Health related work productivity loss in young Australian workers

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1. Introduction

Musculoskeletal pain and psychological conditions are experienced by many young workers. The effect of musculoskeletal pain on its own or together with depression/anxiety on the work productivity of young workers is not well documented. The study aimed to provide detailed estimates of work productivity loss related to absenteeism and presenteeism in young Australians and the effect of musculoskeletal pain on work productivity loss.

2. Methods

The longitudinal Raine Study has collected information on work productivity and health conditions of participants at 23 years of age (n=520). Work productivity loss was measured using the validated World Health Organisation's recommended Health and Work Performance Questionnaire (HPQ) (Kessler et al., 2003). Health conditions were current self-reported health professional diagnosed health conditions.

Three types of productivity loss data were available: absenteeism due to health reasons, presenteeism due to any other reason (excluding vacation) and presenteeism. Absenteeism was calculated as hours lost per worker per year from full day and part day self-reported absences over the past four weeks, the average working hours per day and assuming 48 working weeks a year. Presenteeism was calculated as hours lost per worker per year by combining average hours worked with job performance rating. Cost modelling was based on salary conversion methods using a human capital approach which expresses productivity loss as the product of work time and salary.

Indirect attribution from cross-sectional data was used to quantify the association between health conditions and the different measures of work productivity loss using negative binomial regression. Estimates of work-related musculoskeletal pain were applied to 2011 Australian Census data to provide national estimates for 23 year old workers.

3. Results

3.1 Sample

Among the first 520 participants who completed the 23-year follow up, 84% (n=438) were working. Among these 438 workers, 19 had missing data on working hours. Therefore, these preliminary results are from 419 workers. Further analyses will be conducted in mid 2015 with full cohort data.

About 41% (n=170) were working 19 to 38 hours a week and 32% (n=132) were working 19 hours or less. There were statistically significant differences in working hours by sex (Chi-square=16.27, p<0.01). The most common occupations were Clerical and administrative workers and Sales workers (18% each).

3.2 Prevalence and cost of absenteeism and presenteeism

Absenteeism for health reasons and for any other reason over the past four weeks was reported by 30% and 60% of participants respectively. Presenteeism over the past 4 weeks was reported by 93% of participants but only 14 (3%) reported high presenteeism (rating of work performance ≤5/10).

On average, participants reported a loss of 48 hours per year from work absence for health reasons, a loss of 168 hours per year due to absenteeism for any other reason (excluding vacation) and a loss of 280 hours per year due to presenteeism. The combined mean annualised cost of lost productivity (both types of absenteeism + presenteeism) was estimated as $17 622 per worker per year (median=$ 11 831).
3.3 Comparison by sex and occupation

There were no significant differences by sex for all three productivity loss measures. There were no statistically significant differences by occupation for the two absenteeism measures (Machinery operators and drivers were excluded due to small sample size). However, there were statistically significant differences in mean hours lost due to presenteeism by occupation, $F (5,374) = 723, p < .001$. Post-hoc comparisons showed Technicians and trades workers had significantly higher mean annualised hours lost from presenteeism than all other occupations. Figure 1 shows loss productivity by occupation.

![Diagram showing mean annualised hours lost per worker due to loss in productivity by occupation.](image)

Figure 1. Mean annualised hours lost per worker due to loss in productivity.

3.4 Impact of back or neck pain on absenteeism due to health reasons

Current back or neck pain was reported by 16% of working Raine participants. Current anxiety or depression was reported by 14%. About 4% reported both back or neck pain and anxiety or depression.

Having back or neck pain was associated with significantly greater hours lost from health related absenteeism (1.5 times) after accounting sex and occupation. Those with comorbid spinal pain and psychological distress had 2.3 times the rate of absenteeism from health reasons than those without both health conditions. There were no significant associations between having any health condition and absenteeism due to any other reason and presenteeism.

The estimated marginal means for health related absenteeism for Raine workers with back or neck pain was 55 hours per year compared to 38 hours per year for those without back or neck pain, equating to an extra cost of $663 per worker per year. Nationally, 23 year olds working with back or neck pain were estimated to cost Australia $20 million per year in health related absenteeism.

4. Discussion

In young Australian workers absenteeism and presenteeism are significant problems. Back or neck pain alone and back or neck pain together with anxiety or depression has a significant negative impact on the absenteeism of young workers. This study confirms the findings from another Australian study (WORC study) using the HPQ that health conditions had a significant impact on productivity loss. However, the WORC study did not present estimates by age. Therefore, this study provides the first estimates for productivity loss among young workers in Australia.

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References
