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Musculoskeletal discomfort in veterinarians

A thesis presented in partial fulfilment of the
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Abstract

This thesis comprises three chapters about musculoskeletal discomfort (MSD) in veterinarians. Two of these chapters have been submitted to peer reviewed journals and one is in preparation for submission. The first chapter describes the prevalence and risk factors associated with MSD in New Zealand veterinarians. The second chapter is a paper on the tasks considered by veterinarians to cause MSD. The third chapter is a review of published literature on musculoskeletal problems (MSP) in veterinarians.

The first chapter in this thesis describes a cross-sectional study of 867 New Zealand veterinarians. We used a modified Nordic musculoskeletal questionnaire to enquire about the presence or absence of MSD, whether this affected normal activities and if MSD necessitated absenteeism from work. Additional questions enquired about work activities, psychosocial factors and workload. The overall period prevalence of MSD was 96%. Normal activities were affected in 67% and 18% of participants reported that they had been absent from work due to MSD. Factors associated with the presence of MSD requiring time off work for clinical veterinarians included 10 year increases in age (odds ratio (OR) 1.26, 95% CI 1.05 - 1.52), work involving awkward grip and hand movements 100% of time (OR 12.91, 95% CI 3.46 – 84.21) and those who were dissatisfied with the level and difficulty of their work (OR 2.72, 95% CI 1.11 - 6.56).

In the second chapter in this thesis, veterinarians were asked to indicate tasks that they considered 'most likely to lead to musculoskeletal aches and pains' and 'why these tasks were likely to be the most risky'. They were also asked to suggest 'any solutions that they applied or knew of' to reduce musculoskeletal aches and pains. They identified the following tasks: lifting, surgery, rectal palpations and animal handling. Their reasons were primarily related to physical risk factors. Few identified psychosocial risk factors. The most common suggested solutions involved training and selection strategies rather than redesign of tasks, activities or facilities. These findings are consistent with a participatory ergonomics approach for reducing the risk of MSD, which aims to enhance personal well-being and improved system performance.

The third chapter in this thesis - a review of the literature - focuses on the prevalence and nature (discomfort, pain, injury and disorders) of MSP amongst veterinarians. Veterinarians are exposed to a range of physical and psychosocial occupational hazards that have been well documented and associated with MSP. The range of reported prevalence estimates in this review was 50% to 96%. This range may reflect real differences among the veterinary populations studied, or more likely be due to differences in MSP definitions, study methodologies, and response rates. The magnitude of the reported prevalence justifies further research to triangulate data and determine other factors associated with MSD. Most of the studies in the review focused on physical risk factors. The lack of studies into psychosocial risk factors for MSP needs to be addressed.

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List of publications from thesis

Prevalence and risk factors associated with musculoskeletal discomfort in New Zealand veterinarians. Scuffham, A. M., Legg, S. F., Firth, E. C. and Stevenson, M. A. (2009). *Applied Ergonomics*, In Press.

Tasks considered by veterinarians to cause musculoskeletal discomfort and suggested solutions. Scuffham, A. M., Firth, E. C., Stevenson, M. A. and Legg, S. F. (2009). Submitted for publication to the *New Zealand Veterinary Journal*.

Paper presented at the 15th New Zealand Ergonomics Society Conference: Ergonomics for the Ageing Population, Martinborough. Scuffham, A., Stevenson, M., Legg, S. & Firth, E. Prevalence of musculoskeletal discomfort in New Zealand small animal veterinarians. In: Proceedings of the 15th New Zealand Ergonomics Society Conference: Ergonomics for the Ageing Population. Eds R. G. Adank & L. Gardner Wood. Martinborough, New Zealand Ergonomics Society. 27-28 May 2009, [CD-ROM].

Paper presented at the Society of Dairy Cattle Veterinarians of the New Zealand Veterinary Association 26th annual conference, Rotorua. Scuffham, A., Firth, E., Stevenson, M. & Legg, S. *Musculoskeletal discomfort in New Zealand large animal veterinarians*. In: Proceedings of the Society of Dairy Cattle Veterinarians of the New Zealand Veterinary Association 26th annual conference. Ed. T. Parkinson. VetLearn, Palmerston North. 24-27 June, 2009, pg 201-204. Scuffham, A., Firth, E., Stevenson, M. & Legg, S.

Paper presented at the New Zealand Equine Veterinary Association Annual Conference, Taupo. Scuffham, A., Firth, E., Stevenson, M. & Legg, S. *Musculoskeletal discomfort in New Zealand equine veterinarians*. In: Proceedings of the New Zealand Equine Veterinary Association of the NZVA Annual Conference. Ed. M Leyland. VetLearn, Palmerston North. 24-27 June 2009, pg 163.

Paper presented at the 17th International Ergonomics Association World Congress on Ergonomics, Beijing. Musculoskeletal discomfort in New Zealand (non-clinical) veterinarians. Scuffham, A., Legg, S., Stevenson, M. & Firth, E. In: Proceedings of the 17th World Congress on Ergonomics. 9-14 August, 2009, [CD-ROM].

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