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To assess the effectiveness of structured teaching programme on knowledge and practices regarding first aid management for road traffic accidents among auto rickshaw drivers in selected area of metropolitan city

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Abstract
First aid is the assistance given to any person suffering a sudden illness or injury, with care provided to preserve life, prevent the condition from worsening, or to promote recovery. Automobile accidents are extremely common cause of injury. Whether an accident results in minor whiplash or more serious injuries, it's important to learn how to respond quickly. Many emergency situations involve threatening situations with other people. A total 60 samples were enrolled in the study.

Methodology: Research approach used in this study was evaluatory approach. Pre experimental one group pre-test post-test research design was adapted. The sample was auto rickshaw drivers who fulfilled inclusion criteria selected by using non probability convenient sampling technique. The study was conducted in selected Auto rickshaw stands. The researcher used semi structured questionnaire to assess knowledge and observational checklist to assess practices of auto rickshaw drivers. The data was analysed in terms of the objective and hypothesis using SPSS format.

Result: Wilcoxon Signed rank Test value for knowledge is 6.774 which is statistically significant at 5% level of significance. Wilcoxon Signed rank Test value for practices is 6.749 which is statistically significant at 5% level of significance. The calculated value was statistically significant at 5% level of significance. Hence the null hypothesis is rejected which shows that structured teaching program is effective.

Conclusion: The major findings revealed that structured teaching programme enhanced the knowledge of the auto rickshaw drivers on first aid management during road traffic accident. The overall mean score of post-test knowledge scores of the autorickshw drivers is 15.55 is apparently higher than the overall mean score of pre-test knowledge score 10.83 P value was < 0.001 which is statistically significant at 5 % level i.e., $p<0.05$. Indicating that the STP was effective in gaining knowledge on first aid management during road traffic accident among auto rickshaw drivers.

Keywords: Structured teaching programme, road traffic accident, first aid management, auto rickshaw drivers, knowledge and practices

Introduction

First aid is the provision of limited care for an illness or injury, which is provided usually by a lay person to a sick or injured patient until definitive medical treatment can be accessed, or until the illness or injury is dealt with as not all illnesses or injuries will require a higher level of treatment. It generally consists of a series of simple, sometimes lifesaving, medical techniques, that an individual, either with or without formal medical training, can be trained to perform with minimal equipment.

In many emergency cases, the best thing you can do is to stay calm and collected. Heightened emotions tend to hamper your critical thinking skills and your ability to think quickly. As per WHO report 20 and 50 million people suffer from non-fatal injuries, with many, incurring a disability as a result of their injury.

Road traffic accidents (RTAs) have emerged as an important public health issue which needs to be tackled by a multi-disciplinary approach. The trend in RTA injuries and death is becoming alarming in countries like India. The number of fatal and disabling road accident happening is increasing day by day and is a real public health challenge for all the concerned agencies to prevent it.

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The approach to implement the rules and regulations available to prevent road accidents is often ineffective and half-hearted. Awareness creation, strict implementation of traffic rules, and scientific engineering measures are the need of the hour to prevent this public health catastrophe. Autorikshaw drivers are the first to respond to accidents on roads and if trained they can save many lives. Precious lives could be saved if the victims were attended properly and provided first aid. Traffic policemen, autorikshaw drivers and the public can respond during the golden hour and provide first aid and take them to hospital.

Need for Study

Mr. Nitin Gadkari; Minister of Road Transport and Highways of India, releases annual publication Road Accidents in India- 2016 'Report for the first half of 2017 encouraging - road accidents dropped by 3 % and fatalities drop by 4.75% between January to July 2017. Report revealed that 46.3 percent killed in road accidents were young, between the age group of 18-35 years. Among the vehicle categories, two wheelers accounted for the highest share in the total number of road accidents (33.8 per cent), followed by cars, jeeps and taxis (23.6 per cent), trucks, tempos, tractors and other articulated vehicles (21.0 per cent), Buses (7.8 per cent), Auto-Rickshaws (6.5 per cent) and other motor vehicles (2.8 per cent). The share of two wheelers in total road accidents has increased from 28.8 per cent in 2015 to 33.8 per cent in 2016.

According to the Ministry of Road Transport and Highways, 1,50,785 people were killed and another 4,94,624 were injured in 4,80,652 road crashes in India in 2016. This translates into 1317 crashes and 413 deaths every day or 55 crashes and 17 deaths every hour. The number of road crash deaths has increased by 31% from 2007 to 2017 and that of fatal road crashes have increased by 25.6% in the same period. Road crash fatalities increased by 3% in the last one year (From 1,46,133 in 2015 to 1,50,785 in 2016) and accident severity2 increased from 29.1 in 2015 to 31.4 in 2016. The number of fatal accidents has increased consistently since 2005 and saw a sharp rise from 1,31,726 in 2015 to 1,36,071 in 2016.

As the auto rickshaw drivers are mostly present at the time of accidents and are also having vehicle available with them, if are provided with the first aid knowledge can provide the basic first aid to victim and shift to hospital in the first golden hour.

Aim of the study

To assess the effectiveness of structured teaching program on knowledge and practices regarding first aid management for road traffic accidents among auto rickshaw drivers in selected area of metropolitan city.

Methodology

To assess the effectiveness of structured teaching Programme regarding first aid management for road traffic accidents among auto rickshaw driver To assess the pre-test knowledge and practices regarding first aid management for road traffic accidents among auto rickshaw drivers before structure teaching Programme. To assess the post-test knowledge and practices regarding first aid management for road traffic accidents among auto rickshaw drivers after structure teaching programme. To compare the pre-test and post-test knowledge and practices regarding the first aid management for road traffic accidents among auto rickshaw driver before & after the structured teaching programme. To find out the association between pre-test knowledge and practices regarding the first aid management for road traffic accident among auto rickshaw drivers with selected demographic variables. Research approach used in this study was evaluatory approach. Pre experimental one group pre-test post-test research design was adapted. In this study the sample consists of 60 auto rickshaw drivers who fulfilled the inclusion criteria. Inclusion criteria are Rickshaw drivers of any age group. Rickshaw drivers willing to participate in the study. Rickshaw drivers available at the time of data collection. Rickshaw drivers who are able to understand, read & write Marathi, Hindi, or English. Exclusion criteria are Rickshaw drivers who are mentally & chronically ill. The reliability of the tool was done by the test - retest method by using Cronbach's alpha internal consistency formula. The reliability of the tool was $r = 0.9302$ as this calculated value was more than normal value, the tool was statistically reliable.

Result
The data has been tabulated and organized as follows:
- **Section I:** Distribution of subject according to demographic data.
- **Section II-A:** Distribution of pre and post-test knowledge on first aid management during road traffic accidents before and after structured teaching programme.
- **Section II-B:** Distribution of pre and post-test practices on first aid management during road traffic accidents before and after structured teaching programme.
- **Section III-A:** Analysis of pre and post-test knowledge of auto rickshaw drivers on first aid management during road traffic accidents before and after structured teaching programme.
- **Section III-B:** Analysis of pre and post-test practices of auto rickshaw drivers on first aid management during road traffic accidents before and after structured teaching programme.
- **Section IV:** Comparison of pre and post-test knowledge and practices of auto rickshaw drivers on first aid management during road traffics accident before and after structured teaching programme.
- **Section V-A:** Association between pre test knowledge regarding the first aid management for road traffic accidents among auto rickshaw drivers with selected demographic variables.
- **Section V-B:** Association between pre-test practices regarding the first aid management for road traffic accidents among auto rickshaw drivers with selected demographic variables.

Analysis
Section I Distribution of subject according to demographic data
The analysis of the samples as per demographic data:
- According to age maximum subjects were between the age group 30-39 years, i.e. 40% (24), 18.3% (11) subjects was from 20-29 years, 25% (15) subjects was from 40-49, 16.7% (10) subjects was from 50-59 years of age group.

- The distribution of subjects in relation to gender, which depicts that all the subjects 100% (60) was male and no any subject was female.
- The distribution of subjects according to educational qualification, maximum subjects, i.e. 40% (24) educational qualification was primary, 33.3% (20) subjects educational qualification was secondary, 21.7% (13) subjects educational qualification was higher secondary, 5% (3) subjects educational qualification was graduate and above.
- The distribution of subjects according to annual income, maximum 35% (21) subjects was from annual income 30001-40000 group, 1.7% (1) subject was from up to 20,000 annual income group, 8.3% (5) subjects was from 20001-30000 annual income group, 33.3% (20) subjects was from 40001-50000 annual income group, 21.7% (13) subjects was from more than 50000 annual income group.
- The distribution of subjects according to years of driving auto rickshaw, maximum 38.3% (23) subjects was driving an auto rickshaw for more than 15 years, 20% (12) subjects was driving an auto rickshaw for less than 5 years, 25% (15) subjects was driving auto rickshaw for 5-10 years, 16.7% (10) subjects was driving an auto rickshaw for 11-15 years.
- 70% (42) subject had not received training in first aid before and only 30% (18) subjects had received training on first aid.

- Maximum 91.7% (55) subjects reported that they had seen accidents before and only 8.3% (5) subjects reported that they had not seen any accident yet.
- About 80% (48) subjects had helped accident victims before and only 20% (12) subjects had not helped any accident victim.

Section II A and II B: Distribution of pre and post-test knowledge and practices on first aid management during road traffic accidents before and after structured teaching programme.
There is a significant increase in the post test knowledge regarding first aid management during road traffic accident after structured teaching programme. The findings reveal that the structured teaching programme was effective in increasing the overall practices of the subjects regarding first aid management during road traffic accidents

Section III A and III B: Analysis of pre and post-test knowledge and practises of auto rickshaw drivers on first aid management during road traffic accidents before and after structured teaching programme. The evaluation of effectiveness of structured teaching program by comparing pre-test and post-test knowledge score of subject is analyzed in terms of Wilcoxan Signed rank test to find out the level of significance and proving of hypothesis.

Mean scores

Table 1: Overall mean score of pre and post-test study, based semi structured questionnaire on knowledge on first aid management during road traffic accidents

Knowledge	No. of Questions	Max. Score	Pre Test		Post Test		Wilcoxon Signed rank Test	P Value	Significant at 5% level
			Mean ± SD	Median	Mean ± SD	Median			
Overall	20	20	10.83±2.42	11.0	15.55±2.16	16.0	6.774*	< 0.001	Yes

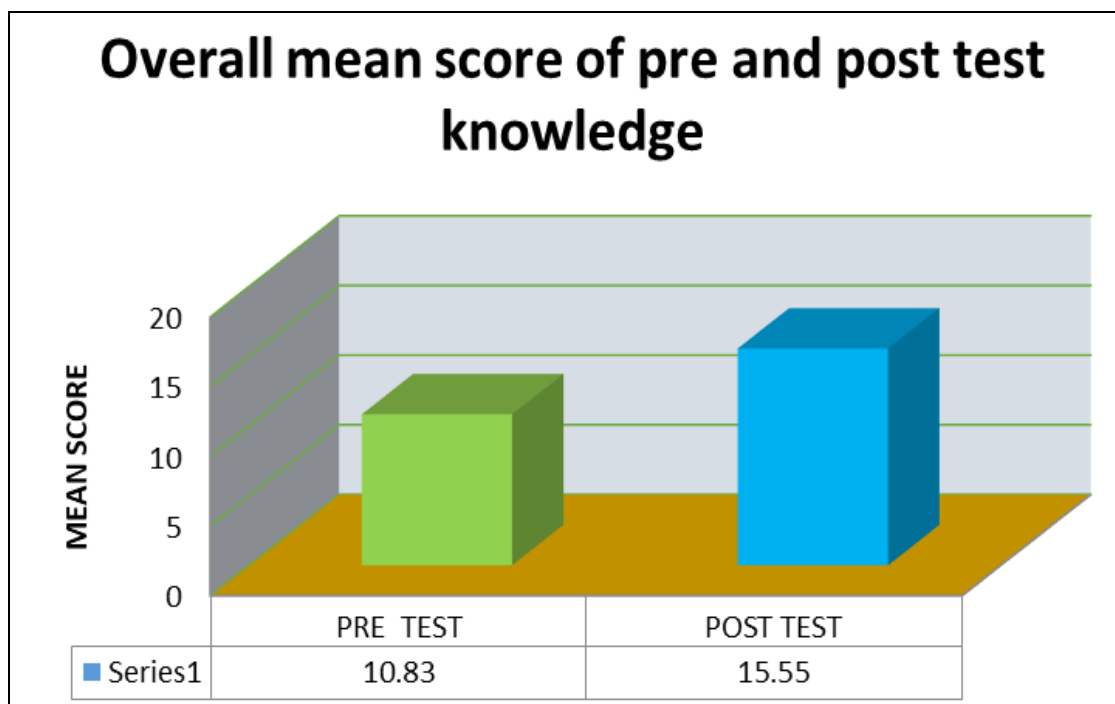*Statistically Significant at 5% level, i.e., $p<0.05$

Fig 1: Overall mean score of pre and post study based semi structured questionnaire on knowledge regarding first aid management during road traffic accident before and after structured teaching programme

Wilcoxon Signed rank Test value is 6.774 which statistically significant at 5% level of significance. This indicates that there is significant difference in the knowledge regarding first aid management during road traffic accident among auto rickshaw drivers before and after the structured teaching program. Hence the null hypothesis (H_0) is rejected.

The difference in mean score is 4.72 which show improvement in knowledge score. Thus the knowledge of auto rickshaw drivers has significantly improved in post-test. Hence research hypothesis (H_1) is accepted.

Table 2: Analysis of pre and post-test practice regarding first aid management during road traffic accident among auto rickshaw drivers before and after structured teaching program

Practice	No. of Questions	Max Score	Pre Test		Post Test		Wilcoxon Signed rank Test	P-Value	Significant at 5% Level
			Mean ± SD	Median	Mean ± SD	Median			
Overall	10	10	4.63±1.07	5.0	7.40±1.12	7.0	6.749*	< 0.001	Yes

*Statistically Significant at 5% level, i.e., $p<0.05$.

The difference in mean score is 2.77 which show improvement in practice score. Thus the practices of auto rickshaw drivers has significantly improved in post-test.
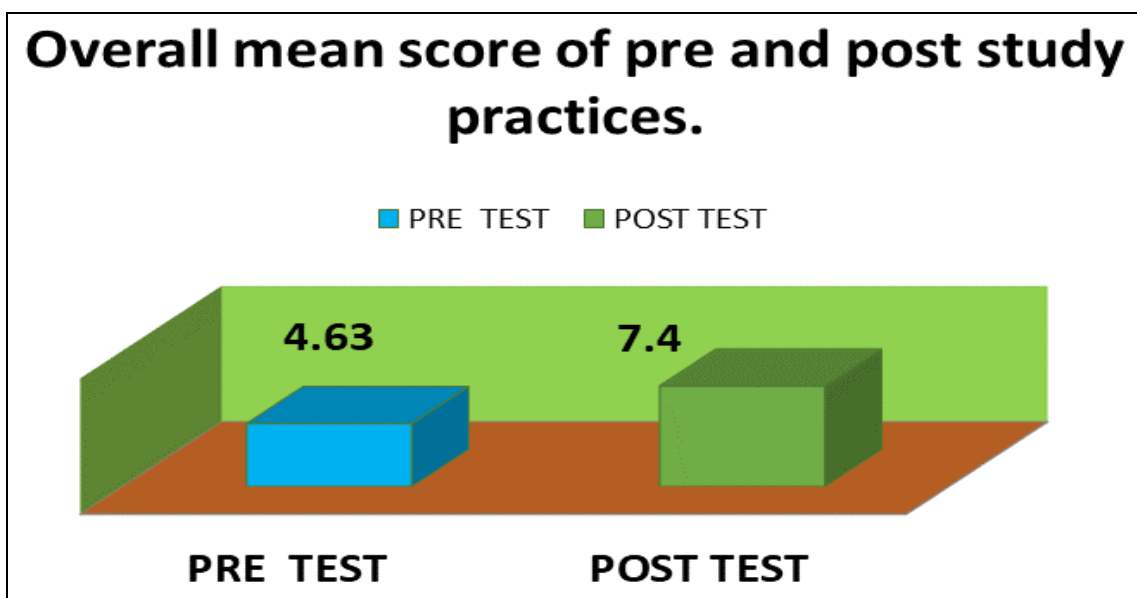

Fig 2: Overall mean score of pre and post study based practice checklist on practices regarding first aid management during road traffic accident before and after structured teaching programme

Wilcoxon Signed rank Test value is 6.749 which statistically significant at 5% level of significance. This indicates that there is significant difference in the practices regarding first aid management during road traffic accident among auto rickshaw drivers before and after the structured teaching program. Hence the null hypothesis (H_0) is rejected.

The difference in mean score is 2.77 which show improvement in practice score. Thus the practices of auto rickshaw drivers has significantly improved in post-test. Hence research hypothesis (H_1) is accepted.

Section IV

Comparison of pre and post - test knowledge and practices of auto rickshaw drivers on first aid management during road traffics accident before and after structured teaching programme.
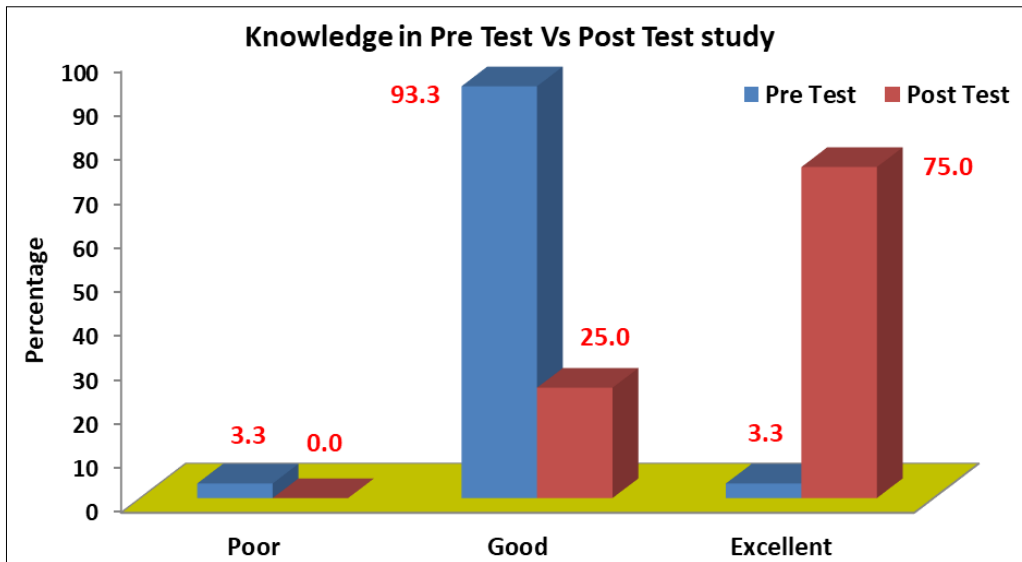
Fig 3: Graph showing the distribution of sample in relation to overall knowledge of first aid management during road traffic accident
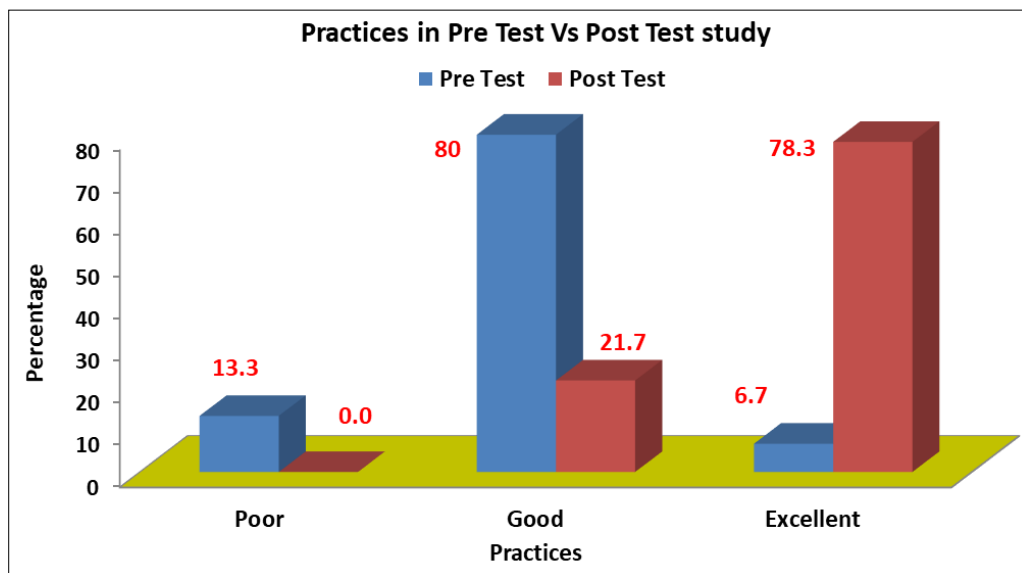

Fig 4: Graph showing the distribution of sample in relation to overall practices of first aid management during road traffic accidents
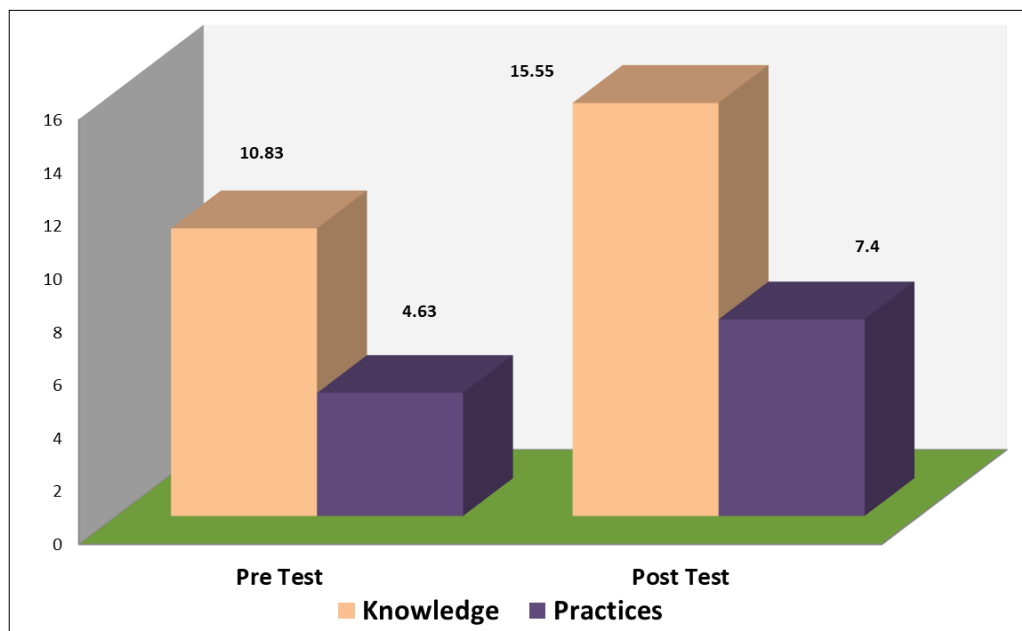

Fig 5: Comparison of knowledge and practices regarding first aid management during road traffic accidents.

Section VA and VB: Association between pre-test knowledge and practices regarding the first aid management

for road traffic accidents among auto rickshaw drivers with selected demographic variables.

This section deals with association of knowledge and practices on first aid management during road traffic accidents among auto rickshaw drivers with selected demographic variables like age, sex, educational qualification, years of driving auto rickshaw, annual income, have attended any first aid training before, have seen accidents before and have helped any accident victim.

Association

The age group, year of auto rickshaw driving and received any first aid training are not associated with knowledge regarding first aid management during a road traffic accident among auto rickshaw drivers and it is not statistically significant at the 5% level i.e. $p>0.05$. Whereas only education is associated with knowledge regarding first aid management during road traffic accidents among auto rickshaw drivers and that is statistically significant at the 5 % level i.e. $p<0.05$. Hence, we can conclude that higher educated drivers have more knowledge regarding first aid management during road traffic accidents. Drivers who have received first aid training are not associated but comparatively have more knowledge than non-training drivers.

The age group wise and year of auto rickshaw driving are not associated with practices regarding first aid management during road traffic accidents among auto rickshaw drivers and it is not statistically significant at the 5% level i.e. $p>0.05$. Whereas education wise and previously trained auto rickshaw drivers in first aid are associated and that is statistically significant at the 5% level i.e. $p<0.05$. Hence we can conclude that higher educated and previously trained drivers in first aid have improved practices of first aid management during road traffic accidents than other auto rickshaw drivers.

Discussion

With regard to demographic data variables 40% (24) subject was from 30-39 years of age group, 18.3% (11) subjects were from 20-29 years of age group, 25% (15) subject was from 40-49 years of age group and 16.7% (10) subject were from 50-59 years of age group. All the subjects, i.e. 100% (60) subjects were male. Maximum 40% (24) subject's educational qualification was primary, 33.3% (20) subject's educational qualification was secondary, 21.7% (13) subject's educational qualification was higher secondary and only few i.e. 5% (3) subject's educational qualification was graduate and above. Maximum 35% (21) subjects annual income lies between 30001-40000, 1.7% (1) subject lies in up to 20000 group, 8.3 % (5) subjects are between 20001-30000 group, 33.3% (20) subjects annual income is between 40001-50000 and 21.7% (13) lies in more than 50000 group of annual income. 38.3% (23) subjects have experience of driving an auto rickshaw for more than 15 years, 20% (12) subjects have experienced for driving an auto rickshaw for less than 5 years, 25% (15) subjects have experienced for driving an auto rickshaw for 5-10 years, 16.7% (10) subjects have experienced for driving an auto rickshaw for 11-5 years. 70% (42) subjects had not received any prior training on first aid management, only 30% (18) subjects had received training of first aid in the past. Maximum 91.7% (55) subjects reported they have witnessed accidents before and very few i.e. only 8.3% (5) subjects

have not seen any accident before. 80% (48) subjects reported they have helped accident victims before and 20% (12) said they have not helped any accident victim before.

Comparison

Overall mean scores of the pre-test knowledge is 10.83 and post-test knowledge score was 15.55 and Wilcoxon Signed rank Test was 6.774 and P Value was < 0.001 which is statistically significant at 5% level i.e., $p<0.05$. Wilcoxon Signed rank Test value is 6.749 which statistically significant at 5% level of significance. This indicates that there is significant difference in the practices regarding first aid management during road traffic accident among auto rickshaw drivers before and after the structured teaching program. It indicates that knowledge among auto rickshaw drivers regarding first aid management during road traffic accidents has increased and practices have also improved.

Interpretation

Structured teaching program is effective in enhancing the knowledge and practices regarding first aid management among auto rickshaw drivers.

Conclusion

The study allowed the researcher to interact with many auto rickshaw drivers and to understand their problems. They actively participated in study and shared their problems, discussed their queries and cleared their doubts. The most of auto rickshaw drivers not coming forward due to police investigation. They have vehicles and are available on roads day and night so educating them were very much important. This study emphasized on first aid management. Structured teaching program on first aid management found effective to increase the level of knowledge, and follow practices of first aid.

Conflicts of Interest
There are no conflicts of interest.

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