre hospital care in other remote areas of Pakistan esp. northern areas with rugged terrain just like the one set up in Punjab: Rescue 1122.[7] Additionally, modification of the conventional animal driven ambulances -in areas lacking proper infrastructure- to cater to the needs of the patient, can also serve as a solution to ensure prompt arrival of the patient to the hospital; as majority of the respondents agree that every means should be sought to save a patient's life.

Despite Chipa and Edhi Foundation's undeniable and unparalleled hard work to provide rapid transportation of the patient from the disaster site to the hospital, innumerable participants felt the need to equip the ambulances with basic life support system and trained personnel so as to commence the treatment during the course of the journey and prevent mortalities.[7] In order to broaden the horizon of the population pertaining to ethical issues, assessment of the casualty and the necessary protocols to follow during the 'golden hour', workshops should be conducted (as approved by the participants) or advertisements should be aired about primary survey - a quick and easy way to determine whether the patient requires immediate medical intervention or not.[11] Respondents also approved the recruitment of beggars to obliterate the biggest obstacle in the transportation of patient: traffic congestion.

However, there are certain limitations to this study; although, this research had an inclusion criterion of individuals above the age of 15, predominantly currently enrolled university individuals in the age group of 19-25 filled out the questionnaires, which accounts for a very small percentage of population esp. in an under developed country like Pakistan. No data was collected from illiterate people which mainly accounts for 48% of the overall population of Pakistan; therefore, this could have significantly affected the results.[12] Not to mention, other obstacles towards delayed transportation namely lack of recognition of life threatening conditions, cultural barriers and cost have not been explored in this cross sectional study. Additionally, there is a paucity of data that focuses on the 'implementation' of knowledge regarding ambulance ethics; hence, no accurate conclusion can be drawn pertaining to the co-operation of the civilians towards an ambulance.

CONCLUSION

This study depicts a fair picture of limited knowledge concerning ambulance ethics amongst the general population especially the well-educated sector of Pakistan. Participants generally don't know much about ambulance ethics or seem to be oblivious to them when it comes to challenging ethical dilemmas as seen in the case of patient autonomy, breaking traffic signals to give way to an ambulance, exceeding the speed limit and paramedics risking their own lives to save that of the patient. The people around us want to save the lives of those at death bed irrespective of the ethical guidelines. Thus, majority of the responses seem to be decided by emotions and feelings of altruism and not dictated by keeping in view what the ethics ideally say so. This study identifies that opinions and knowledge regarding ambulance ethics need to be improved. It's about time to organize an effort to spread awareness regarding ambulance ethics amongst general population. Furthermore, effective ambulance ethics education will help improve pre-hospital care in unimaginable ways and potentially reduce the mortality rate. Moreover, we realized through our study that the perception of ambulance ethics does not differ significantly amongst medical and non-medical participants, the reasons of which can be identified in another research.

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REFERENCES

1. Available at https://www.theatlantic.com/health/archive/2012/09/the-fallacy-of-treating-health-care-as-an-industry/262159/. Accessed on 22 May 2018.
2. Believe W. Ethical challenges in emergency medical services. Prehosp Disaster Med. 1993;8(2):179-82.
3. Baig LA, Shaikh S, Polkowski M, Ali SK, Jamali S, Mazharullah L, et al. Violence against health care providers: a mixed-methods study from Karachi, Pakistan. J Emergency Med. 2018;54(4):558-66.
4. Hara OR, Johnson M, Hirst E, Weyman A, Shaw D, Mortimer P, et al. A qualitative study of decision-making and safety in ambulance service transitions. Health Services Delivery Res. 2014;2(56):3310.

5. Appelbaum PS. Assessment of patients' competence to consent to treatment. New England J Med. 2007;357(18):1834-40.
6. Berg JW, Appelbaum PS, Lidz CW, Parker LS. Informed consent: legal theory and clinical practice. Oxford University Press; 2001.
7. Anand J, Flora TA. Emergency Traffic Management for Ambulance using Wireless Communication. IPASJ Int J Electronics Comm (IIJEC). 2014;2(7):43-52.
8. Available at http://www.codepublishing.com/KS/Topeka/html/Topeka10/Topeka1030.html. Accessed on 17 May 2018.
9. Smith E, Burkle F, Gebbie K, Ford D, Bensimon C. A qualitative study of paramedic duty to treat during disaster response. Disaster Med Public Health Prepared. 2018;1:1-6.
10. Chandran A, Ejaz K, Karani R, Baqir M, Razzak J, Hyder AA. Insights on the effects of patient perceptions and awareness on ambulance usage in Karachi, Pakistan. Emerg Med J. 2014;31(12):990-3.
11. Available at http://www.sja.org.uk/sja/first-aid-advice/what-to-do-as-a-first-aider/how-to-assess-a-casualty/the-primary-survey.aspx. Accessed on 17 May 2018.
Available at https://nation.com.pk/08-Feb-2018/literacy-rate-in-pakistan. Accessed on 17th May 2018.

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