European Journal of Public Health, Vol. 20, No. 1, 43–46

doi:10.1093/eurpub/ckp076 Advance Access published on 12 June 2009

What makes you work while you are sick? Evidence from a survey of workers

Petri Böckerman[1], Erkki Laukkanen[2]

Background: Sickness absenteeism has been a focus of the EU Labour Force Surveys since the early 1970s. In contrast, sickness presenteeism is a newcomer. Based on surveys, this concept emerged in the empirical literature as late as the 1990s. Knowledge of the determinants of sickness presenteeism is still relatively sparse. **Methods:** The article examines the prevalence of sickness presenteeism in comparison with sickness absenteeism, using survey data covering 725 Finnish union members in 2008. We estimate logit models. The predictor variables capture working-time arrangements and the rules at the workplace. We include control variables such as the sector of the economy and educational attainment. **Results:** Controlling for worker characteristics, we find that sickness presenteeism is much more sensitive to working-time arrangements than sickness absenteeism is. Permanent full-time work, mismatch between desired and actual working hours, shift or period work and overlong working weeks increase sickness presenteeism. We also find an interesting trade-off between sickness categories: regular overtime decreases sickness absenteeism, but increases sickness presenteeism. **Conclusions:** Two work-related sickness categories, absenteeism and presenteeism, are counterparts. However, the explanations for their prevalence point to different factors.

Keywords: absenteeism, presenteeism, sickness absence, working-time arrangements.

Decrease in sickness absenteeism reduces firms' costs, but it also contains a possibility for decreasing productivity through presenteeism ('present at work in spite of sickness').[1] Sickness presenteeism may contribute to workers' ill health and firms' costs in the long run,[2–4] and even to dysfunctional 'competitive presenteeism', which is an extreme example of competitive culture at workplaces.[5]

The question about the right management strategy concerning sickness absenteeism and presenteeism is very important for employers as well as for the healthcare sector. In absenteeism, productivity loss is 100%, since the workers' contribution during sickness absence is non-existent. Direct and indirect costs caused by presenteeism are more difficult to estimate.[6,7]

Before the evaluation of costs, knowledge of the determinants of sickness presenteeism is essential. It is reasonable to assume that sickness presenteeism is affected by the same factors as sickness absenteeism, i.e. attributes related to workers and workplaces.[8] According to the literature, special attention should be paid to working-time arrangements,[9] workers' replacement practices,[10] attendance-pressure factors[11] and personal attitudes.[12]

This article contributes to the literature by analysing the prevalence of sickness presenteeism in comparison with sickness absenteeism. Using survey data of Finnish union members from 2008, we provide fresh evidence of the prevalence of both work-related sickness categories. The Finnish case is interesting, because flexible working-time arrangements have increased rapidly during the past 10 years.

1 Labour Institute for Economic Research, Helsinki, Finland
2 The Central Organisation of Finnish Trade Unions, Helsinki, Finland
Correspondence: Petri Böckerman, Labour Institute for Economic Research. Address: Pitkänsillanranta 3A, 6th floor, FI-00530 Helsinki, Finland, tel: +358 9 25357330, fax: +358 9 25357332, e-mail: petri.bockerman@labour.fi

Methods

Sample

Our data set consists of 725 members in SAK-affiliated unions. SAK, the Central Organisation of Finnish Trade Unions, is the largest workers' confederation in Finland, and includes 26 unions. The members of these unions cover all sectors of the Finnish economy. However, most of them are blue-collar workers. The survey provides a broad picture of the labour market in Finland, because the union density (i.e. the share of trade union members among wage and salary earners) is 70%. A total of 1044 individuals were selected for a telephone interview by using random sampling among the SAK-affiliated union members that was conducted by Statistics Finland in February 2008. Out of this sample, 725 persons or roughly 70% participated in the interviews.

Empirical modelling

The outcome variables of the models, absenteeism and presenteeism, are constructed following the literature.[11] Those who have never been or have once been absent (present while sick) during the last 12 months are marked as zero, those who have been absent (present) several times as one. This gives a prevalence of 32% for absenteeism and 30% for presenteeism (table 1). For women, both averages are higher than for men. The association between absenteeism and presenteeism is strongly positive. Half of the workers who have been absent from work several times have also been present at work several times while sick.

The predictor variables include the sector of the economy, educational attainment, age groups, the presence of children, establishment size and workers' replaceability. In the literature, workers' replaceability and working-time arrangements have achieved the status of key theoretical variables.[12,13] Replaceability is particularly interesting from the economic point of view, because when replaceability is not possible a worker has to accomplish all those tasks that were not done during his or her absence from work after he or she returns to work. In this case, the indirect costs of being absent from work while sick are particularly high for a worker.

Table 1 Definitions and averages of the variables as percentages

Variable	Definition	All	Men	Women
Outcome variables				
Absenteeism	Person has been absent several times because of illness during the past 12 months = 1, otherwise = 0	32	30	34
Presenteeism	Person has been present several times while sick during the past 12 months = 1, otherwise = 0	30	27	35
Predictor variables				
Sex	Male = 1, female = 0	58	–	–
Sector				
The public sector	Employer is state or municipality = 1, otherwise = 0 (reference)	23	11	40
Processing industries	Employer is in the processing industries = 1, otherwise = 0	46	65	19
Private services	Employer is in the private service sector = 1, otherwise = 0	31	24	41
Education				
Primary level	Comprehensive education only = 1, otherwise = 0 (reference)	23	22	24
Secondary education	Upper secondary or vocational education = 1, otherwise = 0	65	69	59
Higher education	Polytechnic or university education = 1, otherwise = 0	13	9	17
Age				
<35 years	Less than 35 years = 1, otherwise = 0 (reference)	23	25	20
35–50 years	Age 35–50 = 1, otherwise = 0	45	46	44
>50 years	Age >50 years = 1, otherwise = 0	32	29	36
Children	Person has at least one child = 1, otherwise = 0	58	58	58
Establishment size				
<20 workers	Size of plant less than 20 workers = 1, otherwise = 0 (reference)	44	37	53
20–50 workers	Size of plant 20–50 workers = 1, otherwise = 0	20	20	21
>50 workers	Size of plant over 50 workers = 1, otherwise = 0	36	44	26
Replaceability				
No replacement	Replacement is not possible = 1, otherwise = 0 (reference)	11	14	8
Replacement by substitutes	Replacement is possible by substitutes = 1, otherwise = 0	33	27	43
Replacement by colleagues	Replacement is possible by colleagues = 1, otherwise = 0	55	60	49
Working-time arrangements				
Permanent full-time work	Permanent full-time work = 1, otherwise = 0 (fixed-term or part-time work)	88	92	82
Working hours match	Desired and actual weekly working hours match = 1, otherwise = 0	66	67	64
Shift or period work	Shift or period work = 1, otherwise = 0	41	40	43
Regular overtime	Regular paid and unpaid overtime = 1, occasional or none = 0	11	12	9
>48 h a week	Weekly working hours more than 48 = 1, otherwise = 0. (48 weekly hours are the maximum working time according to the EU working time directive from 1993.)	4	4	4
Rules				
Three days' rule	Three days' paid sickness absence possible without a sickness certificate, as defined in the collective labour agreements = 1, otherwise = 0	45	38	55
Efficiency rule	In tough situations, efficiency rules out everything else in firm, according to the survey respondent = 1, otherwise = 0	48	46	52
Total		725	424	301

Replaceability includes two possibilities: replacement by substitutes and replacement by colleagues.

Besides these, the models include several indicators for working-time arrangements: working hours match (between desired and actual weekly working hours), shift or period work, regular overtime, and overlong weekly working hours. The working-time match between the desired and the actual working hours is used as an indicator of working-time balance. We use a single indicator for shift or period work, because period work bears a similarity to shift work in the sense that the hours for 2 or 3 weeks are fixed, without the usual limitations for daily or weekly hours.

We include predictor variables that capture the rules at the workplace: the 3 days' rule (3 days' paid sickness absence without a sickness certificate), and the efficiency rule. The efficiency rule reflects the relative position of workers compared with employers. The respondents were asked to assess their work by means of the statement: 'In tough situations efficiency rules out everything else.' If the respondents agreed with the statement, as 48% did, the variable for the efficiency rule was set as one, otherwise as zero. This indicator very strongly correlates with other workplace quality measures that are available in the survey, like continuing rush (i.e. a situation in which the worker is engaged in tasks without appropriate breaks from work) and the opportunities to influence one's work. To avoid multicollinearity problems, we prefer to use one overall indicator instead of several.

We estimate logit models, because our outcome variables are dichotomous indicators that categorize the data into two groups. We use Stata v10.1 to estimate the models. The predictor variables are entered in a single block. To make it easier to read the estimates, we report the marginal effects. For binary variables, they are calculated as differences in the predicted probabilities.

Results

Presenteeism is much more sensitive to working-time arrangements than absenteeism (table 2). Some common factors exist, however. In both sickness categories, the public sector workers and those involved in shift or period work are overrepresented.

The first 10 predictor variables are control variables. When these factors are controlled for, it is possible to assess the impact of replaceability and other workplace characteristics that are firms' possible policy instruments. In the case of sickness absenteeism, there are two such instruments: shift or period work and regular overtime. Participation in shift or period work increases the prevalence of sickness absenteeism by 8% and the presence of regular overtime decreases absenteeism by 13%.

In the case of sickness presenteeism, participation in shift or period work has the same sign as for sickness absenteeism, i.e. participation in shift or period work increases sickness behaviour in both sickness categories. However, in the case of

Table 2 The determinants of sickness absenteeism and presenteeism

Outcome variables	Absenteeism		Presenteeism	
Controls	Marginal effect	*P*-value	Marginal effect	*P*-value
Sex	−0.068	0.104	−0.098	0.022
The public sector	Reference			
Processing industries	−0.126	0.018	−0.108	0.040
Private services	−0.144	0.003	−0.116	0.017
Primary level	Reference			
Secondary education	−0.016	0.729	0.086	0.060
Higher education	−0.121	0.052	0.061	0.355
<35 years	Reference			
35–50 years	−0.028	0.524	0.000	0.992
>50 years	−0.245	0.000	−0.058	0.230
Children	−0.105	0.004	−0.000	0.995
<20 workers	Reference			
20–50 workers	0.011	0.817	−0.016	0.731
>50 workers	0.064	0.132	−0.031	0.451
Policy variables				
No replacement	Reference			
Replacement by substitutes	−0.017	0.788	−0.110	0.059
Replacement by colleagues	0.018	0.749	−0.072	0.199
Permanent full-time work	0.073	0.132	0.109	0.019
Working hours match	−0.023	0.531	−0.077	0.041
Shift or period work	0.075	0.048	0.063	0.095
Regular overtime	−0.134	0.014	0.118	0.044
>48 h a week	−0.082	0.418	0.227	0.020
Three days' rule	−0.013	0.737	−0.075	0.057
Efficiency rule	0.052	0.147	0.076	0.030
McFadden's pseudo R^2	0.085		0.062	
Total	725		725	

Reported estimates are marginal effects from the logit models, evaluated at variable means.

sickness presenteeism, participation in regular overtime is associated with a positive effect (12%) that is contrary to sickness absenteeism. Therefore, there is a trade-off between two work-related sickness categories: regular overtime decreases sickness absenteeism, but increases sickness presenteeism. In addition, there is evidence that the possibility of replacement by substitutes decreases the prevalence of presenteeism by 11%.

Other working-time arrangements also have an influence on sickness presenteeism. Participation in permanent full-time work increases the prevalence of sickness presenteeism by 11%. If the desired and the actual working hours match, sickness presenteeism is reduced by 8% less compared with the case in which they do not match. Furthermore, if the regular weekly working hours exceed 48 h, sickness presenteeism is 23% higher, compared with those who work less.

The presence of the 3 days' rule at the workplace, i.e. 3 days' paid sickness absence without a sickness certificate, decreases sickness presenteeism by 8%. The presence of the efficiency rule at the workplace, i.e. 'in tough situations efficiency rules out everything else', increases the prevalence of sickness presenteeism by 8%. Therefore, focusing only on efficiency increases workers' sickness behaviour in the form of presenteeism. Intuitively, a reasonable amount of 'slack' is useful in organizations, if the aim is to minimize the prevalence of presenteeism. There is also unaccounted variation in absenteeism and presenteeism after taking into account the effects of the predictor variables. One reason for this is that we use cross-sectional data. Thus, we cannot control for individual characteristics that are constant over time, such as personality.

Discussion

Two work-related sickness categories, absenteeism and presenteeism, are counterparts. However, the explanations for their prevalence point to different factors. If one controls for worker characteristics, sickness presenteeism is much more sensitive to working-time arrangements than sickness absenteeism.

Participation in permanent full-time work, regular overtime and overlong working weeks increases the prevalence of sickness presenteeism. In contrast, the match between the desired and the actual working hours decreases it. These results are in accordance with the ones in the earlier studies,[12] except the finding for permanent full-time work. One explanation for the fact that participation in permanent full-time work increases sickness presenteeism is related to the degree of control.[11] Workers in permanent full-time work have a higher degree of control over their work, compared with workers in fixed-term and part-time work. Hence, they are less replaceable while sick. We also find an interesting trade-off between two sickness categories: regular overtime decreases sickness absenteeism, but increases sickness presenteeism. This pattern is related to the earlier Canadian results according to which there exist trade-offs between absenteeism and presenteeism.[14]

The rules matter. If workers are eligible for 3 days' paid sickness absence without a sickness certificate, they work less often while sick. Even more interesting is the fact that this rule does not lead to higher levels of sickness absence. This indicates that workers are not 'slacking' when they get the opportunity to take sick leave without a medical certificate. We also find that the presence of the efficiency rule increases sickness presenteeism.

As we are analysing a cross-sectional survey, we cannot explore the direction of causality. This would require an instrumental variables strategy, involving instruments that would predict the presence of working-time arrangements but not the prevalence of sickness presenteeism. Hence, it is possible that the estimates presented are subject to selection bias, at least to some degree, if the unobserved factors that

determine whether workers participate in certain aspects of working-time arrangements also influence their behaviour regarding working while sick. In particular, the fact that shift or period work increases both sickness absence and presence raises the possibility that those who have shift or period work are selected in such a way that they have more bad health on average. Furthermore, the use of panel data would allow us to include a 'personal history of sickness' as a determinant of absenteeism and presenteeism. Another limitation of our approach is that we used a survey of Finnish union members. Union members are not a fully representative sample of the total workforce, even in a country with high union density. Finally, we were not in a position to estimate duration models, because our data do not record how long the individual spells of absences and presenteeism are.

Conflicts of interest: None declared.

Key points

- Sickness presenteeism is a newcomer. The concept emerged in the empirical literature as late as the 1990s. Information about the determinants of sickness presenteeism is still relatively sparse.
- This article focuses on the prevalence of sickness presenteeism in comparison with sickness absenteeism. Using survey data of Finnish union members from 2008, we provide fresh evidence of the prevalence of both work-related sickness categories.
- Controlling for worker characteristics, we find that sickness presenteeism is much more sensitive to working-time arrangements than sickness absenteeism is. Permanent full-time work, mismatch between desired and actual working hours, shift or period work and overlong working weeks increase the prevalence of sickness presenteeism. We also find an interesting trade-off between two work-related sickness categories: regular overtime decreases sickness absenteeism, but increases sickness presenteeism.

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Received 15 January 2009, accepted 8 May 2009