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Photoessay

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Traumatic spinal cord injury in Uganda: a prevention strategy and mechanism to improve home care

L Stothers,[1,2]* AJ Macnab,[2,3] R Mukisa,[3,4] S Mutabazi[4,5] and F Bajunirwe[6]

[1]International Collaboration on Repair Discoveries (ICORD), Blusson Spinal Cord Centre, Vancouver, BC, Canada, [2]Department of Urologic Sciences, University of British Columbia, Vancouver, BC, Canada, [3]Stellenbosch Institute for Advanced Study, Wallenberg Research Centre, Stellenbosch, South Africa, [4]Health and Development Agency (HEADA), Mbarara, Uganda, [5]Cure Medical Centre, Ishaka, Uganda and [6]Department of Community Health, Mbarara University of Science and Technology, Mbarara, Uganda

*Corresponding author. Blusson Spinal Cord Centre, 818 West 10th Avenue, Vancouver V5Z 1M9, BC, Canada. E-mail: lynns@mail.ubc.ca

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Abstract

In low- and middle-income countries (LMICs), the burden of traumatic spinal cord injury (TSCI) is largely unknown. The estimated incidence of TSCI in LMICs is 25.5/million/year, and the impact on affected patients and their families is presumed to be immense due to the social structure, limited health system resources and reliance on family to care for those that survive injury to return home. In sub-Saharan Africa, extrapolated regional figures for incidence range from 21 – 29/million/year, and the occurrence of a spinal injury is likely to be fatal within a year.

The epidemiology of TSCI in developing countries is recognized to include transport related injuries, falls, industrial accidents and violence, including gunshot wounds.[1–5]

In Uganda, transport injuries typically involve head-on and roll-over crashes due to excessive speed, lax securing of unstable loads, very limited use of protective helmets and vulnerability of pedestrians to being struck when crossing busy or unlit roads.

Following injury, transport to hospital is unstructured, units with surgical expertise specific to SCI are scarce, and discharge home without comprehensive follow-up or physiotherapy referral is commonplace. Home facilities are not conducive to care.

We surveyed residents in a rural community in western Uganda, to assess their knowledge of SCI (causes, complications and adequacy of resources) and perceived priorities to improve the burden on quality of life due to SCI in this LMIC.

Among respondents (26 SCI patients, 37 village health team, 220 community members), knowledge of key facts on causation and prevention, and complications likely following SCI, was mixed. They identified traffic trauma

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(95%) as the most prevalent cause, but only 45% believed such SCI was preventable; causes incorrectly identified included malaria (40%) and smoking (32%).

Complications of long-term SCI which were recognized were impaired sexual (90%) and bowel/bladder function (80%), depression and chronic pain (85%), skin breakdown and urinary infections (57%); 55% said SCI caused diabetes and 37% that it caused prostate cancer. The impact of muscle wasting with superimposed contractures was unrecognized.

Major problems articulated were lack of care for patients living at home and lack of support for family care givers, and also limited aids to living, including wheelchairs and crutches. Locally made walking aids are prevalent; most patients rely on family members to move them,



Figure 1. In most LMICs there is a major dependence on communal motor vehicle transportation.



Figure 3. Relatives waiting at a community hospital in Uganda after a bus crash.



Figure 2. Examples of causal factors in traffic-related SCI in Uganda.[2,3] (A) A passenger bus involved in a high-speed incident when overtaking, where a rollover resulted. (B) A commercial truck which left the road in a village when an insecure load shifted. (C) A typical group of motorcycle 'taxi' (boda) drivers awaiting public hire. Only one has a helmet and there is no helmet provision for passengers. (D) A main road scene illustrating the vulnerability of street traders and pedestrians to impact from vehicles travelling at speed.

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crawling short distances independently and modifying their furniture to aid standing.

The two immediate priorities are evident:

- prevention measures to address the unacceptable incidence of SCI;
- and assistance with the provision of essential support for those living with SCI in the community.

Education to generate greater understanding of the epidemiology of SCI may decrease the incidence, especially that related to preventable traffic-related injuries.[1,2,5]



Figure 4. The point of entry to a typical urban dwelling used by an SCI patient illustrating the complexity of access through an area where cooking, washing and laundry activities take place.



Figure 5. Completion of the community-based survey questionnaire by a patient left with residual neurological deficits following a high cervical spine injury, but able to be independently mobile with walking aids.



Figure 6. A bedridden subject, with long-term effects from a lumbar spine injury caused when a cow rolled onto him as a child, completing the survey by interview with a researcher, in his home.

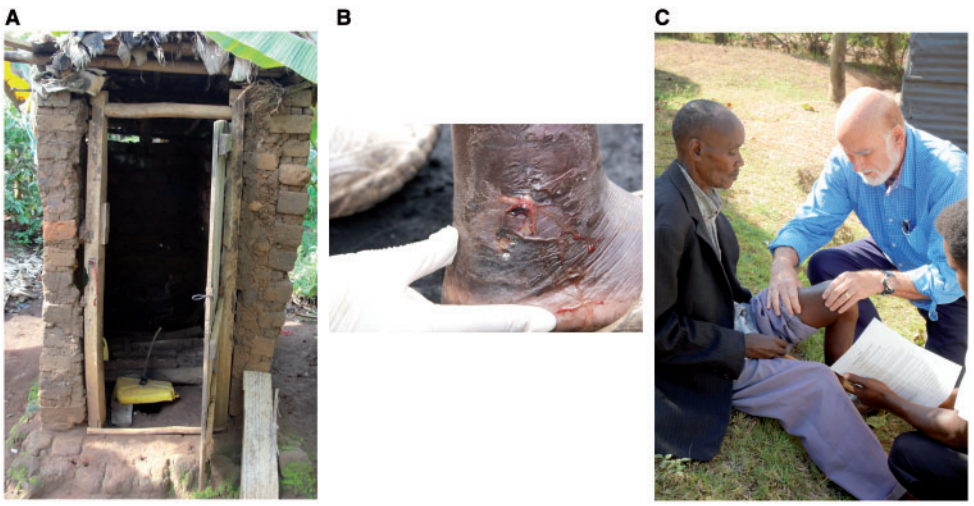


Figure 7. Factors that complicate long-term home care of patients with SCI[1] observed in Uganda. A. Rural toilet facilities. B. Skin breakdown in a patient cared for entirely by his family. C. Muscle wasting and contractures of hip adductors in a patient who had never had any physiotherapy after discharge form hospital.

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Figure 8. A patient with a lumbar spine injury from a vehicle rollover relies on family to carry him from car to house, crawling short distances, and an improvised aid to enable him to stand against his kitchen table.



Figure 9. Locally made crutches aid mobility for a patient with residual high cervical spine injury sustained in a car crash and treated with spinal traction.

A community-based mechanism to provide World Health Organization (WHO)-defined priorities for management[1] to SCI patients living at home would improve care. Schools offer a community forum for education around causation and prevention of SCI, especially where the WHO 'Health Promoting School' model is employed, as such schools improve knowledge leading to individual and community behavioural change.[6,7]

Community-based village health teams (VHTs) exist, are trained to address specific nationally defined health priorities;[8,9] if modified to include delivery of WHO SCI care guidelines,[1] VHTs are ideally placed to provide home care support.



Figure 10. A rural Ugandan school where the wall art complements teaching to promote health knowledge in a WHO Health Promoting Schools[4] programme.



Figure 11. Village health team personnel visiting the home of a patient with SCI in a rural Ugandan community, to collect survey data.

These data come from a survey conducted in Uganda, but the findings and the needs identified are probably representative of the situation in most LMICs. These data also underscore the call for greater understanding of the epidemiology of TSCI, prospective standardized data registries[3,4,5,10] and measures to promote prevention of traffic-related trauma, decrease the incidence of injury, and address resource allocation to improve emergent care and home care by families of those surviving injury.[1,2]

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for their pictures to be used in the dissemination and publication of this research.

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