



ORIGINAL RESEARCH PAPER

Health Science

KNOWLEDGE REGARDING ROAD TRAFFIC ACCIDENT AMONG STUDENTS OF HIGHER SECONDARY SCHOOL

**KEY WORDS:** Knowledge, Road Traffic Accidents, Higher Secondary Students

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ABSTRACT

**Background and Objectives:** Road traffic accidents and injuries have become a burden worldwide. Children, pedestrians, cyclists and the elderly are among the most vulnerable of road users. The overall objective of this study is to assess the knowledge regarding road traffic accident among higher secondary students.

**Method and Materials:** A descriptive cross sectional study was adopted to complete the study. Census was used to select the sample size of 80. A pre-tested self-administered structured questionnaire was used for data collection. Data was organized, coded and entered in IBM SPSS version 20 & analyzed using descriptive statistics and inferential statistics

**Results:** The findings of the study revealed that out of 80 students, 66.3% respondents had high knowledge whereas 33.7% had moderate knowledge. Most of the respondents (95%) knew the meaning of road traffic accidents. Approximately, 80% of the respondents knew the cause of road traffic accidents. Most of the respondents (92.5%) said no for drinking and driving. Respondent's age is statically significant with the level of knowledge ( $p = 0.028$ ). Also those who knew to ride vehicles and type of vehicles were also significant with the level of knowledge ( $p = 0.033$ ) & ( $p = 0.050$ ) respectively.

**Conclusion:** Knowledge regarding road traffic accidents among higher secondary schools students' is quite high according to the study. This might be because of increased awareness and safety rules included in their course book. Intervention program like health education should be undertaken to increase the knowledge regarding road traffic accidents at an optimum level.

INTRODUCTION

A road traffic injury is a fatal or non-fatal injury incurred as a result of a collision on a public road involving at least one moving vehicle. Millions of people each year spend long weeks in hospital after severe crashes and many people dies, work or play as they used to do. Road traffic injuries cause considerable economic losses to individuals, their families, and to nations as a whole. Road traffic crashes cost most countries 3% of their gross domestic product.

Each year in the South-East Asia Region, road traffic deaths are recorded approximately 316,000 accounting for approximately 25% of the world's road traffic deaths. Road Traffic Accident (RTA) deaths are projected to increase from 1.3 million in 2004 to 2.4 million in 2030. RTA is projected to rise from the ninth leading cause of death globally in 2004 to the fifth leading in 2030.

Road Traffic accidents Death in Nepal reached 5.036 or 3.18% of total deaths. The age adjusted Death rate is 22.32 per 100.000 of population ranks Nepal 50 in the world and 9th leading cause of death in Nepal.

Kathmandu witnessed 27,000 road accidents in the last half decade. The data shows the rising number of road accidents and fatalities during the year of 2015/16. This year, 5,668 accidents had occurred so far in which 166 people lost their lives.

Knowledge and Practice Measures Regarding Prevention of Road Traffic Accidents revealed that among 400 students, 51% had average knowledge on prevention of Road traffic accidents, 30% had good knowledge and 18% had poor knowledge. In 2008, the total number of road traffic accident in all development regions was 600 cases where the number of accident occurs at the age of 15-29 were 264 cases. Knowledge regarding road traffic accident among higher secondary school children is not yet carried out in many of Nepal's district so due to such data researcher felt need to assess the knowledge regarding road traffic accidents among higher secondary students.

MATERIALS AND METHODS

Descriptive cross sectional research design was adopted for the study to find out the level of knowledge regarding road traffic accident among the students of higher secondary students. The study was carried out in two private higher secondary school of Rampur Municipality. Altogether, there were two private higher secondary schools in Rampur Municipality, Palpa, Nepal. So, both schools were selected for the study. One was Rampur English Secondary Boarding Schools and another Bhu. Pu. Sainik Rising

Secondary School. The study population included all the students who were studying in class 11 and 12. Prior to the commencement of the study, approval from Birgunj Nursing Campus, Birgunj was received. Written permission was obtained from the school authority before the collection of data.

Census method was used for the study. The sample size was 80. Written informed consent was obtained from each student. Students were explained that their participation to this study will be voluntary and can withdraw from the study at any time if they wished. Those students who were present at the time of data collection and who were willing to participation were included in this study. The instrument was developed through interaction with extensive literature review and consultation with research guide and subject experts in the related field. A pretested structured questionnaire was used to collect data. Self-introduction and purpose of the study was explained to all the students. Anonymity and confidentiality of the respondents and data was maintained by giving code number. The data was collected from 2017-9-10 to 2017-9-24. The duration for the self-administered structure questionnaire was 20-30 minutes.

The collected data was reviewed and checked for its completeness, consistency and accuracy. The collected data was organized, coded and entered in IBM Statistical Package for the Social Sciences (SPSS) version 20. The findings were analyzed using descriptive statistics like (mean, percentage and frequency) and inferential statistics (chi square test).

RESULTS:

TABLE 1: Socio-Demographic Information of Respondents' n=80

Characteristics	Frequency	Percentage
Age in years		
16-17	21	26.2
18-19	59	73.8
Mean ± SD	17.02 0.78	
Sex		
Male	43	53.8
Female	37	46.2
Ethnicity		
Dalit	10	12.5
Janjati	37	46.3
Madhesi	3	3.8

Muslim	3	3.8
Brahamin/Chhetri	25	31.3
Thakuri	2	2.5
Father's education		
Illiteracy	3	3.8
Able to read and write	8	10.0
Primary level	11	13.8
Secondary level	25	31.3
Higher secondary level	22	27.5
Bachelor level	6	7.5
Masters and above	5	6.3
Mother's education		
Illiteracy	10	12.5
Able to read and write	13	16.3
Primary level	24	30.0
Secondary level	17	21.3
Higher secondary level	12	15.0
Bachelor level	4	5.0
Father's occupation		
Service	35	43.8
Farming	13	16.3
Business	32	40.0
Mother's occupation		
Service	7	8.8
Homemaker	55	68.8
Farming	8	10.0
Business	10	12.5

Table 1 shows that, 73.8% of respondents were in age group 18-19 years whereas 26.3% were 16-17 years. The mean and standard deviation is 17.2 ± 0.78. More than half (53.8%) of respondents were male whereas 46.2% were female. Regarding ethnicity, janajati were 46.3% and Thakuri were 2.5%. Regarding father's education, (31.3%) of respondents' fathers achieved secondary level of education whereas (3.8%) were illiterate. Regarding mothers' education, (30.0%) had primary level whereas (12.5%) were illiterate. Regarding father's occupation, (43.8%) was in service whereas (16.3%) did farming. Concerning Mother's occupation most of mothers of respondents' (68.8%) were homemaker where as 8.8% were in service.

**TABLE 2: Respondents' Information regarding Vehicles and License n=80**

Characteristics	Frequency	Percentage
Have vehicles		
Yes	54	67.5
No	26	32.5
Can ride motor vehicles		
Yes	54	67.5
No	26	32.5
If yes, which vehicles you can ride (n=54)		
Bi-cycle	18	22.5
Motorcycle	24	30.0
Car	3	3.8
Scooter	9	11.3
Have driving license		
No	80	100
Experience of RTA		
Once	32	40.0
Never	41	51.3
More than once	7	8.8

Table 2 shows that, about 67.5% of respondents have vehicles and others don't have vehicle. Regarding riding motor vehicles, 67.5% can ride vehicle whereas 32.5% can't ride vehicle. Among vehicles, 30% respondents can ride motorcycle. No any respondents had license. RTA was not experienced by half of the respondents (51%), whereas 40% respondents experienced RTA once in their life time also 8.8% experienced RTA more than once.

**TABLE 3: Respondents' Knowledge Regarding Road Traffic Accidents n=80**

Knowledge	Frequency	Percentage
Meaning of road traffic accidents		
Collision between vehicles with vehicles, vehicle and pole, vehicles and human *	76	95.0
Fighting with traffic police	1	1.3
Fainting attack during walking	3	3.8
Cause of Road Traffic Accidents (RTA)		
Vehicle defect ,road defect, human defect*	64	80.0
Illiteracy	16	20.0
Maximum speed limit		
40km/hr *	22	27.5
80km/hr	33	41.3
120km/hr	22	27.5
160km/hr	3	3.8
Drink alcohol and drive		
Yes	3	3.8
No *	74	92.5
Often	3	3.8
Can use mobile phone and drive		
Yes	4	5.0
No *	74	92.5
Often	1	1.3
Rarely	1	1.3
Can listening music and drive		
Yes	9	11.3
No *	58	72.5
Often	10	12.5
Rarely	3	3.8
Necessary to use helmet while drive		
To protect ear from noise	3	3.8
To protect eye from dust	2	2.5
To protect head from injury *	75	93.8
To protect ear from noise	3	3.8

\*Correct answer

Table 3 shows that, meaning of road traffic accidents is known by most (95%) of respondents whereas few (1.3%) said it was fighting with traffic police. Regarding cause of RTA 80%

respondents knew about cause of RTA that is vehicle defect, road defect, and human defect whereas 20% answered illiteracy. Regarding speed limit, only (27.5%) respondents answered correct answer. Regarding drinking and driving most (92.5%) of respondents said no for drinking while driving. Regarding using mobile phone and drive most (92.5%) of respondents said no for using mobile phone where as few (1.3%) answered rarely. Regarding listening music and drive most of (72.5%) of respondents said no for listening music while driving where as only (3.8%) answered rarely. While asking about why it is necessary to use helmet while driving, 93.8 % respondents were answered to protect head from injury which is correct whereas only 2.5% respondents were answered to protect eye from dust.

**TABLE 4: Respondents' Knowledge Regarding Helmet and Consequence of RTA n=80**

Knowledge	Frequency	Percentage
Can you be safe while drive without helmet		
Yes	13	16.3
No *	63	78.8
Often	3	3.8
Rarely	1	1.3
Necessary to use helmet to back seater		
Yes *	51	63.8
No	16	20.0
Often	9	11.3
Rarely	4	5.0
Result of road traffic accidents		
Disability, Death *	61	76.3
Loss of vehicles	13	16.3
I don't know	6	7.5

\*Correct answer

Table no. 4 shows that, regarding safe without helmet while driving most of (78.3%) respondents don't feel safe while driving/riding without helmet whereas (1.3%) feels rarely safe while driving. Regarding necessary to use helmet to back seater, above half (51%) answered yes whereas 5% respondents said rarely necessary to use helmet to backseater. Regarding result of road traffic accidents 76.3% said disability and death whereas 7.5% respondents didn't know the result of road traffic accidents.

**TABLE 5: Respondents' Knowledge Regarding Traffic rules n=80**

Knowledge	Frequency	Percentage
Rules and laws meant to be followed		
Yes *	74	92.5
No	1	1.3
Often	5	6.3
Correct side for pedestrian		
Right side	22	27.5
Left side *	50	62.5
Middle of road	1	1.3
Both a and b	7	8.8
Should pedestrian use zebra crossing		
When not in hurry	3	3.8
When the road is crowded	8	10.0
Every time while crossing the road*	67	83.8
when traffic police is present	2	2.5

Red color traffic lights mean		
Go	3	3.8
Stop *	75	93.8
Slow down	2	2.5
Green color means		
Go *	74	92.5
Stop	1	1.3
slow down	5	6.3
Yellow color means		
*Correct answer		
Go	3	3.8
Stop	5	6.3
Slow down *	70	87.5
I don't know	2	2.5
Correct side for overtaking		
Right side*	48	60.0
Left side	19	23.8
Both	4	5.0
I don't know	9	11.3

Table 5 reveals that, most of the respondent's (92.5%) agreed that traffic rules and laws are meant to be followed; only few (1.3%) respondents disagreed. Correct side for the pedestrians to walk was responded correctly by (62.5%) whereas few (1.3%) responded middle of the road. While asking about zebra crossing most of (83.8%) respondents said use zebra crossing every time while crossing the road where as few (2.5%) said when traffic is present. Regarding traffic light, 93.8% of respondents knew about red color, 92.5% respondents knew about green and 87.5% knew about yellow respectively. Regarding correct side for overtaking, 60% respondents were known about correct side for over which is right side where as 5% respondents said both side.

**TABLE 6: Level of Knowledge regarding Road Traffic Accidents n=80**

Level of knowledge	Frequency	Percentage
Low knowledge <50%	0	0
Moderate knowledge 51-75%	27	33.7
High knowledge >75%	53	66.3

Table 6 reveals that, those respondents with high knowledge were 66%; respondents who had had moderate knowledge were 33.7% whereas none had low knowledge regarding road traffic accidents.

**TABLE 7: Association between Level of Knowledge & Socio Demographic Information of Respondents: Age, Gender, Ethnicity, Economic Status and Parent's Education & Occupation n=80**

Variables	Level of knowledge		χ <sup>2</sup>	p value
	Adequate n(%)	Moderate n(%)		
Age A				
16-17	35(59.32)	24(40.67)	4.825	.028*
18-19	18(85.71)	3(14.28)		
Sex				
Male	30(69.76)	13(30.23)	514	473
Female	23(62.16)	14(37.83)		
Ethnicity				
Janjati	21(56.75)	16(43.24)	2.773	.096
Other than Janajati	32(74.41)	11(25.58)		
Father education			3.102	.212

Illiteracy	1(33.33)	2(66.66)		
Able to read and write	7(87.50)	1(12.50)		
Primary level and above	45(65.21)	24(34.78)		
Mother's education			159	690
Illiterate	5(50.00)	5(50.00)		
Able to read and write	11(13.75)	2(15.38)		
Primary level	37(64.91)	20(35.08)		
Father's occupation			2.170	.338
Service	22(62.85)	13(37.14)		
Farming	7(53.84)	6(46.15)		
Business	24(75.00)	8(25.00)		
Mother occupation			0.002	.960
Homemaker	35(63.63)	20(36.36)		
Other than Homemaker	18(72.50)	7(28.00)		

\*Statistically Significant at the level <0.05, A Yates correction

Table 7 shows, association between level of knowledge and socio demographic information of respondents. Level of knowledge is statistically significant with age (p = 0.028). Level of knowledge is not statistically significant with sex, ethnicity and economic status (p = 0.473, 0.096 and 0.696 respectively). Knowledge regarding RTA is not significant with father's & mother's education (p = 0.212 & 0.690 respectively). Knowledge is not statistically significant with father's & mother's occupation (p = 0.338 & 0.960 respectively)

**TABLE 8: Association between level of knowledge & having vehicles, can ride motor vehicles, which vehicles they can ride, having licenses & experience of RTA n=80**

Variables	Knowledge		2	p value
	Adequate n(%)	Moderate n(%)		
Have vehicles				
Yes	33(61.11)	21(38.88.)	1.962	.161
No	20(76.92)	6(23.07)		
Can ride motor vehicles				
Yes	40(74.07)	14(25.92)	4.549	.033*
No	13(50.00)	13(50.00)		
Which vehicles you can ride A				
Two wheeler	51(66.23)	26(33.76)	7.834	.050*
Four wheeler	1(33.33)	2(66.66)		
Experience of RTA				
Yes	22(56.41)	17(43.58)	3.297	.192
Never	31(75.60)	10(24.39)		

\*Statically significant level <0.05, A obtained from Yates's correction.

Table 8 shows association between level of knowledge and having vehicles, can ride motor vehicles, which vehicles they can ride, having licenses and experience of road traffic accidents. Level of knowledge is not statistical significant with having vehicles (p = 0.161) & experience of RTA (p = 0.191). Level of knowledge is statistically significant with riding motor vehicles (p = 0.033) & (p =

0.50).

**DISCUSSION**

This study attempted to study the knowledge regarding road traffic accidents among higher secondary school students. In this study, male respondents were 53.8% and female respondents were 46.2%, male has a high knowledge than female. One of the studies showed similar findings with male respondents 52% and female 48%. Regarding ethnicity, near about half respondents were 46.3% janajati and only few 1.3% were brahamin/chhetri. Among all respondents, near about half respondents 48.8% had experience of RTA in past. Contradictory findings were observed in study conducted at Uttarakhand, India, 20% of students verbalized the history of road traffic accident.

Regarding the level of knowledge, this study identified that 66.3% respondents had high level of knowledge, 33.7% had moderate level of knowledge. These findings were contrary with one of the study, which reported that the overall knowledge of the participants was 18.3% poor knowledge, 51.3% average knowledge and 30.5% good knowledge regarding road traffic accidents.

This study showed that, 95.5% respondents attempted definition of RTA. Cause of RTA was known by 80% respondents. Correct answer of maximum speed of motor vehicles in urban area of Nepal was responded correctly by only 27.5% respondents. In one of the study 39.6% respondents' attempted correct maximum speed of motor vehicles, this is a contradictory finding.

Most of the respondents said no to two categories i.e. drink and drive & no to use mobile phone while driving with response rate 92.5% in both categories. Many of the respondent's 72.5 % disagreed to listening music and driving. Several studies show similar results, 97% & 96.7 % respectively for drink and drive & no to use mobile phone while driving. Also, 68.7% respondents disagreed for listening music and driving.

According to age group, this study showed level of knowledge is statically significant with with age (p = 0.028), which is similar to one of the research finding (p = 0.030). According to gender in this study showed not statistically significant association with level of knowledge (p = 0.631) which is converse with one of the research findings (p < 0.001). This variation may be due to small sample size.

In this study, level of knowledge was not statistically significant with ethnicity (p = 0.096). This finding is similar to one of the study (p = 0.246). Parent's education and occupation is also not statistically significant with level of knowledge of RTA (p = 0.212, 0.690) & (p = 0.338, 0.960) respectively. This finding is supported by one of the study.

The findings of this study will help to gain level of knowledge regarding road traffic accidents. The study was conducted only among private higher secondary school students. So the findings cannot be generalized to other level of students. Intervention program like health education should be undertaken in order to advance the knowledge regarding road traffic accidents at an optimum level. Curriculum regarding road traffic accidents and traffic rules and regulation can be included in their academic program. Similar studies can be conducted on a larger scale for wider application. A comparative study can be carried out between government and private secondary school.

**CONCLUSION**

On the basis of the findings, it can be concluded that the knowledge of the respondents on road traffic accidents was adequate. The findings revealed that, respondents had poor knowledge on the maximum speed limit & correct side for overtaking. Respondents who can ride vehicles have quite good knowledge than those who can't ride. It can be concluded that the level of knowledge can be more improved by providing class to the respondents regarding the rules and regulations of traffics.

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