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Awareness and Practices of Students about Road Signboards in Pakistan

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ABSTRACT

Students have risk taking behavior while driving and can be faced road safety issues. Awareness about road signboards is much important to reduce the ratio of accidents. This study was conducted to check the awareness and practice of the students about road signboards at higher secondary level in Pakistan. The study was descriptive and quantitative; questionnaire was used as tool to collect data. The population of the study consisted of all the 11th and 12th class students of higher secondary schools in Pakistan. Total 720 students from 12 higher secondary schools of 3 districts of Bahawalpur division were selected with the help of multistage sampling. Data was collected by visiting sample population by the researchers. Chi-square test for inferential analysis while frequency and percentage was used for demographic analysis. It was found that most of the students are driving motorcycle without driving license and over speeding was the main cause of accidents. Awareness level about road signs is amazing but their implementation was very poor. It was recommended that Authorities may force youngster of age more than 18 years to obtain driving license, so they may have idea about traffic rules and can prevent themselves from road accidents

Introduction

Every day many people faced accidents on busy roads of the country. In these accidents many people met to death in horrible accidents, many were seriously injured in minor accidents (Dekker, 2014). The word accidents left the story in the mind of the peoples in the form of deaths, injuries and crashes of precious vehicles. So, there is need for saving precious lives by a well-coordinated and urgent provision of road safety education to students. (Remy, 2012).The present approach towards road safety requires a complete overhaul in the form of awareness, and practices of students and

teachers. In the current scenario, the key role being played by the teachers in schools and national highway &motorways police road safety issues in a long way (Tahir, 2018).

The young students mostly face accidents in routine life that's why schools can play vital role to deliver road safety education to safe young to death. Road safety education is necessary for young peoples who face more risks on the roads (Raftery & Wundersitz, 2011). The Government is doing lot of work on traffic education, but the efforts are not satisfied. A lot of people, who drive, don't have licenses and those who have licenses got them illegally, without taking part in any driving tests. Many people and officials suggest adding driving courses to university and college curriculums. According to traffic police, 80% of Pakistanis don't follow basic safety precautions like, fastening of seat belts, or wearing helmets (Hussain, Batool, Kanwal, &Abid, 2019).

In recent days, it is noticed that children are increasingly being driven to school and they are likely used motorcycle, bicycle instead of go by foots to attend their school. In this alarming situation of road accidents, educational measures needed as to teach students that how to deal with roads and traffic. Teachers can play an important role to protect children and to stop causalities by giving life saving tips to student regarding daily life and about traffic and road safety rules (Broberg, Anna & SatuSarjala, 2015).

The road signboards provide current information to drivers and other road users. The road signs represent traffic rules that are in place to keep you safe and it communicate messages to road users (drivers and pedestrians) that can help to maintain order and reduce accidents and neglecting or avoiding act accordingly sign that can be dangerous (Merat & Natasha, 2018).

There are mostly signboards show pictures, rather than words, so that they are easy to understand. Those people who belong to different areas of the world or speak different languages can be interpreted easily. For this reason, it's important to aware that pictures and practices accordingly while driving. Failing to do so could result in a serious accident or a fine (Gallois, Cindy& Howard Giles, 2015).

The road signboard serves for several purposes. The main purpose of signboard is to alert drivers to the speed limit while driving. They also help bring attention to road user about construction work, and hazards, such as sharp turns and steep hills (Marilisa, Luigi, & Nicola, 2018). The road signs are important because they help to maintain safe driving. Without these signs, no one would know how fast to drive, what direction to drive, whether the roads being driven on have an upcoming hazard, or whether they are approaching a merge. Highway signs help to reduce the rate of accidents, also ensure the safety of pedestrians, and help drivers to know how communicate with other drivers in a non-verbal way that keeps us all safe (Straub, & Schaefer, 2019).

Road safety education is the program of educational activities around road safety that is provided to children and young people in formal and community

Education about road safety can be aimed at children and adults and delivered in many contexts, such as schools, colleges, sporting clubs and workplaces (Southworth, & Ben-Joseph, 2013).

Material and Methods

Research design

The aim of this study was to explore the Awareness and practices of Students about Road Safety Education (RSE) in Pakistan. The present study is descriptive in nature. The further research methodology as under

Population

The population of the study consisted of all the 11th and 12th class students of higher secondary schools in Pakistan.

Sampling

For this study Multistage sampling technique was used to draw sample from population. The first stage selects division (Bahawalpur) conveniently from the nine divisions of Punjab. Then twelve (12) higher secondary schools were selected from three districts (Bahawalpur, Bahawalnagar and Rahim Yar Khan) of division Bahawalpur.

Sample of study

The sixty (60) students were selected randomly from each higher secondary school consisted of 30 students from 11th class and 30 students from 12th class. That's why total sample consisted of 720 students in this study.

Table 1
Sample of the study

District	Area	Name of Schools	Students				Total
			Class 11th		Class 12th		
			Arts	Science	Arts	Science	
Bahawalpur(BWP)	Rural	GHSS LalSohanra	15	15	15	15	60
		GHSS Mubbarikpur	15	15	15	15	60
	Urban	GHSS Abbasia	15	15	15	15	60
		GHSS Lab QAED	15	15	15	15	60
Bahawal Nagar(BWN)	Rural	GHSS Mari mian sahib	15	15	15	15	60
		GHSS mandi Sadiqgunj	15	15	15	15	60
	Urban	GHSS 123/6R	15	15	15	15	60
		GHSS madrassa	15	15	15	15	60

Rahim Yar Khan(RYK)	Rural	GHSS 88p	15	15	15	15	60
		GHSS Kanpur	15	15	15	15	60
	Urban	GHSS froze	15	15	15	15	60
		GHSS Zahir peer	15	15	15	15	60
	Total		180	180	180	180	720

GHSS= Govt. Higher Secondary School

Research instrument

This study is basically descriptive and quantitative in nature. So, questionnaire is used as tool for data collection. Researcher prepared two questionnaires, one to assess the level of awareness about signboards and the second was to determine the practices of students of higher secondary schools(class 11th&12th) towards road safety education.

Each questionnaire is divided into two main parts

i) Demographic part

ii) Awareness and practices of sign boards.

Demographic part of questionnaire consists on ten characteristics (class, subjects, area, age, vehicle do you drive, means of school coming, license holder, license category, face accident and cause of accidents)Awareness of signboards questionnaire consisted 8 signboards items for identification (Right or wrong option). Practices according to signboard, questionnaire consisted on 8 statement with three point scale (Always, Seldom and Never)

Data collection

The data were collected from the students of 11th and 12th class of higher secondary schools of division Bahawalpur in province Punjab. The division Bahawalpur consists on three districts (Bahawalpur, Bahawalnagar, and Rahim Yar Khan). By using personal contacts, the questionnaire was distributed among the sample of 720 students of higher secondary schools. The consent obtained from respondents before data collection.

Results and Discussion

The Statistical Package for Social Sciences (SPSS-21) was used for data arranging, handling and modification. The following methods were used for data analysis

Descriptive analysis

Demographic information analyzed by frequency and percentage.

Table 2
Socio demographic characteristics of Higher Secondary School Students

Demographic variable	Options	DISTRICTS						Total Students	%
		BWP (f)	%	BWN (f)	%	RYK (f)	%		
Class	11th	120	50%	120	50%	120	50%	360	**50%**
	12th	120	50%	120	50%	120	50%	360	**50%**
Subjects	Science	120	50%	120	50%	120	50%	360	**50%**
	Arts	120	50%	120	50%	120	50%	360	**50%**
Age (Year)	15-16	34	14%	56	23%	40	17%	130	**19%**
	17-18	100	42%	84	35%	80	33%	264	**37%**
	19-20	106	44%	100	42%	120	50%	326	**45%**
Area	Urban	120	50%	120	50%	120	50%	360	**50%**
	Rural	120	50%	120	50%	120	50%	360	**50%**
Vehicle do you drive	Bicycle	70	29%	85	35%	64	27%	219	**31%**
	Motorcycle	144	60%	140	58%	157	66%	441	**61%**
	Car	11	5%	6	3%	15	6%	32	**5%**
	Tractor	15	6%	9	4%	4	2%	28	**4%**
Transportation to School	Pedestrian	64	27%	55	23%	50	21%	169	**24%**
	Bicycle	30	13%	16	7%	25	11%	71	**10%**
	Motorcycle	104	43%	107	44%	105	44%	316	**44%**
	Car	2	1%	4	2%	3	1%	09	**1%**
	Public Convince	40	17%	58	24%	57	24%	155	**22%**
License Holder	Yes	28	12%	11	5%	35	15%	74	**10%**
	No	212	88%	229	95%	205	85%	646	**90%**
License Category	Learner	06	3%	08	3%	16	7%	30	**4%**
	LTV	28	12%	11	5%	35	15%	74	**11%**
	HTV	00	0.0%	00	0.0	00	00.0	00	**0.00**
	None	206	86%	221	92%	189	79%	616	**86%**
Do you face Accident	Yes	69	29%	129	54%	127	53%	325	**45%**
	No	171	71%	111	46%	113	47%	395	**55%**

BWP=Bahawalpur, BWN= Bahawalnagar, RYK=Rahimyarkhan

The analysis of socio demographic characteristics of higher secondary school students is presented in table 2. It shows that equal number of students (360) was taken from each class 11th and 12th which include 120 students from each district (Bahawalpur, Bahawalnagar and Rahim Yar khan). There were 360 students from science subjects and 360 students from Arts subjects. Majority of students (45%) were in the age group of 19-20 year that means those students eligible for driving license (age 18 year) in Pakistan. The 50% students belong to urban schools and 50% from rural schools. There were 441 students out of 720 (61%) can drive motorcycle and majority of students (316) were used motorcycle to reach school. There were only 74 students out of 720 (10%) have driving license of category LTV. The 325 students out of 720 (45%) from age group of 15-20 year were faced accident. The rate of accidents (54%) was very high in district Bahawalnagar.

Table 3

Data about demographic variable Cause of Accidents

Options	DISTRICTS						Total students	%
	BWP (f)	%	BWN (f)	%	RYK (f)	%		
Over Speeding	32	46.37%	54	41.86%	60	47.24%	146	44.92%
Wrong overtaking	10	14.49%	17	13.17%	22	17.32%	49	15.07%
Over loading	02	2.89%	03	2.32%	4	3.14	09	2.76%
Wrong Road Crossing	15	21.73%	35	27.13%	30	23.62%	80	24.61%
Wrong U-turn	10	14.49%	20	15.50%	11	8.66%	41	12.61%

Table 3 shows detail about cause of accidents. It can be seen that majority of students (44.92%) narrated over speed (high speed) was the main cause of accident. The wrong road crossing and wrong over taking were also main cause of accidents in division Bahawalpur which faced young students.

Analysis for research Hypothesis

Analyzing and interpreting the data chi-square (χ^2) was used as it is an appropriate statistic to get more significant results. According to Munro (2001) chi-square widely used statistical tests where frequency data is involved in wide range social issues. The level of significance used in this study was 0.05(5%) and degree of freedom was 2. The chi-square table (χ^2_{Tab}) value was gain as 5.991. The calculated value of chi-square (χ^2_{Cal}) was compared the chi-square table (χ^2_{Tab}) value 5.991 and draw decision to accept or reject hypothesis.

Table 4
Responses of respondents about awareness and Practices
I use Zebra crossing to cross the road

Awareness of signboard		Always	Seldom	Never	Total	Awareness %	χ^2_{Tab}	χ^2_{Cal}
 Zebra Crossing	**Right**	100	163	301	564	78.33	5.991	17.83
	Wrong	51	33	72	156			
	Total	151	196	373	720			
Practice (%)		**20.97**	**27.22%**	**51.81%**	**100%**			

It is evident from table 4 that 564 (78.3%) students out of 720 were aware about zebra crossing sign, whereas 156 were unaware about the sign. In practices 151 respondents (20.97%) told that they practiced zebra crossing while crossing the road. Majority of the respondents 373 (51.81%) do not practiced the zebra crossing while crossing the road. So, it is evident on the basis of results that most of the respondents have idea about zebra crossing sign, but they do not follow while crossing the road.χ^2_{cal} = 17.83 which is greater than the table value 5.991 at df 2. The difference is

significant and calculated value 17.83 lie in critical region, so we reject $H_{O.}$ and concluded that there is association between awareness of signboard (zebra crossing) and practices on signboard.

Table 5
Responses of respondents about awareness and practices about helmet sign board

Awareness of signboard		Practices: I wear a helmet when I drive a bike — Always	Seldom	Never	Total	Awareness %	χ^2 Tab	χ^2Cal
	**Right**	71	51	438	560			
	Wrong	10	25	125	160			
Wearing Helmet	**Total**	81	76	563	720	77.78	5.991	9.59
Awareness (%)		**11.25%**	**10.56%**	**78.19%**	**100%**			

It is evident from table 5 that 560 (77.78%) students out of 720 aware wear helmet signboards, whereas 160 unaware about the signboard. In practices only 81 students (11.25%) told that they wear helmet while riding a bike. Majority of the respondents 563 (78.19%) never wear helmet. So, it is evident based on results that most of the respondents well aware of the signboard regarding wear helmet, but they do not practice accordingly. χ^2_{cal} = 9.59 which is greater than the table value 5.991 at d.f 2. The difference is significant and calculated value 9.59 lie in critical region, so we reject $H_{O.}$ and concluded that there is association between awareness of signboard (wear helmet) and practices on signboard.

Table 6
Responses of respondents about awareness and practices of reduce speed limit sign board

Awareness of signboard		Practices: I reduce the speed of my vehicle where reducing speed signboard is placed — Always	Seldom	Never	Total	Awareness %	χ^2 Tab	χ^2Cal
	**Right**	224	50	240	614			
	Wrong	20	30	56	106			
	Total	244	180	296	720	85.28	5.991	3.65
Practices (%)		**33.89%**	**25.0%**	**41.11%**	**100%**			

According to table 6 that 614 (85.28%) students out of 720 aware the signboard (reduce speed now), whereas 106students unaware about the signboard. In practices 244 respondents (33.89%) told that they always reduce the vehicle speed while seeing the signboard. Majority of the respondents 296 (41.11%) never reduce the vehicle speed after seeing the signboard. So, it is evident based on results that most of the respondents identify the signboard correctly, but they do not reduce the vehicle speed accordingly. As a result, they face accident while driving. χ^2_{cal} = 3.65 which is less than the table value 5.991 at d.f 2. The difference is significant and calculated value 3.65 lies

in acceptance region, so we accept $H_{O.}$ and concluded that there is no association between awareness of signboard (reduce speed now) and practices on signboard.

Table 7
Responses of respondents about awareness and practices of stop on red signal sign board

Awareness of signboard		Practices: I stop the vehicle when the red signal is on. Always	Seldom	Never	Total	Awareness %	χ^2 Tab	χ^2Cal
 Red Signal On	**Right**	537	53	48	638	88.61	5.991	58.42
	Wrong	40	25	17	82			
	Total	577	78	65	720			
Practices (%)		**80.13%**	**10.83%**	**9.03%**	**100%**			

The table7shows that 638 (88.61%) respondents out of 720 aware the signboard (Red signal on), whereas only 82 students unaware about the signboard. Majority of the respondents577 (80.13%) told that they always stop the vehicle when red signal is on. The remaining 65(9.03%) students never stop the vehicle at red signal. So, the results show that majority of the respondents identify the signboard correctly and they practiced accordingly. As a result, they reduce the chance of accident while driving. χ^2_{cal} = 58.42 which is greater than the table value 5.991 at d.f 2. The difference is significant and calculated value 58.42 lies in critical region, so we reject $H_{O.}$ and concluded that there is association between awareness of signboard (red signal on) and practices on signboard.

Table 8
Responses of respondents about awareness and practices on prohibited of parking sign boar

Awareness of signboard		Practices: I do not park my vehicle where no parking sign board is placed. Always	Seldom	Never	Total	Awareness %	χ^2 Tab	χ^2Cal
 No Parking	**Right**	146	146	290	582	80.83	5.991	15.38
	Wrong	15	50	73	138			
	Total	161	196	363	720			
Practices (%)		**22.36%**	**27.22%**	**50.41%**	**100%**			

The table 8 shows that 582 (80.83%) respondents out of 720 aware the signboard (prohibited of parking), whereas 138 students unaware about the signboard. Majority of the respondents 363 (50.41%) told that they park the vehicle where no parking signboard is placed. The remaining 161(22.36%) students always practiced against the

signboard. So, the results show that majority of the respondents identify the signboard correctly and they practiced accordingly. As a result, they reduce the chance of any inconvenience. χ^2_{cal} = 15.38 which is greater than the table value 5.991 at d.f 2. The difference is significant and calculated value 15.38 lies in critical region, so we reject $H_{O.}$ and concluded that there is association between awareness of signboard (prohibited parking) and practices on signboard.

Table 9
Responses of respondents about awareness and practices prohibited of overtaking sign board

		Practices **I overtake the vehicle from right side.**						
Awareness of signboard		Always	Seldom	Never	Total	Awareness %	χ^2 Tab	χ^2Cal
 **Prohibited Overtaking**	**Right**	131	162	307	600	83.33	5.991	62.79
	Wrong	10	77	33	120			
	Total	141	239	340	720			
Practices (%)		**19.58%**	**33.19%**	**47.22%**	**100%**			

The table 9 shows that 600 (83.33%) respondents out of 720 aware the signboard (prohibited overtaking), whereas 120 students unaware about the signboard. In practices 141 respondents (19.58%) told that they do not overtake the vehicle from left side while seeing the signboard. Majority of the 340(47.22%) students never overtake the vehicle from right side. So, the results show that majority of the respondents identify the signboard correctly and they do not practice accordingly. As a result, they increase the chance of accident while driving. χ^2_{cal} = 62.79 which is greater than the table value 5.991 at d.f 2. The difference is significant and calculated value 62.79 lies in critical region, so we reject $H_{O.}$ and concluded that there is association between awareness of signboard (prohibited overtaking) and practices on signboard.

Table 10
Responses of respondents about awareness and practices of U-turn sign board

		Practices **I take a U-turn from place where a signboard of U-turn.**						
Awareness of signboard		Always	Seldom	Never	Total	Awareness %	χ^2 Tab	χ^2Cal
 **U-turn**	**Right**	225	149	240	614	85.27	5.991	4.25
	Wrong	50	22	34	106			
	Total	275	171	274	720			
Practices (%)		**38.19%**	**23.75%**	**38.06%**	**100%**			

According to table 10 that 614 (85.28%) students out of 720 aware the signboard (U-turn), whereas 106 students unaware about the signboard. In practices 275 respondents (38.19%) told that they always take U-turn from where a signboard placed. The other respondents 274 (38.06%) never take U-turn properly according to signboard. So, it is evident based on results that most of the respondents identify the signboard (U-turn) correctly, but they do not take U-turn properly. As a result, they face accident while driving. χ^2_{cal} = 4.25 which is less than the table value 5.991 at d.f 2. The difference is significant and calculated value 4.25 lies in acceptance region, so we accept $H_{O.}$ and concluded that there is no association between awareness of signboard (U-turn) and practices on signboard.

Table 11
Responses of respondents about awareness and practices of prohibited on horn sign board

Awareness of signboard		Practices: I use horn in silence zone. Always	Seldom	Never	Total	Awareness %	χ^2 Tab	χ^2Ca
 No horn	**Right**	174	154	221	549	76.25	5.991	0.2259
	Wrong	51	50	70	171			
	Total	225	204	291	720			
Practices (%)		**31.25%**	**28.33%**	**40.41%**	**100%**			

According to table 11 that 549 (76.25%) respondents out of 720 aware the signboard (prohibited horn), whereas 171 students unaware about the signboard. In practices 225 respondents (31.25%) told that they always use horn in silence zone. Majority of the respondents 291 (40.41%) never use horn in silence zone. So, it is evident based on results that majority of the respondents identify the signboard correctly, but they do not act upon accordingly. As a result, they create disturbance while driving. χ^2_{cal} = 0.23 which is less than the table value 5.991 at d.f 2. The difference is significant and calculated value 0.23 does not lies in critical region, so we accept $H_{O.}$ and concluded that there is no association between awareness of signboard (prohibited horn) and practices on signboard.

Conclusion

In demographic characteristics of higher secondary school student's equal number of students (360) was taken from each class 11th and 12th, 360 students from science subjects and 360 students from Arts subjects. Majority of them were from age group 19-20 year, 50% students belong to urban schools and 50% from rural schools. Most of the students can drive motorcycle and majority of them used motorcycle to reach school whereas very few of them have driving license of category LTV, some of them faced accident. The rate of accidents is very high in district Bahawalnagar as compared to other districts. In cause of accidents majority of students narrated over speed (high speed) as main cause of accident, wrong road crossing and wrong over taking were also causes of accidents.

It is evident that majority of the students aware about zebra crossing sign but very few of them practiced zebra crossing while crossing the road. So H_O was accepted about there is association between awareness of signboard (zebra crossing) and practices on signboard. They also claimed that they have idea about the sign board to wear, but they never wear helmet so, we accept H_O and concluded that there is association between awareness of signboard (wear helmet) and practices on signboard. Most of the students were aware about the signboard (reduce speed now) but mostly told that they never reduce the vehicle speed while seeing the signboard. So H_O was accepted.

When students were asked about the awareness of the signboard (Red signal on), majority of the respondents told that they always stop the vehicle when red signal is on, so we reject H_O and concluded that there is association between awareness of signboard (red signal on) and practices on signboard. Respondents were aware about the signboard no parking but they park the vehicle where no parking signboard is placed, so H_O was rejected. In the response about signboard (prohibited overtaking), most of the students were aware and do not overtake the vehicle from left side while seeing the signboard H_O was rejected and concluded that there is association between awareness of signboard and practices on signboard.

While driving U- turn is very important and most of the students were aware about the signboard of U-turn, whereas about one third students have the opinion that they follow U-turn while driving, hence we accept H_O. Respondents aware about the signboard (No horn) but most of them violate the rule in silence zone so H_O was accepted.

This study was designed to check the awareness and practices of students at higher secondary level about traffic signs. It was concluded that majority of them were from age group 19-20 year but few of them have driving license of category LTV as Riaz, &Shahid, (2018) discussed about the importance of driving license in their study "Knowledge, Attitudes, and Practice of Drivers towards Traffic Rules and Regulations in Multan, Pakistan". It is so because authorities have no attention on the issue mentioned above. Rate of accidents is very high in district Bahawalnagar as compared to other districts as it is a far flung area and authorities had neglected that area about the implementation of traffic rules.

Zebra crossing is help for pedestrians to cross the busy roads but most of the students instead of awareness do not use zebra crossing while crossing the road. It is so because of non-serious attitude of the students. Helmet is necessary for motor bike and cycle riders according to traffic rules of Pakistan, most of the students do not use helmets although they have awareness about helmet sign as the findings of the study matches with similar studies conducted by Swami, Puri, & Bhatia (2006) was important to be safe from serious injuries during road accidents. Reducing speed sign forces drivers to reduce speed, students have idea about the sign but they never reduce the vehicle speed while seeing the signboard. Majority of the respondents told that they always stop the vehicle when red signal is on as most of the time traffic wardens

are there. While parking they park the vehicle where no parking signboard is placed although they have idea about the sign board of no parking placed there. Good thing is that most of the students were aware and do not overtake the vehicle from left side while seeing the signboard. Silence zone violation is trend as most of the student instead of awareness about no horn sign; violate the rule in silence zone.

Recommendations

On the basis of conclusions following recommendations were made:

1. Authorities may force youngster of age more than 18 years to obtain driving license, so they may have idea about traffic rules and can prevent themselves from road accidents.

2. Use of zebra crossing and use of helmet may be encouraged by parents, teachers and other stakeholders of the society.

3. Speed limit may be imposed strictly by authorities to reduce the ratio of accidents by launching comprehensive campaign on print, electronic and social media.

4. Parking vehicle in no parking place and use of horn in silence zone may be discouraged by imposing heavy fines for the convenience of the community.

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