Assessment of Knowledge and Attitude Regarding First Aid Management of Road Traffic Accidents among Undergraduate Medical Students

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ABSTRACT

Background: Road traffic accidents (RTAs) are significant public health and developmental crisis. RTAs are chief cause of morbidity and mortality globally. First aid management enhances the rate of survival among victims of RTAs.

Objectives: To determine the knowledge and attitude regarding first aid management of road traffic accidents (RTAs) among medical students.

Material and methods: A cross sectional, questionnaire-based study was conducted in Jinnah Sindh Medical University and Affiliated Medical college of JSMU(Karachi) during the period of August to November 2018. A total of 162 MBBS students were included in this study. Questionnaire was designed to assess knowledge and attitude of first aid management of RTAs and effective ways that are beneficial in creating mass awareness regarding first aid management of RTAs. Questionnaire was consisted of demographic data, open and close ended questions.

Results: 110(67.89%) students had knowledge of first aid management in RTAs. Nearly 112(69.13%) students were aware of basic components of first aid management in RTAs. Only 56(34.56%) students considered it significant to attend RTA during clinical postings.

Conclusion: Knowledge of medical students was deficient in few fundamental areas of first aid management in RTAs. Majority of medical students were well aware of the significance of first aid management in RTAs. Attitude of medical students in cases of RTAs was inadequate (p-value=0.008).

Keywords: First aid management, road traffic accidents, knowledge, attitude, medical students, curriculum.

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INTRODUCTION

Road traffic accidents (RTAs) are significant public health and developmental crisis. RTAs are chief cause of death, illness and disability globally¹. In South Asian countries, RTA is the 5th leading cause of morbidity and mortality². According to WHO 1.3 million of people died worldwide due to road injuries³.

Human beings, automobiles and environmental factors are basic agents of RTAs. Noticeable factors contributing to RTAs are ignorance, negligence, lack of consideration, self-assurance of human beings, incaution driving and drunken driving⁴. The other participating factors are overconfident driving of young drivers, visual and cognitive impairment of old age driver⁵.

In Pakistan, death rate from RTAs was 4 per1000 population and 15 per 1000 vehicles⁶.

A study was conducted in Pakistan, revealed that the mortality rate of RTAs was 25.3 for every 100,000 population⁷. In unindustrialized

countries, between 5% and 20% of the burden of illness is due to injuries⁸. To reduce fatality rate due to improper pre hospital care, there is a need to improve ambulance and emergency services by proper training of health care providers. Medical care activities like trauma center should be established at district level⁹.

First aid is chief component of the pre-hospital care systems. First aid should be provided to victims before arrival to hospital. Airway blockage and excessive blood loss are frequent cause of mortality in RTAs. While if first aid treatment is provided to victims of RTAs the survival and recovery will be improved¹⁰. The main goals of first aid are to save life, avoid ailments and encourage recovery¹¹. Resuscitation aims to save life. Resuscitation skills involves cardiopulmonary resuscitation (CPR)¹². Therefore, it become essential to improve first aid knowledge among medical students, as the frequency of road traffic accidents are increasing within the country. This can aid in reducing morbidity and mortality among victims of RTAs. Within this context, the objective of current study is to determine knowledge and attitude regarding first aid management of RTAs among medical students. This study also determined strategic ways which will be beneficial in creating mass awareness regarding first aid management of RTAs among common man.

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MATERIALS AND METHODS

A cross sectional study was conducted in Jinnah Sindh Medical University (JSMU) and Affiliated Medical college of JSMU during August 2018 to November 2018. Study protocol has been approved ethically by Institutional Review Board of JSMU.

A total of 162 MBBS students from first year to final year, voluntarily agreed to participate were included in this study after obtaining informed consent. Students of JSMU and Affiliated Medical college of JSMU enrolled in non-medical fields were excluded. Year back students were also excluded. Literature search revealed that health care providers are efficient source to disseminate first aid knowledge and awareness in society¹³. Therefore, medical students were particularly considered in this study.

Convenient Sampling Technique was used. Sample size was calculated by open EPI software. The sample size was 158 using total population of 2550, anticipated % frequency is 12.5%¹³, confidence level of 95%. A total of 162 students were included in present study. A structured questionnaire was prepared under the supervision of efficient professors of JSMU. Questionnaire was consisted of demographic data, open and close ended questions. Questionnaire was designed to collect fundamental knowledge of first aid, knowledge of Cardiopulmonary resuscitation (CPR), attitude of medical students towards first aid management of RTAs and effective ways that are beneficial in creating mass awareness regarding first aid management of RTAs. Data was collected by the project team members via printed forms. Written informed consent was obtained from all the participants. Confidentiality and anonymity of data was guaranteed. The data was coded and processed on SPSS Version 22.0. As it is a descriptive evaluating study, most of the results had been calculated in percentages. P-value of less than 0.05 was considered as significant at 95% of confidence interval.

RESULTS

A total of 162 medical students were interviewed in this study among them 128 (79.0%) were females and 34 (21.0%) were males. Distribution of participants in preclinical and clinical class years was equal, 50% in each group. Distribution of medical students was equal, 81(50%) from public sector university and 81(50%) from private sector university.

Knowledge and attitude regarding first aid management of RTAs is summarized in table 1. Basic components of first aid in RTAs were answered correctly 25(15.43%) by government college participants and 17(10.49%) by private college participants. Approximately 47(29.01%) government college participants and 45(27.77%) private college participants were correctly prioritized airway management first in traumatic unconscious subject. Moreover, significant number of government college participants 48(29.62%) and private college participants 50(30.86%) had knowledge of CPR. Attitude of medical students was less satisfactory. Approximately 31(19.13%) and 25(15.43%) participants considered it significant to attend any RTA during clinical postings. (Table 1)

Table 2 summarizes effective ways that will be beneficial in creating mass awareness regarding first aid management of RTAs. Majority of participants 145(89.5%) reported that workshops for drivers relating to first aid management of RTAs should be arranged. A total of 151(93.2%) medical students suggested that first aid must be the part of school curriculum.

Table 1. Knowledge and attitude of first aid management of RTAs among medical students of government and private college. (N=162)

Variables	Government n(%)	Private n (%)	P-Value
Knowledge of first aid management in RTAs	57(35.18%)	53(32.71%)	0.002
Basic components of first aid of RTAs	57(35.18%)	55(33.95%)	0.001
Knowledge about golden hours	60(37.5%)	59(36.41%)	0.001
Knowledge about logrolling	35(21.60%)	34(20.98%)	0.001
First response in traumatic patient: ABC ¹	47(29.01%)	45(27.77%)	0.983
Knowledge about CPR	48(29.62%)	50(30.86%)	0.010
First step while performing CPR	23(14.19%)	22(13.58%)	0.258
Compressions within one minute	48(29.62%)	37(22.83%)	0.067
Rescue breaths after each cycle	37(22.83%)	35(21.60%)	0.024
Duration to continue CPR	35(21.60%)	33(20.37%)	0.195
Bleeding: Apply pressure and elevate limb	49(30.24%)	45(27.77%)	0.002
Unconsciousness: Follow principals of ABC	67(41.35%)	57(35.18%)	0.062
Shock: Don't move the patient and keep warm	26(16.04%)	15(9.25%)	0.087
Breathing: Monitor breathing, pulse and CPR	21(12.96%)	17(10.49%)	0.038
Attitude of first aid management of RTAs:			
It is significant to attend RTA in clinical postings	31(19.13%)	25(15.43%)	0.008
It is significant to attend workshop on RTA	76(46.9%)	67(41.35%)	0.20

¹Airway, Breathing, Circulation(ABC), ²Cardiopulmonary Resuscitation

Table 2. Frequency distribution of effective ways that are beneficial in creating mass awareness regarding first aid management of RTAs. (n= 162)

Variables	Responses n (%)
Workshops for drivers about first aid of RTAs	145(89.5%)
Drivers must have first aid skills certificate while applying for driving license.	129(76.9%)
Seminars in communities regarding first aid of RTAs	146(90.1%)
First aid must be the part of school curriculum	151(93.2%)
Public awareness programs	68(42.0%)

DISCUSSION

Road Traffic Accidents (RTAs) are chief cause of death, illness and disability globally. However, if first aid treatment is provided to victims of RTA the morbidity and mortality rate will be reduced. To improve first aid management in victims of RTA it is significant to determine knowledge and attitude of first aid management regarding RTAs among medical students.

In present study basic components of first aid management in RTAs was answered correctly by 112 (69.13%) of medical students. An Indian study reported that 12.5% of medical students were well aware of first aid in RTAs¹⁴. Approximately 42.58% participants had knowledge about logrolling. Comparatively, Marhoon *et al.* reported that 78.5% medical students had concept

logrolling¹⁵. Current study reported that 92(56.78%) of participants correctly preferred airway management first in traumatized victim. Which is complemented by Al Hejaili AS, Al Subhi SA, who proved that 59.9% medical students sequenced airway management first¹⁶. The study showed significant finding of 45(27.77%) students have the knowledge to perform CPR correctly. Which is complemented by the finding of Khan A et al conducted in Pakistan, who proven 32.2% participants had knowledge of CPR technique¹⁷.

In this study, knowledge about the chest compressions given in CPR were given by 85(52.54%) participants, which is contradict with the finding of Abbass A, Bukhari SI et al, who found that it was about 34.4%¹⁸. The study showed that 94(58.01%) participants had the knowledge of first aid management of bleeding. Which is contradicted by the research conducted by Pallavisarji U, Gururaj G, Girish RN in India proven that only 4.2% had the knowledge to about the management of bleeding control¹⁹.

Literature review had revealed that mortality and morbidity rates were reduced among subjects received first aid by skilled laypersons as first responder in traumatic care²⁰. The study showed the response about the training of laypersons by seminar was about 146(90.1%) and about the publis awareness was 68(42.0%). The study also revealed that 151(93.2%) medical students suggested that first aid must be the part of school curriculum. Which is complemented by the study conducted by Bollig G, Wahl HA who stated that school students should learn first aid management²¹. A study by Mobarak, A. also revealed that implementing first aid training in school curricula had positive step toward the publicizing of first aid skills in society²². The study showed that 145(89.5%) of medical students considered that workshops for drivers will be an effective process in reducing RTAs associated mortality. Which is complemented by a study conducted in Nigerian which concluded that to reduce the prehospital morbidity drivers must have first aid skills²³.

CONCLUSION

Knowledge of medical students was deficient in few fundamental areas of first aid management in RTAs. Majority of medical students were well aware of the significance of first aid management in RTAs. Attitude of medical students in cases of RTAs was inadequate.

LIMITATIONS

This study had certain limitations. Drawback of this study was the assessment of their practical skill as many participants just have the awareness or they don't have the skill to provide the care or they had responded incorrectly in the questioner. It is suggested that multicenter and large population size-based study will be conducted that will emphasize on practical skills of first aid across the country.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

Qadeer R, Sarwat S:	Concept and design of study, Collection of data, statistical analysis
Naqvi SGZ:	Writing of manuscript, critical review of manuscript
Shabbir U:	Analysis and interpretation of data, statistical analysis
Babar A:	Data collection, bibliography

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.