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Employment of people with a history of sickness absence[a]

by

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Abstract

This register-based follow-up study focuses on the association between workplace characteristics and recruitment of people with a history of sickness absence. The aim was to study whether recruitment differs with regard to workplace sector, number of employees, gender composition, educational level and average age, and whether these workplaces recruit differently with regard to gender and diagnosis. Swedish workplaces with five employees or more in 2012 were chosen (n = 138 081). The results showed that workplaces most likely to recruit people with a history of sickness absence were those characterized by being in the public and non-profit sector, being female-dominated, having few employees, a high proportion of low educated employees and a high average age. The likelihood of recruiting people with different diagnoses was, with a few exceptions, similar between various types of workplaces. Recruitment of men and women with a history of sickness absence was similar between the different workplaces.

Keywords: Employment, sickness absence, workplace, register-based
JEL-codes: [J14; J15; J17; J23; J28]

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1 Introduction

An inclusive working life is a priority for many Western nations. Inclusive working life can be defined such that as many people as possible are encouraged and allowed to enter, develop and remain in employment (SOU 2009:93). The so called "work strategy" (*Arbetslinjen*) (Junestav 2004), that work is preferable to passive benefit receipt, is central to Swedish welfare policy and is in line with the idea of an inclusive working life (Socialförsäkringsutredningen 2005). An expression of the emphasis on the work line is the fixed time limits introduced in 2008 in the Swedish health insurance system, which means that workers on sick leave who cannot return to their existing employers within six months will have to apply for a new job. A prerequisite for this reform to work is that individuals can find suitable work and that employers are willing to hire those who cannot return to their former employer because of poor health.

Health and work are intrinsically linked, and many studies support the notion that work, and employment status affects health (Virtanen et al. 2005; Norstrom et al. 2014). The opposite notion, that health affects work and employment status, is less studied. Some exceptions are Dawson et al. (2015) who reported that poor mental health predicted selection to temporary employment, and Wagenaar et al. (2012), who reported that workers with lower health and work ability are at risk of ending up in precarious temporary employment or unemployment.

The fact that the working population is healthier than the general population, a phenomenon named "healthy worker effect" (HWE) (Wagenaar et al. 2012) is well known in occupational epidemiology. In accordance with HWE, the proportion employed is lower among those with rather than those without disabilities. Among the Swedish population aged 16–64, 78 per cent were employed in 2015. Comparable figures for those reporting any health problems such as motion reduction, mental impairment and asthma/allergy were 62 per cent, and if this poor health contributed to a reduced work ability the employment rate was 54 per cent (Statistics Sweden (SCB) 2016).

HWE can be a result of a "healthy hire effect", i.e. that healthy workers are more likely to be hired for employment than those who are less healthy.

It can also be a result of a "healthy worker survivor effect", i.e. that less healthy workers are more prone to leave their employment and end up in non-employment (Heederik 2006). Health may thus be a determinant of turnover. Focus here will be on the healthy hire effect by studying hiring of individuals who have experienced sickness absence.

The causes of a healthy hire effect may be linked to individual conditions (supply side) or to conditions related to the employer (demand side) (Chan et al. 2010). In the "World Report on Disability" (WHO and The World Bank 2011), it is stated that reasons of both supply and demand explain the lower employment rate among people with rather than without disabilities. On the supply side, those with disabilities may have a higher cost of working, because more effort may be required to reach the workplace and to perform the work. If disability allowances are high, employment may result in a loss of benefits whose value is greater than the wages that could be earned. On the demand side, the employer may consider the market wage to be lower if the health condition makes the person less productive. This may in turn be due e.g. to the fact that job seekers, because of poor health, have disabilities that require adjustments at the workplace.

Kaye and others (2011) found that three common reasons for employers' reluctance to hire people with impaired function were: lack of knowledge about how to deal with and adapt work to people with disabilities, fear of the costs that may arise in connection with the adaptation of the work and fear of legal liability. Apart from the fact that conditions linked to disabilities can affect employers' willingness to hire, previous sick leave for a jobseeker can in itself affect this will as it can be interpreted as a lower job commitment.

In a study of Swedish employers' recruitment behaviour, data were analyzed in an experimental design involving 426 employers. The results showed that the history of sickness absence from a job seeker seems to affect employers' inclination to employ (Eriksson et al. 2012). The results also showed small differences between different employers in terms of sector, number of employees and gender distribution. However, larger companies appeared to be more likely to hire groups who are less attractive in the labour market than smaller companies.

In order to further elucidate the likelihood that individuals with a history of sickness absence are employed, the present study analyses recruits at workplaces in Sweden using register-based data.

Few studies have focused on what characterizes those workplaces where those that have been on sick leave are hired. A previous study from our research group showed a strong selection of individuals with experience of many days of sickness absence to workplaces that already had high sickness absence (Nordstrom et al. 2016). Results from the US showed that large companies and public organizations were more likely to hire people with poor health and reduced work ability than were smaller companies and private organizations (Domzal et al. 2008).

Moreover, hiring of people who have been on sick leave may differ with regard to gender. Studies of recruitment of men and women suggest that women may face discrimination (SOU 2014:30; Carlsson and Eriksson 2017). It is possible that this also applies to the employment of people with poor health. Therefore, it is interesting to study gender patterns more closely. Recruitment may also differ with regard to diagnosis. In a review of employers' attitudes of employing people with disabilities, it was found that workers with physical disabilities were viewed more positively than workers with intellectual or psychiatric disabilities (Hernandez and Keys 2000).

A better understanding of employment patterns of people with a history of sick leave on the labour market can help shape labour market and social policy measures so as to include people who have disabilities in working life. Thus, the aim of this study is to investigate whether the recruitment of people with a history of sickness absence differs with regard to workplace sector, number of employees, gender composition, educational level and average age, and whether these workplaces recruit differently with regard to gender and diagnosis.

2 Data and methods

2.1 Study design

In the study we analyse the flow between two years (2011 and 2012) of how individuals with different sick leave (defined year 1) are recruited to workplaces with different characteristics (defined year 2).

2.2 Sample

In this register-based follow-up study, the sample was selected in two steps. First, Swedish workplaces with five employees or more in 2012 were chosen. Information on workplace level was based on data from the administrative registers from Statistics Sweden, to whom employers in Sweden are required to report annually with information about salary and workplace identification numbers for all employees. A workplace is defined as any address, property or group of properties where some sort of economic activity takes place, with at least one employee working for at least 20 hours per week. A company can have several workplaces, but a workplace can only belong to one company. Individuals with a workplace identification number, which is mainly based on salaries paid in November, were defined as employees. The limit of five employees was chosen, because smaller companies often employ the owner and family members, which may affect recruitment strategies.

In the next step, recruits to the workplaces were identified. Employees who had a workplace identification number in 2012 which differed from the one they had in 2011 were defined as “recruits”. Those that had the same workplace identification were categorized as “stable employees”. Among recruits in 2012, both those who had a workplace recorded in 2011 (job change) and those with no such recording in 2011 were included. Among employees in the sample, 23,369 were employed at workplaces where all employees had a new workplace identification number (13,365 women and 10,004 men). Having a new identification number indicates a new owner of the company rather than new employees being recruited. They were, therefore, categorized as “stable employees”.

In total, there were 467,112 workplaces in Sweden in 2012 which employed 4,419,833 people (Table 1). Thirty per cent (n=138,081) of the workplaces had five employees or more, and 89% (n=3,916,591) of those employed worked at these workplaces. Among the work places having at least five employees or more 118,311 had at least 1 recruit.

Table 1 Number of workplaces and employees in 2012, men and women employed

	Workplaces (n)	Number of employees (n)	Men (n)	Women (n)
Total	467,112	4,41, 833	2,278,819	2,141,014
With more than 5 employees	138,081	3,916,591	1,965,334	1,951,257

2.3 Variables

2.3.1 Sickness absence

The individuals included in the study were categorized according to their sickness absence in 2011. For this, we used information from The Swedish Social Insurance Agency (SSIA)). To be eligible for such benefits in Sweden, one must be resident in and/or work in Sweden. The employer pays for the first two weeks of sickness absence that is not officially registered. If the sickness absence continues after 14 days, the individual receives sickness benefit from the SSIA. The benefit can be 25%, 50%, 75% or 100%. In this study, data on sickness benefits paid by the SSIA were used as a measure of sickness absence, which means that those with no days of sickness absence may, in fact, include those who had been off work for up to 14 days. We have defined one day of sickness absence to encompass one day with full sickness benefit, or two days with 50% or four days with 25% benefits. Days of sickness absence/year were computed and divided into three categories: 0 days of sickness absence, 1–180 days of sickness absence and 181–365 days of sickness absence.

2.3.2 Workplace properties

In this study we investigate the importance of different workplace properties. We here describe which they are and how they have been measured.

Sector. Data regarding sector were collected from Statistics Sweden's Business Register. Based on the legal ownership and type of activity, companies in Sweden are given sector codes. Originally, ten sectors were identified in the register.

These were reduced to five categories: State (both administration and government-owned companies), Municipal, County council, Private (limited companies and other non-public companies), and non-profit (such as adult educational associations, sports associations, welfare organizations, and student unions).

Workplace size. The number of employees was used to measure workplace size. The number was computed by adding up all of the individuals with the same workplace identities. Based on EU standards, four categories were created: 5–9 employees, 10–49 employees, 50–249 employees, and 250 or more employees.

Gender composition. The workplaces were divided into three groups: male dominated (0–40% women), gender integrated (41–60% women), and female dominated (61–100% women).

Average age. For each workplace, an average age was calculated. The average age of workplaces was divided into quartiles which gave the following age intervals: (1) up to 39,18 years, (2) 39,19-44.18 years, (3) 44,19–51.11 years, and (4) 51,12 years or older.

Educational level. The proportion with the highest educational level of post-secondary school at each workplace was computed. Based on this, the workplaces were divided into three groups: High (33% or less of the employees had secondary school as their highest education), Middle (between 34% and 66% had such education), and Low (more than 66% of the employees had secondary school as their highest education).

Information on education was collected from the Swedish Register of Education. For each individual and each year, the highest attained level of education at any formal institute of education in Sweden is registered. Education is classified according to the Swedish Nomenclature of Education (SUN), which was adjusted from the International Standard Classification of Education (ISCED). Elementary school (≤9 years), Secondary school (2–3 years), and University were the categories used.

2.4 Analysis

The analyzes aim at studying if properties of workplaces are associated with the likelihood that new employees in the workplace had a history of sick leave. This probability is calculated by an odds ratio (OR) with a 95% confidence interval and can take a value between 0 to infinity (Ahlbom et al. 2006). An OR of 2, for example, means that the incidence is twice as large for workplaces belonging to any group (e.g. public sector) compared to a group not included in this group

(e.g. private sector). Both crude and adjusted models are calculated. A crude model ("unadjusted") calculates this likelihood without taking other conditions into account (such as different age, education or gender distribution) that may affect this association. An adjusted model takes into account other such conditions. An association should not be interpreted as the characteristics of the workplace are the reason for recruitment patterns. A causal association is just one of several possible interpretations. Four models were computed:

i. A crude model where the unadjusted likelihood (OR) of recruiting an employee who has experienced sickness absence among workplaces that differ with regard to sector, number of employees, gender composition, educational level and average age was computed. The analyses were stratified by gender.
ii. An adjusted model where the likelihood (OR) of recruiting an employee who has experienced sickness absence among workplaces that differ with regard to sector, number of employees, gender composition, educational level and average age was computed. The workplace properties were adjusted for each other. The individual's age and education were also adjusted for. The analyses were stratified by gender.
iii. An adjusted model similar to 2 above. However, no stratification for gender was performed. Instead gender was adjusted for in this analysis.
iv. An adjusted model similar to 3 above. In this model the analyses were stratified by diagnosis.

2.5 Methodological considerations

The strengths of this study lie in the large sample and panel data, and the fact that data on exposures and outcomes are based on legislation and paid benefits, which ensures validity.

The recording of an individual's workplace is based on the salaries reported by employers to the Swedish Tax Agency. Payments for, e.g. withheld vacancy paid after employment has terminated, which may, if paid in November, give employment status to someone who is not actually in employment. However, such overestimation is likely to be random between individuals and workplaces, and should, therefore, not affect our results. Illicit workers, who are not recorded by the Tax Agency, will not be covered by our information on workplaces.

We do not know the magnitude and distribution of illicit workers. However, we do not believe their occurrence is widespread enough to affect our results.

Our information on sickness absence is based on compensated sickness absence days from the SSIA who compensate from day 15 of the sick period. We therefore lack information on sick absences lasting up to 14 days. This absence is from the second day, mainly compensated by the employer. It may also be compensated in other ways such as through vacation or compensation leave. Some individual's sickness absence may, as a result of this, be misclassified. For example, an employee with 10 compensated days from the employer and no compensation from SSIA will be classified in the group lacking sickness absence. As long as this misclassification is not dependent of the working place the individuals belong to, the results from our analysis are not affected. Otherwise, there is a risk of not estimating true associations. We lack knowledge about how individuals are correctly classified. We do not know whether the misclassification is non-differential or differential.

3 Results

3.1 Stable employees and recruits

During the year 2012, 80% of the male employees and 78% of the female employees were employed at the same workplace as they were the year before (Table 2). Among males recruited in 2012, 16% had changed workplace between 2011 and 2012. Four percent of the recruited males did not have a workplace in 2011. Comparable figures among female recruits were 18% and 5%.

Table 2 Number (n) and proportions (%) of stable employees and recruits in 2012

	Same job	Changed job	No work 2011
Men, n (%)	1,564,687 (80)	320,479 (16)	80,168 (4)
Women, n (%)	1,512,085 (77)	346,653 (18)	92,519 (5)
Total, n (%)	3,076,772 (78)	667,132 (18)	172,687 (4)

The vast majority of employees, both among stable and recruits, lacked days with sickness absence (Table 3). In both these groups, sickness absence was more prevalent among women than men. This difference is mainly due to a higher prevalence among women than men having up to 180 days of sickness absence.

Table 3 Number (n) and proportions (%) of days of absence among stable employees and recruits

		Sickness absence		
		No days, n (%)	1-180 days, n (%)	>180 days, n (%)
Men	Same job	1,461,287 (93)	94,561 (6)	8,557 (1)
	Changed job	302,214 (94)	16,743 (5)	1,522 (1)
	No work 2011	67,996 (96)	2,164 (3)	849 (1)
Women	Same job	1,324,985 (88)	169,369 (11)	17,537 (1)
	Changed job	311,529 (90)	32,342 (9)	2,782 (1)
	No work 2011	80,593 (92)	5,584 (6)	1,395 (2)

The proportion of sick leave in the different workplaces was quite similar. Men's sickness absence was similar with regard to sector, number of employees and gender composition. The proportion of males having had sick absence was somewhat higher for those working in lower educated workplaces than higher educated, and for workplaces with the highest average age than the youngest (Table 4).

Females working at municipal workplaces had a higher proportion (13%) of being absent sick for up to 180 days compared to females working at private workplaces (9%). They also had a higher proportion of such absence among those working in female-dominated workplaces than in male-dominated or gender-integrated workplaces. Similar to males, females working in the youngest workplaces had lower proportions of sickness absence compared to those working in workplaces with a higher average age (Table 4).

Table 4 Number (n) and proportions (%) of sickness absence among men and women at workplaces with different properties

	Sickness absence 2012					
	No days, n (%)		1-180 days, n (%)		>180 days, n (%)	
	Men	Women	Men	Women	Men	Women
Sector						
State	168,799 (94)	143,170 (88)	10,393 (6)	17,900 (11)	1,087 (1)	1,876 (1)
County council	45,915 (94)	165,952 (87)	2,919 (6)	23,200 (12)	264 (1)	2,352 (1)
Municipal	166,909 (92)	488,249 (86)	12,548 (7)	74,126 (13)	1,185 (1)	7,383 (1)
Private	1,292,122 (94)	722,986 (90)	77,545 (6)	71,840 (9)	6,337 (1)	6,251 (1)
Non-profit	47,950 (93)	73,792 (89)	3,217 (6)	8,577 (10)	377 (1)	922 (1)
Number of employees						
250-	412,623 (94)	371,640 (88)	24,854 (6)	46,458 (11)	2,277 (1)	4,894 (1)
50-249	555,240 (93)	607,553 (88)	36,653 (6)	77,520 (11)	3,593 (1)	8,268 (1)
10-49	668,303 (94)	594,921 (89)	41,255 (6)	69,685 (10)	3,920 (1)	7,106 (1)
5-9	195,289 (94)	142,975 (91)	10,698 (5)	13,631 (9)	1,138 (1)	1,436 (1)
Gender composition						
Female dominated	226,538 (94)	1,015,425 (87)	13,523 (6)	135,384 (12)	1,542 (1)	14,505 (1)
Male dominated	1,066,192 (93)	192,061 (90)	72,038 (6)	19,592 (9)	1,600 (1)	1,785 (1)
Gender integrated	537,451 (95)	508,477 (90)	27,840 (5)	52,203 (9)	3,081 (1)	5,405 (1)
Educational level [1]						
High	330,334 (96)	537,651 (89)	13,873 (4)	63,033 (10)	1,336 (0)	6,410 (1)
Middle	286,824 (95)	366,288 (89)	12,903 (4)	43,308 (11)	1,217(0)	4,327 (1)
Low	1,213,665 (93)	812,605 (88)	86,641 (7)	100,927 (11)	8,347 (1)	10,965 (1)
Average age [1]						
1 (oldest)	270,335 (92)	313,892 (87)	20,944 (7)	42,357 (12)	2,524 (1)	5,136 (1)
2	383,151 (93)	463,481 (87)	25,496 (6)	61,918 (12)	2,532 (1)	6,739 (1)
3	540,300 (94)	438,884 (88)	34,211 (6)	55,107 (11)	3,034 (1)	5,592 (1)
4 (youngest)	637,669 (95)	500,832 (91)	32,809 (5)	47,912 (9)	2,838 (0)	4,237 (1)

[1] Educational level and average age aggregated at the workplace.

Non-profit workplaces had the highest proportion of male recruits compared to workplaces in other sectors (Table 5). Eighteen per cent of these recruits had changed job, while five per cent did not have a job in the preceding year. Only 15 per cent (12% + 3%) of male employees at the largest workplaces were recruits compared to smaller workplaces, where comparable numbers varied between to 21 per cent to 22 per cent. Female-dominated workplaces had a somewhat higher proportion of recruits among male employees compared to male-dominated and gender-integrated. The youngest workplaces had a high proportion of male recruits compared to older workplaces.

Among women employed by county councils in 2012, only 14 per cent were recruits (Table 5). Comparable figure for women in the private sector was 25 per cent (20% +5%). Women at the largest workplaces (250+ employees) had, like men, a lower proportion of recruits than smaller workplaces. Women at male-dominated workplaces have, also like men, a somewhat smaller proportion recruits than other workplaces. Among women at the youngest workplaces in 2012, one third of the employees were recruits (Table 5).

Table 5 Number (n) and proportions (%) of stable employees and recruits in regard to workplaces with different properties

	Stable		Job change		No work 2011	
	Men	Women	Men	Women	Men	Women
Sector						
State	150,244 (83)	132,949 (82)	25,339(14)	25,566 (16)	4,696 (3)	4,431 (3)
County council	40,468 (82)	164,895 (86)	7,514 (15)	22,985 (12)	1,116 (2)	3,624 (2)
Municipal	142,993 (79)	454,117 (80)	30,485 (17)	91,449 (16)	7,164 (4)	24,192 (4)
Private	1,117,908 (81)	608,186 (76)	215,667 (16)	156,981 (20)	42,429 (3)	35,910 (5)
Non-profit	39,812 (77)	65,966 (79)	9,418 (18)	13,916 (17)	2,314 (5)	3,409(4)
Number of employees						
250-	374,736 (85)	352,492 (83)	54,081 (12)	58,128 (14)	10,937 (3)	12,372 (3)
50-249	474,402 (80)	539,640 (78)	98,567 (17)	121,472 (18)	22,517 (4)	32,229 (5)
10-49	552,894 (78)	502,210 (75)	131,301 (18)	134,848 (20)	29,283 (4)	34,654 (5)
5-9	162,333 (78)	117,537 (74)	36,521 (18)	32,200 (20)	8,271 (4)	8,305 (5)
Gender composition						
Female dominated	180,693 (75)	905,791 (78)	48,702 (20)	204,975 (18)	12,208 (5)	54,548 (5)
Male dominated	940,151 (82)	170,819 (80)	169,222 (15)	34,886 (16)	35,157 (3)	7,733 (4)
Gender integrated	442,442 (78)	434,281 (77)	102,329 (18)	106,561 (19)	23,601 (4)	25,243 (5)
Educational level [1]						
High	277,660 (80)	489,801 (80)	57,814 (17)	99,555 (16)	13,443 (4)	19,732 (3)
Middle	239,684 (79)	325,316 (78)	51,593 (17)	73,227 (18)	11,676 (4)	16,641 (4)
Low	1,046,979 (80)	696,638 (75)	210,811 (16)	173,724 (19)	54,880 (4)	56,029 (6)
Average age [1]						
1 (oldest)	245,930 (84)	298,060 (83)	38,750 (13)	51,668 (14)	9,123 (3)	1,165 (3)
2	348,400 (85)	440,453 (83)	52,473 (13)	74,511 (14)	10,306 (3)	17,174 (3)
3	480,524 (83)	394,115 (79)	80,289 (14)	83,724 (17)	16,732 (3)	21,744 (4)
4 (youngest)	245,930 (84)	298,060 (83)	38,750 (13)	51,668 (14)	9,123 (3)	1,165 (3)

[1] Educational level and average age aggregated at the workplace.

3.2 Sickness absence among recruits to workplaces with different properties

Workplaces in the municipal and non-profit sector recruit men and women who the year before recruitment had been on sick leave, to a greater extent than workplaces in other sectors (Table 6). Workplaces with the highest average age also had a higher proportion among both male and female recruits who had been on sick leave the year before being hired. Proportions with a history of sick leave among male and female recruits did not differ with respect to the number of employees and the level of education at the workplace (Table 6). Proportions that had been on sick leave among women recruited to female-dominated workplaces were slightly higher compared to male-dominated and gender-integrated workplaces. For men there were hardly any differences.

Table 6 Number (n) and proportions (%) of sickness absence among recruits in regard to workplaces with different properties

	Sickness absence 2012					
	No days, n (%)		1-180 days, n (%)		>180 days, n (%)	
	Men	Women	Men	Women	Men	Women
Sector						
State	28,510 (95)	27,039 (90)	1,331 (4)	2,662 (9)	194 (1)	296 (1)
County council	8,227 (95)	23,786 (89)	358 (4)	2,605 (10)	45 (1)	218 (1)
Municipal	35,079 (93)	100,882 (87)	2,318 (6)	13,505 (12)	252 (1)	1,254 (1)
Private	244,627 (95)	177,225 (92)	12,140 (5)	14,166 (7)	1,329 (1)	1,500 (1)
Non-profit	10,919 (93)	15,501 (90)	673 (6)	1,561 (9)	140 (1)	263 (2)
Number of employees						
250-	62,337 (96)	64,210 (91)	24,407 (4)	5,742 (8)	274 (0)	548 (1)
50-249	114,552 (95)	138,139 (90)	5,815 (5)	14,055 (9)	717 (1)	1,507 (1)
10-49	151,231 (94)	152,956 (90)	8,317 (5)	14,876 (9)	1,036 (1)	1,670 (1)
5-9	42,082 (94)	36,810 (91)	2,366 (5)	3,253 (8)	344 (1)	442 (1)
Gender composition						
Female dominated	57,627 (95)	231,573 (89)	2,891 (5)	25,300 (10)	392 (1)	2,650 (1)
Male dominated	192,274 (94)	39,176 (92)	10,907 (5)	3,132 (7)	1,198 (1)	311 (1)
Gender integrated	120,050 (95)	121,128 (92)	5,100 (4)	9,470 (7)	780 (1)	1,206 (1)
Educational level [1]						
High	65,372 (96)	105,719 (90)	2,341 (3)	10,676 (9)	267 (0)	963 (1)
Middle	58,707 (96)	79,722 (90)	2,323 (4)	8,112 (9)	278 (1)	812 (1)
Low	245,790 (94)	206,428 (91)	14,213 (5)	19,129 (8)	1,808 (1)	2,392 (1)
Average age [1]						
1 (oldest)	44,152 (92)	5,453 (88)	3,152 (7)	6,919 (11)	569 (1)	953 (2)
2	59,065 (94)	81,340 (89)	3,286 (5)	9,381 (10)	428 (1)	964 (1)
3	91,578 (94)	94,385 (90)	4,939 (5)	10,010 (10)	504 (1)	1,073 (1)
4 (youngest)	175,407 (95)	160,937 (93)	7,528 (4)	11,616 (7)	870 (1)	1,177 (1)

[1] Educational level and average age aggregated at the workplace.

3.3 Likelihood that a workplace recruits an individual who has been on sick leave

The crude associations show that workplaces within the state, municipal and non-profit sectors had a higher likelihood to recruit men and women with experience of sick leave compared to the private sector (Table 7). Among these workplaces, non-profit organizations had the highest likelihood of employing both men and women with the highest number of days of absence.

The crude analysis also shows that, compared to small workplaces (5–9 employees) middle-sized and big workplaces were less likely to employ individuals with experience of sickness absence.

Compared to gender-integrated workplaces both male- and female-dominated workplaces had a somewhat higher likelihood of employing men and women who have had sickness absence for up to 180 days. There was no difference among workplaces with different gender composition in hiring men that had been on sick leave for more than 180 days in the year preceding recruitment. However, female-dominated workplaces were more likely than gender-integrated workplaces to recruit women with experience of more than 180 days of sickness absence, while male-dominated workplaces were less likely to recruit these women (Table 7).

Table 7 Likelihood (OR) that workplaces hired men and women with previous sickness absence (crude results)

	Men		Women	
	Up to 180 days/year OR (95% CI)	More than 180 days/year OR (95% CI)	Up to 180 days/year OR (95% CI)	More than 180 days/year OR (95% CI)
Sector				
State	0.9 (0.9–1.0)	1.3 (1.1–1.5)	1.2 (1.2–1.3)	1.3 (1.4–1.5)
County council	0.9 (0.8–1.0)	1.0 (0.7–1.4)	1.4 (1.3–1.4)	1.1 (0.9–1.2)
Municipal	1.3 (1.3–1.4)	1.3 (1.2–1.5)	1.7 (1.6–1.7)	1.5 (1.4–1.6)
Non-profit	1.2 (1.1–1.3)	2.4 (2.2–2.8)	1.3 (1.2–1.3)	2.0 (1.8–2.3)
Private	1	1	1	1
Number of employees				
250-	0.7 (0.6–0.7)	0.5 (0.5–0.6)	1.0 (1.0–1.1)	0.7 (0.6–0.8)
50-249	0.9 (0.9–0.9)	0.8 (0.7–0.9)	1.2 (1.1–1.2)	0.9 (0.8–1.0)
10-49	1.0 (0.9–1. 0)	0.8 (0.7–0.9)	1.1(1.1–1.1)	0.9 (0.8–1.0)
5-9	1	1	1	1
Gender composition				
Female dominated	1.2 (1.1–1.2)	1.0 (0.9–1.2)	1.4 (1.4–1.4)	1.2 (1.1–1.2)
Male dominated	1.3 (1.3–1.4)	1.0 (0.9–1.5)	1.0 (1.0–1.1)	0.8 (0.7–0.9)
Gender integrated	1	1	1	1
Educational level [1]				
High	0.6 (0.6–0.7)	0.6 (0.5–0.6)	1.1 (1.1–1.1)	0.8 (0.7–0.8)
Middle	0.7 (0.6–0.7)	0.6 (0.6–0.7)	1.1 (1.1–1.1)	0.9 (0.8–1.0)
Low	1	1	1	1
Average age [1]				
1 (oldest)	1.7 (1.6–1.7)	2.6 (2.3–2.9)	1.7 (1.7–1.8)	2.4 (2.2–2.6)
2	1.3 (1.2–1.4)	1.5 (1.3–1.6)	1.6 (1.5–1.6)	1.6 (1.5–1.8)
3	1.3 (1.2–1.3)	1.1 (1.0–1.2)	1.5 (1.4–1.5)	1.6 (1.4–1.7)
4 (youngest)	1	1	1	1

[1] Educational level and average age aggregated at the workplace.

Workplaces with a high or medium educational level were less likely to employ men with experience of sickness absence than workplaces with low educational level. The workplaces with the highest educational level were, when compared with workplaces with the lowest, also less likely to hire women having had more than 180 days of absence. The likelihood of recruiting women with up to 180 days of absence was slightly higher for workplaces with high and medium educational level than for workplaces with low education (Table 7).

Table 7 also reveals that the likelihood of recruiting men and women that have experienced sickness absence was higher among "older" workplaces than "younger". This was especially pronounced for the recruitment of individuals with most days of sick leave.

The adjusted associations between workplace properties and sickness absence among recruits are shown in Table 8. The higher likelihood among workplaces in the public compared to private sector of recruiting an individual having had sickness absence was more evident as this has become true for workplaces in the county council as well. The higher likelihood found for workplaces in the non-profit sector of recruiting men and women with more than 180 days of absence from the crude analysis, was still evident, but weaker.

When adjusting for workplace properties and individual characteristics, male-dominated workplaces not only had a lower likelihood than gender-integrated ones of recruiting women with sickness absence above 180 days per year but also a comparable group among men (Table 8). Female-dominated workplaces had a bordering significant association in the opposite direction.

The crude analysis shows a higher likelihood among high educated workplaces to recruit women with sickness absence up to 180 days. This association was reversed in the adjusted analysis. In the adjusted analysis, the higher likelihood for the older workplaces to recruit individuals that had been on sick leave is reduced or has become non-significant (Table 8). It is only for recruiting women with most days of absence that this higher likelihood still is evident.

The associations between number of employees and sickness absence among recruits from the crude analysis are not altered in the adjusted analysis (Table 8).

Table 8 Likelihood (OR) that workplaces hire men and women with previous sickness absence (adjusted results*)

	Men		Women	
	Up to 180 days/year OR (95% CI)	More than 180 days/year OR (95% CI)	Up to 180 days/year OR (95% CI)	More than 180 days/year OR (95% CI)
Sector				
State	1.2 (1.1–1.3)	1.5 (1.3–1.8)	1.2 (1.1–1.2)	1.3 (1.1–1.5)
County council	1.3 (1.2–1.5)	1.6 (1.1–2.2)	1.2 (1.1–1.2)	1.1 (0.9–1.3)
Municipal	1.4 (1.3–1.5)	1.2 (1.0–1.4)	1.3 (1.3–1.3)	1.1 (1.0–1.2)
Non-profit	1.1 (1.0–1.2)	1.5 (1.2–1.8)	1.1 (1.0–1.1)	1.5 (1.3–1.7)
Private	1	1	1	1
Number of employees				
250-	0.8 (0.8–0.9)	0.6 (0.5–0.8)	1.0 (0.9–1.0)	0.7 (0.6–0.9)
50-249	1.0 (0.9–1.0)	0.8 (0.7–0.9)	1.0 (1.0–1.0)	0.8 (0.7–0.9)
10-49	1.0 (1.0–1.1)	0.8 (0.7–1.0)	1.0 (1.0–1.1)	0.9 (0.8–1.0)
5-9	1	1	1	1
Gender composition				
Female dominated	1.2 (1.1–1.2)	1.1 (1.0–1.3)	1.2 (1.2–1.2)	1.1 (1.0–1.2)
Male dominated	1.2 (1.1–1.2)	0.8 (0.7–0.8)	1.0 (1.0–1.0)	0.8 (0.7–0.9)
Gender integrated	1	1	1	1
Educational level at workplace				
High	0.7 (0.6–0.7)	0.5 (0.4–0.6)	0.9 (0.8–0.9)	0.7 (0.6–0.8)
Middle	0.7 (0.7–0.7)	0.6 (0.5–0.7)	0.9 (0.9–1.0)	0.8 (0.7–0.9)
Low	1	1	1	1
Average age at workplace				
1 (oldest)	1.0 (1.0–1.1)	1.1 (1.0–1.3)	1.0 (1.0–1.1)	1.3 (1.2–1.5)
2	1.0 (1.0–1.1)	1.0 (0.8–1.1)	1.1 (1.1–1.1)	1.2 (1.1–1.3)
3	1.1 (1.0–1.1)	0.9 (0.8–1.0)	1.1 (1.1–1.2)	1.2 (1.1–1.3)
4 (youngest)	1	1	1	1

[1] Educational level and average age aggregated at the workplace.
* Controlling for workplace properties (sector, number of employees, gender composition, educational level and average age) and individual characteristics (age, education and gender).

An adjusted analysis of the likelihood that a workplace recruit a person that has been on sick leave where gender, instead of being a stratification variable, is adjusted for, (Table 9) does not change previous results in any significant way.

Hiring is probably related to unemployment and other indicators of the current economic state of society. We therefore conducted the corresponding analysis presented in Table 8, with data from 2006/2007 in order to study whether the results are stable over time. The results with data from 2006/2007 give similar results as data from 2011/2012 as to which workplaces hire those who have been on sick leave (results not shown).

Table 9 Likelihood (OR) that workplaces hire a person with previous sickness absence (adjusted results*)

	Up to 180 days/year OR (95% CI)	More than 180 days/year OR (95% CI)
Sector		
State	1.2 (1.1–1.2)	1.4 (1.3–1.6)
County council	1.3 (1.2–1.3)	1.3 (1.1–1.5)
Municipal	1.3 (1.3–1.4)	1.2 (1.1–1.3)
Non-profit	1.1 (1.0–1.1)	1.5 (1.3–1.7)
Private	1	1
Number of employees		
250-	0.9 (0.9–0.9)	0.7 (0.6–0.8)
50-249	1.0 (0.9–1.0)	0.8 (0.7–0.9)
10-49	1.0 (1.0–1.0)	0.9 (0.8–0.9)
5-9	1	1
Gender composition		
Female dominated	1.2 (1.2–1.2)	1.1 (1.0–1.1)
Male dominated	1.2 (1.1–1.2)	0.8 (0.7–0.8)
Gender integrated	1	1
Educational level [1]		
High	0.8 (0.8–0.8)	0.6 (0.6–0.7)
Middle	0.8 (0.8–0.9)	0.7 (0.7–0.8)
Low	1	1
Average age [1]		
1 (oldest)	1.0 (1.0–1.1)	1.2 (1.1–1.3)
2	1.1 (1.1–1.1)	1.1 (1.0–1.2)
3	1.1 (1.1–1.1)	1.0 (1.0–1.1)
4 (youngest)	1	1

[1] Educational level and average age aggregated at the workplace.
* Controlling for workplace properties (sector, number of employees, gender composition, educational level and average age) and individual characteristics (age, education and gender).

3.4 Diagnoses among recruits

In order to acquire knowledge of whether workplaces tend to recruit people that had different diagnosis differently, we analysed recruitment of only those who had been on sick leave. There was information on diagnosis for 88 per cent of the 65,077 individuals that had been on sick leave in 2011 and changed job in 2012. Musculoskeletal disorders and mental illness accounted for 53 per cent of the sickness absence (Table 10).

Workplaces do not seem to differ in recruiting people with musculoskeletal disorders. There were also few differences between workplaces in recruiting those with mental illness. However, workplaces with the highest proportion of high-educated employees were more likely to recruit those that had been diagnosed with mental illness than those with the lowest proportion. The same was true for workplaces with the "oldest" employees compared to the youngest. Municipal workplaces were less likely to recruit a person who had a history of sickness absence in other diagnosis than musculoskeletal and mental diagnosis. Workplaces with the highest number employees were also less likely to recruit this group than the smallest workplaces (Table 10).

Table 10 Likelihood (OR) that workplaces hire a person with different diagnoses that has previously been on sick leave (adjusted results*)

	Musculoskeletal disorders (n=13,061)		Mental Illness (n=17,000)		Other (n=26,950)	
	1-180 days OR (95%CI)	>180 days OR (95%CI)	1-180 days OR (95%CI)	>180 days OR (95%CI)	1-180 days OR (95%CI)	>180 days OR (95%CI)
Sector						
State	1.0 (1.0–1.0)	1.2 (0.7–2.1)	1.6 (1.0–2.7)	1.6 (0.9–2.7)	0.9 (0.7–1.2)	1.3 (0.9–1.5)
County council	0.8 (0.4–1.4)	0.6 (0.3–1.3)	0.7 (0.4–1.2)	0.7 (0.4–1.1)	0.6 (0.4–0.9)	0.5 (0.3–0.9)
Municipal	1.4 (1.0–2.0)	1.2 (0.8–1.8)	1.2 (0.9–1.6)	0.9 (0.6–1.2)	0.9 (0.7–1.2)	0.9 (0.7–1.2)
Non-profit	0.7 (0.4–1.3)	0.9 (0.5–1.7)	1.0 (0.6–1.6)	1.6 (0.9–2.7)	1.0 (0.7–1.4)	1.3 (0.8–2.0)
Private	1	1	1	1	1	1
Number of employees						
250-	1.2 (0.7–1.9)	0.9 (0.5–1.6)	1.1 (0.7–1.6)	0.9 (0.5–1.4)	0.9 (0.7–1.3)	0.6 (0.4–0.9)
50-249	1.2 (0.8–1.7)	1.0 (0.7–1.5)	1.0 (0.7–1.4)	0.8 (0.6–1.2)	0.9 (0.7–1.2)	0.7 (0.5–0.9)
10-49	1.3 (0.9–1.8)	1.1(0.7–1.6)	1.2 (0.8–1.7)	1.0 (0.7–1.4)	0.9 (0.7–1.2)	0.8 (0.6–1.0)
5-9	1	1	1	1	1	1
Gender composition						
Female dominated	1.0 (0.7–1.4)	1.1 (0.7–1.6)	1.1 (0.8–1.4)	1.0 (0.7–1.3)	1.2 (1.0–1.5)	1.1 (0.9–1.5)
Male dominated	1.1 (0.8–1.5)	1.0 (0.7–1.5)	1.3 (0.9–1.8)	0.9 (0.7–1.3)	0.9 (0.7–1.1)	0.8 (0.6–1.0)
Gender integrated	1	1	1	1	1	1
Educational level [1]						
High	1.2 (0.8–1.8)	1.0 (0.7–1.6)	1.6 (1.1–2.1)	1.2 (0.8–1.6)	1.1 (0.9–1.4)	0.9 (0.7–1.2)
Middle	1.4 (1.0–1.9)	1.1 (0.8–1.6)	1.1 (0.8–1.4)	0.8 (0.6–1.1)	0.9 (0.7–1.1)	0.8 (0.6–1.0)
Low	1	1	1	1	1	1
Average age [1]						
1 (oldest)	1.3 (0.8–1.9)	1.3 (0.8–2.1)	1.2 (0.8–1.8)	1.6 (1.1–2.3)	1.2 (0.9–1.5)	1.3 (0.9–1.7)
2	1.1 (0.8–1.6)	1.0 (0.7–1.5)	0.9 (0.6–1.2)	0.9 (0.6–1.2)	1.2 (0.9–1.5)	1.2 (0.9–1.5)
3	1.1 (0.8–1.5)	1.0 (0.7–1.4)	1.0 (0.7–1.3)	1.0 (0.7–1.3)	1.3 (1.0–1.6)	1.1 (0.8–1.4)
4 (youngest)	1	1	1	1	1	1

[1] Educational level and average age aggregated at the workplace.
* Controlling for all workplace properties (sector, number of employees, gender composition, educational level and average age), and individual characteristics (age, education and gender).

4 Concluding discussion

The results in this paper show that workplaces with different properties vary in the likelihood of recruiting people that have been on sick leave. Compared to workplaces in the private sector, workplaces in the public and non-profit sector were more likely to recruit a person that has been on sick leave, both up to 180 days/year and above 180 days/year.

Workplaces with more than 50 employees were less likely to recruit a person that had been on sick leave compared to workplaces with the smallest number of employees. This was mainly true for absence above 180 days/year. Workplaces with the highest educational level were less likely, compared to workplaces with the lowest educational level, to recruit a person that had been on sick leave.

Compared to gender-integrated workplaces, female dominated workplaces had a higher likelihood of recruiting both male and female employees with a history of sick absence up to 180 days. However, male-dominated workplaces had a lower likelihood of recruiting both men and women with sickness absence above 180 days compared to gender-integrated workplaces.

Recruits that had been off sick due to mental illness were more likely to be recruited by higher educated workplaces and those with the highest average age among employees. Workplaces do not differ in recruiting those with musculoskeletal disorders.

Our results show that workplaces with different characteristics have a different likelihood of recruiting individuals that have been on sick leave. We do not know the reasons for this different recruitment. Future research should focus on these reasons. We conclude this report by discussing some potential explanations.

There are few previous studies to which the results from this study can be compared. A study of Swedish data showed that individuals that had been on sick leave were less likely to be recruited to positions that were difficult to replace in case of absence, building on the idea that employers are vulnerable to absence in jobs with few substitutes (Hensvik and Rosenqvist 2015). Because jobs demanding low education are generally easier to replace, these results are in accordance with our findings that highly educated workplaces are less likely to recruit those with a history of sick leave. Our results are also supported by a study showing that workers with disabilities were disproportionally relegated to entry level occupations (Kaye 2009).

The starting point in our report has been to study the employment patterns of people with a history of sickness absence as their potentially reduced working capacity (due to poor health) is likely to make them a less attractive group for employers. However, this assumption may not be valid for those with previous sick leave whose poor health was transient or for those whose poor health is not known to the employer. Previous history of sickness absence is instead used as an indicator for groups with visible and long-term illness that reduces work ability. These are groups that in international scientific literature are referred to as "disabled". People with a history of sickness absence, compared with those without such history, include to a greater extent those with a reduced work capacity. However, we do not know to what extent. The results we present here are interesting to compare with international literature on disabled.

One such study, which is in accordance with our results, shows that workers in the US with "disability" work mainly in simple jobs (Kaye 2009). However, contrary to results reported from the US (Hernandez and Keys 2000), we found that smaller workplaces were more likely than bigger ones to employ those that had been on sick leave. One possible explanation for these opposing results may be differences in labour market policies between countries.

An explanation for the difference in recruitment between workplaces may be that individuals with reduced working ability may have low expectations of what jobs they are likely to get, and therefore apply for jobs that demand low education. There is a lack of knowledge of such expectations. An exception is a survey of worker preferences from the US that reported that unemployed people with reduced working ability are similar in their views as those without it, of the importance of income, job security and other valued job characteristics. However, it was found that they were less active in searching for jobs (Ali et al. 2011).

The fact that the employment of previous sick leave differs between workplaces may also reflect that people with high sick leave are grouped in some occupations (Swedish Social Insurance Agency 2012), which, in turn, are found in certain segments of the labour market.

The differences between workplaces in recruiting people that had been on sick leave may also be due to actions taken by the employer. If employers actively opt out of employing those that have been on sick leave even though they are qualified for the position, it is an action violating intentions in the Work Environmental Act (1977:1160) and Discrimination Act (2008:567). The previous referred study of recruitment behaviour among Swedish employers supports the idea that these laws may be violated. In their study, employers were asked to choose between two hypothetical applicants that differed with respect to e.g. gender, age, ethnicity and previous sickness absence they showed that employers, among several individual characteristics, discriminate against previous sickness absence applicants (Erikssson et al. 2012). Our results suggest that such discrimination on the part of employers may differ with regard to characteristics of the workplace.

Including people with reduced working ability in working life requires a match between the individual's function and the requirements of the work. We do not know from this study how well these matches. However, an alternative explanation of the different recruitment patterns between workplaces is that they reflect a successful return to work. This would imply that the most suitable jobs for people with reduced working ability will more often be found in e.g. the public sector, small workplaces or low educated workplaces.

The fact that some workplaces are more likely to recruit people that have been on sickness absence may contribute to differences in sickness absence between workplaces. It is known that history of sickness absence predicts future sickness absence (Roelen et al. 2010). Recruits that previously have been sick absent are likely to be more absent than other recruits. A result is that high sickness absence at a work place, besides e.g. reflecting poor working conditions and leadership, also reflects recruitment patterns. The same reasoning goes for the association between gender composition and sickness absence (Laaksonen et al. 2010). Studies that do not consider this may thus overestimate the influence of workplace characteristics on health.

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