

Existing Laws to Combat Road Traffic Injury in Nepal and Bangladesh: A Review on Cross Country Perspective

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ABSTRACT

Background: Road traffic accidents is a leading cause of injury and death globally. The consequences of road traffic accidents are prominent in developing countries that can least afford to meet the health services, economic and societal challenges. Nepal and Bangladesh are two developing country of South Asia who bear a large share of burden due to road traffic injuries.

Methods: A non-systematic review of relevant documents using Google scholar and PubMed as well as review of relevant legal documents was done.

Results: Nepal and Bangladesh have traffic laws including all the key risk factors as recommended by the World Health Organization except the child restraint systems laws. The existing laws for both countries include speed, drunk driving, use of seatbelts and motorcycle helmet, driver license, vehicle condition, overloading and accident related compensations. In both the countries for post-crash response, national emergency care access number has partial coverage and in Nepal there are some provisions related to trauma registry. Vulnerable groups are pedestrians with majority of male and higher mortality found in rural areas than urban areas for both the countries.

Conclusions: Both the countries have traffic laws that focus on the prevention of road traffic accidents and protection of victims. However, amendments in the existing laws are required for confronting immediate challenges of increasing accidents and injuries that both the countries face every year.

Keywords: Bangladesh; Nepal; road traffic injury; road traffic accident; traffic acts and laws.

INTRODUCTION

A country's advancement mostly depends on the transport connection with utilization of different routes. As roads become busy, road safety comes in priority. The rules and regulations are rudimentary to make roads safe. According to World health Organization (WHO) Global Status Report (GSR) on road safety 2018, globally 13,54,840 people died due to Road Traffic Accidents (RTAs) and it's ranking as the 8th leading cause of all global deaths.¹ In Nepal, the population is 26 million and WHO estimation shows, there was death of 4,622 people but the country reported nationally 2,006 deaths due to RTAs.^{2,3} In contrast, Bangladesh is a densely populated country with 158.9 million people and WHO estimation for Bangladesh shows, there was death of 24,954 people but the country reported 2,376 deaths.^{3,4} As the burden

of RTAs are increasing every year, law enforcement and strengthened health care service delivery can be a sustainable resolution.^{5,6} The aim of this paper was to review existing laws of RTAs in Nepal and Bangladesh.

METHODS

This is a non-systematic review in which we analyzed available legal documents, information from government websites, reports, articles, newspaper articles and online data sources. We selected two countries, Nepal and Bangladesh because these are two developing countries from South Asian region who are facing challenges related to RTIs. We searched Google, Google Scholar, PubMed and Newspapers by using the following search items; "Bangladesh", "Health care", "Nepal", "Post-crash response", "Road safety", "Road traffic injury", "Road

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traffic accident” and “Traffic laws”. At the initial stage Google was used to search the country wise traffic act on the basis of WHO recommended key risk factors (speed, drunk driving, use of seatbelts and motorcycle helmet, child restraints system). Then, reports were found from different stakeholders about current scenario related to law on each country. Google Scholar and PubMed search engines were used to find abstract of relevant peer reviewed articles in different journals for collecting information related to health care and response of RTIs. Relevant abstracts were further screened and full article was reviewed. The newspaper search was done for the updated status linked with traffic legislations. Retrieved data was synthesized qualitatively and then organized into emerging themes and compared them between two countries for comprehensive understanding of RTAs laws and policies.

EXISTING ROAD TRAFFIC LAWS

Legislation on key risk factors including speed, drunk driving, use of seatbelts and motorcycle helmet, child restraint systems is an integrated strategy to stop RTAs.^{1,7} In Nepal, most RTAs occur for driver negligence (driving speed and blind turnings), drunk driving, random roadside parking, reckless pedestrian crossing and poor road conditions.^{8,9} While in Bangladesh, over speeding, overloading, overtaking of motor vehicle and unregulated movement of motorized vehicle with non-motorized vehicle are major causes of RTAs.¹⁰

In Nepal, the Motor Vehicle and Transportation Management Act (VTMA), 1993 was first amended on 1993 and enacted by the parliament on the same year.¹¹ The government of Nepal had framed the Motor Vehicles and Transport Management Rules (VTMR) 1997, in implementing the Section 179 of VTMA 1993 and also had two times amendment in 2004 and 2010.¹² In 2016 with new penalty structure for violation of traffic rules, another amendment was done to section 164.¹³

In Bangladesh, the earliest law on the road transport sector was 1914 Motor Vehicles Act and was enacted by the British colonial rulers; then replaced by a new law the Motor Vehicle Act of 1939 which underwent three name changes and finally the Motor Vehicles Ordinance (MVO) 1983 and modified up to year 1990.^{14,15} In Bangladesh, other legal and administrative instruments relevant for road traffic and road safety include i) The Bengal Motor Vehicles Rules 1940 and Motor Vehicles Rules 1984 ii) Metropolitan Police Acts and Ordinances for; Dhaka, 1976, Chittagong, 1978, Khulna, 1985, Rajshahi, 1991, 1992, Barisal, 2009, Sylhet, 2009, Police Act, 1861 and the High Way Police Rules, 2009 and also some sections

of Penal Code, 1860 are also relevant for penalties for RTA related offenses and fatalities.¹⁵

In Nepal, VTMA 1993 is beneficial to make transportation services collective, efficient and effective with a vision to prevent motor vehicle accidents, enabling victims having reparation, providing insurance and making transportation facilities available generally in a simple and easily accessible manner.^{11,16}

In provision of on the spot punishments which is assigned to traffic police, section 164 (with the amendment of 2016) describes driving without license causes fine of 1000 rupees (USD 9). Use of one purposed vehicle for other purpose and exceeding number of passengers are subject to fine of 200-1000 rupees (USD 2-9). Over-weight, driving unworthy vehicles, reckless driving, violating traffic signal, driving without seatbelt and helmet cause fine of 500-1500 rupees (USD 4.5-13). Driving under influence of alcohol is subject to fine of 1000 rupees (USD 9). Driving unregistered vehicle and exceeding speed limit are subject to fine of 1000-1500 rupees (USD 9-13) and 200-1000 rupees (USD 2-9) respectively.

Section 161 and 162 focuses on the event of death and disablement. A person driving a motor vehicle causing death and disability (blindness, impotency and disability of any organ) both inside and outside of vehicle will be punished, starting from 1-12 years up to life imprisonment along with/ without confiscation of his/ her entire property and fine of 2000- 10,000 rupees (USD 18-88). A person who permits his motor vehicle to another person and if another person causes death and disability, the owner will be punished with imprisonment for two years and fine of 2000 rupees (USD 18).

Similarly, section 163 focuses on payment of medical expenses, obsequies expenses and compensations. In case death of a person, the inheritor of the deceased shall be paid 10,000 rupees (USD 88) as obsequies expenses and as compensation (for disability as well) through third party insurance; if no third-party insurance has been procured then 5,000 rupees (USD 44) as medical expenses if such organ is functional. In an event of injury, a sum of 2,000 rupees (USD 18) will be paid as medical expenses to that person regarding to the existing condition of injury. If the victim becomes entitled to receive compensation of a larger amount subsequently, that person shall be paid only the residual amount after deducting the medical expenses so paid earlier. The VTMR 1998 says, the owner or manager of the vehicle shall procure third party insurance equivalent to NPR 3,00,000 (USD 2650).¹²

RTA occurrences due to mechanical defect has decreased to 70 from 101 respectively in fiscal year 2016/017 from 2011/012 because new buses and vehicles brought into the market of Kathmandu.⁹ In western Nepal, old vehicles were involved in 66% of RTAs with fatality of 79%.¹⁷ In higher models of cars, vehicle safety features (rear parking assistance, vehicle stability management, electronic stability programme, air bags, automatic braking system, etc.) has been used but in public vehicles safety features use is very uncommon.¹⁸

In Bangladesh, Chapter X of the MVO 1983 provides details on offences, punishments, penalties and procedures related to the misconduct of existing motor vehicle laws.¹⁹

According to MVO 1983, for driving without license or being a disqualified license holder, section 138, 141 mentions that whoever (driver/conductor) drives, the person is subject to imprisonment up to 4 months or fine up to 500 BDT (USD 6) or both according to gravity of offence. Section 153 mentions that contravention in agent or canvasser to obtain license is subject to maximum fine of 1000 BDT (USD 12) for first offence. Any subsequent offence is subject to imprisonment up to 6 months and fine up to 2000 BDT (USD 24). Section 142, 143, 148 discusses, driving at excessive speed, reckless and racing is subject (both driver & employer) to imprisonment up to 6 months or fine up to 500 BDT (USD 6) or both and suspended driving license for a specified period of time. Any subsequent offence (excessive speed and reckless driving) is subject to imprisonment up to 6 months or fine up to 1000 BDT (USD 12) or both and suspended driving license for one month.

Section 149, 152 and 154 focuses on driving vehicles in unworthy condition and causing bodily injury or damage to property and driving vehicles exceeding permissible weight (not applicable for emergency situation) is subject to imprisonment maximum of 3 months or fine up to 2000 BDT (USD 24) or both and any subsequent offence is subject to imprisonment up to 6 months or fine up to 5000 BDT (USD 59) or both. Section 164 focuses on

many offences, one of them is driving against red signal may cause deprivation of driving license up to 3 months. In case of driving under the influence of drink or drug, section 144 discusses of imprisonment up to 3 months or fine up to 1000 BDT (USD 12) or both and subsequent offence causes imprisonment up to 24 months or fine up to 1000 BDT (USD 12) or both and suspended driving license for a specified period. According to GSR on road safety 2018, Bangladesh has national helmet law for both driver and passenger with specified helmet standard but no national seat belt law.¹ For accidents, driver or other person in control will convey the victim to the healthcare centers and take care of all the medical expenses according to section 104, 146. First conviction and subsequent offence causes imprisonment up to 6 months and fine up to 1000 BDT (USD 12) or both. According to section 109, 155 the Government shall establish and maintain a fund in accordance for meeting any liability arising out of death or bodily injury caused by an unidentified motor vehicle. An application for compensation due to damage or injury or death can be submitted to the claim tribunal within the six months of the accidents following section 128. There is no specific compensation amount to be paid by the owner or driver or insurer of the vehicle involved in the accident. The claim tribunal will decide the amount after reviewing all the information, witnesses and reports.

In Bangladesh, an integrated speed management program (consisting of a combination of road user education, active community involvement and small-scale infrastructural measures) at three locations resulted with a 66% reduction in the number of serious accidents, a 73% reduction in injury and a 67% reduction in fatality.²⁰ In Dhaka, RTAs is reducing more than 10% every year and 63% of RTAs happened in no traffic control area, 73% RTAs happened where only one-way traffic movement existed.²¹ In the city, probability of fatalities was decreased by traffic police controlled schemes (41%) and two-way traffic configuration (21%).²² The table below (Table 1) shows the comparison between existing laws for Nepal and Bangladesh.

Table 1. Comparison of existing laws for Nepal and Bangladesh.

Laws	Nepal	Bangladesh
License	Driving without license causes fine of 1000 rupees (USD 9).	Driving without license is subject to imprisonment up to 4 months or fine up to 500 BDT (USD 6) or both.
Traffic signal	Contravening traffic signal causes fine of 500-1500 rupees (USD 4.5-13).	Driving against red signal may cause deprivation of driving license for 3 months.
Speed limit	Exceeding speed limit fine is 200-1000 rupees (USD 2-9).	For first offence, imprisonment up to 6 months or fine up to 500 BDT or both or suspended driving license for a specified period of time. For subsequent case, fine up to 1000 BDT (USD 12) and suspension of license for one month will be added.

Overloading	Passenger overloading is subject to fine of 200-1000 rupees (USD 2-9). Overweight is subject to fine of 500-1500 rupees (USD 4.5-13).	Overweight causes imprisonment maximum of 3 months or fine up to 2000 BDT (USD 24) or both. Subsequent offence is subject to imprisonment up to 6 months or fine up to 5000 BDT (USD 59) or both.
Vehicle condition	Driving unworthy vehicle is subject to fine of 500-1500 rupees (USD 4.5-13).	First offence is subject to imprisonment up to 3 months or fine up to 2000 BDT (USD 24) or both. Subsequent offence is subject to imprisonment up to 6 months or fine up to 5000 BDT (USD 59) or both.
Drunk driving	Driving under influence causes fine of 1000 rupees (USD 9).	First offence is subject to imprisonment up to 3 months or fine up to 1000 BDT (USD 12) or both. Subsequent offence is subject to imprisonment up to 24 months or fine up to 1000 BDT (USD 12) or both and driving license will be suspended for a specified period.
Seatbelt and helmet	Driving without seatbelt in four wheeled vehicle and without helmet in motorcycle will cause fine of 500-1500 rupees (USD 4.5-13).	Bangladesh has national helmet law for both driver and passenger with specified helmet standard. There is no national seat belt law.
Accident related compensations	A person driving a motor vehicle causing death and disability will be punished, starting from 1-12 years up to life imprisonment and fine of 2000-10,000 rupees (USD 18-88). For injury, a sum of 2,000 rupees (USD 18) as medical expenses to be paid.	Driver or other person in control will convey the victim to healthcare centers and take care of all the medical expenses. First conviction and subsequent offence is subject to imprisonment of 3-6 months and fine of 500-1000 BDT (USD 6-12) or both. There is no specific compensation amount. The claim tribunal will decide the amount after reviewing all the information, witnesses and reports

TRAFFIC INJURY AND POST-CRASH RESPONSE

According to GSR on road safety 2018, WHO stated, in both Nepal and Bangladesh; national emergency care access number has partial coverage and in Nepal there is some facilities of trauma registry in post-crash care.¹ For both of the countries vulnerable groups are pedestrians followed by, motorcycle & bicycle riders and public vehicle passengers with majority of male than female.^{8,10}

In Nepal, health matrices and evaluation ranked transport injury as 12th burden of disease in 2016.²³ Highest RTAs occurred during major national festivals and in rural areas, bus accidents accounting for 13% with 31% of all fatalities and serious injuries.^{8,24} Urban accidents are responded immediately, in plain sections of highways and feeder roads generally within 15-30 minutes and for hill or district roads 30-60 minutes.⁸ Around one third of all RTIs, females become the victim of bike and scooter accidents in Kathmandu and outside.⁹ Until 2015, in Kathmandu most common injury type was soft tissue injury (37.6%), followed by open wound (20.9%), fracture (18%) and traumatic brain injuries (12.7%).²⁵ In the tertiary care center major diagnosis were lower limb fracture in eastern part and head injury in western part of one year round RTAs of Nepal.^{17,26} By the year 2015, disability due to RTIs was 21.1% nationwide.²⁷ Traffic police responds immediately after RTA, collects and compiles all the RTA data (statistics are age, gender, vehicle involved and severity of injury)

which is separated by five development regions and finally police headquarters maintain the consolidated statistics.¹⁸ In Nagdhunga to Narayangadh road segment of Prithvi Highway, as post-crash response, serious cases of RTIs are taken to tertiary hospitals and for first aid of minor injuries, survivors avail services from nearby local health posts.²⁴ The Ministry of Health and population (MoHP) is planning to introduce comprehensive injury surveillances to record RTA cases and also contemplating to develop three level of care for crash victims (primary, secondary and tertiary).¹⁸

Each year Bangladesh is losing 2-3% Gross Domestic Product (GDP) for the causal impact of RTAs.²⁸ Average household out of pocket expenditure in Bangladesh ranging from US\$ 52- 93 by year 2004 (US\$ 45 in 2008, Nepal) and loss of work for the injured person ranging in average from 89-124 days and there was approximately 70% of the total RTI-related admissions in primary and secondary level hospitals in one year.²⁹⁻³¹ In rural Bangladesh, morbidity occurred among vehicle passengers (34%) and pedestrians (18%) also nationally of total child fatalities nearly 66% are boy and 34% are girl.^{32,33} Accidental deaths which straddles major national highways includes mostly in bus stands (41%) in pick time of 10 a.m.-12 p.m. and most dominant perpetrator is buses (38.1%) followed by trucks (30.4%).¹⁵ In a major public hospital of Dhaka city, 100% victims had multiple abrasion and bruise, 80.44% had laceration and 64.82% had intra cranial injury and most accident prone road/

corridor is Johnson road.^{34,35} The incidence of RTIs was three times higher in rural than urban areas by mostly involving non-motorized vehicle and disability affecting higher in males aged 30-54 years.³⁶

OTHER ACTIVITIES FOR ROAD SAFETY

Nepal has simple road network of 26,900 km length with around 2 million registered motor vehicles by the year 2015.³⁷ Strategic road network of Nepal is altogether under Department of Roads (DoR) (national highways, feeder roads & important urban roads) and separately, Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR) coordinates the local road network.¹⁸

The Kathmandu Sustainable Urban Transport Project (KSUTP) report July 2018 showed, Improvement of sidewalks in Kathmandu city center was about 90% completed and also had objective of improving and updating public transport, traffic management, walk ability and more.³⁸ There is also confirmation of few disable friendly footpath construction in Kathmandu; national Road Safety Secretariat establishment; Government providing new licensing system franchising physical facilities from the private parties. Traffic police have started checking compliances of speed limit using radar gun in specific locations of high rate accidents.⁸ The Metropolitan Traffic Police Division (MTPD) plans to install GPS devices on its patrol vehicles to improve emergency response within the Valley along with some other areas and on the spot Breathalyzer tests on ad-hoc basis.¹⁸ On 19 March, 2019 Nepal Police officially revealed the 'Road Accident Information Management System' in an attempt to make traffic police paperless (given Tablet) and to keep regular documentation of the accidents in the central database at the Nepal police headquarters.³⁹ The Department of Transport Management (DoTM) is preparing to install portable transport scale systems on the national highways and the transits of Kathmandu to check overloading and it will be operated through joint mechanism of DoTM and traffic police.⁴⁰ In 2019, the UN Global Road Safety Week was inaugurated nationwide for the fifth time in Nepal and for the first time in Bangladesh.⁴¹⁻⁴⁵ UK assisted Road Maintenance Project (RMP) had installed the Technology Readiness Level by Micro-Computer Accident Analysis Package (TRL MAAP) for windows accident software at the MTPD.¹⁸ In Kathmandu, for traffic management and security purposes 640 CCTV cameras had been installed by MTPD.⁴⁶

The MoHP had conducted a series of poster campaign on road-safety independently.¹⁸ Ministry of Education

has already introduced road safety chapters in school level text books.⁸ Road safety awareness and education campaigns are conducted on ad-hoc basis by the Traffic Police, DoR, DoTM and MoHP without horizontal coordination and are often project led.¹⁸ DoR has launched Road Safety Audit on 10 Feb, 2019 along the eight-lane Kalanki- Koteshwor road section of Ring Road.^{47,48}

Bangladesh having 21,322 km length of road (mostly plain) with 1.7 million registered motor vehicles by the year 2014 and to address the road safety issues, the country has National Road Safety Council (NRSC) under Ministry of Communication.^{4,10,37} Road Safety Cell (RSC) acts as secretariat to NRSC at the Bangladesh Road Transport Authority (BRTA) and disseminates information on road safety and accident to all relevant organizations and members of the public.⁴⁹

A standard format First Investigation Report (FIR); with victim identity, vehicle particulars and circumstances of the accident) for accident information recording was designed in 1995, under Institutional Development Component (IDC) program and adopted by Police Department.¹⁵ Roads and Highways Department (RHD) has conducted road inventory survey to find out Black spots (209 spots until 2014) with cooperation of IDC.^{15,49} Since 1998, Micro-Computer Accident Analysis Package (MAAP5) software based accident database system has been developed for police department.⁴⁹ The Dhaka Urban Transport Project (DUTP) funding and IDC program; a data base for recording registered motor vehicles and officially licensed driver's data was established and since 2001 BRTA has been preparing reports.^{49,50}

In 2004, the Planning Commission of Bangladesh, National Land Transport Policy has been adopted with policies such as 1. Road safety auditing at all phases of road projects, road construction & maintenance; 2. Speed restrictions on roads; 3. Safety improvement of existing roads etc.⁴⁹ Under the Southwest Road Network development Project (SRNDP) funding and consultant's services, revision of Traffic Training Syllabus and Curriculum was approved and adopted in 2004 by the Police Department.⁵⁰ Speed limit zoning and speed restriction rules have been developed for different highways in Bangladesh, approved and published in a gazette of BRTA in 2005.⁴⁹ Bangladesh police has co-ordination with local administration (District and Upazilla) while enforcing traffic law through mobile court and also implementing national highway patrol plan.¹⁰ Safety awareness campaign and training at different levels in the country by different government and Non-Governmental Organizations (NGOs) (Two leading NGOs

are BRAC and Center for Rehabilitation of the Paralyzed (CRP)) is a continuous process.⁴⁹ Establishment of Accident Research Institute (ARI), Road Safety Unit (RSU), Highway Police, Road safety voluntary and advisory group are achievements till 2013 in Bangladesh.⁴⁹ Concerned organizations of Bangladesh have developed effective linkages with different institutions (local, international and regional levels), universities etc. to facilitate the exchange of knowledge and technologies.³³ There is also an executive committee headed by the chairman of BRTA to co-ordinate NGOs regarding road safety issues.⁴⁹

RECOMMENDATIONS

Based on our review we came up with the following recommendations:

“Zero tolerance” policy should be taken towards the most common contraventions. Amendment is needed for not wearing seatbelt in four wheeled vehicles by the front seat passenger, not wearing helmet by motorcycle passenger and safety standards of helmets for both driver and pillion rider. Also, amendment with child restraint law, that is; use of seat belts for children or not allowing children in the front seat until a certain age. Providing traffic signs, enforcing two drivers in long-route vehicles and vehicle fitness centres in all districts can be introduced. Similarly, needs more provisions of punishments for subsequent offences, compensation for vehicle owners who has safety features and monitoring selling of liquors to drivers. For Nepal, it is necessary to establish Road Safety Council and for Bangladesh comprehensive CCTV surveillance should be enforced.

There is necessity for official involvement of government to strengthen coordination in health care delivery system of RTIs. Establishment of trauma centers and strengthening trauma units, deploying rescue teams in highways (mostly around the black spots) and strong ambulance network should be achieved. Insurance schemes can be introduced to finance rehabilitation services for victims and minimizing both physical and psychological trauma. Besides, research and development are needed to improve post-crash response.

Furthermore, there is a need to design and enforce national programs following relevant SDGs targets. At the same time, strengthening the institutional capacities, human resources, national information system, providing adequate funding and accelerating implementation of the UN General Assembly Resolution on improving road safety, coordinated actions by designated national focal points or units and producing regular national injury monitoring reports are desired for evidence-based policy

making and its proper implementation.

CONCLUSIONS

RTIs are a public health priority which requires close coordination and collaboration among public and private agencies by using a holistic and integrated approach for both the countries Nepal and Bangladesh. Appropriately responding to disparities with available evidence, resource and prevention efforts can comprehensively address this global health dilemma.

ACKNOWLEDGEMENTS

We would like to express our deepest gratitude to our colleagues of Nepal Health research Council (NHRC); Binaya Chalise, Dr. Diwakar Guragain, Kriti Adhikari, Srishtee Priyadarshinee, Smriti Jhaa, Ranjana Karna, Arun Shah, Ashok Pandey, Namuna Shrestha, Bihungum Bista, Anjuv Baral and Ranjeeta Subedi for their cordial support, inspirations and co-operations.

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