Comparison of working conditions and health among dairy farmers in southern Sweden in over a 25-year period

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1. Background
In recent decades, rationalisation of dairy production in Sweden has accelerated, resulting in a change in working conditions and exposure to risk factors among dairy farmers (Pinzke, 2003).

2. Purpose
To monitor working conditions and health among dairy farmers in 2013 by repeating a mail survey of dairy farmers in the Scania region of southern Sweden, using the same method of collecting data on perceived musculoskeletal disorders (MSDs) and working conditions employed in previous surveys conducted in 1988 and 2002 (Pinzke, 2003).

3. Materials and Methods
All dairy enterprises in Scania (total 419) registered in the Swedish Board of Agriculture Farm Register (LBR 2013) were sent two copies of a questionnaire. Responses were received from 232 enterprises (55.4%), of which those from 247 dairy farmers (75% men, 25% women) in 199 enterprises are included in this study.

4. Results
Compared with the female dairy farmers surveyed, male farmers were on average seven years older (\( \bar{x} = 53.5, 46.3; p=0.000 \)), had worked 11 years more as a dairy farmer (\( \bar{x} = 32.6, 21.8; p=0.000 \)) and worked six hours more per week (\( \bar{x} = 43.9, 37.9; p=0.016 \)).

Both male and female farmers had increased their weekly hours in 2013 compared with 2002 (males \( \bar{x} = 43.9, 40.7; p=0.016 \); females \( \bar{x} = 37.9, 33.9; p=0.055 \)).

Each male milked on average 30 cows in 1988, 44 cows in 2002 and 86 cows in 2013. The increase between years was significant (\( p=0.000 \) and \( p=0.000 \), respectively). The corresponding number of cows milked by female farmers in 1988, 2002 and 2013 was 29, 60 and 102, respectively (difference \( p=0.000 \) and \( p=0.000 \), respectively).

In 1988, almost all farmers used tethered systems and only 4.1% of male farmers worked with a loose-housing system. This figure increased to 25.9% in 2002 and 54.4% in 2013 (\( p=0.000 \) and \( p=0.000 \), respectively). The corresponding increase for the female farmers was from 1.8% in 1988 to 28.5% in 2002 and 66.1% in 2013 (\( p=0.000 \) and \( p=0.000 \), respectively). Of the farmers who stated that they used loose-housing systems, 50.7% had a robotic milking system.

In 2013, 79.0% of male and 88.5% of female farmers reported MSDs on some occasion, especially in the lower back, shoulders and knees for men and in the shoulders, lower back and wrists/hands for women. However, there was no statistical change compared with the frequency of MSD symptoms in 2002 (\( p=0.214 \) and \( p=0.812 \) for males and females, respectively).

In 2013, there was a tendency for younger dairy farmers (≤35 years) to report MSD symptoms more frequently than younger farmers in 2002, especially in the shoulders (\( p=0.081 \)), elbows (\( p=0.039 \)), lower back (\( p=0.084 \)) and feet (\( p=0.095 \)).
The males who worked with robot milking systems in 2013 indicated less discomfort in the shoulders (p=0.091) than men who did not work with robotic systems. The corresponding females also indicated fewer problems in the lower back in 2013 (p=0.013).

Approximately 17% of all dairy farmers reported health problems from working in tethered systems, compared with 9% in loose-housing systems. Common symptoms were asthma, allergies and rashes, and respiratory system disorders such as sneezing, coughing and colds. The dairy farmers also reported suffering from fatigue and stress.

In 2013, 40.8% of those working with tethered systems had an accident, compared with 30.7% in loose-housing systems. Animal-related injuries dominated, e.g. kicking, trampling, crushing and butting by cows. Fall injuries also occurred in both systems.

Farmers derived most satisfaction from working with animals and milking (tethered systems) and working with animals and calves (loose-housing systems).

Keywords
Musculoskeletal symptoms, survey, physical exposure, ergonomics, agriculture, dairy farming.

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References