

and 8.12% respectively for men and women in the death toll. The sex ratio of injury mortality was 165 males for every 100 females which was higher than the sex ratio of mortality among the total population. Suicide was the first leading cause of injury death in Hubei Province which comprised more than 30%. The mortality rates of suicide were 47.49/10<sup>5</sup>, 49.10/10<sup>5</sup>, 44.35/10<sup>5</sup>, 44.81/10<sup>5</sup> and 44.86/10<sup>5</sup> respectively during 2008–2012. The five major injury causes of death were as followed: suicide, traffic-related injury, falls, drowning and crushing injury. Injury death was the first cause of death in children aged 1 ~ 44 years. The injury mortality rates in male were higher than female in all ages' groups. The injury mortality rates were almost stable during the above period. However, the mortality rates of suicide had a slight decrease and the death rate of road traffic injury showed a slight increase.

**Conclusions** Injury is the leading cause of death for kids, teenagers and working population. It is necessary to prevent traffic-related injury and strengthen psychological counselling for suicide prevention.

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#### "EVALUATING THE FREQUENCY OF THE PUBLISHED STUDY DESIGNS IN THE FIELD OF SAFETY PROMOTION AND INJURY PREVENTION DURING THE LAST THREE DECADES (1985–2015)"

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**Background** Study design in the fields of basic and clinical sciences is classified generally into two categories: 1) observational; and 2) interventional. In observational studies, the researcher just focuses on the status of the study question and describes the current status as well as measuring associations between exposures and outcomes. While, in the interventional studies, the main aim of research is the study of the intervention effects which applied on the eligible persons by researcher that could finally result in prevention and health promotion or treatment of diseases depends on applied interventions. The aim of current study is to determine the frequency of the published study designs in the fields of safety promotion and prevention of injury regarding to the continents during the last three decades (1985-2015).

**Methods** In this review article, all published papers in Pubmed from 1984 to 2015 in the field of safety promotion and injury prevention were studied. We used the following keywords for our search: Road traffic, burning, drowning, fall, and violence. The total number of articles in the field of injury prevention and safety promotion were 115 manuscripts from 1985 to 2015, which were assessed in terms of study design.

**Results** We showed that the most published papers on the safety promotion and injury prevention were conducted in America. About 67% of all studies and 78% of all intervention studies in this area have been conducted in the continent of America and Europe. Asia shared 9% of intervention studies and Iran shared 3.6% of the studies which have been conducted in this area.

**Conclusions** Considering the current situation in developed countries compared to developing countries, in the field of injury prevention and safety promotion, if one of the goals of the national health system to be health promotion in the society, the

current status in terms of study design that are running, cannot results in safety promotion and injury prevention, therefore, as long as the frequency of intervention studies with the aim of injury prevention and safety promotion in the developing countries would not as much as developed countries, we could not expect any advances in the field of injury prevention and safety promotion in developing countries.

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#### CHALLENGES IN IMPROVING DATA SYSTEMS OF ROAD TRAFFIC INJURIES IN SRI LANKA

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**Background** Road traffic injuries (RTI) are increasing in low and middle income countries, as twice the risk as the developed countries. This study aims to 1) review national RTI data sources in Sri Lanka, for their strengths and weaknesses and to identify gaps, that if addressed could help improve RTI data systems in Sri Lanka; and 2) summarise the published studies on RTI in Sri Lanka to make recommendations on RTI programs, policies, and research.

**Methods** A comprehensive review of published articles and grey literature was done together with an analysis of existing data sources. Electronic searches were performed (updated as December 2015) using Pubmed and Google database using specific key words related to RTI. Only studies that included data pertaining to Sri Lanka were selected. Full text articles were then reviewed using the same inclusion criteria, and references from included articles were scanned to find additional relevant articles.

**Results** RTI rate and the RTI death rate in 2010 was 130.0 and 13.2 per 100,000 population respectively in Sri Lanka. There is a 19% increase in RTI rate from 2006 to 2010 in Sri Lanka. The main RTI data sources in Sri Lanka are Sri Lanka traffic police, National death registration system, National transport board and Ministry of Health indoor morbidity and mortality reports. Each existing data system has its own strengths and weaknesses. There are gaps in the existing data systems including limited coverage, underreporting, overlapping, lack of injury surveillance system and even lack of data pertaining to financial burden, risk factors and disability. Despite some studies with limited population locally, overall country statistics or interventions have not been fully assessed.

**Conclusions** Limited availability of important reliable data on RTI in Sri Lanka is an issue. Standardisation of data systems with intersystem connexions covering the country is recommended in order to be comparable internationally.

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#### COMPARE JAPANESE MORTALITY DUE TO EXTERNAL CAUSES IN 1984 TO 2014

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**Background** The purpose of this study is to compare mortality due to external causes in Japan and to explore strategies for injury prevention.

**Methods** Mortality caused by external causes provided by the Vital Statistics of Japan and the standard population data were used.

**Results** Among 0–14 year olds, mortality due to external causes declined from 13.1 per 100,000 population in 1984 to 3.6 in 2014. Of the types of external causes, suicide death rate increased, but drowning, motor vehicle crashes and suffocation death rate were reduced.

Among 15–14 year olds, mortality due to external causes declined from 36.8 per 100,000 population in 1984 to 26.2 in 2014. Of the types of external causes, suicide death rate increased, but drowning and motor vehicle crashes death rate were reduced.

Among 45–64 year olds, mortality due to external causes declined from 63.6 per 100,000 population in 1984 to 42.1 in 2014. Of the types of external causes, suffocation death rate increased, but motor vehicle crashes and suicide death rate were reduced.

Among those 65 years or older, mortality due to external causes declined from 135.2 per 100,000 population in 1984 to 105.1 in 2014. Of the types of external causes, suffocation and drowning death rate increased, but suicide, motor vehicle crashes and fall death rate were reduced.

**Conclusions** In Japan, the motor vehicle crashes death rate among all ages decreased significantly. The drowning and suffocation death rate among children decreased, but among those 65 years or older those rates increased.

Laws requiring seat belts from 1985 and child seat under 6 year old from 2000 have prevented many traffic fatalities.

Development of such legal systems would be useful for a decline of the death rate mortality due to external causes.

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#### UNIQUE FEATURES OF MORTALITY, HOSPITALIZATIONS AND OUT-PATIENT VISITS DUE TO EXTERNAL CAUSES BY AGE GROUP IN JAPAN

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**Background** The purpose of this study is to analyse the unique features of mortality, hospitalizations and out-patient visits due to external causes in Japan and to explore strategies for injury prevention.

**Methods** The WHO standard population data and data on mortality caused by external causes made available by the Vital Statistics of Japan were used. Also, the rates of hospitalizations and outpatient visits due to unintentional injuries were calculated using the Patient Survey of Japan.

The deaths caused by the Great East Japan Earthquake in 2011 were removed from the analysis to avoid confounding.

**Results** Among all ages, the mortality due to external causes was 59.7 per 100,000 populations in 2011. Among 0–14 year olds, the mortality due to external was 3.9 per 100,000 populations. Among 15–44 year olds, the mortality due to external causes was 31.1 per 100,000 populations. Among 45–64 year olds, the mortality due to external causes was 51.1 per 100,000 populations. Among those 65 years or older, the mortality due to external causes was 143.9 per 100,000 populations.

Among all ages, assuming injury death was one, the hospitalizations were 18 and out-patient visits were 286. Among 0–14 year olds, assuming injury death was one, the hospitalizations were 123 and out-patient visits were 9,548. Among 15–44 year olds, assuming injury death was one, the hospitalizations were 20 and out-patient visits were 508. Among 45–64 year olds, assuming injury death was one, the hospitalizations were 15 and out-patient visits were 242. Among those 65 years or older, assuming injury death was one, the hospitalizations were 18 and out-patient visits were 110.

**Conclusions** Among 0-14 olds, the mortality due to external causes and rate of hospitalizations were lower than another age groups, but rate of out-patient visit was higher.

Among 15–44 year olds and among 45–64 year olds, rate of hospitalisation was higher than children, but rate of out-patient visit was half of them.

Among those 65 years or older, the mortality due to external causes and rate of hospitalizations were higher than another age groups, but rate of out-patient visit was half of children.

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#### ANIMAL INJURY MORTALITIES AND MORBIDITIES: EVIDENCE FROM A COMMUNITY SURVEY

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**Background** Animal injuries are the major causes of morbidity and mortality worldwide including developing countries. Worldwide, up to five million people are bitten by snakes every year; the majority in Africa and South-East Asia. Dog bites account for tens of millions of injuries annually; the highest risk is among children. In Bangladesh, the most of the animal injuries including snake and dog bites are common. This study determined the magnitude and pattern of animal injury mortalities and morbidities in rural Bangladesh.

**Methods** A cross sectional survey was conducted in 19 Unions of 3 sub-districts of Bangladesh from June to September 2013. Socio-economic, demographic, environmental and injury related data were collected from adult respondents by face-to-face interview with the help of structured questionnaires at a household level. A total of 534,221 population of all ages were studied from 128,820 households.

**Results** The incidence of fatal and non-fatal animal injury in all ages were 1.2 (95% CI: 0.4–3.4) and 1,165.4 (95% CI: 1128.8–1203.1) per 100,000 population respectively. The highest non-fatal animal injury rate 1,367.0 (95% CI: 1310.7–1425.7) per 100,000 population was observed in the age group 25–64 years. The morbidity was found higher among males across all ages. 65.0% of the animal injuries occurred without any provocation. The highest proportion (28.2%) of animal injuries was caused by the cattle, which was followed by wasp 24.4%, dog 11.3%, hornet 9.6%, and snake 6.4% bites.

**Conclusions** Above data support that animal injury is an important public health issue in Bangladesh. Immediate attention should be made to strengthen the intervention measures to prevent these unexpected events.