

LETTER TO THE EDITOR

Estimating TSCI incidence worldwide: a long road to drive

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We would like to thank the authors of the paper 'Estimating the global incidence of traumatic spinal cord injury', especially Dr Bonsan B Lee for her generous help in one of our projects to translate two Russian papers related to spinal cord injury (SCI). We read the paper by Fitzharris *et al.*¹ with great interest and care. Fitzharris *et al.*¹ have unquestionably done a wonderful job in the estimation of SCI worldwide; however, there are some points we would like to mention here. Fitzharris *et al.*¹ have used the raw population data as a model in the estimation of SCI patients in each country. They have used data from 17 countries to run a statistical model of SCI incidence worldwide. The data used in this study contain data of 11 high-income countries, 5 middle-income countries and only 1 low-income country. They have estimated that with use of population data and help of economic indicators there would be 179 213 new SCI cases worldwide (based on 2007 data).

Some data used in this study are questionable. In the report of Australia SCI national registry, data are available almost annually from 1986. The incidence of traumatic SCI (TSCI) in Australia has decreased from 17.9 cases per million (c.p.m.) in 1990 to 15 c.p.m. in 2007; however, the authors have used the two lowest incidence rates of 14.5 c.p.m. in 1998 and 14.9 c.p.m. in 2006. Incidence of TSCI in Iran² is reported as 98.4 c.p.m. for males and 46.5 c.p.m. for females, which results in an incidence of 72.4 ((98.4 + 46.5)/2) c.p.m. in total; however, the authors have used the figure of 62.2 c.p.m. Incidence of TSCI in South Africa is not reported in the original paper by Velmahos *et al.*³; however, considering the 112 cases annually and Johannesburg population of 2 554 726 in 1990, the incidence of TSCI would be 48.5 c.p.m. The authors have indicated an incidence of 13.9 TSCI c.p.m. On the basis of inclusion criteria of the study by Fitzharris *et al.*¹ more data are available for other countries.⁴ We would add the following data: Sierra Leone (3.4 c.p.m. 2002–2004), Brazil (17.3 c.p.m. 1986–2007 and 71 c.p.m. 1997–1998), Chile (7.8 ± 3.6 c.p.m. 1986–2005), Jordan (18 c.p.m. 1988–1993), Kuwait (7.8 c.p.m. 1991–1999), Qatar (12.5 c.p.m. 1987–1996), Saudi Arabia (27 c.p.m. 1990; 63 c.p.m. 1994), Pakistan (5.1 c.p.m. 1995–1999), Denmark (8.5 c.p.m. 1990; 13.6 c.p.m. 2000; 10.6 c.p.m. 2007), Finland (13.8 c.p.m. 1976–2005), Germany (10.65 c.p.m. 1976–1996), Iceland (20 c.p.m. 1990–1994; 12.5 c.p.m. 1995–1999; 21 c.p.m. 2000–2004), Israel (13.1 c.p.m. 2000), Norway (15.9 c.p.m. 1992–1996; 26.3 c.p.m. 1997–2001), Portugal (57.8 c.p.m.

1989–1992), Spain (17.6 c.p.m. 2000–2008; 12.9 and 13.4 c.p.m. 1991–2000 and 2000–2008, respectively), Sweden (19.6 c.p.m. 2006), New Zealand (30 c.p.m. 2007–2009, 22.5 c.p.m. 2012), Malaysia (167 TSCI cases, 2006–2009) and Taiwan (18.8 c.p.m. 1992–1996; 61.4 c.p.m. 2003).

As it is believed, SCI is seen more frequently in two age groups of 19–29 years and 65+ years. Thus, the use of age-structured population might be a better option than the use of raw population data as the population structure of countries are different—for example, Iran has a young population with 22% population aged 20–29 years and USA has a population of 12% in the 20–29-year age group. In a recent 2013 report by World Health Organization (WHO), an incidence rate between 40 to 80 c.p.m. for SCI is estimated worldwide. Although this estimation is not fractioning TSCI and non-traumatic SCI cases, considering the high share of TSCI, these incidence estimations by WHO are more than that by Fitzharris *et al.* Overall, it seems that with recent publications and use of statistical methods it might be possible to estimate SCI cases in global and country scales in the near future.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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