

Presentation Title	Place in Schedule
Occupational injury and employment duration: an analysis of newly hired manufacturing workers	Concurrent Session 3.6 <i>Day 2 – Wednesday</i> <i>May 9th, 2018</i> <i>4:00 – 5:15pm</i>
Description of Presentation	Presenter Name(s) And Credentials
<p>In general, the risk of occupational injury decreases as employment duration increases. A reasonable hypothesis, therefore, is that employees who experience an occupational injury during the early stages of employment may be more likely to leave an organization. However, surprisingly few studies have explored occupational injury as a predictor of employment duration, and the results have been mixed. We performed an analysis of all newly hired production employees of a large manufacturing company. A cohort of employees hired from 2012-2016 was identified using the employer's human resources database (N=3765). Occupational injury information from the same time period was extracted from a separate database maintained by an on-site occupational health center.</p> <p>The dependent variable was duration of employment, dichotomized as (i) working <60 days or (ii) working ≥60 days. The 60-day threshold was based on the employer's accounting of the average duration of employment required to recover training costs. The primary independent variable was a first-time visit to the occupational health center within the first 60 days of employment, categorized as (i) no visit, (ii) a visit within 1-20 days, or (iii) a visit within 21-60 days. A secondary independent variable incorporated the nature of injury, classified as repetitive strain, acute sprain/strain, or other occupational injury types. Covariates</p>	<p>Nathan Huizinga <i>University of Iowa, Department of Occupational and Environmental Health</i></p> <p>Nathan Fethke, PhD, CPE <i>University of Iowa, Department of Occupational and Environmental Health</i></p>

included demographics (e.g., age, gender, and race/ethnicity), shift placement, and nature of assigned job (e.g., assembly).

Incidence rates of first-time visits were calculated (i) across the full study period and (ii) for a reduced period that included only the first 60 days of employment. Logistic regression was used to estimate adjusted associations between the primary/secondary independent variables and the dependent variable.

Of the 3765 employees, 1184 (31.5%) worked less than 60 days. About two-thirds were male, about half were white/Caucasian,

and the overall mean age was 33.8 ± 10.8 years. During the full study period, 1105 first-time visits to the occupational health center

were recorded with an overall incidence rate (IR) of 47/100 person-years (PY). The IR for repetitive strain was 18/100PY. Of the

1105 first-time visits, 408 occurred within the first 60 days of employment with an overall IR of 85/100PY and an IR for repetitive

strain of 36/100PY. Employees who visited the occupational health center in the first 20 days of employment were more likely to terminate prior to the 60-day threshold (adjusted odds ratio: 1.7; 95% confidence interval: 1.3-2.4). Associations were elevated for

all nature of injury categories.

Overall, the results suggest that experiencing an occupational injury (and repetitive strain, in particular) within the first 20 days of

employment is associated with early termination. Our results may not be generalizable to all manufacturing enterprises, and we do

not make a distinction between voluntary and involuntary termination. However, the results indicate that employers should

examine policies and practices to minimize the burden of injury among new employees and reduce turnover. In the case of the

study facility, an extended or modified work hardening program could maximize new employees' adaptation to the physical

demands of manufacturing work.