

# Determinants of Sick Leave Duration Following Occupational Injuries among Workers in the County of Gävleborg, Sweden

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## Abstract

**Background:** Occupational injuries continue to add to the global burden of injuries. Recent global estimates show that up 317 million workers were injured in accidents at work that resulted in absence from work of four days or more. Whereas sick leave is important for rehabilitation and recovery, the duration of sick leave and consequent return to work is of concern in order to prevent negative outcomes. There is therefore a need to examine factors associated with sick leave duration among injured workers for effective rehabilitation. This study aimed to investigate the determinants of leave sick duration following occupational injuries.

**Method:** The Swedish National Working Environment Agency keeps a record of all cases of occupational injuries requiring at least one day sick leave day and reported to Swedish Social Welfare Security Agency. The present study is register based using data from a total of 5291 cases of occupational injuries that occurred in the county of Gävleborg, Sweden between 2007 and 2012.

**Result:** Sick leave longer than two weeks was highest for the self-employed and temporary workers although injury frequency was low for both groups. Fall injuries and injuries involving slip, trip and snapping or breaking of an object were more likely to lead to sick leave longer than two weeks. Shorter sick duration was observed among injured workers in the health and manufacturing sectors.

**Conclusions:** Possible reasons for the observed results and the need for individual based rehabilitation process



Male	3251	5291	61.4
Female	2040		38.6
Cause of Injury			
Loss of control			
Fall			
Movement involving load			
Slip/snapping/splitting/breaking of an object			
Violence			
Movement not involving load			
Electricity/fi©			

self-employed and their family members (72%). All of the figures reached statistical significance.

Variable

Sick leave longer than 14 days

Transport & storage	255	104	40.5	
Accommodation & Food service activities				
Information and communication	362	181	50	
Financial insurance activities	74	31	41.9	
Real estate				
Professional/scientific/technical activities	15	5	33.3	
Administrative & support services	12	0	0	
Public administration/compulsory social security	75	41	54.7	
Education	64	23	35.9	
Human health and social work				
Arts/entertainment/recreation & other services	254	104	40.9	
	218 84 38.5			
	392 133 33.9			
	964 327 33.9			
	90 42 46.7			
Employment status				
		36	72	0.000
		1667	38.5	
		9	19.5	
		286	37.8	
Self-employed and family members	50			
Permanent employment	4331			
Student	86			
Temporary	773			

**Table 2** Proportions of sick leave duration longer than two weeks by demographic factors, occupational sector and cause of injury

Adjusted odds ratios for determinants of length of sickness absence are presented in Table 3. The results show that the odds of sickness absence longer than fourteen (14) days increased with age (<20yrs=0.214; 20-29=0.397; 30-39=0.575; 40-49=0.709; 50-59=0.778; 60 and above=1.000). Compared to females, injured male workers were less likely to be away from work for periods longer than four days (OR=0.783). There was a twofold odds for longer sickness absence for injuries due to fall (OR=2.020) and Slip/snapping/splitting/breaking of an object (2.078).

With regards to occupational sector, being a worker in the manufacturing or healthcare sector was a significant predictor of sick leave duration with workers in these sectors having lower odds for sick leave longer than two weeks (0.558; p=0.011 and 0.592; p=0.025) respectively. The sectors with the highest odds of longer sick leave were mining (1.833), agriculture (1.246), transport (1.153) and real estate (1.136) however, these did not reach statistical significance. It can also be seen from Table 3 that the self-employed, their family members and

temporary workers were more likely to have been on sick leave longer than 14 days.

Variable	Sick leave longer than 14 days		
	Adjusted OR	CI for OR	P-value
Self-employed and family members	2.020	1.000-4.080	0.048
Temporary	1.153	0.600-2.200	0.650
Student	0.783	0.300-2.000	0.620
Permanent employment	0.558	0.250-1.250	0.011
Real estate	1.136	0.500-2.500	0.780
Transport	1.153	0.500-2.500	0.780
Agriculture	1.246	0.500-3.000	0.250
Mining	1.833	0.700-4.500	0.180
Fall	2.078	1.000-4.080	0.048
Slip/snapping/splitting/breaking of an object	2.020	1.000-4.080	0.048

be seen from Table 3 that the self-employed, their family members and

Cause of Injury			
Loss of control	1.467	0.861 – 2.497	0.158
Fall	2.020	1.185 – 3.444	0.010
Movement involving load	1.642	0.934 – 2.889	0.085
Slip/snapping/splitting/breaking of an object	2.078	1.169 – 3.695	0.013
Violence	1.649	0.955 – 2.848	0.073
Movement not involving load	1.348	0.784 – 2.320	0.280
Electricity/fire/Explosion	1.172	0.501 – 2.742	0.714
Leakage/Radiation	1.000		0.000
Industry			
Agriculture/fishing/logging	1.246	0.685– 2.268	0.471
Mining	1.833	0.447 – 7.510	0.400
Manufacturing	0.558	0.356 – 0.873	0.011
Electricity/gas/stea/airconditioning	0.613	0.213 – 1.769	0.366
Water supply/sewage/waste management/remedial	0.838	0.405 - 1.731	0.632
Construction	0.911	0.566 - 1.467	0.701
Wholesale/retail trade/repair of vehicles&motorcycle	0.829	0.501 – 1.371	0.464
Transport & storage	1.153	0.708 – 1.878	0.567
Accommodation & Food service activities	0.989	0.518 – 1.886	0.973
Information and communication	0.468	0.145 – 1.505	0.202
Financial insurance activities	0.000	0.00	0.999
Real estate	1.136	0.599 – 2.154	0.695
Professional/scientific/technical activities	0.657	0.330 – 1.309	0.232
Administrative & support services	0.784	0.474 – 1.297	0.344
Public administration/compulsory social security	0.741	0.438 – 1.254	0.265
Education	0.683	0.419 – 1.116	0.128
Human health and social work	0.592	0.374 – 0.938	0.025
Arts/entertainment/recreation & other services	1.00		0.000
Employment Type	2.172	1.112 – 4.240	0.023
Self-employed and family members	0.875	0.733 – 1.045	0.140
Permanent employment	0.420	0.178 – 0.987	0.045
Student	1.000		0.005
Temporary			

**Table 3** Adjusted odds ratio for sick leave duration: adjusted for age.



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