



ORIGINAL ARTICLE

Head injury burden in a major referral hospital emergency centre in Botswana

Megan Cox^a, Timothy D. Becker^{b,1}, Mpapho Motsumi^{c,*}

^a Department of Emergency Medicine, Faculty of Medicine, University of Botswana, Gaborone, Botswana

^b Perelman School of Medicine, University of Pennsylvania, USA

^c Department of Surgery, Faculty of Medicine, University of Botswana, Gaborone, Botswana

A B S T R A C T

Introduction: This study describes the demographics, aetiology, emergency centre diagnosis and severity indicators of patients with head injuries presenting to the largest referral hospital emergency centre in Botswana. **Methods:** Cross-sectional retrospective data was collected from July 2015 to September 2015 for all emergency centre head injury presentations at Princess Marina Hospital. Information was extracted from emergency centre records regarding patient demographics, mechanism of injury, clinical observations, diagnosis, and treatment. **Results:** Three-hundred and sixty head injury patients presented to the emergency centre in the three months, averaging four per day. 80% were less than 40 years of age and males accounted for 69% of all presentations. 58% of injuries were listed as being accidental, 39% recorded from assaults and 38% from road traffic accidents. The most common emergency centre clinical diagnosis was concussion and the most common radiological diagnosis skull fracture. The median Glasgow Coma Scale was 15 with a range from 3 to 15; and, among patients for whom Revised Trauma Score could be calculated, 79% scored the lowest probability of death in the Revised Trauma Score.

Discussion: Head injury disproportionately overburdened males in this study, and head injury aetiology and demographic picture was similar to regional data. Severity scoring using the Glasgow Coma Scale was only available among 66% of patients and Revised Trauma Score calculable in half of presentations. Only 55% of head injury patients were discharged from the emergency centre, despite the preponderance of low severity scores. Head CTs appear to have been over-utilised and implementation of a Traumatic Head CT guideline for our setting is proposed. This study improves understanding of the burden of head injury in Botswana and advocates for national referral guidelines for patients with head injury in Botswana.

African relevance

- This is the first clinical head injury study in Botswana, a middle-income country in sub-Saharan Africa.
- This study adds to regional trauma data for sub-Saharan Africa.
- This study shows complexities and practicalities of research in low- and middle-income country emergency centres.
- This study advocates for a local head injury head CT guideline that could be replicated in other low- and middle-income countries.

Introduction

Trauma has been increasingly identified as a pressing concern in the

developing world. Numerous studies have highlighted that trauma patients in low- and middle-income countries (LMIC) endure greater morbidity and mortality than their counterparts in high-income countries [1–3]. Traumatic Brain Injury is the most common cause of death and disability from trauma, especially among young adults, and is predicted to surpass many diseases as a major cause of death and disability by 2020 [4,5].

Botswana, a landlocked upper middle-income country in sub-Saharan Africa, provides an example of a middle-income country with tremendous opportunities to improve trauma care. Botswana has not yet developed centralised trauma services and has little epidemiological trauma data. Princess Marina Hospital (PMH) located in the capital city, Gaborone, is currently the largest public referral hospital in the

Peer review under responsibility of African Federation for Emergency Medicine.

* Corresponding author.

E-mail address: mpapho.motsumi@mopipi.ub.bw (M. Motsumi).

¹ Botswana-UPenn Partnership.

<https://doi.org/10.1016/j.afjem.2018.02.003>

Received 24 May 2017; Received in revised form 2 February 2018; Accepted 14 February 2018

2211-419X/ 2018 African Federation for Emergency Medicine. Publishing services provided by Elsevier. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

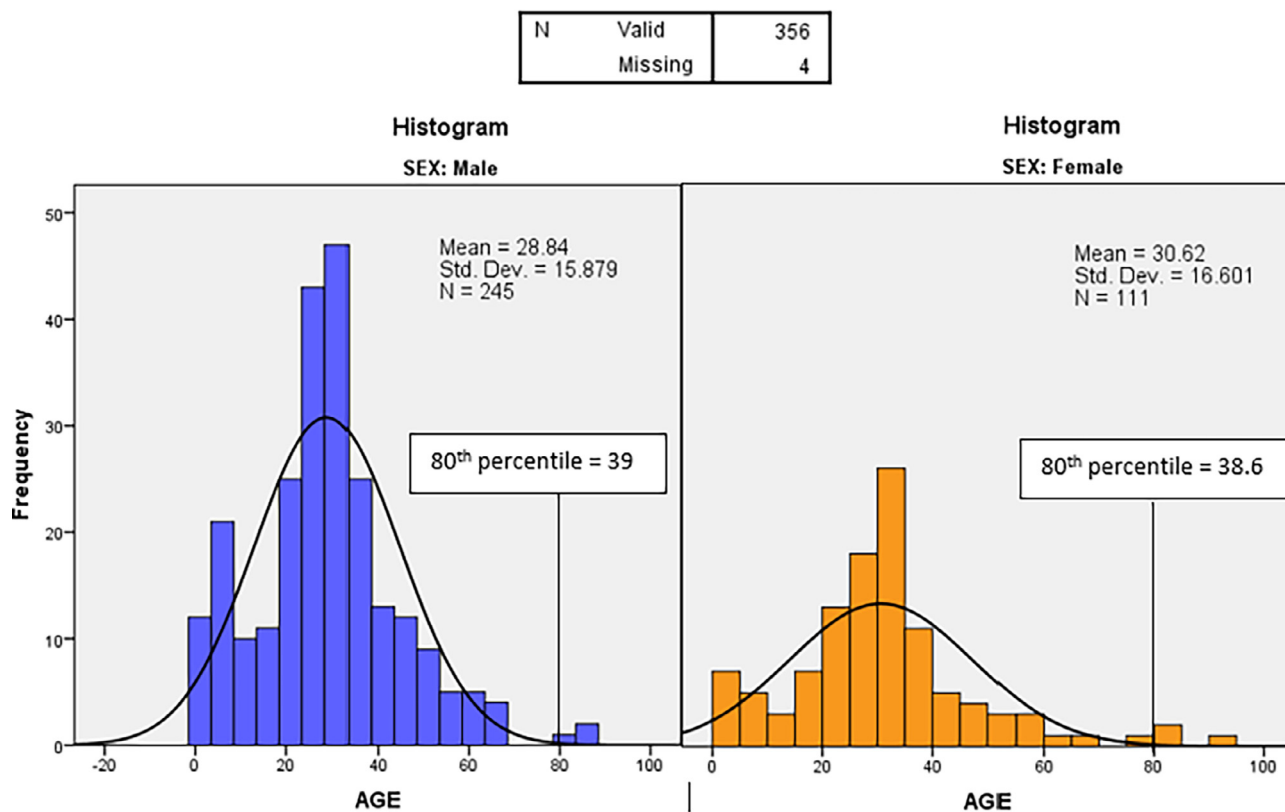


Fig. 1. Distribution of ages of head injury patients according to gender.

country. PMH is a mixed (adult and paediatric) emergency centre (EC) with 24-hour availability of all major surgical and orthopaedic services, including access to computed tomography (CT) scanning and an eight bed combined adult and paediatric intensive care unit. PMH also operates as the primary and district hospital for Gaborone, the capital city with over 230,000 people reported in the 2011 census [6]. A new referral hospital, with a dedicated trauma EC, has been constructed in Gaborone with the aim to improve specialty care in the country. Only one previous paper has looked at presentations to PMH EC and reported traumatic injuries as the third highest presenting diagnosis in 2011 [7]. Trauma types and severity were not studied; but the authors experience is that head injury is a significant burden at PMH. This study aimed to research head injury at PMH EC to investigate the burden of head injury and describe the current state of acute head trauma management in Botswana.

This study aims to describe the burden of head injury presenting to the largest public hospital EC in the country. It discusses the demographics, aetiology, EC diagnosis and severity of head injury presenting to PMH EC in three months of 2015.

Methods

Data was collected retrospectively on all patients with head injury, defined broadly by the researchers to include everything from scalp lacerations to open skull injuries, who presented to PMH EC from July 1, 2015 through September 30, 2015. Patients who were dead on arrival (“brought in dead”) were excluded from the study, regardless of injury. A Microsoft Access 2010 database, (Microsoft Corp, Redmond WA, USA) was setup and used to extract relevant information from EC records filled out by medical and nursing staff for each patient. Collection began in July 2015 and EC staff was informed about the objectives of this study at this time.

EC record data collected included patient demographics (age, gender), geographical location of event, place of referral, method of

arrival to EC, and times of injury, triage, and doctor examination. Vital signs (mobility, respiratory rate, heart rate, blood pressure, body temperature, mental status, and random blood sugar) were collected directly from corresponding fields on the same EC record. Glasgow Coma Scale (GCS), loss of consciousness, neurologic status, and pupil reaction were recorded from the physician history and physical field. Mechanisms of injury, as described in the physician history notes, were coded according to the WHO International Classification of External Causes of Injury system [8]. RTS was calculated retrospectively for all patients with complete data for GCS, blood pressure, and respiratory rate (citation).

Head injury is a nonspecific term, which includes clinically evident external injuries to the face, scalp, and calvarium, such as lacerations, contusions, abrasions, and fractures, and these may or may not be associated with Traumatic Brain Injury (TBI). TBI were coded using a previously published clinical case definition for neuro-trauma surveillance systems’ that defines TBI as any injury to the head associated with any loss of consciousness or confusion/altered sensation and/or documented clear neuropathology (e.g., haemorrhage or fracture seen on CT), or head injury or trauma as a documented cause of death [5,8,9]. Intracranial diagnoses found on CT (e.g., subdural hematoma, intracerebral haemorrhage) were documented as recorded by the medical officer and/or neurosurgeon attending the patient from EC records. The doctors’ diagnoses on discharge along with the patient’s destination from EC were also recorded.

Ethics committees at the University of Botswana, University of Pennsylvania, Princess Marina Hospital, and Botswana Ministry of Health approved the study.

Results

Two authors retrospectively reviewed all EC records from the study period and a total of 360 patients were identified as having any head injury from July 1 to September 30, 2015. PMH EC unpublished data

Download English Version:

<https://daneshyari.com/en/article/8957646>

Download Persian Version:

<https://daneshyari.com/article/8957646>

[Daneshyari.com](https://daneshyari.com)