Original Article

Safety Education on Knowledge, Attitude and Practice Towards Road Traffic Signs and Regulations Among College Students At, Gujarat

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Abstract

Background: Road traffic injuries occurred more than 1.25 million lives each year and have a huge impact on health. According to World Health Organization, in the South East Asian region India is one of the accounted for 73 percent of these Road traffic accidents. Traffic signs and regulations is most essential part for all person. Any person who takes a driving license and deserve to drive a vehicle should have proper knowledge of traffic signs and regulations. If the signs and regulations of traffic are imitating correctly, the becoming accident are very much reduced. Road traffic injuries are currently estimated to be the eight-leading cause of death across all age groups globally, and are predicted to become the seventh leading cause of death by 2030.So, there is a strong need for giving this safety education regarding road traffic signs and regulations.

Aims: The current study is aimed to assess the effectiveness of safety education on knowledge, attitude and practice towards road traffic signs and regulations among those who are studying in college. The researcher wants to scrutinize the positivity through the research result to reduce the road traffic accidents.

Objective: To assess the pre-test and post-test knowledge, attitude and practice towards road traffic signs and regulations among college students.
To compare the pre-test and post-test knowledge, attitude and practice.
To find out the association between the knowledge, attitude and practice towards road traffic signs and regulations with their selected demographic variables.

Methodology: Design and Setting Quasi Experimental research design was used and Probability (simple random) sampling method was used to drawn samples. Then after tool validation from various subject experts, all questions were given to the students and inform consent form also has been conducted for data collection from the samples.
Prior to data collection written setting permission obtain from Principals of various college, for the data collection researcher were selected colleges at Nadiad city. The total sample size was 100 students.
The tool consists of following
Section A: Socio-demographic variables.
Section B: Knowledge questionnaire related to road traffic signs and regulations.
Section C: Likert's attitude scale related to road traffic signs and regulations
Section D: Practice checklist related to road traffic signs and regulations.

Statistical Analysis: used Inferential and Descriptive statistics applied where, data were analyzed by using SPSS software, and Frequency, percentage, tables etc. were used to represent the statistical data in the tables and graph and figure. Paired -t test was used for assess the significant difference between the pre-test and post-test. Chi-square test was used to assess the significant association between the demographic and level of knowledge, attitude and practice towards road traffic signs and regulation among college students.

Results: Data reveals that majoritystudents,41 (41 %) of college students belongs to 18-20 years age group, 33 (33%) belong to 21-23 Years, 26 (26%) belong to 24-26 Years. The most of the samples belongs to the Hindu community 60(60%). The pretest knowledge score of samples was majority 98(98%) in inadequate, 02 (02%) sample had moderate knowledge score. In attitude score,31(31%) samples had moderate attitude, 64(64%) had favorable attitudeand05(05%) had unfavorable attitude. In the practice score of samples, 48(48%) had average practice,52(52%) had good practice. After administration of safety education towards road traffic signs and regulations the posttest knowledge score was majority 42(42%) had adequate knowledge,56 (56%) sample had moderate knowledge. In the attitude score of samples was majority samples had favorable attitude 75(75%) ,20(20%) had moderate attitude and in the practice score of samples was most of the samples had good score 80(80 %)and 20(20%) had average practice score.

Conclusion: This study reveals that 98(98%) had inadequate knowledge regarding road traffic signs and regulations. After administration

of safety education, 42(42%) had gain adequate knowledge regarding road traffic rules. So, this study is very effective tool for increasing knowledge attitude and practice on traffic sign and regulation and reduce the road traffic accidents. Government should also start to give the safety education to the college students for the reduce the chances of road traffic accidents.

Keywords: Road safety, Practice, Driving, Helmet, Road Traffic accident, Knowledge, Practice

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INTRODUCTION

Every country has its own road safety sign and regulations for the best interests of citizens. Road safety rules in India are designed as per the best interests of citizens [1]. As a citizen, you have certain important roles and responsibilities. For making the safety efforts successful, you need to follow the rules persistently [2]. The transport department of every city around the world is responsible for providing a smooth transport for public on roads. The responsibility includes not just clearing up traffic jams but also, controlling pollution, keep an account of registered and unregistered vehicles and collecting fines for flouting traffic rules[3].

Any vehicle would come from anywhere, raising more chances of accidents or speeding. In case you are found guilty, you can easily raise this to the speeding ticket attorneys, that there was no signal that could help you or alert you to slow down your vehicle. Moreover, due to the traffic laws, the pedestrians can comfortably cross the road without the risk of a speeding vehicle coming from the other end. If there is a zebra crossing or any other possible event such as a rally, there roads must have signs that would inform the drivers to slow down their vehicle[4].Fortunately, a teen's risk drops with experience and practice, best managed by gradual exposure to new driving situations and, of course, parental supervision. This includes setting restrictions on what kids can do behind the wheel. Set rules for teenager to ensure they get home without an accident. Car crashes are the greatest health and safety threat for teens. What parents should know about driving is that most teen crashes are preventable. Road safety laws are passed when there is compelling evidence that they will make roads safer and prevent crashes and injuries. Thus, these laws serve as a guide to all drivers as to what is considered minimum safe driving practice [5].

We should always do what we can to reduce the possibility of avoidable accidents by paying attention to the road, adjusting our speed for poor weather, and following road signs. Traffic education is equally important to all road users. All the participants of road are equally responsible for the traffic safety. The drivers and pedestrians should have adequate information regarding road uses [5].When people are driving a motorcycle, helmet must be worn to prevent accidents [7].

Every driver should take care to avoid common road violations. Driver's education program shouldn't simply teach the student how to drive a car, it should also teach the sign and regulations that enforce safety for all drivers. Consequently, obtaining driver license criteria should also be reviewed. Adequate knowledge of traffic sign, rules and regulations should be ensured before issuing driving license. The driving school should teach about how to adjust speed for different conditions, how to distance oneself from other vehicles, and other fundamentals of driving [5].

Objective

To assess the pre-test and post-test knowledge, attitude and practice towards road traffic signs and regulations among college students.

To compare the pre-test and post-test knowledge, attitude and practice.

To find out the association between the knowledge, attitude and practice towards road traffic signs and regulations with their selected demographic variables.

Materials And Methods

Research Approach: - Quantitative Research approach

Research Design: - Quasi Experimental Research Design – One group pre-test post-test only

Research Variables

Independent variable:

Safety Education.

Dependent variable:

Knowledge and attitude and practice. Demographic variable:

Age, Gender, Education, Family Income, Religion etc….

Sampling method

In this research study, Probability sampling technique (simple random sampling technique) was used for data collection.

Study population: - College Students

Study Sample: - Students who are studying in college.

Study Setting: One college of Kheda District Gujarat.

Sample Size: - 100 students

Sample Criteria

Inclusion criteria:

Students who are all willing to participate in this study.

Age between 18 years and above 18 years.

Exclusive criteria:

Students who will not be available at the time of data collection.

Tool for Data Collection

Section A : Socio-demographic variables.

Section B : Knowledge questionnaire related to road traffic signs and regulations.

Section C : Likert's attitude scale related to road traffic signs and regulations

Section D :Practice checklist related to road traffic signs and regulations.

Results

Section I: Socio Demographic variable of college students.

Table No. 1

Demographic variables	Number	Percentage (%)
Age (in Years)		
18-20	41	41%
21-23	33	33%
24-26	26	26%
Above 26	-	-
Gender		
Male	25	25%

Female	75	75%
Transgender	-	-
Religion		
Hindu	60	60%
Christian	08	08%
Muslim	22	22%
If any other	10	10%
Stream of study		
Arts	-	-
Commerce	-	-
Science Math's/ Biology	100	100%
Medical/ Paramedical	-	-
If any other	-	-
Program of study		
Diploma	-	-
UG	100	100%
PG	-	-
Family monthly income		
Rs/-< 10000	6	6%
Rs/- 10001 to 20000	11	11%
Rs/- 20001 to 30000	48	48%
Rs/- above 30000	35	35%
Place of Residence		
Urban	72	72%
Rural	28	28%
Do you have any motor vehicle in your family?		
Car	19	19%
Bike/ Scooter	49	49%
Both	17	17%
None of above	15	15%
Do you have driving license?		
Yes	62	62%
No	38	38%
How do you come to college?		
By Car	10	10%
By Bike/ scooter	43	43%
By public/ Private transport	27	27%
By college Bus	17	17%
Others	03	03%
Type of vehicle drive		
Two-wheeler	49	49%
Four-wheeler	25	25%
Both	26	26%
Do you have any history of road traffic accident (RTA)?		
Yes	23	23%
No	77	77%

Table No.1. data shows that majority students, 41 (41 %) of college students belongs to 18-20 years age group, 33 (33%) belong to 21-23 Years, 26 (26%) belong to 24-26 Years. The most of the samples belongs to the Hindu community 60(60%).

Section: II

Assessment of level of knowledge, attitude and practice towards road traffic signs and regulations among college students.

Table .2.1: Assessment of level of knowledge towards road traffic signs and regulations among college students.

Level of knowledge	Pre-test		Post-test	
	F	%	F	%
Inadequate (<50%)	98	98%	2	2%
Moderately adequate (50-75%)	2	2%	56	56%
Adequate (>75%)	-	-	42	42%

Table No. 2.1. data shows that pretest knowledge score of majorities 98(98%) sample had inadequate, 02 (02%) sample had moderate knowledge score. After given the safety education to the students, the posttest knowledge score was majority 42(42%) had adequate knowledge ,56 (56%) sample had moderate knowledge and 2(2%) sample had inadequate knowledge.

Table 2.2: Assessment of level of attitude towards road traffic signs and regulations among college students.

Attitude	Attitude Pretest		Attitude Post test	
	No	%	No	%
Unfavourable Attitude	05	05%	05	05%
Moderate favourable Attitude	31	31%	20	20%
Favourable Attitude	64	64%	75%	75%

Table No. 2.2 data shows that before administration of safety education,31(31%) samples had moderate attitude, 64(64%) had favorable attitudeand05(05%) had unfavorable attitude. After given safety education, majority samples had favorable attitude 75(75%) ,20(20%) had moderate attitude.

Table 2.3: Assessment of level of practice towards road traffic signs and regulations among college students.

	Practice Score			
Practice Score	Pre-Practice	%	Post Practice	%
Good (14-20)	52	52	80	80
Average (8-13)	48	48	20	20
Poor (0-7)	00	00	00	00

Table No.2.3 data shows that pretest practice score of majorities 48(48%) had average practice ,52(52%) had good practice. After administration of safety education, most of the samples had good score 80(80 %) and 20 (20%) had average practice score.

Section: III

Paired t-test analysis for the significance of pre-test and post-test knowledge, attitude and practice towards road traffic signs and regulations among college students.

	Max	Enhancement		Paired t test	P value Table Value
		Mean	SD		
Knowledge	20	8.93	2.85	31.28** S df= 99	P<0.05 Sig.= 0.00 1.660
Attitude	60	1.43	3.254	4.394** S df= 99	P<0.05 Sig.= 0.00 1.660
Practice	20	1.170	1.07	10.89** S df= 99	P<0.05 Sig.= 0.00 1.660

Section :IV

Association between post knowledge, attitude and practice with their selected demographic variables.

Table 4.1: Association between posttest knowledge regarding road traffic signs and regulations among college students with their selected demographic variables.

Demographic Data	F	%	Level of Knowledge			$\chi 2$-Value	Tabulated Value P-Value
			Inadequate	Moderate	Adequate		
Age in years 18-20 21-23 24-26 Above 26	 41 33 26 0	 41 % 33 % 26 % 0	 1 0 1	 26 15 14	 14 17 11	 3.214 df= 4 NS	 P>0.05 Sig 0.523 9.48
Gender Male Female Transgender	 25 75 0	 25 % 75 % 0	 0 2	 17 39	 8 34	 2.317 df= 2 NS	 P>0.05 Sig 0.314 5.99
Religion Hindu Christian Muslim Others	 60 8 22 10	 60 % 8 % 22 % 10 %	 1 0 1 0	 36 6 8 6	 23 2 13 4	 5.619 df= 6 NS	 P>0.05 Sig 0.467 12.59
Stream of study Arts Commerce Science Biology Medical/ Paramedical If any other	 0 0 100 0 0	 0 0 100% 0 0	 2	 56	 42	No statistics are computed because variable is constant	
Program of study Diploma UG PG	 0 100 0	 0 100% 0	 2	 56	 42	No statistics are computed because variable is constant	

Monthly Income							
< 10000	6	6 %	0	2	4	4.196	P>0.05
10001 to 20000	11	11%	0	7	4	df= 6	Sig 0.650
20001 to 30000	48	48 %	2	28	18	NS	12.59
Above 30000	35	35 %	0	19	16		
Place of Residence						1.000	P>0.05
Urban	72	72 %	2	41	29	df= 2	Sig 0.606
Rural	28	28%	0	15	13	NS	5.99
Do you have any motor vehicle in your family?						3.338	P>0.05
Car	19	19 %	0	9	10	df= 6	Sig 0.765
Bike/ Scooter	49	49 %	2	27	20	NS	12.59
Both	17	17 %	0	11	6		
None of above	15	15 %	0	9	6		
Do you have driving license?						3.362	P>0.05
Yes	62	62%	0	35	27	df= 2	Sig 0.186
No	38	38%	2	21	15	NS	5.99
How do you come to college?							
By Car	10	10 %	0	7	3	6.285	P>0.05
By Bike/ scooter	43	43%	1	24	18	df= 8	Sig 0.615
By public/ Private transport	27	27%	0	15	12	NS	15.50
By college Bus	17	17%	1	7	9		
Others	3	3%	0	3	0		
Type of vehicle drive			0	29	20	9.332	P>0.05
Two-wheeler	49	49%	0	17	8	df= 4	Sig 0.053
Four-wheeler	25	25%	2	10	14	NS	9.48
Both	26	26%					
Do you have any history of road traffic accident (RTA)	23	23%	0	11	12	1.690	P>0.05
Yes	77	77%	2	45	30	df= 2	Sig 0.430
No						NS	5.99

Table 4.2: Association between posttestattitude regarding road traffic signs and regulations among college students with their selected demographic variables.

Demographic Data	F	%	Level of Attitude			χ^2-Value	Tabulated Value P-Value
			Unfavorable	Moderate	Favorable		
Age in years							
18-20	41	41 %	2	11	28	2.596	P>0.05
21-23	33	33 %	2	4	27	df= 4	Sig 0.628
24-26	26	26 %	1	5	20	NS	9.48
Above 26	0	0					
Gender							
Male	25	25 %	0	9	16	6.471	P<0.05
Female	75	75 %	5	11	59	df= 2	Sig 0.039
Transgender	0	0				S	5.99

Religion Hindu Christian Muslim Others	 60 8 22 10	 60 % 8 % 22 % 10 %	 2 0 3 0	 19 0 0 1	 39 8 19 9	17.244 df= 6 S	P<0.05 Sig 0.008 12.59
Stream of study Arts Commerce Science Biology Medical/ Paramedical If any other	 0 0 100 0 0	 0 0 100% 0 0	 5	 20	 75	No statistics are computed because variable is constant	
Program of study Diploma UG PG	 0 100 0	 0 100% 0	 5	 20	 75	No statistics are computed because variable is constant	
Monthly Income < 10000 10001 to 20000 20001 to 30000 Above 30000	 6 11 48 35	 6 % 11% 48 % 35 %	 1 0 4 0	 0 4 10 6	 5 7 34 29	8.476 df= 6 NS	P>0.05 Sig 0.205 12.59
Place of Residence Urban Rural	 72 28	 72 % 28%	 3 2	 17 3	 52 23	2.298 df= 2 NS	P>0.05 Sig 0.317 5.99
Do you have any motor vehicle in your family? Car Bike/ Scooter Both None of above	 19 49 17 15	 19 % 49 % 17 % 15 %	 2 3 0 0	 1 10 4 5	 16 36 13 10	6.764 df= 6 NS	P>0.05 Sig 0.343 12.59
Do you have driving license? Yes No	 62 38	 62% 38%	 1 4	 15 5	 46 29	5.192 df= 2 NS	P>0.05 Sig 0.075 5.99
How do you come to college? By Car By Bike/ scooter By public/ Private transport By college Bus	 10 43 27 17 3	 10 % 43% 27% 17% 3%	 1 2 2 0 0	 1 10 3 5 1	 8 31 22 12 2	4.943 df= 8 NS	P>0.05 Sig 0.764 15.50
Type of vehicle drive Two-wheeler Four-wheeler Both	 49 25 26	 49% 25% 26%	 2 2 1	 8 3 9	 39 20 16	5.359 df= 4 NS	P>0.05 Sig 0.252 9.48
Do you have any history of road traffic accident (RTA) Yes No	 23 77	 23% 77%	 3 2	 4 16	 16 59	4.084 df= 2 NS	P>0.05 Sig 0.130 5.99

Table 4.3: Association between posttest practice regarding road traffic signs and regulations among college students with their selected demographic variable.

Demographic Data	F	%	Level of Practice			χ^2-Value	Tabulated Value P-Value
			Poor	Average	Good		
Age in years							
18-20	41	41 %	0	10	31	0.908	P>0.05
21-23	33	33 %	0	6	27	df= 2	Sig 0.635
24-26	26	26 %	0	4	22	NS	5.99
Above 26	0	0	0				
Gender							
Male	25	25 %	0	5	20	0.000	P>0.05
Female	75	75 %	0	15	60	df= 1	Sig 1.000
Transgender	0	0	0			NS	3.84
Religion							
Hindu	60	60 %	0	14	46	2.462	P>0.05
Christian	8	8 %	0	0	8	df= 3	Sig 0.482
Muslim	22	22 %	0	4	18	NS	7.81
Others	10	10 %	0	2	8		
Stream of study							
Arts	0	0	0			No statistics are computed because variable is constant	
Commerce	0	0	0				
Science Biology	100	100%	0	20	80		
Medical/	0	0	0				
Paramedical	0	0	0				
If any other							
Program of study							
Diploma	0	0	0			No statistics are computed because variable is constant	
UG	100	100%	0	20	80		
PG	0	0	0				
Monthly Income							
< 10000	6	6 %	0	2	4	3.972	P>0.05
10001 to 20000	11	11%	0	1	10	df= 3	Sig 0.264
20001 to 30000	48	48 %	0	7	41	NS	7.81
Above 30000	35	35 %	0	10	25		
Place of Residence						0.112	P>0.05
Urban	72	72 %	0	15	57	df= 1	Sig 0738
Rural	28	28%	0	5	23	NS	3.84
Do you have any motor vehicle in your family?	19	19 %				1.795	P>0.05
	49	49 %	0	5	14	df= 3	Sig 0.616
Car	17	17 %	0	11	38	NS	7.81
Bike/ Scooter	15	15 %	0	2	15		
Both			0	2	13		
None of above							
Do you have driving license?	62	62%	0	15	47	1.793	P>0.05
Yes	38	38%	0	5	33	df= 1	Sig 0.181
No						NS	3.84
How do you come to college?	10	10 %	0	2	8		
By Car	43	43%	0	12	31	4.585	P>0.05
By Bike/ scooter	27	27%	0	5	22	df= 4	Sig 0.333
By public/ Private	17	17%	0	1	16	NS	9.48
transport	3	3%	0	0	3		

By college Bus							
Type of vehicle drive						0.015	P>0.05
Two-wheeler	49	49%	0	10	39	df= 2	Sig 0.993
Four-wheeler	25	25%	0	5	20	NS	5.99
Both	26	26%	0	5	21		
Do you have any history of road traffic accident (RTA)						4.574	P<0.05
Yes	23	23%	0	1	22	df= 1	Sig 0.038
No	77	77%	0	19	58	S	3.84

Conclusion

On the basis of analysis of this study the following conclusion were drawn:The purpose of the present study is to assess the knowledge, attitude and practice towards road traffic signs and regulations among students at selected college at Kheda District. The safety education program implementing measures of traffic rules will help to make responsible citizens of the country which will automatically bring reduction in morbidity and mortality due to RTAs [6].The study consisted of 100 samples that were selected on the basis of simple random sampling techniques. Based on the objective the data analysis was done. After administration of safety education towards road traffic signs and regulations the posttest knowledge score was majority 42(42%) had adequate knowledge,56 (56%) sample had moderate knowledge. In the attitude score of samples was majority samples had favorable attitude 75(75%) ,20(20%) had moderate attitude and in the practice score of samples was most of the samples had good score 80(80 %) and 20 (20%) had average practice score.

Conflict of Interest

There is not any conflict of interest between the all authors

Source of Funding

Self-funding

Ethical Clearance

The study was approved by the institutional ethical committee of Dinsha Patel college of nursing, research committee, there are total 15 members in the committee from various field. The ethical approval reference number is DPCN-IEC/202-21/14 and a formal written permission was gathered from the authority of or Principal of Institute prior to data collection

Statement of Informed consent: Yes, informed consent form was taken from the participants prior to data collection.

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