Road Safety on Data Collection of Motorcycle Crashes

Sharing Experiences from Bangladesh

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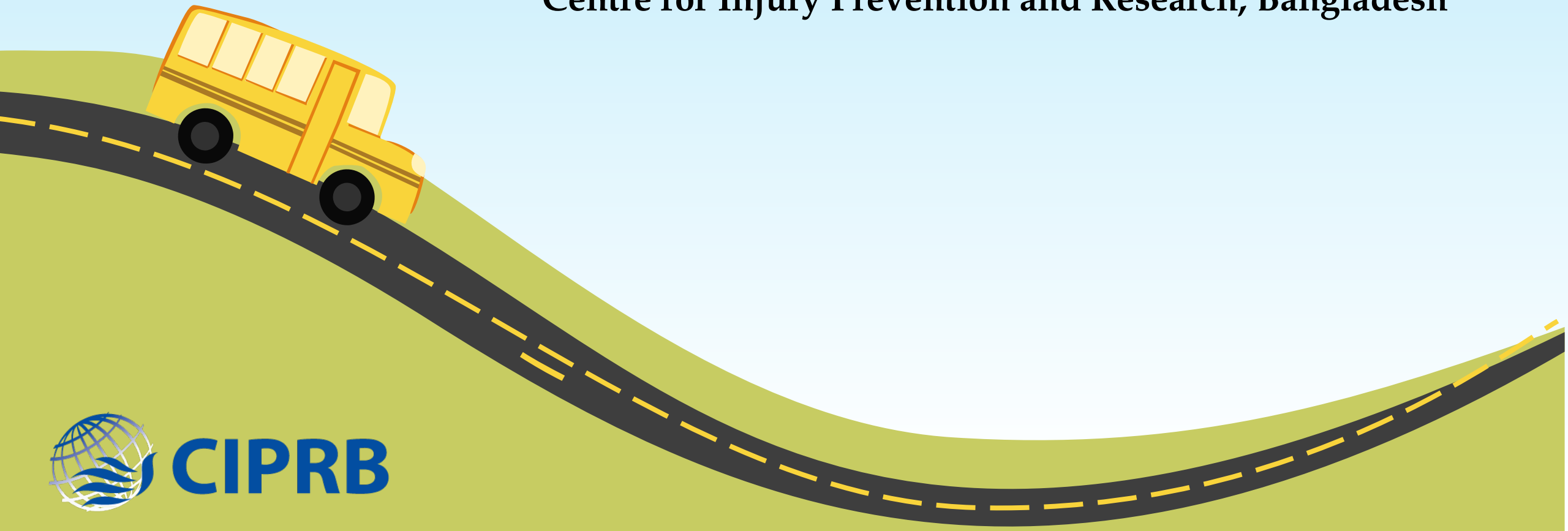

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Road traffic injuries: the global scenario

- Road traffic injuries kill around 1.25 million people while up to 50 million people incur non-fatal injuries each year as a result of road traffic crashes
- It is predicted that road traffic injuries would become the seventh leading cause of death by 2030 if appropriate measures are taken to prevent.

Table 1: Trends in reported road traffic deaths in Bangladesh

Year	Accidents	Total injury	Deaths	Rate per 100 000 population	Data from other sources (NGO's)	
					Deaths	Rate/100000
2004	3917	2752	2968	2.10	13000(862,7% Motor cycl)	BHIS (9.20)
2005	3955	2755	3187	2.22		
2006	3794	2409	3193	2.20		
2007	4869	3273	3749	2.55		
2008	4427	3284	3765	2.53		
2009	3381	2686	2958	1.97		
2010	2827	1803	2646	1.74		
2011	2667	1641	2546	1.65		
2012	2636	2134	2538	1.63		
2013	2029	1396	1957	1.24		
2014	2027	1535	2067	1.30		
2015	2394	1958	2376	1.47	21316	WHO (13.60)
2016	2566	2134	2463	1.51	23166(2674, 12% Mot. Cy)	BHIS (14.48)

Source: Annual Report, Bangladesh Police

Table 2: Estimated number of deaths from injuries, all ages

External leading cause of fatal injury	Mechanism of Injury	Per year(n)	per day(n)	Rate/ 100000	Motor cycle Per/year	Rate/ 100000
1st leading	Suicide	23868	66	14.92		
2nd leading	Road Traffic Injury	23166	64	14.48	2674	1.67
3rd leading	Drowning	19247	53	12.03		
4th leading	Falls	15045	41	9.40		
5th leading	Electrocution	9210	25	5.76		
6th leading	Homicide	6475	18	4.05		
7th leading	Animal Injury	3248	9	2.03		
8th leading	Unintentional Poisoning	2672	7	1.67		
9th leading	Burns	2714	7	1.70		
10thleading	Blunt object Injury	1624	4	1.02		
11thLeading	Cut	555	2	0.35		
12thleading	Machine Injury	534	1	0.33		
	Total	108358	297	67.72		

Table 3: Estimated number of injury morbidity, all ages

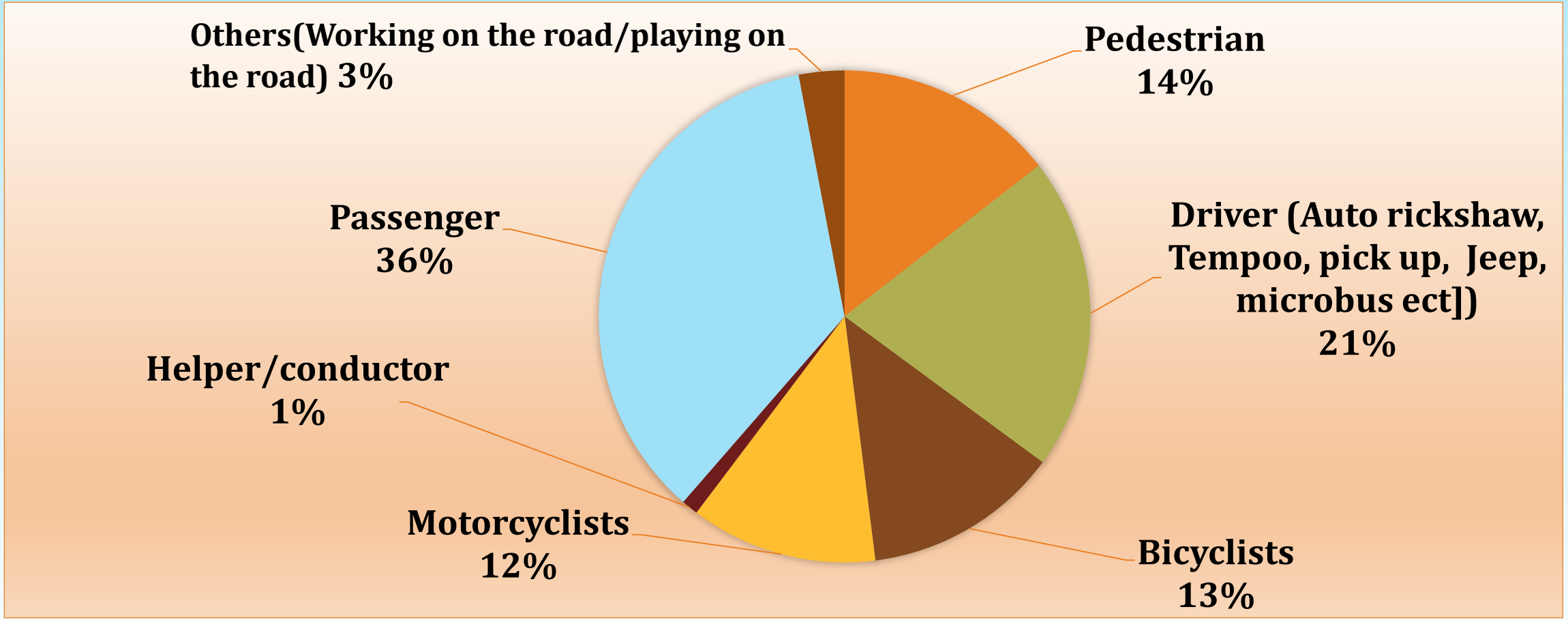
Rank of non-fatal injury	Mechanism of Injury	per year	per day	Rate/ 100000	Motorcycle/yr	Rate/ 100000
1st leading	Falls	5930470	16248	3706.5		
2st leading	Cut	4544171	12450	2840.1		
3rd leading	Road Traffic Injury	3420299	9371(2054)	2137.7	747554	467.22
4th leading	Blunt object Injury	1712774	4693	1070.5		
5th leading	Burns	1586665	4347	991.7		
6th leading	Animal Injury	1319431	3615	824.6		
7th leading	Assault/homicide	629530	1725	393.5		
8th leading	Machine Injury	381908	1046	238.7		
9th leading	Electrocution	270622	741	169.1		
10th leading	Drowning	144576	396	90.4		
11th leading	Suffocation	39605	109	24.8		
12th leading	Unintentional Poisoning	28090	77	17.6		
13th leading	Suicide attempt	15981	44	10.0		
	Unknown	9428	26	5.9		

Table 4: Estimated number of permanent disability due to injury in all ages

External cause of disability	Mechanism of injury	Per year	Per day	Rate/100000	Mtor cycle/yr.	Per day	Rate/100000
1st leading	Falls	82954	227	51.8			
2st leading	Road Traffic Injury	80448	220	50.3	11764	32	7.35
3rd leading	Cuts	18791	51	11.7			
4th leading	Machine Injury	18551	51	11.6			
5th leading	Blunt Object Injury	12367	34	7.7			
6th leading	Animal Injury	10408	29	6.5			
7th leading	Assault/violence	8448	23	5.3			
8th leading	Electrocution	7163	20	4.5			
9th leading	Burns	2265	6	1.4			
	Total	241395	661	150.9			

Source: BHIS 2016

Figure1:Mode of transport at the time of non-fatal RTI



Source: BHIS 2016

Figure 2 :Activity of the injured persons at the time of non-fatal RTI

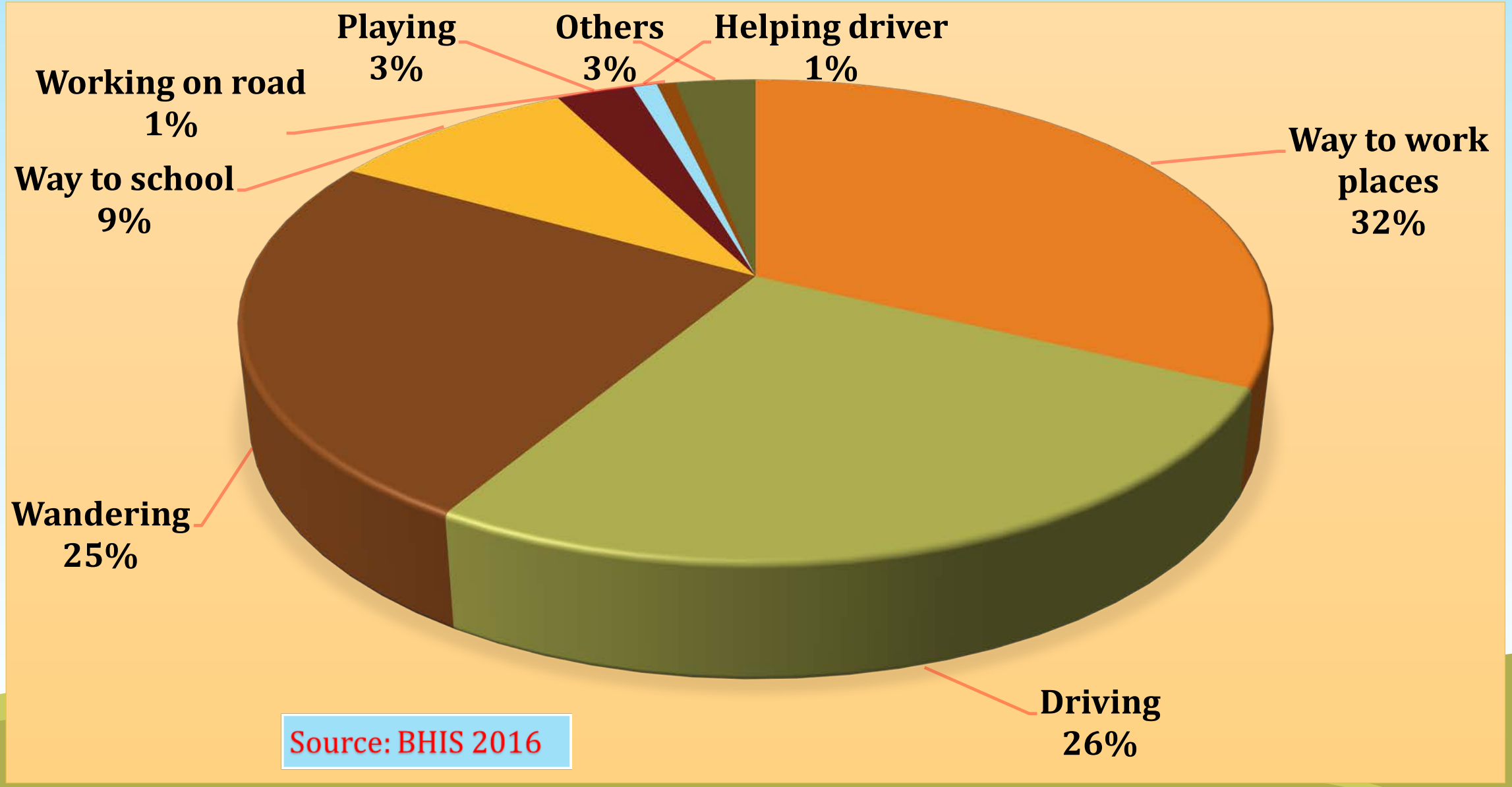


Table 5 : Use of Safety Device (seat belt and helmet), mobile phone and drug at the time of RTI among driver and motorcyclists

Injury morbidity	Used, n(%)	Not used, n(%)
Driver (seat belt)		
Morbidity	28(2.1)	1306(97.9)
Mortality	----	----
Motor cyclists (helmet)		
Morbidity	224(28.1)	574(71.9)
Mortality	1(20.0)	4(80.0)
Total	225 (24.05)	578 (75.95)
Mobile phone (Driver and motorcyclist)		
Morbidity	95(4.50%)	2037(95.50%)
	Drug (alcohol or substance)(Driver & Motorcyclist)	
Morbidity	80(3.80 %)	2052(96.20%)

Table 6 :Incidence of non-fatal and fatal RTI related injury occurred by time & place, n (%), 95% CI

Incidence of non-fatal and fatal injury by occurred time	Non-fatal, n=6476, %, (95%CI)		Fatal, n=43, %, 95%CI	
00-6am	54	0.8(00.64-01.09)	3	7.0(2.40-18.61)
6.01-9.00 am	266	4.1(03.65-04.62)	6	14.0(6.55-27.26)
9.01-12.00pm	1552	24.0(22.94-25.02)	13	30.2(18.06-45.01)
12.01 pm-15.00 pm	1978	30.5(29.43-31.68)	4	9.3(3.68-21.6)
15.01 pm-18.00 pm	1642	25.4(24.31-26.43)	8	18.6(9.74-32.62)
18.01 pm-21.00 pm	826	12.8(11.96-13.59)	8	18.6(9.74-32.62)
21.01 pm 24.00 pm	158	2.4(02.09-02.84)	1	2.3(0.41-12.06)
6.01 am-18.00 pm (by day)	5438	84.0(83.06-84.84)	31	72.1(57.31-83.25)
18.01 pm-6.00 am (by night)	1038	16.0(15.16-16.94)	12	27.9(16.75-42.69)

Road Traffic Injuries: Bangladesh Perspective

- RTi is a major public health problem in the world where it is neglected in low and middle income countries like Bangladesh
- We believe RTi is predictable and preventable. Research is the gate-way to injury prevention activities
- BHIS estimated that rate per 100 000 population 14.48 & 2nd leading causes of death
- Estimated GDP lost due to road traffic crashes 1.6%

Why do we need road traffic crash data?

Major issues regarding accident data include reliable data source, variables involved, methods of collection, provisions for storage and retrieval etc. The current road accidents report form of Bangladesh is not comprehensive enough to conduct an in depth investigation. The form contains 69 fields of information from which only the general characteristics analysis of accidents can be carried out. This paper describes the process of accident data collection including data collecting agencies, reporting and recording system and data processing of accident database. It also includes identification and assessment of variables involved in accident and reviews the potential sources of errors in accident data collection. Accident statistics depend critically on the accuracy of data itself as well as on the reliability of the sequence of information links.

It is observed that the sources of accident data are biased due to under-reporting, particularly in the case of non-fatal accidents. However, the traditional data sources such as police data is also grossly under-reported in case of the fatal RTI events in Bangladesh. For example, police statistics showed 3160 deaths due to RTI in 2003, whereas the Bangladesh Health and Injury Survey (BHIS) reported 13,000 RTI deaths in the same year. Similarly, a recent police report showed 2538 deaths due to road crashes in 2012 and 2376 in 2015, much lower than the 21,316 road traffic deaths estimated by the WHO in 2015 and 23116 in Bangladesh Health and Injury Survey 2016.

To address the gaps in data collection, process a standard tool needs to be developed and the

Objectives

- To Identify the range of risk factors, including economic imperative, regulatory and governance failures, and behavioral deficits that render severely unsafe in Bangladesh
- Develop a institutional landscape of key actors and stakeholders whose engagement is central to any effective redressed of unsafe roads
- Situation of road traffic injury care, rehabilitation and institutional support of victims and households
- Though a wide-ranging consultation process, established a holistic road safety agenda and action plan that can inform and shape a major advocacy initiative.

Take home message

- Road traffic crash/accident data is grossly under-reported in Bangladesh;
- Standard data collection forms need to be developed following global guideline; and
- Proper (hands on) training should be given to the data collectors (police officers and responsible persons in other agencies).

Conclusion

There is a requirement of pragmatic health policy and implementation strategy where both must equally emphasize on preventative and curative approaches.

To develop such strategy, understanding and updated knowledge regarding injury magnitude and determinants are necessary

The study findings will support in improving knowledge of health professionals, health policy planners in designing health programs in national, regional and international influence.

Recommendations

- Rti should be included in the priority agenda of health issues
- A feasible national Rti prevention strategy should be develop and implemented
- As Rti prevention is a cross-cutting issue, a multi-sectoral committee should be formed involving representatives from the relevant ministries. Ministry of Road Transport and Bridge and Ministry of Health & Family welfare should be the lead ministry. This committee should provide policy guidance, approval of the strategy and provide support to implement the intervention as per plan.
- Evidence based interventions should be scaled up throughout the country
- Existing Management Information Systems (MIS) to be strengthen to obtain RTi data from all sources including community
- Government agencies including the Ministry of Road Transport and Bridge, Ministry of Local Government and Engineering Department (LGED), Ministry of Health & Family Welfare/ Directorate General of Health Services(MOHFW/DGHS) should encourage and support for conducting research to improve understanding of effectiveness of potential interventions for Rti prevention
- Awareness raising and capacity building on Rti prevention should be introduced and encouraged immediately

Thank You!