

Epidemiology of Non-Disaster Spinal Injuries at a Spine Unit

Dear Editor,

We have read with interest "Epidemiology of non-disaster spinal injuries at a Spine Unit" by Qureshi *et al.*¹ with interest. We would like to offer the following comments:

1. Research on disaster and non-disaster related spinal cord injuries (SCI) is limited in Pakistan to few retrospective, small, hospital-based surveys only.²⁻⁵ This study is an excellent long-term prospective survey with follow-up which has not been reported in Pakistan before. Moreover, it comes from the largest and only dedicated spinal orthopaedic department of the Pakistan Armed forces, which receives patients, both from armed forces and civil population from Peshawar to Karachi and even abroad.

2. The study highlights the epidemiological pattern of non-disaster spinal injuries which is different from the Western data on the same topic.⁶ In contrast to the developed countries, falls have shown to be the leading cause of SCI in Pakistan. Most of the cases include falls from workplaces, e.g. construction workers, line-men of electricity department on poles and fall from trees in civilian population. There is a need to start a fall prevention program and implementing better workplace safety laws to prevent an avoidable cause of severe and long-term disability.

3. The study also points out the inadequate trauma management and evacuation protocols in the country. Although the emergency services have improved a lot in the last one decade, but still there is a lot of room for improvement, specially for the initial evacuation of suspected or actual cervical spine injuries.

4. Authors have described an impressive follow-up period of 4 years in patients who underwent spinal surgery. It would have been better if outcomes between surgical management and conservative management were compared and reported too. Most of the patients in a poorly resourced country like Pakistan cannot afford costly spinal implants and this could be one of the reasons that patients after spinal injuries do not seek an early spinal orthopedic consultation. Therefore, it becomes important to see if spinal surgery offers any extra benefits apart from early spinal stabilization and patient's mobilization. In addition, there are many validated scales available for objective and qualitative assessment of outcomes after spinal injuries.⁷ The

comments about an adequate outcome should only be made if these objective assessment tools have been used.

5. Most of the patients from their spinal unit were transferred to the spinal rehabilitation unit of the Armed Forces Institute of Rehabilitation Medicine at Rawalpindi. Surgical intervention helps in stabilization of the spinal column, but it is the comprehensive and dedicated SCI rehabilitation program focusing on the counselling of patient and family, patient education, bladder and bowel management, skin care, therapeutic exercises and prevention of secondary long-term complications that ensure re-integration of these mostly severely disabled population in the community as active members.

6. There is a need to carry out a nation wide population-based survey on the epidemiology of acute SCI as well as follow-up of community dwellers with SCI to monitor complications and psychosocial problems. If this is difficult, another alternative can be country wide hospital based surveys recruiting patients from the neurosurgery, spinal orthopaedic and rehabilitation departments.

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Author's reply

Sir,

We thank for the comments made by the reader.

1. The indications for surgical management of the spinal injuries have been established by various authors.^{1,2} The department was inclined to treat an injury for which a superior outcome has been established. Furthermore, the patients treated conservatively continue to suffer long-term pain, trauma of prolonged immobilization, deformities, and non-unions. The treatment of these ailments and especially post traumatic kyphosis requires an extensive, prolonged and complicated surgery.³ To compare these conservative spinal injuries and operated patients, the data of our institute was published which may be compared to the patients managed elsewhere.

2. We agree that the outcome measures such as ODI, VAS, various spinal injury outcome scores, employment status have not been documented, but the main outcome measure on which outcome depends is the neurological recovery and that is recorded in all the cases. The current assessment for the spinal procedures are those used by the Swiss Registry,^{4,5} for which our department is gearing for. Soon we will be documenting all the cases in this registry. This will not only enable us to measure the outcomes objectively, but also compare our results with the rest of the world.

3. The rehabilitation program is an integral part of any spinal surgery. The main indication for surgery is to start early mobilization,^{6,7} and get the patient as soon as possible into the rehabilitation stage for the individual's early integration into the society.

4. The establishment of a nationwide database is very important,⁵ and will help to allocate the health budget in accordance with other injuries. It is important to note that these individuals require lifelong support from family, community and health care providers.

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Health Locus of Control among Pakistani University Students

Sir,

The term 'locus of control' was developed from social learning theory and refers to an individual's belief that his/her actions result in given outcomes i.e. internal locus of control, or that outcomes are under the influence of forces outside their control i.e. external locus of control.¹ In general, internal locus of control tends to predict better health awareness, practices, and outcomes.²

A cross-sectional survey with convenience sampling was conducted among university students in the cities of Islamabad, Rawalpindi, and Multan to study the locus of control perspective in Pakistan from January to September 2007. Students of either gender on the campus premises of various universities in these cities were approached, and after obtaining verbal consent, questionnaires were distributed. Health Locus of Control (HLC) instrument; an eleven question instrument with five internal and six external locus of control assessing questions was used.³ Cumulatively 764 students; 277 (36.2%) males and 487 (63.7%) females, participated in this study. The mean age was 22.3 ± 1.5 years for males and 21.6 ± 1.4 years for females. Six hundred and eighty-seven (89.5%) students were enrolled in the masters program, while the rest were enrolled in M.Phil program. Statistically significant associations were found between the two genders and the cumulative 11 items of HLC. The mean scores on all 11 items of HLC by gender and their statistical significance is presented in Table I.

Higher scores on external items indicate more external locus of control. Cumulative mean scores on external items for female university students were significantly higher than male students. This pattern has been reported previously, showing women having lower scores on internal and higher scores on external items of HLC.⁴ Lower scores on internal items indicate more internal locus of control i.e. with internal items scoring is reversed. Cumulative mean scores on internal items of



Table I: Health locus of control scores by gender.

Question	Male Mean (SD)	Female Mean (SD)	p-value (t-test)
1. If I take care of myself, I can avoid illness.	2.4 (1.5)	2.2 (1.4)	0.043
2. Whenever I get sick, it is because of something I have done or not done.	2.9 (1.7)	3.0 (1.6)	0.477
3. Good health is largely a matter of good fortune.	2.8 (1.8)	3.3 (1.9)	< 0.0005
4. No matter what I do, if I am going to get sick, I will get sick.	3.3 (1.8)	3.6 (1.7)	0.035
5. Most people do not realize the extent to which their illnesses are controlled by accidental happenings.	3.4 (1.5)	3.7 (1.5)	0.005
6. I can only do what my doctor tells me to do.	3.8 (1.7)	3.5 (1.7)	0.035
7. There are so many strange diseases around that you can never know how or when you might pick one up.	4.3 (1.7)	4.4 (1.7)	0.452
8. When I feel sick, I know it is because I have not been getting the proper exercise or eating right.	2.8 (1.6)	3.0 (1.7)	0.128
9. People who never get sick are just plain lucky.	3.0 (1.9)	3.6 (1.9)	< 0.0005
10. People's ill health results from their own carelessness.	2.3 (1.5)	2.7 (1.6)	< 0.0005
11. I am directly responsible for my health.	2.2 (1.5)	2.6 (1.6)	0.001
Total - Internal	12.5 (4.6)	13.4 (4.8)	0.012
Total - External	20.6 (4.9)	22.2 (5.5)	< 0.0005
All Items	33.2 (7.6)	35.6 (8.1)	< 0.0005

Item numbers 1, 2, 8, 10 and 11 constitute internal locus of control, while the rest determine external locus of control.

male university students were significantly lower than female students. Total mean scores on all 11 items were significantly higher for female students indicating more external locus of control; while lower total mean scores for males reflect more internal locus of control. Internal/external dimensionality of locus of control impacts treatment compliance and education of patients.⁵

Better understanding of locus of control dimensionality among university students would lead to target health education and promotion campaigns in Pakistan more effectively.

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