

# Knowledge, attitude, and practice of first aid among the commercial drivers in the Kumaon region of India

Sadhana Awasthi<sup>1</sup>, Gaihehlung Pamei<sup>1</sup>, Hariom K. Solanki<sup>1</sup>, Amandeep Kaur<sup>1</sup>, Maneesh Bhatt<sup>1</sup>

<sup>1</sup>Department of Community Medicine, Government Medical College, Haldwani, Uttarakhand, India

## ABSTRACT

**Background:** First aid assistance is one of the important life-saving skills. According to World Health Organization, over 50 million people are injured or disabled and over 1.2 million people die following Road Traffic Accident (RTA) every year. Providing the basic care until emergency medical services arrive is the essence of first aid, which will prevent a number of RTA-related mortality and morbidity. **Aim:** To assess the knowledge, attitude, and practice regarding first aid among the commercial vehicle drivers operating in and from Haldwani. **Method:** This was a cross-sectional study conducted among the commercial drivers operating in and from Haldwani Block of Uttarakhand, from November 2018 to January 2019. Participants were selected using consecutive sampling technique. The questionnaire used for data collection was semistructured and pretested. **Results:** All participants were male with the mean age (standard deviation) of 40.4 (8.7) years. Overall 96.4% and 81.7% had heard about first aid and the “Good Samaritan” law. Among participants, 96% knew that first aid should be provided immediately and 90.5% were willing to be trained in first aid. First aid kit was available in 84.9% of the vehicles. In total, 211 (91%) participants had attended RTA victim/s in the past, and 192 (91%) of them provided assistance to RTA victims. **Conclusions:** Although the study showed a positive attitude toward giving first aid to RTA victims, the knowledge and practice of first aid was not universal.

**Keywords:** Commercial drivers, first aid, knowledge, road traffic accident

## Introduction

Every year over 50 million people are injured or disabled and 1.35 million people die as a result of road traffic accidents (RTAs) globally. In India, 4.94 lakh injures and 1.50 lakh deaths were recorded in 2016.<sup>[1,2]</sup> Apart from the loss of life, RTA incur a huge financial loss in the form of on-going treatment and years of productive life lost.<sup>[3]</sup> The golden hour, referring to the first hour after trauma, to large extent, determines the fate of the RTA victims.<sup>[4]</sup> In certain situation, if a patient does not receive first aid immediately, their condition will worsen, thus affecting their future health, quality of life, or may even result in death.

**Address for correspondence:** Dr. Hariom K. Solanki, Department of Community Medicine, Government Medical College, Haldwani - 263 139, Uttarakhand, India.  
E-mail: hariom.mamc@gmail.com

**Received:** 09-04-2019 **Revised:** 10-04-2019 **Accepted:** 20-04-2019

The main goals of first aid are to preserve life, prevent further illness or injury, and promote recovery.<sup>[5]</sup> Untrained individual attending accident victims may sometimes lead to further injuries (unknowingly, unintended) with grievous consequences.<sup>[6]</sup> In Canada, it is estimated that the survival rate can be raised from 8% to 32%, if all bystanders provide first aid.<sup>[7]</sup> The knowledge of first aid is important for every individual but is more so for commercial drivers as they are more likely to witness or to be involved in RTAs. Also, studies among commercial drivers regarding first aid were sparse. Hence, this study was carried out with the aim to assess the knowledge, attitude, and practice among the commercial drivers operating in and from Haldwani block, district Nainital of Uttarakhand state in India, regarding first aid.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:** reprints@medknow.com

**How to cite this article:** Awasthi S, Pamei G, Solanki HK, Kaur A, Bhatt M. Knowledge, attitude, and practice of first aid among the commercial drivers in the Kumaon region of India. *J Family Med Prim Care* 2019;8:1994-8.

### Access this article online

#### Quick Response Code:



**Website:**  
www.jfmipc.com

**DOI:**  
10.4103/jfmipc.jfmipc\_295\_19

## Methodology

**Study design and settings:** This was a cross-sectional study conducted in Haldwani Block of Nainital district in the Kumaon division of Uttarakhand state, India, from November 2018 to January 2019. Haldwani is the third most populous city in Uttarakhand.<sup>[8]</sup>

**Sample size:** Sample size was calculated using the expected prevalence of knowledge of first aid among drivers as 50%<sup>[9]</sup> ( $P = 0.5$ ) and precision as 7.5% for 95% confidence interval. The minimum sample size obtained was 171. Using a design effect of 1.33 and assuming 10% nonresponse rate, the final sample size of at least 250 participants was obtained.

**Study population:** Commercial drivers,  $\geq 18$  years of age, who drove commercial buses, taxis, and auto rickshaws, operating in and from Haldwani through the designated stands for the respective vehicles on most days in a week and who gave consent were participated in this study.

**Sampling technique:** Participants in the study were selected using consecutive sampling technique from bus stations, taxi stands, and auto stands. Two hours a day for three days a week were allotted for data collection. The days in a week on which data were collected varied from week to week. A predecided cap of interviewing a maximum of 25 drivers in a day was followed. Drivers were approached one after another for interview till the required sample size was reached.

**Ethical issues:** Informed written consent was taken from participants after explaining the purpose of the study. Data confidentiality and anonymity was maintained throughout the study.

**Data collection and statistical analysis:** Data were collected using pretested, semistructured questionnaire. The data obtained were compiled in MS Excel and analyzed using SPSS version 16.0.

## Operational definitions

**Commercial driver:** A person who drives a commercial bus, four wheeler taxi or auto rickshaw on a regular basis (defined as at least 4 days in a week) for at least 3 months preceding the data collection.

**First aid:** All kind of helping behavior (includes making call to police, ambulance, or family members of the victim; and transporting the RTA victim to the health facility or police post) and initial care provided for an RTA injury to the victim.

**Road traffic accident:** Any injury due to crashes originating from collision of vehicles with other vehicles, pedestrian, or any other stationary obstacles.<sup>[10]</sup> For inclusion as RTA in our study, at least one of the vehicles should have been in motion at the time of the crash.

## Results

In total, 267 commercial drivers were approached for interview, out of which 252 consented to participate and completed the interview (response rate of 94.3%) for whom the results have been presented. All participants in our study were male with the mean age (standard deviation) of 40.4 (8.7) years. A quarter of the study population (26.6%) drove state transport cooperation buses, i.e. commercial government buses, while a fifth of them (19.8%) drove buses owned by private individuals or organizations. Over one-third of the study participants (38.5%) were taxi drivers and just under a sixth (15.1%) drove auto rickshaws. About 5% study participants did not have any formal education. Majority of the drivers (58.7%) had over 10 years of experience in their present occupation and a quarter of them (25.8%) drove for over 10 h a day excluding the waiting period. Three-fourth of the study participants (74.2%) had witnessed at least one RTA in the last 6 months [Table 1].

In our study, 96.4% of the study participants were familiar with the term “first aid”; 92.1% were aware that first aid can save life, but only a negligible number of participants (1.2%) had

**Table 1: Sociodemographic profile of the study participants (n=252)**

Variable	Frequency (%)
Age (in years)	
20-29	23 (9.1)
30-39	91 (36.1)
40-49	94 (37.3)
$\geq 50$	44 (17.5)
Vehicle type	
Bus - government	67 (26.6)
Bus - private	50 (19.8)
Taxi - private	97 (38.5)
Auto rickshaw - private	38 (15.1)
Experience (years)	
$\leq 5$	36 (14.3)
6-9	68 (27.0)
$\geq 10$	148 (58.7)
Educational status	
Illiterate	12 (4.7)
Primary	27 (10.7)
High school	129 (51.2)
Senior secondary	69 (27.4)
Graduate and above	15 (6.0)
Marital status	
Married	234 (92.9)
Unmarried	18 (7.1)
Hours of driving per day (excluding waiting period)	
$\leq 5$	22 (8.7)
6-10	165 (65.5)
$> 10$	65 (25.8)
RTA witnessed in last 6 months	
0	65 (25.8)
1-5	108 (42.8)
$> 5$	79 (31.4)

received any formal training in first aid. The emergency helpline number was known to 98.4% of the drivers interviewed. Correct knowledge of who and when, and where of first aid was found in 66.3% and 90.1% of the study participants, respectively. The Good Samaritan Law which gives certain rights and immunity to the first responder/s was known to 81.7% of the participants. When asked to prioritize the first aid concept, 38.9% and 22.2% of the drivers prioritized breathing maintenance and chest compression, respectively. Only a sixth (16.3%) of participants was aware of signs of airway obstruction/problem; and only a third (31.7%) knew the correct recovery position for semiconscious or unconscious person. Only 57.9% participants had the right knowledge on how to stop severe bleeding and about three-fourth of them (73.4%) knew that a splint is applied in bone fractures [Table 2].

Of the study participants, 96% believe that first aid should be provided to the victim following RTA immediately at the scene itself. However, four study participants (1.6%) declined to provide first aid and another 15 participants (5.3%) were uncertain of providing first aid to the victims. The reasons for unwillingness to provide first aid by the study participants themselves were the fear of police persecution (94.7%) and lack of knowledge (5.3%). About 232 (92.1%) of the study participants think that lay persons should be trained in first aid and 90.5% of them were willing to be trained in first aid [Table 3].

First aid kit was available in the vehicles of 84.9% participants and 69% used its contents at least once in the past. Among the participants, 211 (83.7%) had attended RTA victim in the past, out of which 192 (91%) provided first aid to the victim. The nature of aid provided to the victims included calling for the ambulance (51.1%) and taking the victim to the hospital (33.3%) among others. Forty-five of the study participants encountered victim with airway problem, for which four-fifth of them (80%) called for ambulance or transported the victim to the hospital, themselves. In total, 170 study participants witnessed victims with heavy bleeding and two-fifth of them (40%) applied pressure and dressed the bleeding site to stop the bleeding followed by other measures. Only 17 of study participants encountered victims with head and neck injury and almost half of them (47%) called for ambulance, whereas four-fifth of them (41.2%) transported the victim to the nearby hospital themselves. It was also found that 140 of the drivers had attended victims of bone fracture and majority of them (54.3%) applied splint [Table 4].

## Discussion

This study assessed the knowledge, attitude, and practice among 252 commercial drivers of first aid related to RTA victims. All participants in our study were male which is expected in a male-dominated occupation in India. Twelve (4.7%) participants had no formal education, whereas in another study,<sup>[11]</sup> 8.4% of the study population was found to be illiterate. This can be explained in terms of time trend - the educational status of Indian population is increasing steadily over time<sup>[12]</sup> - as

**Table 2: Knowledge of the participants' regarding first aid (n=252)**

Knowledge domains	Frequency (%)
Heard about first aid	243 (96.4)
Ever received training in first aid	3 (1.2)
First aid saves life	232 (92.1)
Emergency helpline number known	248 (98.4)
Heard of 'The good Samaritan Law'?	206 (81.7)
Knowledge of when and where to provide first aid	227 (90.1)
Bystander should give first aid	167 (66.3)
First aid priority*	
Chest compression	56 (22.2)
Breathing maintenance	98 (38.9)
Stopping bleeding	73 (29.0)
Splinting fractures	10 (4.0)
Transport to hospital	46 (18.2)
Wound management	11 (4.4)
Don't know	2 (0.8)
Any symptom or sign of airway problem known	41 (16.3)
Correct knowledge of safe position	80 (31.7)
Applying pressure for severe bleeding	146 (57.9)
Application of splint for fracture	185 (73.4)
Indication of transportation to hospital*	
Unconscious	196 (77.8)
Open wound	44 (17.5)
Fracture	38 (15.1)
Don't know	26 (10.3)

\*Multiple response possible

**Table 3: Attitude of the participants' toward first aid (n=252)**

Attitude	Response	Frequency (%)
Willingness to provide first aid	Yes	233 (92.5)
	No	4 (1.6)
	Uncertain	15 (6.0)
If no/uncertain, reasons (n=19)	Lack of knowledge	1 (5.3)
	Fear of police persecution	18 (94.7)
Should lay person be trained in first aid?	Yes	232 (92.1)
	No	4 (1.6)
	Don't know	16 (6.3)
Willingness for training in first aid	Yes	228 (90.5)
	No	24 (9.5)

our study was done later higher literacy rate is expected. The acquisition of commercial driving license does not require any formal educational qualification in the State where this study was conducted.<sup>[13]</sup>

As people who helped RTA victims were sometimes persecuted, many people were reluctant to come forward to help RTA victims. Therefore, the "Good Samaritan law" was enacted in 2016, whereby a person helping the RTA victim cannot be forced to reveal their identity or personal details (except eye witness) and that they cannot be unnecessarily detained by police or hospitals.<sup>[14]</sup> In spite of its existence for over 2 years, only 81.7% study participants were aware about it, which is similar

**Table 4: Practice of the participants' in regard to first aid (n=252)**

Practice	Frequency (%)
Availability of first aid kit	214 (84.9)
Ever used contents of the first aid kit	174 (69.0)
Ever attended RTA victim	211 (83.7)
First aid provided	192 (91.0)
First response of study participant (n=192)	
Called ambulance	98 (51.1)
Transported to hospital	64 (33.3)
Provided first aid according to injury	28 (14.6)
Called police	2 (1.0)
Attended victim of airway problem (n=45)	
Called ambulance	22 (48.9)
Transported to hospital	14 (31.1)
Did nothing	8 (17.8)
Gave camphor to smell	1 (2.2)
Attended victim of heavy bleeding (n=170)	
Tourniquet	45 (26.5)
Applied pressure	68 (40.0)
Called ambulance	26 (15.3)
Transported to hospital	15 (8.8)
Did nothing	14 (8.2)
Limb elevation	2 (1.2)
Attended victim of head and neck injury (n=17)	
Called ambulance	8 (47.0)
Transported to hospital	7 (41.2)
Did nothing	2 (11.8)
Attended victim of bone fracture (n=140)	
Applied splint	76 (54.3)
Called ambulance	30 (21.4)
Transported to hospital	18 (12.9)
Did nothing	16 (11.4)

to the findings (84%) reported by a national study in general population of India.<sup>[15]</sup>

In our study, 96.4% of the drivers knew what first aid is, but only 1.2% of them were trained, whereas a much higher percentage (15.5%) of the drivers were trained in Zambia.<sup>[16]</sup> Breathing maintenance was accorded priority by 38.9% study participants in our study, whereas, in Nigeria, it was accorded first priority by 59.9% participants. In the same Nigerian study, 88.5% the drivers considered application of splint for the initial management of fracture, which was lower in our study at 73.4%. The correct knowledge regarding the stoppage of severe bleeding was found to be similar in both the studies (57.9% in our study and 51.5% in the Nigerian study).<sup>[17]</sup>

Large majority of the participants (92.5%) in this study were willing to provide first aid to the victims of RTAs. Overall 90.5% participants were willing to be trained in "First Aid." On the contrary, another study from India reported that 58% of the participants who were confident and willing to provide assistance.<sup>[11]</sup> In a study from Ethiopia, 88% of the drivers in the study were not confident to render first aid as they had inadequate knowledge.<sup>[18]</sup> In this study, 83.7% of the participants had attended

to victims of RTA. Among these 14.6% provided first aid at the spot. Similarly 80.7% of the taxi drivers in Nigeria had attended to RTA victims and 16.2% of them provided first aid on site.<sup>[17]</sup>

Three-fourth of study participants in our study had driving hours (excluding waiting period) in excess of 6 h per working day. Waiting time can range from half to equal to the driving hours for commercial drivers (data not collected, personal experience/opinion of authors after informal discussions with a few commercial drivers) depending upon type of vehicle being driven. This means a day at work may last about 9–18 h or even more for a substantial number of these drivers. As long working hours for drivers are associated with increased risk of accidents and also associated with increased risk of many lifestyle related comorbidities including mental disorders, this is an important finding with implications for health for both the people traveling by road (may or may not be in a vehicle) and also the individual drivers of the commercial vehicles.<sup>[19,20]</sup> Globally, drowsy driving led to about 72,000 crashes, 44,000 injuries, and 800 fatal cases in a single year.<sup>[21]</sup> It is estimated that fatigue while driving has a crash risk of six times compared with the well-rested drivers.<sup>[22]</sup>

Some of the limitations in our study are that all the aspects of first aid were not studied; the sample size of the current study was relatively small and the study participants were studied from a single city; therefore, it may have limited generalizability.

## Conclusion

Majority of the commercial drivers had the basic knowledge that first aid save lives. However, only a negligible number of them were trained in first aid. However, the attitude of the drivers toward assisting victims of RTA was largely positive and majority of them were willing to be trained in first aid. First aid kit was not universally available in commercial vehicles. The most common aid provided by the participants to RTA victims was calling the ambulance and transporting the victims to the hospital.

## Recommendations

There is a need to sensitize drivers of commercial vehicles about "The Good Samaritan Law" and keeping a 'ready to use' first aid kit in their vehicles at all the time. The concerned authorities can contemplate making first aid training mandatory before issuing commercial or even noncommercial driving license to the new applicants and organizing first aid training workshops for existing drivers. Similar studies should be conducted in different settings to obtain better picture of the knowledge, attitude, and practices of commercial drivers regarding "First Aid" in India.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. WHO.2019.GLOBAL STATUS REPORT ON ROAD SAFETY 2018.pdf [Internet]. [cited 2019 Mar 27]. Available from: <http://www.globalncap.org/wp-content/uploads/2018/12/WHO-status-report-eng.pdf>.
2. Ministry Of Road Transport and Highway. Annual Report 2017-18.pdf [Internet]. [cited 2019 Mar 27]. Available from: <http://morth.nic.in/writereaddata/mainlinkFile/File3152.pdf>.
3. WHO. Road Traffic Injuries [Internet]. [cited 2019 Mar 27]. Available from: <https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries>.
4. ATLS.10<sup>th</sup> ed. 2018.pdf [Internet]. [cited 2019 Mar 27]. Available from: <https://viaaerearcp.files.wordpress.com/2018/02/atls-2018.pdf>.
5. Zideman DA, Singletary EM, Buck EDJD, Chang WT, Jensen JL, Swain JM, *et al.* Part 9: First aid: 2015 International consensus on first aid science with treatment recommendations. *Resuscitation* 2015;95:e225–61.
6. Podolsky S, Baraff LJ, Simon RR, Hoffman JR, Larmon B, Ablon W. Efficacy of cervical spine immobilization methods. *J Trauma Inj Infect Crit Care* 1983;23:461-5.
7. Charlie. Red Cross First Aid and CPR Save Lives-Is It True? [Internet]. First Aid and Swimming Canadian Red Cross Training Partner. 2017 [cited 2019 Mar 27]. Available from: <https://www.c2cfirstaidaquatics.com/red-cross-first-aid-and-cpr-save-lives-is-it-true/>.
8. District census handbook, Nainital. Directorate of Census operations, Uttarakhand [Internet] [cited 2018 Sep 15]. Available from: <http://www.censusindia.gov.in/2011census/dchb>.
9. Lata S. An exploratory study to assess the awareness of drivers and conductors regarding first aid kit in buses running in Sonipat. *IOSR J Bus Manag* 2016;01:76-81.
10. Road Traffic Accidents. National Health Portal Of India [Internet]. [cited 2019 Mar 27]. Available from: [https://www.nhp.gov.in/road-traffic-accidents\\_pg](https://www.nhp.gov.in/road-traffic-accidents_pg).
11. Pallavisarji U, Gururaj G, Girish RN. Practice and perception of first aid among lay first responders in a Southern District of India. *Arch Trauma Res* 2013;1:155-60.
12. Census Of India 2011. Report on Post Enumeration Survey. pdf [Internet]. [cited 2019 Mar 27]. Available from: <http://www.censusindia.gov.in/2011Census/pes/Pesreport.pdf>.
13. State Transport Department. Government Of Uttarakhand. India. Licence [Internet]. [cited 2019 Mar 27]. Available from: <http://transport.uk.gov.in/pages/display/56-licence>.
14. The Gazette Of India. Gazette notification regarding protection of Good Samaritans. MoRTH.pdf [Internet]. [cited 2019 Mar 27]. Available from: <https://dghs.gov.in/WriteReadData/userfiles/file/Gazette%20notification%20regarding%20protection%20of%20Good%20Samaritans-%20MoRTH.pdf>.
15. Safe Life Foundation. [Internet]. [cited 2019 Mar 27]. Available from: <https://savelifefoundation.org/gsl-microsite/>.
16. Mpombo DAK, Mwanakasale V. Assessment of knowledge, attitude and practice of first aid amongst minibus drivers, conductors and road traffic police officers in Ndola, Zambia. *Asian Pac J Health Sci* 2017;4:121-8.
17. Olugbenga-Bello AI, Sunday OK, Nicks BA, Olawale OA, Adefisoye AO. First aid knowledge and application among commercial inter-city drivers in Nigeria. *Afr J Emerg Med* 2012;2:108-13.
18. Teshale AA, Alemu ZA. Knowledge, Attitude and Practice of first aid and factors associated with practice among taxi drivers in Addis Ababa, Ethiopia [Internet]. ResearchGate. [cited 2019 Mar 27]. Available from: [https://www.researchgate.net/publication/326082625\\_Knowledge\\_Attitude\\_and\\_Practice\\_of\\_first\\_aid\\_and\\_factors\\_associated\\_with\\_practice\\_among\\_taxi\\_drivers\\_in\\_Addis\\_Ababa\\_Ethiopia](https://www.researchgate.net/publication/326082625_Knowledge_Attitude_and_Practice_of_first_aid_and_factors_associated_with_practice_among_taxi_drivers_in_Addis_Ababa_Ethiopia).
19. CDC. Long-Haul Truck Drivers. Health. NIOSH Workplace Safety and Health Topics [Internet]. 2018 [cited 2019 Mar 28]. Available from: <https://www.cdc.gov/niosh/topics/truck/health.html>.
20. Driver Fatigue Policy Statements. RoSPA [Internet]. [cited 2019 Mar 28]. Available from: <https://www.rospa.com/road-safety/advice/drivers/fatigue/policy-statements/>.
21. CDC. Dangers of Drowsy Driving [Internet]. Centers for Disease Control and Prevention. 2018 [cited 2019 Mar 28]. Available from: <http://www.cdc.gov/features/dsdrowsydriving/index.html>.
22. European Commission. Road Safety. Fatigue and crash risk [Internet]. Mobility and transport-European Commission. 2016 [cited 2019 Mar 28]. Available from: [https://ec.europa.eu/transport/road\\_safety/specialist/knowledge/fatigue/fatigue\\_and\\_road\\_crashes/fatigue\\_and\\_crash\\_risk\\_en](https://ec.europa.eu/transport/road_safety/specialist/knowledge/fatigue/fatigue_and_road_crashes/fatigue_and_crash_risk_en).