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Investigating musculoskeletal disorders in New Zealand
meat processing using an industry-level participative
ergonomics approach

A thesis presented in partial fulfilment of the requirements for the degree of

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Abstract

In New Zealand, the highest incidence of musculoskeletal disorders (MSD) is found in meat processing, accounting for over half the injury compensation costs for the sector. This thesis reports on a two-year study of MSD in the New Zealand meat processing industry, with the aims of identifying MSD risk factors and interventions using an industry-level participative ergonomics approach.

A review of the literature on occupational musculoskeletal disorders and participatory ergonomics identified gaps in knowledge, notably contextual factors for MSD and a limited scope for participatory ergonomics. The studies described in this thesis contribute to addressing these knowledge gaps.

The first stage of the study established a profile of MSD injury data in the industry. Data were collected from four injury data sources for meat processing. A number of priority tasks were identified for beef and sheep processing, based on triangulation of these data, and findings were approved by the industry stakeholders, the Meat Industry Health and Safety Forum (MIHSF).

The second stage of the study was the assessment of these tasks in a representative sample of processing plants, with the purpose of identifying risk factors that contribute to the occurrence of MSD, implementation barriers and MSD interventions. The study involved interviews with 237 workers, management, union and safety personnel in 28 meat processing sites. MSD risk factor data were separated into those concerning the high MSD-risk tasks (task-specific), and the wider work system (task-independent). From these data a list of contextual factors was developed which it is proposed may create conditions under which greater exposure to physical and psychosocial factors can occur in meat processing. Some 276 interventions were also identified.

The third and final stage of the study involved working with the MIHSF in developing the interventions for use by the industry in reducing MSD risk. MSD intervention ideas were collated, summarised and prioritised. A document containing interventions, implementation barriers and risk factors was developed with the MIHSF and distributed to all levels of the industry. The thesis reflects on the effectiveness of an industry-level participative ergonomics approach to the achievement of the study aims, notably the identification of contextual risk factors and interventions for MSD.

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