



नेपाल इन्जरी अनुसन्धान केन्द्र Nepal Injury Research Centre

Introduction to Issue 2

Welcome to the second Newsletter of the Nepal Injury Research Centre.

In this issue we have described each of the research studies that we are conducting through the NIRC. Over the last year we have been designing the research studies with our research partners and different stakeholders, writing the research protocols, gaining approval and permissions from the necessary agencies and organisations, and recruiting and training a large number of data collectors. We are excited to see data now starting to be collected that will be used to create the evidence to make Nepal a safer country for everyone.

As we finish each study we will write a report, prepare a journal article for publication, and share our findings with relevant stakeholders and decision makers, so that the research can be put to use.

If you would like more information about any of our studies, please do get in touch via info@nirc.org.np



Prof. Dr Julie Mytton (NIRC UK Director and Chief Investigator)

Prof. Dr Sunil Kumar Joshi (NIRC Nepal Director).



Meet our new staff

The NIRC team would like to welcome Mr. Anish Khadka to the team of researchers.

Anish has a MSc in Transport Engineering and will be a Research Associate working on projects focusing on Road Danger Reduction.

Anish will be based at Kathmandu Medical College in Nepal.



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Newsletter Calendar

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- May 2019, Issue 2
- September 2019, Issue 3
- January 2020, Issue 4

Research Projects in Progress at the NIRC

Publications reporting injuries in Nepal: a systematic review of published studies

The population of Nepal are vulnerable to injuries from natural disasters as well as those occurring in the home, at work and on the roads. The recent significant investment in



road construction and rapid increases in vehicle numbers has increased the risk of road traffic injuries. The aim of

this study was to identify and summarise all published literature reporting injuries to people of any age resident in Nepal. Injuries of any cause and events resulting in any type of injury were included.

We conducted a systematic literature review following published guidance. We developed a sensitive search strategy to identify studies using a range of different study designs. The search strategy was developed in Medline and then adapted for four other electronic databases. Potentially eligible citations were screened by title and abstract and full texts of relevant studies were obtained for further assessment. Data were extracted by two researchers.

The included studies were summarised narratively by injury type and study design.

We found many more publications than we expected to, showing that there is an increasing interest in injury research. However, we noted that many publications reported small hospital case series. These types of studies may underestimate the true burden of injuries as not every patient attends a hospital after their injury. The full results of our review have now been submitted for publication in a journal. When the study has been published, we will post a copy of the research on the NIRC website.

Exploration of the burden of injuries in Nepal: A secondary data analysis

Routinely collected information from hospitals and health facilities can be used to understand the burden of ill health in communities, the demand placed on health services and the resources required to run the health facilities. The Hospital Management Information System (HMIS) was introduced in Nepal in 1993/94. This system compiles data on health service use for family health, disease control and treatment services at the district level, and these are sent to the Department of Health Services in Kathmandu every month. These data are collated into an annual report published by the Department of Health Services.

There has never been a specific analysis of injury data held in the HMIS system. Therefore, the aim of this study is to analyse the routinely collected data on inpatients and outpatients who have sustained injuries and presented for care. This will enable us to better understand the epidemiology of injuries in Nepal, and to identify if it is possible to strengthen this system of collecting routine data on injuries.

National-level data will be taken from 8 years of published reports from the Department of Health Services website. Following conversion into spreadsheets suitable for analysis, the data will be explored to describe who is getting injured and how those

injuries are happening, and whether any population groups are vulnerable to certain types of injuries. If feasible, the data will be analysed using geographical information systems (GIS) to illustrate the distribution of injuries across the country.

Surveillance of hospital-attended injury in the Makwanpur district of Nepal: A feasibility study



Injury surveillance is recommended by the WHO to inform injury prevention activities and the development of emergency care services. There is no routine hospital-based injury surveillance in the hospitals of Nepal. This study aims to evaluate the feasibility of a model of hospital-based injury surveillance. After receiving ethical approval from the Nepal Health Research Council

and the University of the West of England (UWE Bristol, UK) training was given to eight data collectors and one supervisor between 16th - 22nd March 2019. The injury surveillance system started on 1st April 2019 in the emergency department of two hospitals in Makwanpur district; Hetauda Hospital and Chure Hill Hospital. Anonymous data on patients presenting with an injury will be collected 24 hours a day, 7 days a week for six-months initially, using an electronic data capture system (REDCap). Towards the end of the surveillance study we will interview data collectors and staff at the hospitals to explore the feasibility of continuing the surveillance beyond the initial six months and extending the model to other hospitals. We will

study the data collected to better understand the epidemiology of injuries presenting to these hospitals, identify population groups at risk of different types of injuries and the risk factors associated with sustaining an injury. The implementation of this study has been undertaken with Mother and Infant Research Activities (MIRA).



Community-level estimate of deaths due to injuries in rural areas of Makwanpur district, Nepal: A verbal autopsy study

In settings where many deaths occur at home and where civil registration systems are not well established, deaths that occur away from health facilities may not be recorded and the cause of death not identified. This study aims to test a model to identify and record deaths secondary to injuries. Ethical approval



has been obtained from the Nepal Health Research Council and the

University of the West of England, Bristol, UK. This one-year, prospective study is being conducted in two rural municipalities (Bakaiya and Bhimpheji) in the Makwanpur district Nepal using methods derived from the principles of verbal autopsy. Two researchers, 107 Female Community Health Volunteers (FCHVs) and 33 health facility staff were trained between 8-24th January 2019. The study started on 1st February 2019. FCHVs will notify health facility staff when someone dies in their ward area. From these notifications, the researcher will identify cases where someone died from an injury and, after a respectful period of mourning, will invite the families of the victim to take part in an interview to better understand the circumstances of the

event that lead to the injury. The study will illustrate the circumstances of fatal injuries in these communities, identify potentially modifiable risk factors for injury and indicate the proportion of fatal injury cases that access healthcare facilities. The implementation of this study has been undertaken with Mother and Infant Research Activities (MIRA).



Road danger reduction in Makwanpur, Nepal: Advocacy and action through data



Road traffic crashes are a leading cause of morbidity and mortality in Nepal. The World Health Organisation estimated that Nepal's road traffic fatality rate is one of the highest in South-East Asia at 17 per 100,000 population. The aim of this study is to improve our understanding of the scale and nature of road dangers in the Makwanpur District of Nepal. Fieldwork will focus on three sites located along the East-West

Highway, where collisions and casualties have been found to be particularly high: Pushupatinagar, Nawalpur, and Basamadi. The study will include the collection and analysis of locally collected road traffic collision and casualty data, analysis of police-recorded collision and casualty data, monitoring of motorised vehicle speeds through use of a roadside speed gun, and recording of traffic flows and public use of the road space through roadside observation. We aim to start fieldwork in April 2019 and the study will be completed in April 2020. Qualitative research will explore the knowledge and attitudes of road users, regarding road dangers and will involve the local communities, truck drivers and school children. The findings will provide a baseline for a potential before-and-

after natural experiment study of the impact on road danger of the reconstruction of the East-West



Highway through Makwanpur. The study team will also seek to influence the reconstruction of the East-West Highway, through dissemination of the findings of this study with key stakeholders. Elements of the study will be supported by Mother and Infant Research Activities (MIRA).

First Responder Training for the Traffic Police in Makwanpur District, Nepal

The World Health Organisation has identified that the proportion of people who die from injuries sustained in road traffic crashes before reaching hospitals in low and middle-income countries is over twice that in high-income countries.

It has been shown that targeted training in first aid of key groups and the timely provision of first-aid by trained and non-medical first responders can make a significant difference to a road crash victim's chances of survival.

Ethical approval has been obtained from the Nepal Health Research Council and the University of the West of England, Bristol, UK for this

study which explores first responder training for the traffic police in Makwanpur District, Nepal.



In Nepal, traffic police are often the first to be present at the scene of a road crash and help victims. Providing them with training on first response could have a significant impact on the

reduction of the complications caused by road traffic crashes. However, little is known about the capacity of traffic police officers to provide first response and the feasibility of such training in Nepal. Thus, we are planning a post-crash, first responder training programme for the traffic police in Makwanpur District.

This study will generate the evidence to determine whether a traffic police first responder training programme could be scaled-up to a national level and be made available for traffic police personnel across Nepal.

Study of home and workplace injuries in Makwanpur district, Nepal: A household survey

This study is collecting information about home and occupational injuries by undertaking a household sample survey in three palikas in the Makwanpur district. The aim of this study is to describe the epidemiology of all unintentional injuries that take place in the Makwanpur district of Nepal, including the causes and risk factors associated with those injuries. This is being undertaken using a community-based survey of injuries.

Structured questionnaires are being used to capture detailed information on nonfatal and fatal injuries covering over 3,300 households. This survey utilises a digital approach to data collection using REDCap application on mobile tablets. A team of field data collection and supervision were trained by NIRC members of staff on REDCap. The data collection work for this cross-sectional study is expected to be completed by June 2019; after which data will be analysed, a report and paper(s) will be published. The cooperation and support received from Palikas indicates increasing interest in injury research. When the study has been published.



For this study, injury is defined as: *the physical damage that results when a human body is subjected to energy that exceeds the threshold of physiological tolerance or results in lack of one or more vital elements, such as oxygen.* According to this definition, we have defined home injury and work-related injury for the purpose of this study.

Home injury is defined as *any injury defined above occurring within and around the home; and not related to paid work or trades and requiring*

medical attention or at least a day's loss of usual activities or absence from school. Similarly, Work-related injury is defined as *any injury defined above occurring during working for a paid job or family subsistence. This can happen at home, during a journey or at a workplace and requiring medical attention or at least a day's loss of usual activities or absence from school.*

Perception of home and occupational injuries in the Makwanpur District of Nepal: A qualitative study

This study will collect information about the perception of home and occupational injuries by undertaking focus groups with groups of individuals and interviews with key informants in three palikas in the Makwanpur district.

The results will provide new knowledge in the field of home environment and work place injury. Ultimately, this will help to identify appropriate, feasible and acceptable strategies for developing and implementing effective injury prevention interventions for implementation in the home environment and work place in Nepal.



The status of post-injury first response systems in Nepal: An online descriptive cross-sectional study

Road traffic crashes (RTC) are increasing at an alarming rate in Nepal resulting in many deaths and injuries. Around 50% of road trauma victims with survivable injuries die in the prehospital setting of Low and Middle-Income Countries (LMICs) like Nepal because they do not receive timely first-aid and transfer to a healthcare facility.

It has been shown that targeted training in first aid of key groups and the timely provision of first-aid by trained and non-medical first responders can make a significant difference to a road crash victim's chances of survival.

In Nepal evidence of the impact of first response services and training has not been collected in a systematic way to include the number of organisations involved in first response, their activities, and their effectiveness and health outcomes following any first response treatment. In addition, little is known about the capacity of institutions/organisations and first response providers to provide such care.

Ethical approval has been obtained from the Nepal Health Research Council and the University of the West of England, Bristol, UK for this study which explores the status of post-injury first response system in Nepal. This is an online cross-sectional study to identify institutions involved

Reference Group (FRRG), a consortium of experts and key stakeholders involved in pre-hospital emergency medical, first response and first aid services in Nepal. This group, is comprised of fourteen members, and in the first phase of the research have acted as key informants



in designing, implementing and evaluating first response/first-aid programmes in Nepal.

In phase one of the research, the Nepal Injury Research Centre (NIRC) have established a First Response

in identifying organisations and institutions providing first-response services and emergency medical services in Nepal.



NIRC Latest Publications

Occupational risk factors as causes of deaths among economically active population in Nepal

Puspa Raj Pant

Nepal Injury Research Centre (NIRC), University of the West of England (UWE Bristol)
(Visiting Fellow: Kathmandu Medical College, Kathmandu Nepal)

Awareness about potential direct and/or indirect health hazards of an occupation, job or workplace environment is an unrecognised issue in Nepal for a long but slowly getting attention. To highlight such a neglected public health issue, it needs the dissemination of adequate information about potential harms to individual as well as the society. Such information can be in the form of information regarding direct health effects associated to occupational health hazards. In order to achieve effective dissemination, the information should be well supported by evidence, both facts and figures. However, precise evidence is only available through proper research or appropriate

education which is hugely deficient for occupation health aspects. Nepal's economy still relies heavily on traditional agrarian occupations; majority of such occupations have been driven by traditional knowledge and practices. However, gradual shifts have been observed in occupational and industrialisation in the current decades coinciding with the epidemiological transition [...].

For a full-text please visit:

<https://www.nepjol.info/index.php/IJOSH/article/view/22889>

International Journal of Occupational Safety and Health, 7(2), 1-2. <https://doi.org/10.3126/ijosh.v7i2.22889>

NIRC Latest News

Elisha Joshi was selected as one of the Young Leaders for the Women Deliver Young Leaders Program in 2018, following which she has been awarded a scholarship to attend the Women Deliver Conference in Vancouver, Canada from 2nd to- 6th June 2019. Elisha Joshi will also attend the 'Qualitative Research Methods' course at the University of Bristol, UK from June 17th -21st, 2019.

In the next Issue...

Read about the following events

- Financial Governance of Grants Course (25th/26th April 2019)
- Research Grant Writing Workshop (28th April 2019)
- International Injury Research Conference (29th April 2019)

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