Work-related accident absence: A comparison between shift and non-shift workers in Belgium. Findings from the fifth European working conditions survey

Hanan Alali[1], Lutgart Braeckman[2] , Magd Abdel Wahab[1], Tanja Van Hecke[3], Bart De Clercq[2], and Heidi Janssens[2]

[1]Department of Electrical Energy, Metals, Mechanical Construction and Systems, Faculty of Engineering and Architecture , Ghent University
[2]Department of Public Health, Faculty of Medicine and Health Sciences, Ghent University
[3]Department of Industrial Technology and Construction, Ghent University.
Hanan.Alali@Ugent.be

Objective

The fast growth of non-standard working arrangements in advanced countries highlights the importance of studying the influence of non-standard work arrangements indicators on employee's health and safety.
Our study purpose is to investigate whether or not Belgian shift workers have more absence due to work accidents than workers from regular daytime schedules, using a representative Belgian sample and taking into account several sociodemographic and work characteristics.

Study design

Organization	Questionnaire	Sample number
Eurofound	5th European working condition survey (EWCS) 2010	From 43816 persons in EWCS only 3343 workers included

For the purpose of this analysis, the analytical sample was restricted to a subgroup of 3343 respondents from Belgium, who were all employed workers.

Results

Characteristics of the study population (n =3343)

Individual and work-related factors	Total study sample n (%)
Mean age / yr (SD)	39.42 (10.91)
Gender	
Male	1769 (52.9)
Female	1574 (47.1)
Work-related accident absence	
No	1973 (88.3)
Yes	262 (11.7)
Contract type	
Precarious contract	428 (13.1)
Permanent contract	2847 (86.9)
Long hours	
Long hours	202 (6.1)
Normal hours	3087 (93.9)
Multiple jobs	
No	3026 (90.9)
Yes	303 (9.1)
Shift work	
No	2815 (84.4)
Yes	520 (15.6)

Calculated according to the percentage of the valid count

Odds ratios OR and 95% confidence intervals [95% CI] for work-related accident absence from multivariate logistic regression model with non shift workers as reference group.

Model 3	
Shift work Yes Vs.no[c]	1.546 [1.074- 2.224]*
Gender Men Vs. women [c]	0.752 [0.561- 1.007]
Age	1.014 [0.996- 1.032]
Self-rated health Bad Vs.good[c]	2.153 [1.531- 3.028]*
Education Low Vs. high [c]	2.420 [1.044- 5.607]*
Work experience (Continuous)	0.986 [0.966- 1.006]
Company size Small Vs. large [c]	0.739 [0.442- 1.236]
Economic activity Construction Vs. services[c]	1.866 [1.119- 3.111]*
Overall fatigue Yes Vs. no[c]	1.263 [0.905- 1.763]
Sleep difficulties Yes Vs. no[c]	0.896 [0.614- 1.308]
Risk information Not well informed Vs. well informed [c]	1.194 [0.799- 1.784]
Physical exposure (PH) Yes Vs. no[c]	0.748 [0.535- 1.045]
Chemical exposure (CH) Yes Vs. no[c]	1.211 [0.857- 1.711]
Biological exposure (BL) Yes Vs. no[c]	0.693 [0.463- 1.037]
Biomechanical exposure (BM) Yes Vs. no[c]	1.670 [1.225- 2.277]*

Model 3: adjusted for socio-demographic factors and, in addition, for all work-related factors.
The proportion of the explained variance of the multivariate model is 10.7 % = 0.107 (Nagelkerke R Square) for work-related accident absence.
C: reference category

Conclusions

- Shift work was significantly associated with work- related accident absence.
- To reduce the burden of occupational injuries, not only risk reduction strategies and interventions are needed but also policy efforts should be undertaken to limit shift work.
- These findings could be used as an important element in creating and implementing health and safety policies at the Belgian and international levels.

Presented at the) 13th edition of Knowledge for Growth (KFG) Flanders Bio's annual life sciences Conference", taking place on May 18, 2017 in Ghent, Belgium.

The authors acknowledge the European Foundation for the Improvement of Living and Working Conditions as the original data creator. Also, the first author wishes to thank Al-Baath University for the financial support and The Ministry of High Education in Syria for the research grant.