Do New Zealand nurses claim more lumbar spine injuries than the general population? A retrospective study (1995–2009)

In New Zealand, low back pain (LBP) has the highest incidence of all work-related diseases,\(^1\) with the Accident Compensation Corporation (ACC) spending more than $350 million annually on claims for lumbar spine injuries.\(^2\)

Determining lumbar injury frequency by occupation is important as it allows for targeted risk analysis to determine causes and develop strategies to prevent injury. It also highlights the injury risks associated with individual vocations. Nursing is recognised as an occupation associated with high lumbar spine injury risk with annual and lifetime injury prevalence reported at 40–50% and 35–80% respectively.\(^3\) Such a high annual prevalence for work-related LBP in New Zealand nurses is comparable to nursing populations in other industrialised countries.\(^4,5\)

A recent survey demonstrated that the annual prevalence of LBP did not differ for occupations of nursing, postal and office workers, and was as high as 57%.\(^6\) However it remains unclear whether nurses in New Zealand have a higher risk of lumbar injury than other occupations,\(^3\) and whether the costs for such injuries differ to other lumbar injury groups. Therefore, we explored the relationship between the number and cost of ACC-registered lumbar spine injury claims in nurses compared to the general population for work-related and non-work-related injuries in New Zealand between 1995 and 2009.

All data covered the period 1995–2009. Injury statistics were retrieved from ACC for all registered lumbar spine injury claims for individuals aged 20 to 69 years.\(^7\) Population and employment statistics were accessed from Statistics New Zealand.\(^8\) Data on registered nurses were acquired via the New Zealand Nursing Council.\(^9\)

Lumbar injury claim data was standardised for age and population and analysed using STATA 11.0 (StataCorp, Texas) and SPSS 17 (IBM, California) statistical software. Frequency of lumbar spine injury claims was analysed using a Poisson regression analysis, with total costs of lumbar injury claims and annual average cost per registered lumbar injuries analysed using a linear regression model. Statistical significance was set at p<0.05.

Between 1995 and 2009 nurses claimed significantly fewer work-related ACC-registered lumbar injuries (0.7% vs 1.7%) and non-work related (2.0% vs 3.3%) lumbar injuries than the general population (Figure 1). Lumbar injury claims were more likely for the general population (Odds Ratio = 45.06, 95% CI 44.97 to 45.11, p<0.0001) with nurses registering 43% fewer claims than the general population.

Claims for lumbar spine injury for all groups increased by 1.7% annually (significant). For both nurses and the general population, lumbar injuries not related to work were more likely to be registered (Odds Ratio = 1.439, 95% CI 1.437 to 1.446, p<0.0001).
The total cost of ACC-registered lumbar spine injuries was $2.1 billion, with no significant change in total cost with year. Nurse lumbar injuries represented 2.4% of the total cost ($49.7 million total, $3.5 million per annum) and work-related nurse injuries 1% ($20 million, $1.4 million per annum).

Costs per nurse’s claim were on average three times more expensive than those of the general population (p<0.0001) (Figure 2), with costs per claim decreasing with time (p<0.0001). No significant difference was found for cost per claim in work and non-work related injuries (nurses and non-nurses).
Between 1995 and 2009 nurses registered significantly fewer claims for both work and non-work related lumbar injuries compared to other groups. Interestingly, the frequency of nurse’s non-work related injury has increased to closely match non-nurses while the cost of each injury still remains higher. The corresponding work data for the end of this period shows less frequent nurse injury and similar costs to the general working population. Therefore, on average ACC-registered lumbar injuries in nurses were of greater severity and required more costly interventions than those of the general population though the trend shows costs are decreasing for both groups and converging.

New Zealand nurses did not suffer from either work or non-work lumbar injury as frequently as the general population over the study period, indicating that as an occupation nursing has different lumbar injury claim patterns to other groups. However, results should be interpreted with caution. Policy alterations following
changes in government are potentially responsible for data fluctuations, with the influence of lumbar injury claims to private workplace insurance agencies an unknown factor. Nevertheless, the dynamic nature of some data suggests continued surveillance of the figures is warranted to determine the extent of this relationship over time. This would allow the facilitation of adequate prevention strategies and appropriate vocational education for those suffering lumbar spine injuries.10

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References:

7. The Accident Compensation Corporation of New Zealand. ACC Business Service Centre, PO Box 795, Wellington, New Zealand.