

Background and Epidemiology of Rural Trauma in Nepal

This is my poster for the Research Symposium I presented with Ishita.



Background and Epidemiology of Rural Trauma in Nepal

Ishita Khurana¹, Ebubekwu Anaevune¹, Sanjaya B. Chand², Mandeep Pathak³, Ramu Kharel⁴

¹Brown University, RI, ²Nepal Health Nepal - Bayalpata Hospital, Nepal



Background

- Trauma is a leading cause of morbidity and mortality across the globe, but the burden is disproportionately high in low and middle income countries such as Nepal¹
- The population of Nepal is at a particularly high risk of injury due to accidents and natural disasters as a result of the country's geographic features, agricultural focus, and lacking infrastructure²
- There is a severe dearth of resources, training, and research surrounding trauma care in rural Nepal, limiting public health interventions focused on injury prevention and management
- The majority of trauma care research in Nepal available centers urban hospital settings, neglecting underserved rural areas where the majority of the country's population resides
- Our research aims to better understand the epidemiology of trauma at Bayalpata Hospital, a district level hospital in far western Nepal

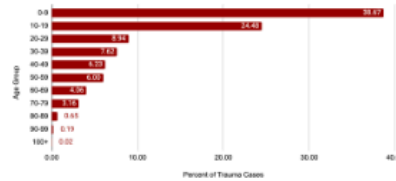
Study Design

- A thorough literature review was conducted on trauma epidemiology in Nepal, and a retrospective cross sectional method was used to describe the trauma epidemiology at Bayalpata Hospital from January 2019 until December 2023
- All patients with a chief complaint relating to traumatic injury were reviewed, and the following data was extracted:
 - Demographics (age, gender, and occupation)
 - Injury characteristics (type, mechanism, location, initial management, and severity of the injury)
 - Outcomes (date of admission, discharge, and referral to a higher center)

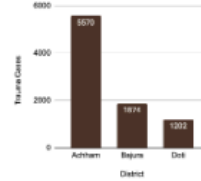
Results and Discussion

- Of 8928 total patients at the hospital, demographic and injury data was extracted for 8928 patients from electronic health records (EHR) at the emergency department
- The major catchment district of the hospital is Achham district (n = 5570), where it is located, as well as neighboring districts Bajura (n = 1874) and Doti (n = 1202)
 - All three districts are located in rural Nepal
 - The demographic most at risk of injury is males ages 0-9, which is consistent with findings from research and government data with an urban or nation-wide focus³

Trauma Cases by Age Group



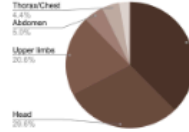
Trauma Cases by Catchment District



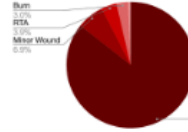
Sex	Number of Trauma Cases	Percentage of Trauma Cases
Male	5573	62.4%
Female	3355	37.6%
Total	8928	100%

- The most prevalent type of injury (85.7% of all trauma cases) identified in this study was fractures, which are commonly a result of falls
 - This reflects previous studies identifying falls as the most common cause of injury^{4,5}
- The most prevalent location of injury (37.7% of all trauma cases) identified in this study was lower limbs, followed by head (29.6%) and upper limbs (20.6%)

Trauma Cases by Location



Trauma Cases by Cause



- The limitations of this study include:
 - Analysis was dependent on the quality and completeness of preexisting data in medical records due to the retrospective study design
 - Generalizability of our findings may be limited to the specific study setting
- The strengths of this study include:
 - Contribution to narrowing the knowledge gap in understanding rural trauma in Nepal

Conclusion

- Findings from the EHR data review from a rural Nepali hospital have provided epidemiological data on trauma which can inform future interventions focused on:
 - public health initiatives aimed at improving trauma care
 - improving trauma care capacity in rural primary hospitals
 - increasing resources and infrastructure development to address the specific needs of rural areas
- Additional, broader studies on trauma epidemiology in various geographical locations across Nepal are needed to build a more comprehensive understanding of national trauma prevalence, causes, and impacts
- These efforts have the potential to cause a significant reduction in trauma prevalence and improve the overall well being of rural communities in Nepal

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