



Leakage from medically-certified to self-certified workplace absence among norwegian employees

Geir R. Karlsen & Elinor Ytterstad

To cite this article: Geir R. Karlsen & Elinor Ytterstad (2017) Leakage from medically-certified to self-certified workplace absence among norwegian employees, *Society, Health & Vulnerability*, 8:1, 1411119

To link to this article: <https://doi.org/10.1080/20021518.2017.1411119>



© 2017 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



[View supplementary material](#)



Published online: 05 Dec 2017.



[Submit your article to this journal](#)



[View related articles](#)



[View Crossmark data](#)

Leakage from medically-certified to self-certified workplace absence among norwegian employees

Geir R. Karlsen^{a*} and Elinor Ytterstad ^b

^aDepartment of Sociology, Political Science and Community Planning, UiT The Arctic University of Norway, Tromsø, Norway;

^bDepartment of Mathematics and Statistics, UiT The Arctic University of Norway, Tromsø, Norway

ABSTRACT

There are two different kinds of sickness absence in Norway: self-certified absence (SCA), and medically-certified absence (MCA). In this study of 6437 Norwegian employees, we applied logistic regression models for a dichotomous SCA variable on initially 38 independent variables including age and gender. Our findings showed that employees reporting long-term health issues but no record of MCA in the past 12 months (9.4% of the employees), had significantly higher odds of SCA than other employees. We claim that this constitutes a leakage of workplace absence from MCA to SCA, since these employees have long-term health issues. In addition, we found that women in this group were more likely to reduce their workload to part-time jobs, compared to other women. We suggest that basing MCA on diagnoses from a certified list contributes to leakage of employees with specific characteristics from MCA to SCA.

KEYWORDS

Age; diagnosis; gender; health issues; workplace absence

Introduction

It is reasonable to expect that when a person accepts a job he or she will attend it, but occasionally employees call in sick. In Norway, the magnitude of workplace absence has become an object of political debate and economic concern. There are two different kinds of sickness absence in Norway, which exist to provide convalescence for employees during/after sickness or injury: self-certified absence (SCA), for which the diagnosis of illness is self-certified by employees without external confirmation; and medically-certified absence (MCA).

The Norwegian social insurance act §§ 8–18, 8–19, and 8–23 to 8–26 provide employees the right to a maximum of 3 consecutive days of SCA four times per year, with at least 16 consecutive days between SCA periods. SCA is generally used for shorter absences due to things like the common cold, sick children, or other minor injuries or diseases. However, because SCA is based on a self-diagnosis, it is possible that some SCA is based on factors other than acute illness or injury.

In order to qualify for MCA, employees must meet two conditions: they must receive a diagnosis that is recognized in the medical diagnostic system, and a medical professional must confirm that the medical condition diagnosed prevents the employee from working and that restitution outside the workplace is the better strategy for convalescence.

There are some fundamental legislative differences between SCA and MCA. First, SCA is paid entirely by the employer, and the absent employee is paid in full throughout the absence. For MCA, the employer pays for the first 16 days of absence, and anything beyond that period is covered by an insurance system. In the public sector, a public insurance fund covers these costs directly, whereas in the private sector, a private insurance reimburses the employer for any absence beyond 16 days.


These differences in financial compensation between SCA and MCA invite an analysis of the characteristics of the employees that use these two categories of workplace absence, as well as the characteristics of their workplace environment. The purpose of this paper is to analyse the use of SCA among employees with long-term health issues. As the requirement of a physician-certified medical diagnosis is the core difference between MCA and SCA, we tested the specific hypothesis that there is a leakage of employees with certain health issues and social characteristics from MCA to SCA.

Perspectives on workplace absence

The characteristics of absent workers have been explored in the literature. Froggatt (1970a, 1970b, 1970c) used linear regression models that included gender, job type, sector, and other variables, and found that SCA declined with the age of the

CONTACT Elinor Ytterstad  elinor.ytterstad@uit.no 

*In memory of Geir Runar Karlsen who died 9 June 2016.

 Supplemental data for this article can be accessed [here](#).

© 2017 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

employee, but he concluded that his search for a model to predict who was most prone to absence was not successful. Froggatt's study triggered a variety of other studies during the 1970s, in which new perspectives were developed that looked into the social and psychological causes of workplace absence. Muchinsky (1977) considered absenteeism as a form of compensatory behaviour, in which the employee withdraws from the workplace in order to compensate for detrimental working conditions. Some studies focused on the effects of various medical conditions, for instance rheumatism (Anderson, 1971). Others looked into psychological factors like emotions and mood changes (Christie & Venables, 1973). The structure of and environment in the workplace, also came into focus in analyses of commuting and shift work (Taylor, Pocock, & Sergean, 1972a, 1972b). Finally, statistical modelling of absence also became the object of increased scrutiny (Pocock, 1973, 1974).

Long-term health issues are a prominent factor when explaining workplace absence. A study by Kessler et al. (1999) indicated that employees struggling with depressions have between 1.5 to 3.2 more SCA than other employees. This finding was supported in a study by Nystuen, Hagen, and Herrin (2001), which showed that mental issues are more likely to induce MCA among women than men, but increases were generally seen among both genders with age. A study from Finland suggested that certain health issues are particularly prominent when explaining work absences longer than 2 weeks (Laaksonen, Kääriä, Leino-Arjas, & Lahelma, 2011). The results showed that physical health issues accounted for more absence than mental health issues, and that general health was an important predictor of sickness absence. However, the study also found that, among women, presence of physical pain was a particularly strong predictor of sickness absence.

On the other hand, some jobs provoke more workplace absence than others. Lund et al. (2005) found that Danish employees whose work tasks involved extreme twisting or bending of the neck or back, those whose work included standing or bending, lifting or carrying loads, or pushing or pulling heavy loads, were more likely to have MCA. This is supported by another study from Sweden, in which Voss, Floderus, and Diderichsen (2001) showed that jobs that included heavy lifting and monotonous movement were associated with an increased risk of sickness absence. Their findings also suggested that workplace bullying increases the risk of sickness absence among women, and that anxiety about reorganization of the workplace increases the risk among men. They also found that those who work more than 50 hours of overtime per year were less likely to call in sick.

The effects of the demographic characteristics of the working population remain an important focus in research on workplace absence in Norway. Mastekaasa

and Olsen (1998) found that women are absent significantly more often than men, which is consistent with other research (Rhodes, 1983). They argued that gender health differences and gender personality differences have significant effects on the wide gap in these absence rates. Mastekaasa (2000) examined, and subsequently refuted, the claim that differences in role-conflicts between men and women, in which women who have children experience a double-burden when combining childcare with an active professional career, account for differences in absence rates between genders. In another paper, Mastekaasa (2005) refuted the hypothesis that differences in workplace composition may explain higher absence rates among women; instead the research suggested that female-dominated workplaces tend to develop norms that encourage workplace absence to a higher degree than male-dominated workplaces.

Unionization may also be considered a structural attribute of the workplace, since unions generally aim at strengthening the voice of employees (Freeman & Medoff, 1985). One could expect that unionized employees are more satisfied with their job than non-unionized employees; however, this does not appear to be the case. Several studies have suggested that unionized employees are in fact less satisfied with their job than non-unionized employees (Hamermesh, 1977; Kochan & Helfman, 1981; Meng, 1990; Odewahn & Petty, 1980). The voice-hypothesis accounts for this phenomenon. Because unions give employees a voice at the workplace, the employee-employer relationship becomes politicized and lowers the threshold for making the workplace an arena for collective complaining and dissatisfaction with the management. Although the voice-hypothesis has been contested in other research (Georgellis & Lange, 2009), it is relevant to this analyses. Indeed, it seems plausible that if this hypothesis is valid, unionized employees would be more absent than non-unionized employees because politicization of the workplace would lower the threshold for SCA.

There is an inherent relationship between physical and psychosocial working conditions. Using data on a cohort of British civil servants, North, Syme, Feeney, Shipley, and Marmot (1996) found that a high degree of job demands and a low degree of job control were associated with short spells of sickness absence. A study from Denmark (Lund, Labriola, Christensen, Bültmann, & Villadsen, 2006) indicated that MCA is triggered among female employees who experience role conflicts, low job rewards, and poor management quality, whereas among men the most prominent causes were job characteristics that require hiding emotions and high emotional demands.

Yet another study from Denmark did not arrive at the same conclusion (Nielsen, Rugulies, Christensen,

Smith-Hansen, & Kristensen, 2006), finding that short absence spells among men could be predicted by low supervisory support, low predictability, and low meaning of work. Among women, they observed that short spells of absence could be predicted by high skill discretion. Among men, long spells could be predicted by low decision authority, low supervisory support, and low predictability, whereas among women predictors were high psychological demands and low decision authority. Some forms of negative mental stress may heighten the threshold for SCA. Those who are in a position to lose their job may try to compensate by attending work in cases where they normally would have called in sick. Thus, the opposite of absenteeism, presenteeism, occurs, mainly as a way of adapting to a risk of unemployment.

A study based on data from 15 European Union countries shed some light on the effects of organizational commitment on absenteeism (Gimeno, Benavides, Amick, Benach, & Martínez, 2004). They found that high psychological job demands, low job control, high strain, and passive work were associated with an increased risk of sickness absence. However, they also found that these effects were more pronounced among men than women, and among non-permanent than permanent employees.

Workplace absence has been studied from many perspectives in the literature, for both short – and long spells of sickness absence. It is well known that women are more absent than men, and absence decline with age. Some studies focus on medical and psychological causes of absence, others on type of work, such as physical demanding work and work hours. Psychosocial working conditions, like job demands and job control, has also been identified as absence predictors.

Research design and data

The data on working conditions used in this study were provided by Statistics Norway as a part of a data collection program called the Living Conditions Survey. Within the framework of this survey, between 11 June 2009 and 9 January 2010, 20,460 people from the Norwegian population were randomly selected and invited to participate. A total of 12,255 people responded. Due to our focus on SCA, we excluded all respondents who were unemployed, on welfare, or otherwise not under an employment contract (6,632 remaining persons). We also excluded those with missing information on any of the variables used in the analysis, resulting in a final study sample of 6,437 persons. In order to fit a statistical model for SCA, we recoded some of the variables in the dataset. The details of the original coding and our recoding, as well as frequencies, are found in Supplementary Table 1.

Our main independent variable in explaining SCA has four categories and is a combination of MCA and self-reported yes/no to the question “Have you had any long-term health issues (including seasonal health issues)”:

- Random MCA: participants with no long-term health issues but who had used MCA at least once in the past 12 months.
- Recurring MCA: participants with long-term health issues who used MCA at least once in the past 12 months.
- Latent MCA: participants with long-term health issues, but no record of MCA in the past 12 months.
- Present and healthy: participants with no long-term health issues who had not used MCA in the past 12 months, and our reference group in the analysis.

We also classified participants with more than 6 months of MCA as having long-term absence, in a separate variable, in order to identify those who had a substantially shorter period in which to generate SCA.

Statistical analysis

Based on the literature review described in the introduction, we chose 38 variables (Supplementary Table 1) for our logistic regression model. The response variable SCA was coded as 1 if the employee had an SCA at least once in the past 12 months, and zero otherwise. Initial analyses were carried out separately for men and women in three age groups (18–24 years, 25–44 years, and 45–66 years). Within these subgroups, we fitted logistic regression models with a stepwise procedure in order to identify a subset of adequate independent variables (Kleinbaum, Kupper, Nizam, & Muller, 2008, chap. 16). Twenty-two independent variables were significant in at least one of the subgroups and were included in the final model. Results from the cohort models indicated many similarities across age groups, thus we combined all age groups in one regression model. Finally, it turned out that age could be included as a continuous variable. Due to gender differences in SCA, we still ran separate logistic regression model for each gender. We observed that the odds of SCA decreased with age, significantly more for men than for women. For almost all other variables the odds ratios (ORs) were of the same magnitude for both genders. The exceptions were “random MCA”, “workplace noise, vibration, and temperature”, “tenure”, and “losing job”. These gender differences are carried into the final model as interaction terms. The interaction coefficients are presented in Table 1 through their interacting variables. As for Age and Gender, the Age OR for women is: $\exp(\beta_{\text{Age}})$ and men: $\exp(\beta_{\text{Age}} + \beta_{\text{Age}^* \text{Men}})$. All calculations were

Table 1. Self-certified absence (SCA) regressed on the 24 variables in the final model^a. The dependent variable SCA = 1 if absent at least once during the past 12 months. Male and female employees ($n = 6437$) between 18 and 66 years old.

Variable name		OR	99% CI
Medical-certified absence (MCA):			
Present and healthy		1	
Random MCA	Women	0.65***	[0.53, 0.81]
	Men	0.93	[0.73, 1.17]
Recurring MCA		0.99	[0.79, 1.23]
Latent MCA		1.39***	[1.08, 1.79]
Long-term absence, more than 6 months		0.36***	[0.22, 0.56]
Musculoskeletal afflictions		1.32***	[1.13, 1.54]
Other physical afflictions		1.51***	[1.30, 1.75]
Discouraged during the past month		1.38**	[1.07, 1.78]
Rest, getting enough rest between workdays		0.86*	[0.74, 1.01]
Age (years)	Women	0.98***	[0.97, 0.99]
	Men	0.97***	[0.96, 0.98]
Small children, at least one child ≤ 11 in household		1.43***	[1.22, 1.68]
Private sector (vs. public)	Day	0.82**	[0.69, 0.99]
	Shift	0.56***	[0.41, 0.77]
Shift work (vs. day)	Private sector	0.63***	[0.49, 0.80]
	Public sector	0.93	[0.72, 1.19]
Full-time work, 30–45 h/wk (vs. part-time)		1.56***	[1.27, 1.92]
Flexible workplace		0.71**	[0.54, 0.95]
Work noise, vibration and temperature	Women	1.26*	[1.00, 1.59]
	Men	0.83*	[0.67, 1.03]
Indoor air quality, poor indoor air quality		1.11	[0.95, 1.29]
Large workplace, ≥ 10 employees		1.57***	[1.28, 1.91]
Union member		1.47***	[1.25, 1.73]
Conflicts, experience conflicts at work		1.15*	[0.99, 1.33]
Job resources, adequate resources		0.92	[0.79, 1.07]
Tenure more than 1 year	Women	0.84	[0.62, 1.13]
	Men	1.39**	[1.03, 1.88]
Leader of other employees		0.75***	[0.65, 0.88]
Losing job, may lose current job	Women	0.62***	[0.44, 0.87]
	Men	0.94	[0.67, 1.32]
Motivation, and passionate about my work		0.88*	[0.76, 1.02]
Satisfaction, very satisfied with my job		0.91	[0.78, 1.06]

a) Logistic regression. Intercept and the non-significant main factor Gender are not included in the table.

Hosmer-Lemeshow with 10 df: 6.8.

Abbreviation: OR: odds ratio; CI: confidence interval; df: degrees of freedom

* $p < .05$. ** $p < .01$. *** $p < .001$

performed in the statistical programming language R (R Development Core Team, 2012).

Results

Employees with long-term health issues but no MCA (Latent MCA) showed significantly higher odds of SCA (OR = 1.39) compared to those neither long-term health issues nor MCA (Present and healthy) (Table 1). In fact, when latent MCA was coded as the reference group (not shown here), it showed significantly higher odds of SCA than any of the three other groups. In order to identify the characteristics of employees in the latent MCA group, we compared them with all other employees across various characteristics (Table 2). The latent MCA group consisted of an almost equal amount of men and women. Almost all men above 25 years of age had full-time employment, and the proportion of employees with musculoskeletal afflictions and/or other physical afflictions, was significantly higher within the latent MCA group than within the other MCA group. Among older women, those in the latent MCA group were more likely to be part-time workers when compared the other MCA group. The proportion

of female part-time employees with musculoskeletal and/or other physical afflictions was significantly higher within the latent MCA group than within the other MCA group. We also noted that the proportion of female employees who worked part-time at large workplaces and/or in the health sector was higher in the latent MCA group than in the other MCA group.

Female employees with MCA but no long-term health issues (Random MCA) are less likely to have SCA (OR = 0.65) than those neither long-term health issues nor MCA (Present and healthy) (Table 1). There are no such significant difference among men. Furthermore, employees having long-term absence had an OR of only 0.36 of SCA compared to others.

Three different afflictions also had a significant effect on SCA. Employees with musculoskeletal problems have 1.32 times the odds of SCA as those without such afflictions, and employees with other physical problems 1.51 times the odds of SCA as others, while participants who reported feeling discouraged have 1.38 times the odds of SCA as those who did not report discouragement.

Age had a significant decreasing effect on SCA. Both men and women were less absent the older

Table 2. Percent employees in subgroups by gender, age and Latent-Other group. Latent are employees reporting long-term health issues, but not recorded medical-certified absence the last 12 months. Other are all other employees. Comparing Latent and Other with Pearson Chi-Square Goodness-of-fit test.

Subgroups of employees	Age 18–24				Age 25–44				Age 45–66			
	Latent		Other		Latent		Other		Latent		Other	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Men	38	100	208	100	109	100	1301	100	155	100	1318	100
Full-time work, 30–45 h/wk	24	63.2	147	70.7	102	93.6	1245	95.7	143	92.3	1244	94.4
Musculoskeletal afflictions												
Part-time	8	21.1	32	15.4	5	4.6	30	2.3	9	5.8	52	3.9
Full-time	20	52.6	73	35.1	78	***71.6	694	53.3	113	**72.9	806	61.2
Other physical afflictions												
Part-time	9	23.7	29	13.9	5	4.6	36	2.8	9	5.8	47	3.6
Full-time	19	50.0	74	35.6	73	***67.0	615	47.3	96	*61.9	695	52.7
Large workplace												
Part-time	8	21.1	46	22.1	7	6.4	50	3.8	11	7.1	65	4.9
Full-time	12	**31.6	123	59.1	82	75.2	1048	80.6	118	76.1	1067	81.0
Health sector (SN2007 86–88)												
Part-time	1	-	4	-	3	-	17	1.3	1	-	12	0.9
Full-time	1	-	4	-	1	-	79	6.1	12	7.7	74	5.6
Women	36	100	199	100	117	100	1405	100	153	100	1398	100
Full-time work, 30–45 h/wk	15	41.7	86	43.2	90	76.9	1154	82.1	100	***65.4	1097	78.5
Musculoskeletal afflictions												
Part-time	17	47.2	74	37.2	22	18.8	188	13.4	47	***30.7	249	17.8
Full-time	12	33.3	59	29.6	71	60.7	822	58.5	80	52.3	797	57.0
Other physical afflictions												
Part-time	17	47.2	69	34.7	25	**21.4	175	12.5	42	***27.5	214	15.3
Full-time	14	38.9	61	30.7	71	60.7	787	56.0	83	54.2	726	51.9
Large workplace												
Part-time	16	44.4	82	41.2	20	17.1	210	14.9	43	***28.1	232	16.6
Full-time	11	30.6	64	32.2	81	69.2	984	70.0	89	*58.2	935	66.9
Health sector (SN2007 86–88)												
Part-time	6	16.7	21	10.6	13	11.1	137	9.8	28	**18.3	138	9.9
Full-time	3	-	25	12.6	29	24.8	384	27.3	28	*18.3	386	27.6

* $p < .05$. ** $p < .01$. *** $p < .001$

- Less than 5 persons

they became, but the decrease was significantly steeper for men ($p < 0.001$). We also adjusted for the effect of having small children, employees who lived with at least one child younger than 12 years of age have 1.43 times the odds of SCA as employees who did not live with small children, and no gender difference was observed here.

Furthermore, employees in private sector are less likely to have SCA than in public sector (OR = 0.82 for day-time workers, and 0.56 for shift workers). Within private sector, shift workers are less likely to have SCA than day-time workers (OR = 0.63). There is no such significant difference between shift- and day-time in public sector. Employees working full-time have 1.56 times the SCA odds of part-time employees. At large workplaces, the odds of SCA is 57% higher compared to smaller workplaces. Union members have 47% higher SCA odds compared to non-members. Tenure has a significant effect on SCA among men. Those who have been employed at the present workplace for more than one year, have 1.39 times the odds of SCA as recently employed men. There is also a gender difference among employees afraid of losing their job, where women in such positions are less SCA compared to women not afraid of losing their job (OR = 0.62).

Discussion

When employees report long-term health issues, there is ample reason to expect them to use the

MCA provision when convalescence is needed. However, our findings show that almost 40% of long-term health issues employees did not use MCA (Supplementary Table 1). However, this latent MCA group is far more likely to use the SCA provision than any of the other MCA groups. Their very use of any workplace absence tells us that their long-term health issue makes this absence necessary, and thus it cannot be argued that the health issue does not affect their ability to attend work. Secondly, the long-term health issues but no MCA employees (Latent MCA) accounted for 9.4% of the study sample, which indicates that there is a substantial portion of Norwegian employees who one might expect to use the MCA provision, but instead tend to use SCA.

When employees with underlying conditions use the SCA, and it is not sufficient for convalescence, the employer and the absent employee pay the costs. Of course the employer pays according to the financial regulation of workplace absence, but our claim that the employee pays as well is related to our empirical findings. The ancillary analysis revealed that employees with long-term health issues but no MCA (Latent MCA) reported more musculoskeletal and other physical afflictions than among other employees. However, some other characteristics are more pertinent to our argument. We observed that women in the latent MCA group tended to work part-time at large workplaces, often in the health sector, and that many of them received disability benefits (data not

shown). This indicates that women with long-term health issues may compensate for their need for increased convalescence by reducing their workload and combining SCA with disability benefits. Moreover, this means that these women subsidize their own convalescence by reducing their workload, and that they will keep paying for their convalescence after they retire, as part-time employment generates less retirement pension benefits, and disability benefits do not count towards their pension.

There may be a number of plausible explanations for our observations; in some cases employees may only report unspecific health problems in order to use SCA instead of MCA. However, we find it implausible that 9.4% of Norwegian employees misreport their long-term health issues and have significantly higher odds of SCA compared to other employees. The long-term health issues in this analysis are based on self-reported information; we do not have data on the medical diagnoses of these problems. In spite of this limitation, our findings may indicate that these participants' health issues are so subtle that they are hard for a medical professional to diagnose, thus making it impossible to use MCA. However, research into diagnostic practices and the patient-physician relationship by Van Ryn and Burke (2000) suggested that a patient's socioeconomic status affects physicians' evaluations, which is consistent with the general literature in the field (Willems, De Maesschalck, Deveugele, Derese, & De Maeseneer, 2005). A similar trait was found by Green, Wheeler, and LaPorte (2003). Our findings suggest that differences in physicians' diagnostic practices based on the socio-demographic characteristics of patients may be surfacing as a leakage from MCA to SCA, in which some groups of employees are not diagnosed with health conditions that qualify for MCA.

Females with MCA but no long-term health issues (Random MCA) had significantly less SCA than other female employees. This may be explained by a finding in a recent Nordic study (Oke, Braithwaite, & Antai, 2016), where 'sickness presenteeism' was a significant indicator for MCA among Norwegian female employees, and non-significant among men.

Employees having long-term absence, i.e., more than 6 months, had significantly less SCA than others, and we ascribe this finding to the fact that they have considerably less time to use SCA since they already have MCA for most of the work year.

Our model shows that musculoskeletal and other physical afflictions or pains by themselves lead to significantly higher odds of SCA. These terms group together a number of afflictions that may impede the employee when carrying out work tasks, and in some cases they develop over time and are of such a subtle nature that the exact cause of the affliction or pain may be difficult to diagnose. In cases where symptoms were acute and short-lived, employees may find it more practical to report

SCA instead of calling their doctor and risk that symptoms disappear before the appointment. Feeling discouraged increased the odd of SCA. Mental issues may be difficult to diagnose and may be preceded by a complicated causal structure. In some cases, depression and other psychological conditions have pathological causes, while in other cases such conditions have external causes, such as family issues (e.g. divorce), or personal issues (e.g. substance abuse). Our data do not allow us to get deeper into the causal nature of detrimental mental conditions, but rely on self-reported discouragement.

Weaknesses of this study is the response rate at only 60% of the randomly selected 20,450 persons, and that the long-term health issues variable is left up to the respondent to define.

Conclusion

Many employees in Norway have health issues that may sometimes cause them to be absent from work. In these cases, it seems clear that MCA would be the most appropriate type of absence. In our sample of 6,437 Norwegian employees, 1589 reported long-term health issues, but almost 40% of these employees had no record of MCA the past 12 months. However, the long-term health issues and no record of MCA group (latent MCA) had significantly higher odds of SCA than other employees. We submit that latent MCA are eligible for MCA instead, constituting a leakage of workplace absence from MCA to SCA.

Treating health issues by use of SCA instead of MCA may, in the long run, cause the health issue to develop into states that make it difficult to keep a full-time job. It is along this second dimension that we observed a gender gap. Men in the latent MCA group stayed in full-time jobs with the consequence that the employer paid for absence and the employee maintained full age retirement benefits. Women, on the other hand, were more likely to reduce their workload to part-time jobs, in some cases in combination with disability benefits. However, for women, the consequence is a permanent reduction in income that is carried forward into retirement.

The analysis shows that there are good reasons to look into the nucleus of workplace absence and the diagnosis that determines whether the employee receives SCA or MCA.

Acknowledgments

The publication charges for this article have been funded by a grant from the publication fund of UiT The Arctic University of Norway.

Disclosure statement

No potential conflict of interest was reported by the authors.

ORCID

Elinor Ytterstad  <http://orcid.org/0000-0002-1203-1491>

References

- Anderson, J. A. D. (1971). Rheumatism in industry: A review. *British Journal of Industrial Medicine*, 28(2), 103–121. doi:10.1136/oem.28.2.103
- Christie, M. J., & Venables, P. H. (1973). Mood changes in relation to age, EPI scores, time and day. *British Journal of Social and Clinical Psychology*, 12, 61–72. doi:10.1111/j.2044-8260.1973.tb00846.x
- Freeman, R. B., & Medoff, J. L. (1985, January). What do unions do? *Industrial & Labor Relations Review*, 38, 244–263. doi:10.1177/001979398503800207
- Froggatt, P. (1970a). Short-term absence from industry: I Literature, definitions, data, and the effect of age and length of service. *British Journal of Industrial Medicine*, 27(3), 199–210. doi:10.1136/oem.27.3.199
- Froggatt, P. (1970b). Short-term absence from industry: II Temporal variation and inter-association with other recorded factors. *British Journal of Industrial Medicine*, 27(3), 211–224. doi:10.1136/oem.27.3.211
- Froggatt, P. (1970c). Short-term absence from industry: III The inference of 'proneness' and a search for causes. *British Journal of Industrial Medicine*, 27(4), 297–312. doi:10.1136/oem.27.4.297
- Georgellis, Y., & Lange, T. (2009). Are union members happy workers after all? Evidence from eastern and western European labor markets. *Economics and Finance Working Paper, Brunel University*, 09–24. Retrieved from <http://bura.brunel.ac.uk/handle/2438/5125>
- Gimeno, D., Benavides, F. G., Amick, B. C., III, Benach, J., & Martínez, J. M. (2004). Psychosocial factors and work related sickness absence among permanent and non-permanent employees. *Journal of Epidemiology & Community Health*, 58(10), 870–876. doi:10.1136/jech.2003.016634
- Green, C. R., Wheeler, J. R. C., & LaPorte, F. (2003). Clinical decision making in pain management: Contributions of physician and patient characteristics to variations in practice. *The Journal of Pain*, 4(1), 29–39. doi:10.1054/jpai.2003.5
- Hamermesh, D. S. (1977). *Economic aspects of job satisfaction. Essays in labor market analysis.* (pp. 53–72). New York, NY: John Wiley.
- Kessler, R. C., Barber, C., Birnbaum, H. G., Frank, R. G., Greenberg, P. E., Rose, R. M., ... Wang, P. (1999). Depression in the workplace: Effects on short-term disability. *Health Affairs*, 18(5), 163–171. doi:10.1377/hlthaff.18.5.163
- Kleinbaum, D. G., Kupper, L. L., Nizam, A., & Muller, K. E. (2008). *Applied regression analysis and other multivariable methods (Fourth)*. Belmont, CA: Thomsen. ISBN 978-0-495-38498-4.
- Kochan, T., & Helfman, D. (1981). The effects of collective bargaining on economic and behavioral job outcomes. In R. G. Ehrenberg (Ed.), *Research in labor economics* (Vol. 4, pp. 321–365). Greenwich, CT: JAI Press.
- Laaksonen, M., Kääriä, S.-M., Leino-Arjas, P., & Lahelma, E. (2011). Different domains of health functioning as predictors of sickness absence - a prospective cohort study. *Scandinavian Journal of Work, Environment & Health*, 37(3), 213–218. doi:10.5271/sjweh.3131
- Lund, T., Labriola, M., Christensen, K. B., Bültmann, U., & Villadsen, E. (2006). Physical work environment risk factors for long term sickness absence: Prospective findings among a cohort of 5357 employees in Denmark. *BMJ*, 332, 449–452. doi:10.1136/bmj.38731.622975.3A
- Lund, T., Labriola, M., Christensen, K. B., Bültmann, U., Villadsen, E., & Burr, H. (2005). Psychosocial work environment exposures as risk factors for long-term sickness absence among danish employees: Results from DWECs/DREAM. *Journal of Occupational and Environmental Medicine*, 47(11), 1141–1147. doi:10.1097/01.jom.0000174301.80318.f2
- Mastekaasa, A. (2000). Parenthood, gender and sickness absence. *Social Science & Medicine*, 50, 1827–1842. doi:10.1016/S0277-9536(99)00420-7
- Mastekaasa, A. (2005). Sickness absence in female- and male-dominated occupations and workplaces. *Social Science & Medicine*, 60, 2261–2272. doi:10.1016/j.socscimed.2004.10.003
- Mastekaasa, A., & Olsen, K. M. (1998). Gender, absenteeism, and job characteristics: A fixed effects approach. *Work and Occupations*, 25(2), 195–228. doi:10.1177/0730888498025002004
- Meng, R. (1990). The relationship between unions and job satisfaction. *Applied Economics*, 22, 1635–1648. doi:10.1080/000368490000000070
- Muchinsky, P. M. (1977). Employee absenteeism: A review of the literature. *Journal of Vocational Behavior*, 10(3), 316–340. doi:10.1016/0001-8791(77)90066-5
- Nielsen, M. L., Rugulies, R., Christensen, K. B., Smith-Hansen, L., & Kristensen, T. S. (2006). Psychosocial work environment predictors of short and long spells of registered sickness absence during a 2-year follow up. *Journal of Occupational and Environmental Medicine*, 48(6), 591–598. doi:10.1097/01.jom.0000201567.70084.3a
- North, F. M., Syme, S. L., Feeney, A., Shipley, M., & Marmot, M. (1996). Psychosocial work environment and sickness absence among British civil servants: The Whitehall II study. *American Journal of Public Health*, 86(3), 332–340. doi:10.2105/AJPH.86.3.332
- Nystuen, P., Hagen, K. B., & Herrin, J. (2001). Mental health problems as a cause of long-term sick leave in the Norwegian workforce. *Scandinavian Journal of Public Health*, 29, 175–182. doi:10.1177/14034948010290030301
- Odehahn, C. A., & Petty, M. M. (1980). A comparison of levels of job satisfaction, role stress, and personal competence between union members and nonmembers. *Academy of Management Journal*, 23, 150–155. doi:10.2307/255502
- Oke, A., Braithwaite, P., & Antai, D. (2016). Sickness absence and precarious employment: A comparative cross-national study of Denmark, Finland, Sweden, and Norway. *The International Journal of Occupational and Environmental Medicine*, 7, 125–147. doi:10.15171/ijoem.2016.7.13
- Pocock, S. J. (1973). Relationship between sickness absence and length of service. *British Journal of Industrial Medicine*, 30(1), 64–70. doi:10.1136/oem.30.1.64
- Pocock, S. J. (1974). Harmonic analysis applied to seasonal variations in sickness absence. *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, 23(2), 103–120. doi:10.2307/2346992
- R Development Core Team. (2012). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. ISBN 3-900051-07-0. R Foundation for Statistical Computing. Retrieved from <http://www.R-project.org/>
- Rhodes, S. R. (1983). Age-related differences in work attitudes and behavior: A review and conceptual analysis.

- Psychological Bulletin*, 93(2), 328–367. doi:10.1037/0033-2909.93.2.328
- Taylor, P. J., Pocock, S. J., & Sergean, R. (1972a). Absenteeism of shift and day workers: A study of six types of shift system in 29 organizations. *British Journal of Industrial Medicine*, 29(2), 208–213. doi:10.1136/oem.29.2.208
- Taylor, P. J., Pocock, S. J., & Sergean, R. (1972b). Shift and dayworkers' absence: Relationship with some terms and conditions of service. *British Journal of Industrial Medicine*, 29(3), 338–340. doi:10.1136/oem.29.3.338
- Van Ryn, M., & Burke, J. (2000). The effect of patient race and socio-economic status on physicians' perceptions of patients. *Social Science & Medicine*, 50(6), 813–828. doi:10.1016/S0277-9536(99)00338-X
- Voss, M., Floderus, B., & Diderichsen, F. (2001). Physical, psychosocial, and organisational factors relative to sickness absence: A study based on Sweden Post. *Occupational and Environmental Medicine*, 2001(58), 178–184. doi:10.1136/oem.58.3.178
- Willems, S., De Maesschalck, S., Deveugele, M., Derese, A., & De Maeseneer, J. (2005). Socio-economic status of the patient and doctor-patient communication: Does it make a difference? *Patient Education & Counseling*, 56(2), 139–146. doi:10.1016/j.pec.2004.02.011