



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1225356>Available online at: <http://www.iajps.com>

Research Article

**DETERMINANTS OF ROAD TRAFFIC ACCIDENTS
COMING TO TRAUMA CENTER OF DHQ HOSPITAL
GUJRANWALA****Dr. Affan Tahir Bhatti^{1*}, Dr. Farah Munir², Dr. Sidra Baig³**¹Gujranwala Medical College, Gujranwala²University College of Medicine and Dentistry University of Lahore³Fatima Jinnah Medical University**Abstract:**

OBJECTIVES: To identify the risk factors for road traffic accidents in Gujranwala, To increase the awareness among people by our study.

STUDY DESIGN: Descriptive, cross-sectional study.

PLACE AND STUDY DURATION: Research paper was completed in the period of 3 months from April 2017 to June 2017 at the venue of DHQ hospital Gujranwala

MATERIALS AND METHODS: Patients of road traffic accidents visiting the Trauma center of D.H.Q Gujranwala. The sample size was calculated by using Epi-Info software. Sample of 100 people will be taken. A questionnaire was developed in keeping with the study objectives, dependent and independent variables. Questionnaire was pretested before the data collection. SPSS computer software was used for entry compilation and analysis of the data.

RESULTS: The main reasons, of traffic accidents is use of cell phone and not using seat belt during driving with (48.62±2.35) & (42.38±3.50)

CONCLUSION: The main reason of traffic accidents is use of cell phone and not using seat belt during driving. There is clearly a need for road safety education and it should be directed towards road users, who are frequently involved and injured in RTAs.

Corresponding author:

Affan Tahir Bhatti,
Gujranwala Medical College,
Gujranwala

QR code



Please cite this article in press Affan Tahir Bhatti et al., *Determinants of Road Traffic Accidents Coming To Trauma Center of DHQ Hospital Gujranwala, Indo Am. J. P. Sci, 2018; 05(04).*

INTRODUCTION:

Accident can be defined as “an unanticipated and detrimental event, a misfortune unexpected and with no obvious cause”. In the world more than two million people die each year from road traffic accidents and twenty to fifty million people experience non-fatal injuries. Now a days an increase in road traffic accidents is observed all across the globe. [1] Increase in such incidents is present especially in the low economic countries. It is found that in such countries there is a huge number of street-walkers, cyclists, travelers of buses and trucks which are in a greater risk of road accidents. In high economic countries, those children experience more injuries and deaths which belong to poor socioeconomic group. While comparing the rates for road accidents, there is a 6 times greater risk in low income regions of the world. [2]

Of all the road traffic deaths, street-walkers are ranked first throughout the world. The rates varies among different economic group regions in low-income countries is 45% in middle-income is 29% and in high-income countries is 18%. [3] In low economic countries the mortality rate for the passengers is 35%, for drivers 12% and for cyclists is 8%. [4] Demographic studies shows that young adults i.e. between 18-24 years of age are the high risk groups. Form 2015-2017, it is observed that there is 17 fold increased risk in per 100,000 in 18-20 years age group while there is 8 times increased risk in per 100,000 in 20-24 years age group. [5]

Road accidents appear to occur regularly at some flash points such as where there are sharp bends, potholes and at bad sections of the highways. Statistics indicate that over 90 percent of traffic accident situations can be attributed to driver errors. In 2013, in Karachi 1544 deaths and 1793 injuries were stated by the Karachi police on the other hand 1343 deaths and 2,048 injuries were stated by the ambulance records. Comparing to the rates with the year 2010 which is 1084 injuries and 17.2 deaths per 100,000 it is easy to predict an increase in incidence of road traffic accidents. [6]

LITERATURE REVIEW

Road traffic crashes have emerged as a major health problem around the world. Road crash fatalities and injuries have been reduced significantly in developed countries as compared to developing countries. Road accidents not only cause agony and misery to the population but are also effect country's economy. As it effect the economy it is a burden especially for the low income countries. [7] In economic terms, the cost of road crash injuries is projected at roughly 1% of

gross national product (GNP) in low-income countries, 1.5% in middle-income countries and 2% in high-income countries. [8] The economic cost of road crashes and injuries is assessed to be over Rs100 billion for Pakistan. [9] In 2004, in a survey across the globe found that Pakistan ranked highest for road traffic accident mortality rate. This study also showed that the countries with low economic status have high mortality rates. The high rate in these countries was explained by high number of pedestrians which are ranked first in the road traffic accidents fatalities. [10] It has also been found that In developing countries like Pakistan, a huge share of population has also inadequate access to post-crash emergency health care which causes a valuable loss of lives that pretty much explains the high mortality rate. In many developing countries, the costs of prolonged medical care, the loss of the family breadwinner, the cost of a funeral, and the loss of income due to disability can push families into poverty. In Mexico, the second commonest cause of children being orphaned is traffic crashes. [11]

Especially death proportion of pedestrians and motorcyclists are very high which mostly belong to lower socio-economic groups of society. Recent studies have shown that pedestrians and motorcyclists have the highest rates of injury in Asia. [12] the burden of injury is unequal. More boys are injured than girls, and children from poorer families have higher rates of injury. In 2002, males accounted for 73% of all road traffic deaths, with an overall rate almost three times that for females: 27.6 per 100 000 population and 10.4 per 100 000 population, respectively [13] In Pakistan, among males of the economically active age group accidental death rate is very high, and also according to the study, motor vehicle injuries are the third most important cause of death in developing countries. [14] Research evidence also indicates that the human element is responsible for 80 to 85% of all traffic accidents. Traffic violations, driving while intoxicated and lack of driving courtesy are the results of human actions. Unsafe highway and road conditions cause about 10% of all traffic accidents while mechanical deficiencies are responsible for nearly 5% of all traffic problems [15] Among the E's of traffic safety, Education and Enforcement are important for talking about road traffic security actions, although the calculation of road traffic security measures from the point of view of Education and Enforcement has been unsatisfactory. It is possibly one of the causes that there is no organized assessment system for Education or Enforcement. [16]

Socio-economic status and education are probably the key differences between developing and developed countries. It has been argued that the link between fatalism and poverty is not clear and may be more dependent on culture and education[17]There is some evidence of a link between lower levels of education and greater fatalistic beliefs and there has been speculation that an increased number of road accidents among drivers was a result of lower education levels[18][19]Participants also reported that protective medicines, consulting traditional healers or prophets, and cleansing procedures could be effective means to avoid future accidents. Similarly, high degrees of superstition have been identified among various categories of drivers in the Ivory Coast and Nigeria [20],[21]It has been argued that, both more generally and in road safety, programs that are highly successful in developed countries sometimes do not work in developing countries, in part because their appropriateness for the local culture may have been overlooked.[22],[23]

A thorough review of reports on road crashes in Pakistan was conducted in the late 1990s, and was supplemented by interviews with hospital victims which revealed high levels of under-reporting in police data. It was found that there had been a steady increase in traffic deaths and injuries from 1956 to 1996. Annex planed issue in the study was the disparity between vehicles on the road and registered vehicles, with only half the vehicles on the road being registered. Commercial vehicles made up 12-35% of registered vehicles across the period, but were involved in more than 60% of crashes (increasing over time) and 90% of fatalities. The vehicles concerned were primarily buses.[24]the second, conducted a few years later, involved a systematic review of the literature relevant to road transport in Pakistan, which included gaining access to government reports. The report notes a distinct lack of official policy statements about road traffic injuries, and, when the issue was acknowledged, the lack of reference to

any interventions. A thorough search of databases revealed only seven studies, most of which are cited here, and mostly involving groups of authors with some members in common across the studies.[25]

National Health Survey conducted in Pakistan in the period 1990-94 found higher levels for men and in urban areas, while the1997 survey found higher rates for people aged 16-45 years (21.6 per thousand), and very high rates for laborers (119.5) and vendors (104.6). Looking at transport mode, 34% of injuries were as vehicle occupants, 24% as pedal cyclists, 21% as motorcyclists, 12% as pedestrians and 9% recorded as "other". According to the study, most of the injured vehicle occupants were occupants of buses or larger vehicles [26],[27]According to the Pakistan Social and Living Standards Measurement Survey for 2007-08, the overall literacy rate (age 10 years and above) is 56 per cent (69 per cent for males and 44 per cent for females).[28]

MATERIALS AND METHODS:

Research paper was completed in the period of 3 months from April 2017 to June 2017 at the venue of DHQ hospital Gujranwala .Patients of road traffic accidents visiting the Trauma center of D.H.Q Gujranwala. Non probable convenient sampling is the sampling technique used .The sample size was calculated by using Epi-Info software. Sample of 100 people will be taken .Informed consent was also secured from the participants of the research. A data collection tool (a questionnaire) was developed in keeping with the study objectives, dependent and independent variables. Questionnaire was pretested before the data collection. The outcomes variables were listed as frequencies and proportions. The demographic variables were described as simple statistics. SPSS computer software was used for entry compilation and analysis of the data.

RESULTS AND DISCUSSION:

Table No. 1:Frequency distribution of Age of driver

	Frequency	Percent
Valid		
15-35 years	64	64
36-55 years	33	33
More than 55 years	3	3
Total	100	100.0

Out of 100 subjects in our research, 64 (64%) are of age between 15-35 years, 33 (33%) are of age between 36-55 years and 3(3%) are of age more than 55 years

Table No. 2: Frequency distribution of Sex of driver

		Frequency	Percent
Valid	Male	74	74.0
	Female	26	26.0
	Total	100	100.0

Out of 100 subjects in our research, 74 (74%) are males and 26(26%) are female

Table No. 3: Frequency distribution of Occupation of driver

		Frequency	Percent
Valid	farmer/laborer	5	5
	Employed	48	48
	Businessman	16	16
	Unemployed	31	31
	Total	100	100.0

Out of 100 subjects in our research, 5 (5%) are farmers/laborer, 48(48%) are employees, 16 (16%) are businessman and 31 (31%) are unemployed

Table No. 4:Frequency distribution of Use of side mirror by driver

		Frequency	Percent
Valid	Yes	80	80
	No	20	20
	Total	100	100.0

Out of 100 subjects in our research, 80 (80%) use side mirrors while 20 (20%) do not use side mirrors.

Table No. 5: Frequency distribution of Overtaking of vehicles by driver

		Frequency	Percent
Valid	Yes	53	53
	No	47	47
	Total	100	100.0

Out of 100 subjects in our research, 53 (53%) overtake other vehicles while 47 (47%) do not overtake other vehicles.

Table No. 6: Frequency distribution of Use Of medicine by driver

		Frequency	Percent
Valid	Yes	19	35.2
	No	35	64.8
	Total	100	100.0

Out of 100 subjects in our research, 19 (35.2%) use medicine for any illness while 35 (64.8%) do not use medicine for any illness.

Table No. 7: Frequency distribution of Mental illness of driver

		Frequency	Percent
Valid	Yes	3	3
	No	97	97
	Total	100	100.0

Out of 100 subjects in our research, 3 (3%) have mental illness .e.g. epilepsy while 97 (97%) do not have any mental illness.

Table No. 8: Frequency distribution of Duration of Driving

		Frequency	Percent
Valid	Less than 10 hours	92	92
	More than 10 hours	8	8
	Total	100	100.0

Out of 100 subjects in our research, 92 (92%) drive less than 10 hours while 8 (8%) drive more than 10 hours.

Table No. 9: Frequency distribution of driving license owned by driver

		Frequency	Percent
Valid	Yes	77	77
	No	33	33
	Total	100	100.0

Out of 100 subjects in our research, 77 (77%) have driving license while 33 (33%) do not have driving license.

Table No. 10: Frequency distribution of Visit to Workshop by driver

		Frequency	Percent
Valid	3 months	59	59
	6 months	17	17
	more than 6 months	24	24
	Total	100	100.0

Out of 100 subjects in our research, 59 (59%) visit workshop after every 3 months, 17(17%) visit workshop after every 6 months and 8 (24%) visit workshop between 6-12 months.

Table No. 11: Frequency distribution of Use of Seatbelt by driver

		Frequency	Percent
Valid	Yes	40	40
	No	60	60
	Total	100	100.0

Out of 100 subjects in our research, 40 (40%) use seat belt while 60 (60%) do not use seat belt.

Table No. 12: Frequency distribution of Over-speeding by driver

		Frequency	Percent
Valid	Yes	42	42
	No	58	58
	Total	100	100.0

Out of 100 subjects in our research, 42 (42%) over speed i.e. more than 50 kmh-1 while 58 (58%) do not over speed their vehicles.

Table No. 13: Frequency distribution of Overloading of vehicles by driver

		Frequency	Percent
Valid	Yes	36	36
	No	64	64
	Total	100	100.0

Out of 100 subjects in our research, 36 (36%) overload their vehicles while 64 (64%) do not overload their vehicles.

Table No. 14: Frequency distribution of Use of Mobile Phones by driver

		Frequency	Percent
Valid	Yes	61	61
	No	39	39
	Total	100	100.0

Out of 100 subjects in our research, 61 (61%) use mobile phones during driving whereas 39 (39%) do not use mobile phones while driving.

Table No. 15: Frequency distribution of One-wheeling by driver

		Frequency	Percent
Valid	Yes	10	10
	No	90	90
	Total	100	100.0

Out of 100 subjects in our research, 10 (10%) are fond of one wheeling while 90 (90%) are not fond of one wheeling

Table No. 16: Frequency distribution of Condition of Roads

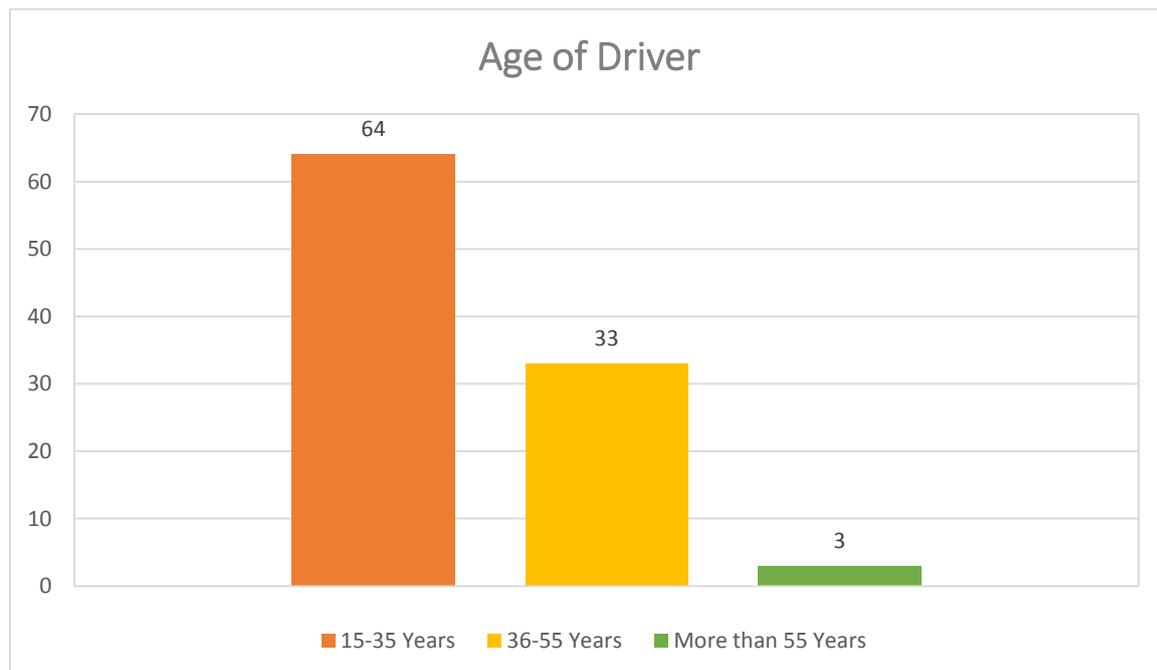
		Frequency	Percent
Valid	Good	57	57
	Poor	43	43
	Total	100	100.0

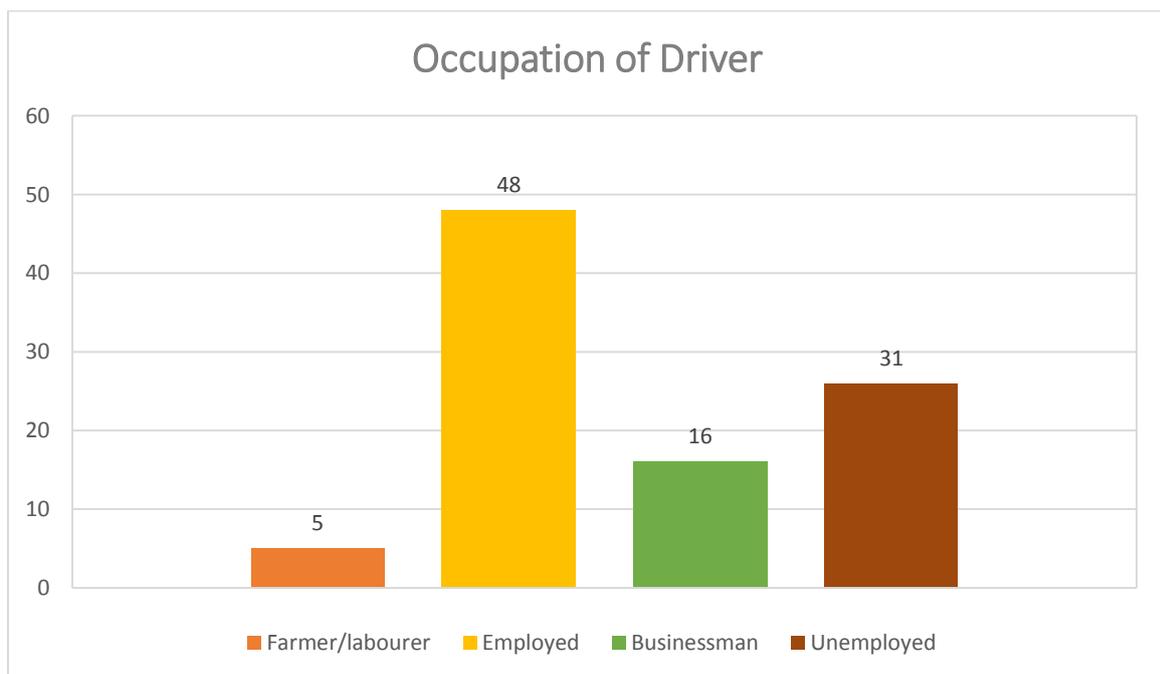
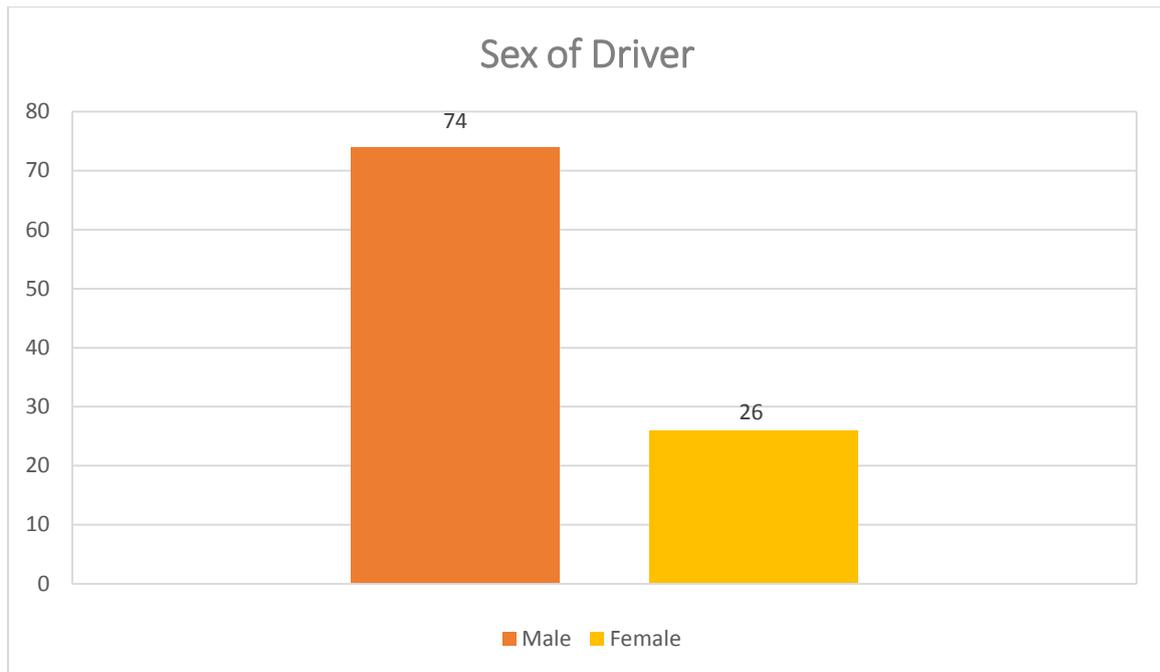
Out of 100 subjects in our research, 57 (57%) have good condition of roads in their area while 43 (43%) have poor condition of roads in their area.

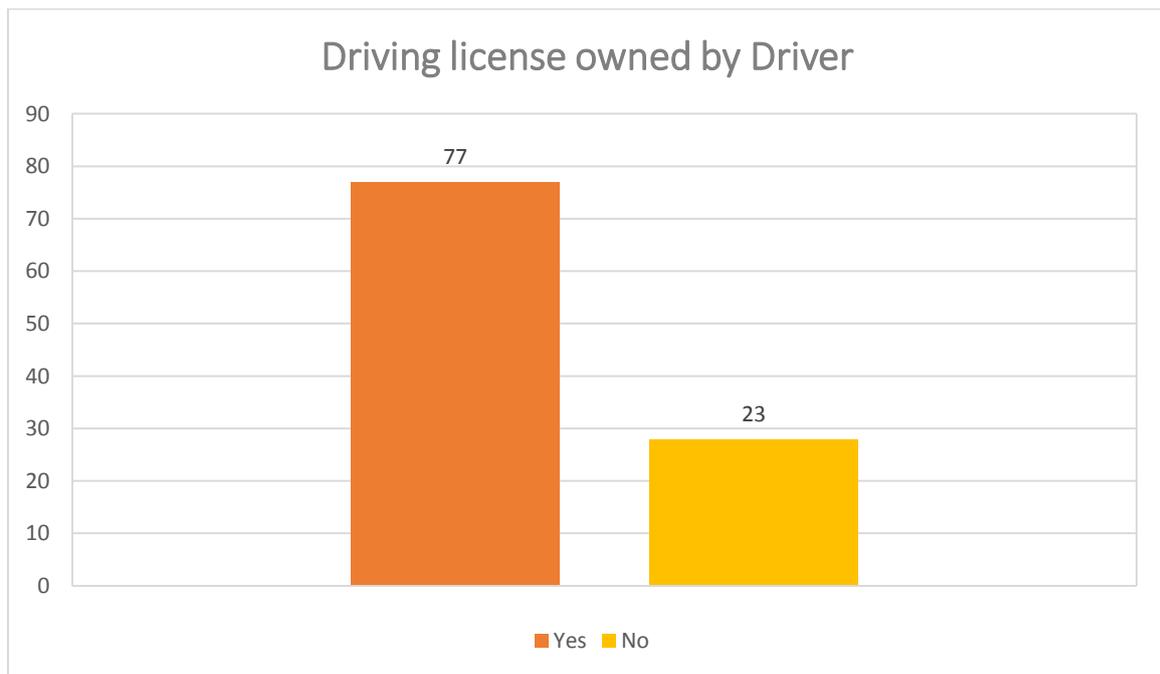
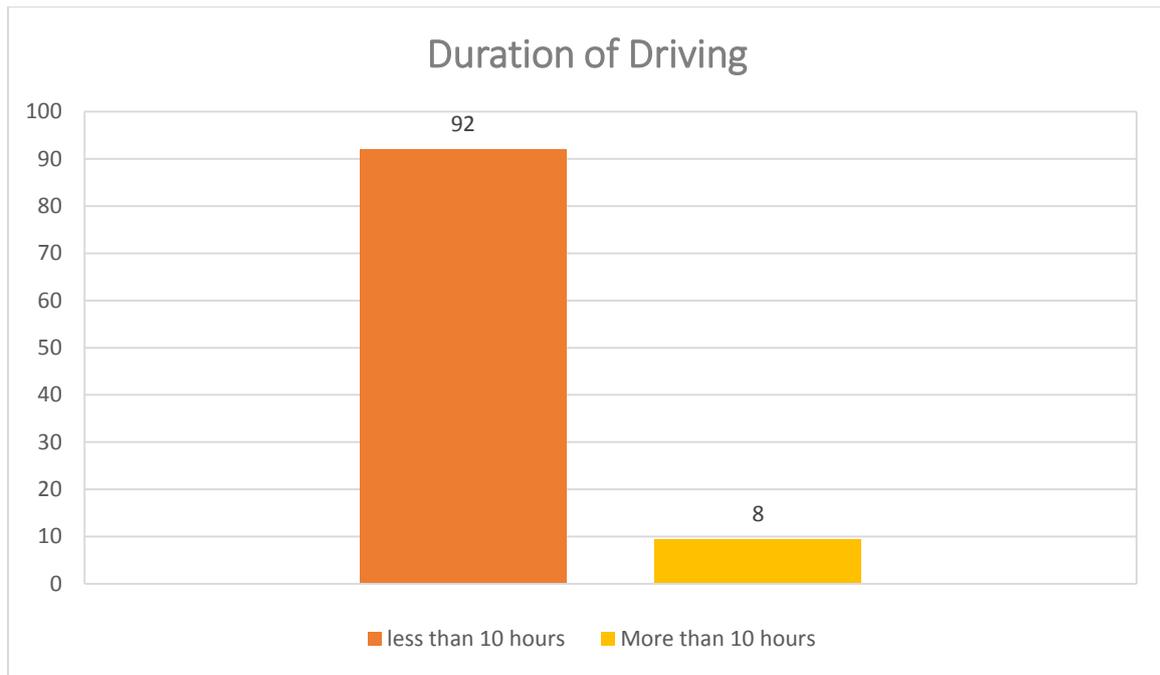
Table No. 17: Frequency distribution of Use of Helmet by driver

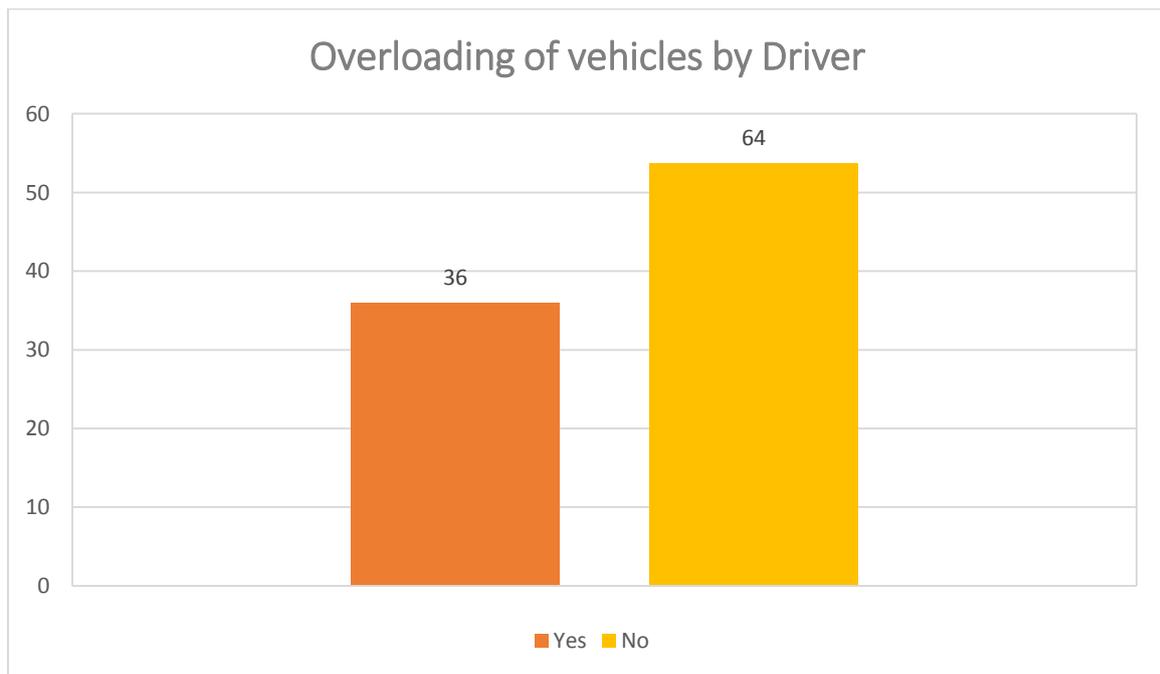
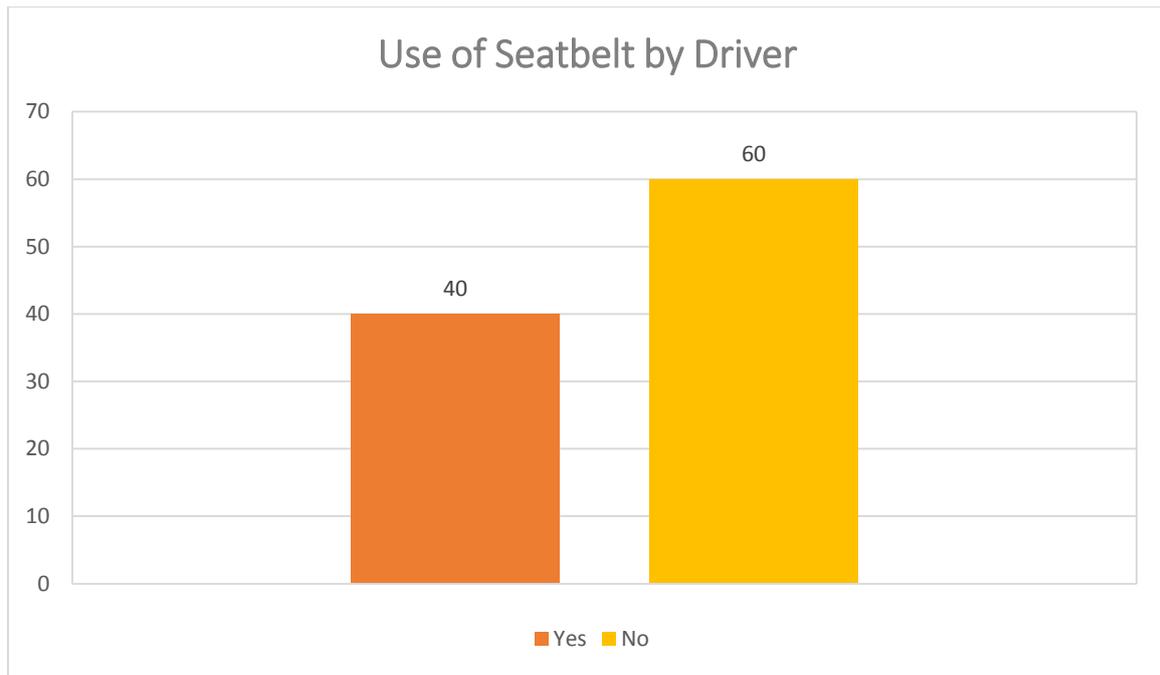
		Frequency	Percent
Valid	Yes	25	25
	No	75	75
	Total	100	100.0

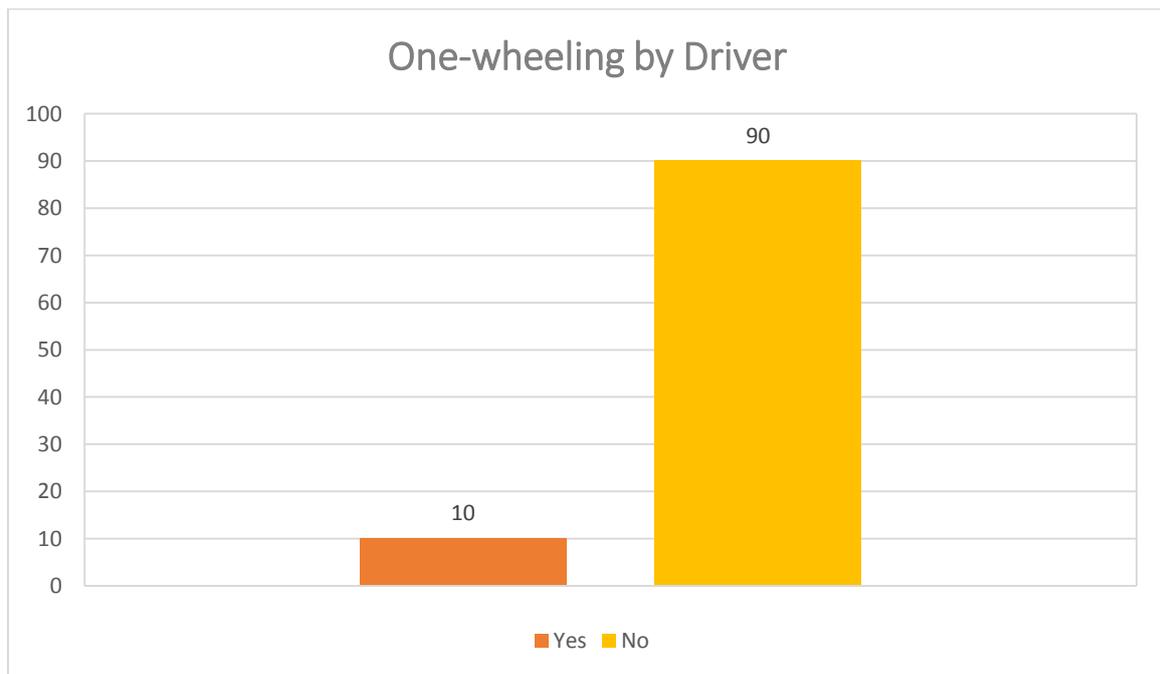
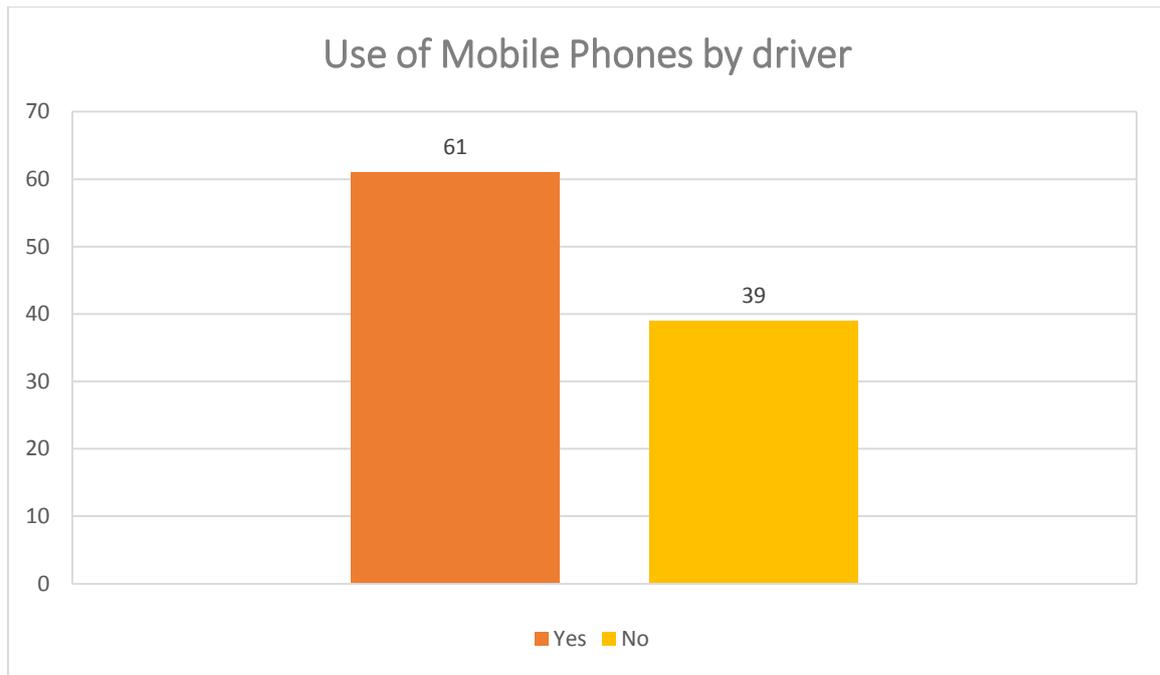
Out of 100 subjects in our research, 25 (25%) use helmet during driving whereas 75 (75%) do not use helmet while driving.

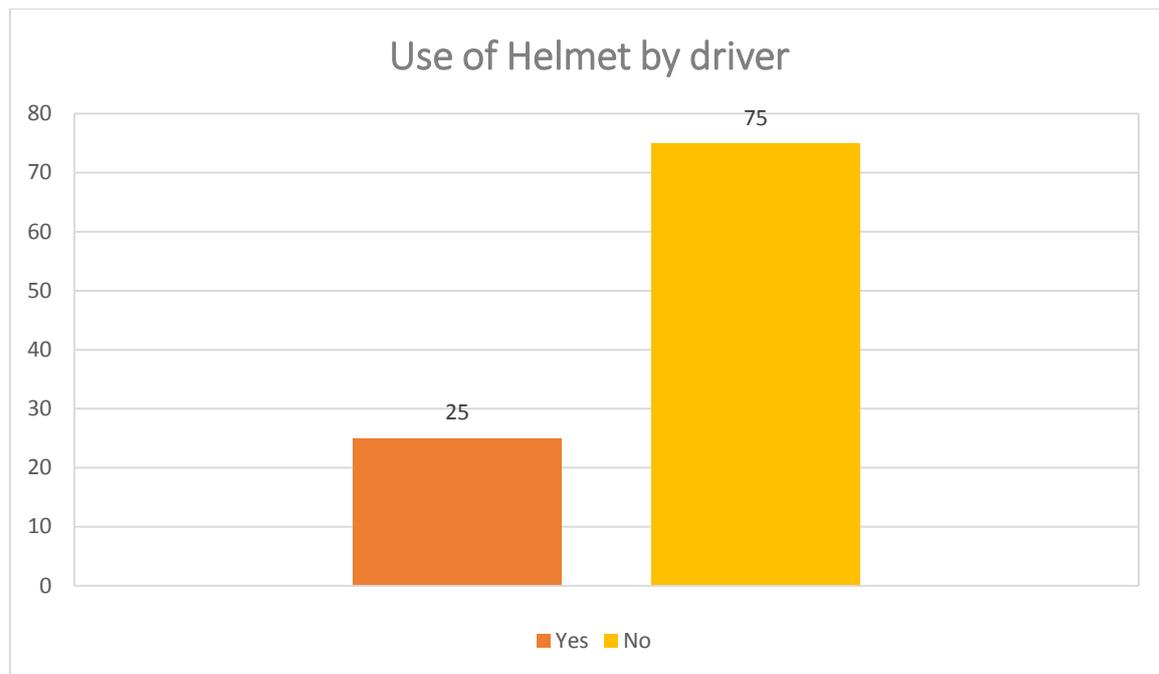












On the basis of the results obtained by our study of 100 respondents that 64 % of the respondents are belonging from the age group 15-35 years shown in table 1 of this study it is cleared that such group is more ambitious and inexperienced as compared the other age group. Our study is co-related with the study conducted by Dawn L. Massie, Kenneth L. Campbell, Allan F. Williams on , November 4–6, 1993 which is “Elevated rates were observed for drivers aged 16–19 and 75 and over. The oldest drivers had the highest fatal involvement rate, while the youngest drivers had the highest rate of involvement in all police-reported crashes.” Supporting our results similarly, it also showed that Men had a higher risk than women of experiencing a fatal crash, while women had higher rates of involvement in injury crashes and all police-reported crashes. The same result is shown by our research in table 2 of this study which showed that man had a high risk which is 100%. [29]

The respondent driving for duration less than 10 hours are found to have increased risk of accidents i.e. 92% in table 8. The results contradict the research done by Fridulv Sagberg November 1999. In which the drivers for longer duration of driving are prone to accidents. The reason for our results that the drivers of shorter distance use of high speed as they believe that they well-recognize their local area and they can easily pass through any obstruction and they know the junctions of road where is the heavy traffic is usually encountered. [30]

In a research done by E. Petridou, A. Skalkidou in 1998, the motorcyclists which do not use helmet are a major cause of road traffic fatalities, the proportion of all deaths that could have been avoided if 38% of motorcycle deaths could have been avoided if all motorcycle riders used helmets. Our results also support this research that non-helmet users are majorly involved in accidents too as shown in table 17. [31]

The mobiles phones by far is denoted as most important factor in road traffic accidents in our study more than 68.5% shown in table 14 respondents involved in road traffic accidents are using mobile at the time of accident. The results contradict with the study by John M. Violanti , March 1996 in which there is only 13% individuals were involved. [32] In a study carried in 2004 by Nilambar Jha , D.K. Srinivasa , Gautam Roy the laborers were the highest (29.9%) in number among the victims. Persons who were employed in service were the next largest group with 157 victims (21.6%). 115 (15.8%) students were involved in accidents. Which contradict our result in which laborers account only 9.5% shown in table 3 . [33]

One wheeling is considered an important determinant of road traffic accidents in a research by Abdul-Manan khan and Ansa Tehreem in 2012 conclude that In most of the parts of the country, one wheeling occurs by young people on roads and 76% of the respondents view that this cause road accidents while only 4% of the respondents answer

that one wheeling is not a cause of accidents contraindicating our result in which only 16% are fond of one wheeling are involved in road traffic accidents shown in table 15. Our next question highlight another burning issue that 72.2% of the road accidents occur due to untrained/ unskilled drivers while only 27.8% of the respondents view that unskilled drivers are not responsible, which is shown in table 9 which is supported by research of Abdul Manan and Ansa Tehreem 2012.[34]

By our research 53.7% refused that they overload which contradict the research of R. R Tiwari, G. B Ganveer 2008 in which more than 70 % are involved in road traffic accidents shown in table 13.[35] The second most important factor is find to be use of seatbelt our results showed that more than 65% showed an increased risk of accidents induced fatal injuries showed in table 11. A similar research conducted by J.Thomas in 1990 showed that there is 40% increase in number of those who escaped from fatal injuries by simply using seat bealts[36]

CONCLUSION:

The main objective of this study is to highlight the main causes of road accidents in Gujranwala, Pakistan. On the basis of primary data we conclude the study as following.

The main reason of traffic accidents is use of cell phone another problem which causes road accidents is that the do not use seat belt during driving

There is clearly a need for road safety education and it should be directed towards road users, who are frequently involved and injured in RTAs

At the time of giving license to the public transport drivers (Bus and Trucks), they can be given training in first-aid skills so that victims are attended immediately in the post-accident period.

The results of this study can contribute positively and meaningfully to the design of future educational program and materials

RECOMANDATIONS:

For future researches it is recommended that a comparative study of different countries or different cities could be done regarding traffic accidents

Issues of use of mobile phones and overloading can be solved by creating awareness and by applying some penalty to defaulters

Government should work on weak infrastructure areas of Pakistan. Drivers should follow all rules and regulations to drive. All safety measures must be requisite before starting journey.

The real pressure and motivation to improve driving skills can come only through licensing

authorities by adopting stricter, more comprehensive and scientifically based test laying a stress on road rules, regulations and traffic control devices.

REFERANCES:

1. World Health Organization .Global status report on road safety: time for action. Geneva: World Health Organization, 2009.
2. Nantulya VM, Reich MR. The neglected epidemic: Road traffic injuries in developing countries. 2002 324:1139–41
3. Baker TD, Naci H. Chisholm D, Distribution of road traffic deaths by road user group Feb2009, Vol. 15 Issue 1, p55
4. <http://europepmc.org/abstract/MED/7555886>
5. <http://www.bmj.com/content/318/7199/1647>
6. Augustus, O.,determinantsof road traffic accident occurrences in Lagos state: some lessons for Nigeria Vol. 2 No. 6 [Special Issue – March 2012]
7. Ameratunga S, Hajar M, Norton B. Road-traffic injuries: confronting disparities to address a global-health problem. Lancet 2006; 367:1533–40.
8. Soderlund N, Zwi A.B., (1995), Traffic related mortality in industrialized and less developed countries. BuU World Health Organ.73:175-82.
9. Ahmad, B., (2006), Country Report on Road Network in Pakistan, Ministry of Communications, Islambad.
10. Acevedo GA. Islamic fatalism and the clash of civilizations: an appraisal of a contentious and dubious theory. Social Forces 2008; 86(4):1711-1752.
11. Hajar, M., Vazquez-Vela, E, Arreola-Risa, (2003), Pedestrian traffic injuries in Mexico: a country update. Injury Control and Safety Promotion. 10:37–43
12. Peden, M., Scurfield, R., et al (2004), World Report on Traffic Injuries Prevention; Geneva, WHO
13. Yang, B. M., and Kim J., (2003), Road traffic accidents and policy interventions in Korea. Injury control and Safety Promotion.10:89–93.
14. Soderlund N, Zwi A.B., (1995), Traffic related mortality in industrialized and less developed countries. BuU World Health Organ.73:175-82.
15. Aaron, J. E. and Strasser, M. K., (1990), Driver and Traffic Safety Education, London: The Macmillan Company.
16. Nishida, Y. (2009). Road Traffic Accident Involvement Rate by Accident and Violation Records: New Methodology for Driver Education Based on Integrated Road Traffic Accident Database. In Proceedings: 4th IRTAD Conference, Seoul, Korea, 99-111

17. Freeman H. Cancer and the socioeconomic disadvantaged. Atlanta: American Cancer Society, 1989.
18. Peltzer K. The road 'kill' factor. Human Science Research Council 2008; 6(4):31-32.
19. Peltzer K, Renner W. Superstition, risk-taking and risk perception of accidents among South African taxi drivers. *Accident Analysis and Prevention* 2003; 35:619–623.
20. Kouabenan D R. Beliefs and the perception of risks and accidents. *Risk Analysis* 1998;18(3):243-252.
21. Dixey RA. 'Fatalism', accident causation and prevention: issues for health promotion from an exploratory study in a Yoruba town, Nigeria. *Health Education Research. Theory & Practice* 1999; 14(2):197–208.
22. King MJ. Improving road safety transfer from highly motorised countries to less motorized countries. In *Australasian Road Safety Research, Policing and Education Conference, GoldCoast, Australia 2006*. Viewed 22 December 2010
23. Mendonca M, Kanungo RN. Impact of culture on performance management in developing countries. *International Journal of Manpower* 1996; 17(4/5):65-75.
24. Hyder AA, Ghaffar A, Masood TI. Motor vehicle crashes in Pakistan: the emerging epidemic. *Injury Prevention* 2000; 6:199-202.
25. Hyder AA, Ghaffar AA, Sugerman DE, Masood TI, Ali, L. Health and road transport in Pakistan. *Public Health* 2006; 120:132-141.
26. Ghaffar A, Hyder AA, Masud TI. The burden of road traffic injuries in developing countries: the 1st national injury survey of Pakistan. *Public Health* 2004; 118:211-217.
27. Fatmi Z, Hadden WC, Razzak JA, Qureshi HI, Hyder AA, Pappas G. Incidence, patterns and severity of reported unintentional injuries in Pakistan for persons five years and older: results of the National Health Survey of Pakistan 1990–94. *BMC Public Health* 2007; 7:152doi: 10.1186/1471-2458-7-152.
28. Federal Bureau of Statistics. *Pakistan Social and Living Standards Measurement Survey2007-08*. Government of Pakistan. Viewed December 2010
29. Massie L., Campbell L., Williams F. Traffic Accident involvement rates by driver age and gender February 1995, Volume 27, Issue 1, P 73–87
30. Fridulv Sagberg Road accidents caused by drivers falling asleep, November 1999, Volume 31, Issue 6, P 639–649
31. E. Petridou, A., Skalkidou, N. Ioannou, Fatalities from non-use of seat belts and helmets in Greece: A nationwide appraisal January 1998, Volume 30, Issue 1, P 87–91
32. Violanti M., Marshall R., Cellular phones and traffic accidents: An epidemiological approach March 1996, Volume 28, Issue 2, P 265–270
33. Jha N., D.K. Srinivasa, Roy G., Jagdish S., Epidemiological study of road traffic accident cases : a study from south India mar 2004, Vol. 29, P 20-24
34. Khan A. M., Tehreem A., Causes of Road Accidents in Pakistan March 2012, Vol. 1, Issue 1 P 22-29
35. Tiwari R., Ganveer G. B., A Study on Human Risk Factors in Non-fatal Road Traffic Accidents at Nagpur December 2008, Vol. 52 No.4 October, P 197-199
36. Thomas J., road traffic accidents before and after seatbelt legalization- study in a district general hospital Feb 1990, vol. 83 No. 2 P 79-81.