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Relationship Between Perceived Work Ability and Productivity Loss

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*This paper presents an approach to assessing presenteeism (on-the-job productivity loss) that is related to perceived work ability. The aim of this explorative research was to find out if perceived work ability could be a robust indicator, interchangeable with presenteeism, in Finnish food industry organizations. The developed approach was based on existing presenteeism research as well as on register and survey data. The approach demonstrates that one step downward on the 10-point perceived work ability scale theoretically reduces employees' on-the-job productivity by ~5 percentage points. At the company level, on-the-job productivity loss was 3.7% (*mdn *0), while sickness absence was 5.0% (*mdn *2.2). The probability of productivity loss among factory workers was fourfold compared to women in office work. The developed approach makes it possible to assess perceived productivity loss at the level of an individual and an organization. Perceived work ability may, in fact, be a robust indicator for assessing perceived productivity loss.*

presenteeism perceived productivity loss perceived work ability

1. INTRODUCTION

All decision-makers are keen on improving their organization's performance, productivity and outcome. Sickness absence is a costly problem and a great concern also at the national level. However, sickness absence is not the only health-related issue that increases an organization's costs; presenteeism, too, is relevant as a potential performance loss factor [1, 2, 3]. Presenteeism has many synonyms, e.g., sickness presence [1], sickness presenteeism [2], on-the-job productivity loss [4] and at-work productivity loss [5]. In fact, presenteeism means being at the workplace but not fully working due to health problems [6, 7, 8]. In this research, productivity loss and presenteeism are synonyms.

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The history of presenteeism research is relatively short [9]. Even basic statistics, such as trends and absolute figures, is scarce [10]. Four kinds of studies are available: on medical conditions and presenteeism [2, 4, 11, 12], on health risks and presenteeism [2, 4, 13, 14, 15], on the cost of presenteeism [16, 17, 18, 19, 20] and on methods of measuring presenteeism [21, 22, 23, 24, 25, 26, 27].

Existing presenteeism measurement methods are appropriate for a rather short recall period of 1–4 weeks and those methods are suitable for evaluating the productivity loss in different health conditions. However, our philosophical basis was totally different compared to the existing methods. We did not use the fixed recall period at all or we may say that the length of the recall period was as long as an employee's work career so far. In addition, our philosophy was that also people who did not have any medical conditions could feel that their ability to perform had decreased compared to lifetime best.

We were also keen to research and to develop a way of reporting the average on-the-job productivity loss caused by poor or decreased perceived work ability. Previous studies did not address our intentions, except for Ozminkowski, Goetzel, Chang, et al. [5], who compared the usability of two valid and reliable instruments, the Work Limited Questionnaire (WLQ) [24] and the Work Productivity Short Inventory (WPSI) [28], and reported productivity loss percentages. They reported that the average productivity loss due to presenteeism was 4.9 and 6.9% for WLQ and WPSI, respectively. We selected Ozminkowski et al.'s research as our reference study because their study group consisted of ordinary healthy people without any specific symptoms, diseases or illnesses. There is no consensus or gold standard which measurement method is appropriate for evaluating on-the-job productivity loss. In addition, there is no gold standard for productivity loss percentages regarding so-called healthy employees, or even regarding employees with health conditions. It is hard to say what the average productivity loss percentage might be regarding healthy employees or regarding employees with health conditions. Much research on productivity loss has reported productivity loss figures related to medical conditions [11, 16, 29, 30] like depression, migraine and arthritis; however, productivity loss percentages due to poor health seem to vary case by case [30].

One cornerstone of our research was the work ability concept [31], which tells how well people can cope with their work with respect to work demands. Work ability is like a four-floor building where the ground floor is based on an employee's mental, physical, psychological and social functional capacity. The second floor consists of the employee's skills, the third floor of the employee's values and the top floor is work itself and work-related factors.

Earlier research reported that perceived work ability was associated with sickness absence and perceived health status [32, 33, 34] as well as poor productivity [35] but we were keen on finding out if perceived work ability could be a robust indicator and if it could be interchangeable with presenteeism. Perceived work ability is one's own sense about capability to perform. Decreased work ability does not mean directly that a person is a poor worker or the bottleneck of company performance but it can theoretically reveal how much a company might lose if full capacity is necessary.

Regarding our intention to report the connection between perceived work ability and on-the-job productivity loss, we used Ozminkowski et al.'s study results [5]. However, we had to introduce some restrictions because our primary data did not include questions on presenteeism. We found that the relative shares between health statuses in Ozminkowski et al.'s study group and ours were quite comparable, even if there were some differences, too. For example, ~14% of Ozminkowski et al.'s respondents reported fair or poor health. The corresponding share in our research was 16% (Table 1). Because there is a strong relationship between employee health status and work ability, we hypothesized that productivity loss percentages in Ozminkowski et al.'s study were comparable with perceived work ability. Thus, we combined Ozminkowski et al.'s results and our research data, and we obtained productivity loss discount factors, which consist

of employees' perceived work ability and which directly report theoretical productivity loss percentages.

TABLE 1. Comparison Between Some Factors in Ozminkowski, Ozminkowski, Goetzel, et al.'s [5] and in Our Study

Factors	Ozminkowski et al.	Our Study
Health status (%)		
excellent	14.11	7.0
very good	33.86	25.0
good	37.57	52.0
fair	13.76	14.4
poor	0.71	1.6
Other		
annual working days	238	228
age (*M*) (years)	37.4	40.5
respondents (*n*)	567	847

Our intention was not to evaluate the difference between presenteeism and sickness absence. However, we took into account and reported sickness absence figures because we used sickness absence data as an independent variable for calculating perceived productivity loss days due to presenteeism.

This research was explorative. We hypothesized that it was possible to construct a presenteeism measurement method based on perceived work ability, even if such an attempt had never been made before.

2. MATERIALS AND METHOD

The study was carried out at one of the largest food processing companies in Finland, which consists of an administration center and four factories. At the time of the study, the company employed 1995 persons.

2.1. Register Data

Objective data on age, gender, employment type (office or factory work) and sickness absence of all individuals employed from January 1 to December 31, 2003, were obtained from the register of the human resources department. Age and sickness absence factors were treated as continuous variables. An employee without any absence from work had 228 working days annually, excluding vacations and other days off.

2.2. Survey Data

Data on perceived work ability and perceived health status were based on the questions selected from a large survey, also including questions on leadership, community spirit and workload. The survey was carried out in 2003 among all employees of the company. It yielded 1120 replies (response rate: 56%). Of these, 873 (78%) consented to the survey data being combined with their sickness absence records. After excluding incomplete responses, the number of respondents eligible for this study was 847 [36]. The research was approved by the ethical committee of the Pirkanmaa Hospital District.

Because the number of eligible respondents was relative low, compared to the total number of company employees, we compared objective data on age, gender, work experience, employment type and sickness absence of respondents and nonrespondents. According to descriptive statistics (Table 2) and the Kruskal–Wallis test, the difference between respondents and nonrespondents was not significant. Therefore, we can state that the sample represented well the whole company.

TABLE 2. Demographics of Respondents (*N* = 847) and Nonrespondents (*N* = 1101)

	Respondents			Nonrespondents		
Demographic	***M***	***SD***	***Mdn***	***M***	***SD***	***Mdn***
Sickness absence (%)	5.0	2.2	7.3	6.0	3.0	7.9
Job tenure	11.8	8.6	9.5	10.9	8.6	8.8
Age	40.5	40.0	11.1	39.3	38.0	11.4
	n (%)			*n* (%)		
Employment type						
office work	273 (32)			143 (13)		
factory work	581 (68)			958 (87)		
Gender						
female	589 (69)			639 (58)		
male	265 (31)			462 (42)		

2.3. Construction of Measures to Assess Presenteeism

The survey included the question "Define your current work ability compared to your lifetime best". The response scale was 0–10. The question is a part of the Work Ability Index [37], but methodological studies have shown that the question is also valid for defining an employee's perceived work ability [35, 38]. The employees also self-reported their perceived health status on a 0–10 scale. Perceived work ability, perceived health status and Ozminkowski et al.'s [5] study results were the starting point in constructing measures for assessing presenteeism. The average perceived work ability level of our study group was 8.4 (*SD* 1.3) and perceived health status was 7.7 (*SD* 1.5), while the contingency coefficient between perceived work ability and perceived health status was .85.

The variable of our study, perceived work ability-related Presenteeism Scale, was constructed as follows. We hypothesized that the average health status of Ozminkowski et al.'s [5] study group and ours was comparable; therefore, we could use Ozminkowski et al.'s research results. We combined and compared the average productivity loss values of 4.9% (WLQ) and 6.9% (WPSI) from Ozminkowski et al.'s study with our average perceived work ability level of 8.4. Because WLQ and WPSI were health status-related, we fixed the average productivity loss percentages of 4.9 and 6.9% into work ability-related percentages by multiplying them by the contingency coefficient .85 between perceived health status and perceived work ability from our study. The result yielded the average perceived productivity loss percentages of 4.2 and 5.9%. Next, we calculated the ratios between the work ability fixed productivity loss percentages of 4.2 and 5.9% and the perceived work ability level of 8.4 of our study group (4.2/8.4 and 5.9/8.4) and matched those linearly to relate the perceived work ability level 8. While the productivity loss percentages of 4.2% (WLQ) and 5.9% (WPSI) corresponded to perceived work ability level 8.4, the corresponding productivity loss percentages for perceived work ability level 8 were 4.4% (WLQ) and 6.1% (WPSI). It is good to notice that when the perceived work ability number decreases, perceived productivity loss percentage increases. For example, the mathematical proportion

$$\left[\frac{4.2\%}{8.4} = \frac{X}{8.0}\right] \text{ yields } X = 4.0\%.$$

However, in this case we have to invert the scale so that decreasing perceived work ability yields $X = 4.4\%$. The next phase was that excellent perceived work ability levels 9 and 10 were considered as not causing productivity loss [35] and, therefore, level 9 was considered to respond to zero perceived productivity loss. For example, the linearity of our scale means that a one-level discount downward a perceived work ability level yields ~4.4% (WLQ) and 6.1% (WPSI) productivity loss:

$$\left[\frac{productivity\ loss\,(WLQ)}{perceived\ work\ ability}\right.$$
$$\left.\left(\frac{0.0\%}{9.0} \xrightarrow{loss} \frac{4.4\%}{8.0} \xrightarrow{loss} \frac{8.7\%}{7.0} \xrightarrow{etc.}\right)\right],$$

$$\left[\frac{productivity\ loss\,(WPSI)}{perceived\ work\ ability}\right.$$
$$\left.\left(\frac{0.0\%}{9.0} \xrightarrow{loss} \frac{6.1\%}{8.0} \xrightarrow{loss} \frac{12.3\%}{7.0} \xrightarrow{etc.}\right)\right].$$

After that, we extended the productivity loss figures to correspond to perceived work ability levels. The procedure resulted in two perceived work ability-related productivity loss scale options, one related to WLQ, the other to WPSI. Finally, we calculated the means of the two scales (Table 3) and constructed the Productivity Loss Scale.

We calculated that perceived work ability 8 theoretically corresponded to ~5% reduction in productivity, and each downward step of the perceived work ability scale reduced productivity by ~5 percentage points. We cut and ignored the productivity loss scale from downward of perceived work ability level 4 because perceived work ability levels from 3 to 0 were irrelevant in employees who might have on-the-job productivity loss. In this case, the relative share of employees who had a level under 4 was 0.7%. Employees with a very low perceived work ability level

TABLE 3. Presenteeism Scale According to Perceived Work Ability Level

	Perceived Work Ability Level				
Measure of Presenteesim	**4**	**5**	**6**	**7**	**8**
WLQ (WA-related presenteeism, %)*	21.80	17.40	13.10	8.70	4.40
WPSI (WA-related presenteeism, %)*	30.70	24.50	18.40	12.30	6.10
M (%)	26.20	21.00	15.70	10.50	5.20
Presenteeism scale (discount factor)	0.26	0.21	0.16	0.11	0.05

Notes. WLQ—Work Limited Questionnaire, WA—work ability, WPSI—Work Productivity Short Inventory; the values for levels 0–3 are irrelevant, the values for levels 9–10 are zero; *—the starting values of WLQ and WPSI are derived from Ozminkowski, Ozminkowski, Goetzel, et al. [5].

also had a very low health status level and, therefore, a high number of sickness absence days.

When we took into account bank holidays, vacations and weekends, we calculated that an employee with no absence from work had 228 working days annually, i.e., potential on-the-job productivity loss days. The annual sickness absence days (D_{abs}) of every employee were calculated from the register data by multiplying every employee's absence rate percentage ($A_{\%}$) by the 228 annual working days (D_{gross}):

$$D_{abs} = A_{\%} \bullet D_{gross}.$$

We calculated the on-the-job productivity loss rate (L_{pres}), i.e., presenteeism days, by using the perceived work ability-related discount factors (F_{wa}) and annual net working days (D_{net}) obtained by subtracting the annual absence days (D_{abs}) from the annual working days (D_{gross}). Every employee's annual presenteeism days were determined individually by multiplying their net working days (D_{net}) by their perceived work ability discount factor (F_{wa}):

$$L_{pres} = D_{net} \bullet F_{wa},$$

where $D_{net} = (D_{gross} - D_{abs})$.

The number of total loss days due to presenteeism at the company level is

$$\sum_{i=1}^{n} L_{pres_i},$$

where *n*—number of employees.

2.4. Analysis Design

The independent variables were sickness absence percentage from register data as well as perceived work ability level and perceived health status level from survey data. The dependent variable, presenteeism, was defined according to independent variables. We hypothesized that the selected independent variables were the only possible variables related to presenteeism in this research.

2.5. Statistical Analysis

Cross-tables of presenteeism and absence days per person per working year described the differences in total loss days between women and men working in an office or a factory. Presenteeism was dichotomized in the upper quartile (0–11 days versus at least 12 days). High presenteeism was explained with age-adjusted interaction of gender and occupational status by binary logistic regression; they were described with odds ratios (*OR*) and their 95% confidence intervals (95% CI). Analyses were done with SPSS version 14.0.1 and Microsoft Excel.

3. RESULTS

The aim of this research was to explore if perceived work ability could be a robust indicator, interchangeable with presenteeism. In addition, the aim was to develop a new approach to using perceived work ability as an indicator for assessing data on presenteeism.

The total number of lost working days in the study group of 847 employees was 17786, of which 60% (10642 days) were sickness absence and 40% (7144 days) presenteeism (Table 4). These figures corresponded to 5.0% annual loss due to sickness absence and 3.7% loss due to presenteeism.

TABLE 4. Annual Presenteeism and Absence Among the Participant Groups

Participants	*N*	No. of Annual Working Days	No. of Presenteeism Days	Presenteeism (%) *M* (*SD*)	Presenteeism (%) *Mdn* (Range)	No. of Absence Days	Absence % *M* (*SD*)	Absence % *Mdn* (Range)
Office workers								
women	172	39216	866	2.3 (3.3)	0.0 (15.9)	698	1.8 (3.7)	0.3 (23.8)
men	94	21432	692	3.3 (4.7)	0.0 (20.0)	443	2.0 (5.9)	0.0 (47.4)
total	266	60648	1558	2.6 (3.9)	0.0 (20.0)	1141	1.9 (4.6)	0.0 (47.4)
Factory workers								
women	414	94392	3928	4.2 (5.6)	4.0 (35.3)	7369	7.1 (8.2)	4.1 (48.8)
men	167	38076	1658	4.4 (6.2)	3.2 (31.4)	2132	4.6 (5.9)	2.5 (35.3)
total	581	132468	5586	4.2 (5.8)	3.8 (35.3)	9501	6.4 (7.7)	3.6 (48.8)
Whole company								
women	586	133608	4794	3.6 (5.1)	0.0 (35.3)	8067	5.5 (7.6)	2.7 (48.8)
men	261	59508	2350	4.0 (5.7)	0.0 (31.4)	2575	3.7 (6.0)	1.1 (47.4)
total	847	193116	7144	3.7 (5.3)	0.0 (35.3)	10 642	5.0 (7.2)	2.2 (48.8)

TABLE 5. Mean and Median Values of Presenteeism and Sickness Absence at Employee Level

			Presenteeism			Absence		Total Loss	
		Age	WA < 9	Days/Person/Year		Days/Person/Year		Days/Person/Year	
Participants	*N*	*M* (*SD*)	*N* (%)	*M* (*SD*)	*Mdn* (IQR)	*M* (*SD*)	*Mdn* (IQR)	*M* (*SD*)	*Mdn* (IQR)
Office workers									
women	172	43.2 (10.0)	64 (37)	5.2 (7.6)	0.0 (11.3)	4.0 (8.5)	0.6 (4.4)	9.2 (11.1)	5.0 (12.6)
men	94	45.0 (10.4)	42 (44)	7.5 (10.7)	0.0 (11.4)	4.7 (13.5)	0.0 (2.8)	12.2 (19.3)	8.4 (15.4)
Factory workers									
women	414	39.5 (11.3)	218 (53)	9.5 (12.7)	9.0 (11.3)	16.2 (18.8)	9.4 (18.6)	25.7 (23.9)	18.5 (29.6)
men	167	37.5 (11.0)	84 (50)	10.0 (14.1)	7.4 (11.4)	10.5 (13.4)	5.6 (13.7)	20.5 (20.0)	13.8 (25.9)
total	847	40.5 (11.1)	408 (48)	8.5 (12.1)	0.0 (11.4)	11.3 (16.4)	5.0 (15.0)	19.8 (21.6)	12.6 (23.1)

Notes. WA—perceived work ability, IQR—interquartile range.

Table 5 presents descriptive statistics of the participants. There were more women than men both among factory and office workers. The mean age ranged from 38 in male factory workers to 45 years in male office workers.

Table 5 also shows presenteeism, sickness absence and the total number of lost days per person per working year. The figures were higher for factory workers than for office workers. Sickness absence contributed 63% (female factory workers) and 51% (male factory workers) to the total number of lost days; in office workers, the corresponding percentages were lower, 39–43%. Regarding the whole company, the median of presenteeism days was 0 (interquartile range, IQR: 11.4) per person, while the median of sickness absence days was 5 (IQR: 15) per person. In all, for 52% of the factory workers the perceived work ability level was under 9, i.e., potential perceived productivity loss, whereas in office workers the figure was 40%.

Table 6 presents high presenteeism. The probability of age-adjusted presenteeism among male office workers was about twofold compared to women in office work, but the difference was not statistically significant (*OR* 1.84, 95% CI [0.79, 4.29]). Among factory workers, presenteeism was significantly higher than among female office workers (*OR* 3.90, 95% CI [2.06, 7.39] for women, and *OR* 4.21, 95% CI [2.08, 8.53] for men. Long-term presenteeism seems to be quite similar in both genders, but age increased presenteeism (*OR* 1.03, 95% CI [1.02, 1.05]).

TABLE 6. Employees With at Least 12 Presenteeism Days During a Working Year by Gender and Occupation; Odds Ratios (*OR*) and 95% Confidence Intervals (CI)

		Presenteeism				
Respondents	***N***	**WA < 9 *N* (%)**	**Univariate *OR***	**[95% CI]**	**Multivariate *OR***	**[95% CI]**
Age			1.03	[1.01, 1.04]	1.03	[1.02, 1.05]
Office workers						
women	172	64 (37)	1.00		1.00	
men	94	42 (44)	1.95	[0.84, 4.54]	1.84	[0.79, 4.29]
Factory workers						
women	414	218 (53)	3.44	[1.83, 6.48]	3.90	[2.06, 7.39]
men	167	84 (50)	3.46	[1.73, 6.92]	4.21	[2.08, 8.53]

Notes. WA—perceived work ability

4. DISCUSSION

Generally, the magnitude of the reported presenteeism figures were realistic compared to those of other studies [11, 16, 29, 30], suggesting that our perceived work ability-related measurement method might be reliable and worth further developing. We realized that there was much former research that reported productivity loss of even 2–40%, depending on existing health and the study group [11, 29, 30]. Lerner, Adler, Chang, et al. reported the lowest productivity loss of 2%, measured with WLQ, in their depression study, where the figure was related to productivity loss of a healthy control group [29]. That figure corresponds rather well with our research material; we found that the group of so-called healthy employees had a 2.9% productivity loss. The highest productivity loss of 40% was found in Wahlqvist, Reilly and Barkun's gastro-oesophageal reflux disease study [11].

It is important to bear in mind that the perceived productivity loss figures of this explorative research were theoretical; they show how much the organization might lose in annual productivity compared to the best-case scenario, where every employee performs without any productivity loss. However, we are going to validate the perceived productivity loss scale in the near future to test the method and to secure its validity and reliability.

Even if a measurement method yields sensible figures, we must consider potential limitations. Although perceived work ability is a reliable way to obtain robust data, it should be borne in mind that employees' self-reported perceived work ability are subjective and over- or underestimation is possible. Some employees can overestimate their perceived health status and perceived work ability, whereas others can underestimate them. However, self-reports are widely used for assessing individual perceived work ability and productivity loss, and they are considered reliable. In addition, there is no previous research on the relationship between perceived work ability, work ability concept and on-the-job productivity loss. However, researching and developing a measurement method for that kind of relationship is relevant, especially in Europe, where the concept of work ability is widely used and has a long history.

The link between reported presenteeism (productivity loss) days and reality may also be questioned at an individual level. In fact, productivity is defined as the ratio of output and input, and it depends on many variables, not only labor input [39]. In this study, we were able to calculate a theoretical amount of perceived productivity loss days during a year, but we were not able to measure quantitative productivity, input and output, of the company or an employee. In all, we were not able to illustrate how much at-work productivity may decrease in the real world. However, we can state that a high presenteeism rate decreases productivity especially in times of an economic boom; that is why high capacity is necessary. Therefore, the developed perceived work ability-related Productivity Loss Scale can be used for

estimating how much the perceived productivity loss might be if full capacity is necesarry.

Speaking technically, we succeeded in using Ozminkowski et al.'s [5] study results in constructing the perceived work ability-related Productivity Loss Scale and in applying the obtained variable in testing the developed perceived productivity loss measurement method. However, our questionnaire did not include directly presenteeism or productivity loss questions. That restriction might be a weakness or a strength. We were not able to obtain presenteeism data directly but we know that employees are not willing to answer questions regarding their perceived productivity or presenteeism. Therefore, the question on perceived work ability might be better than a question on perceived productivity level or presenteeism. One more limitation was that we hypothesized that the average health status of the participants in Ozminkowski et al.'s study and of our study group were comparable. We knew there was a difference in the health status but we assumed that the difference was not significant among employees in industrialized countries. However, the relative shares of our data regarding perceived work ability matched well Ozminkowski et al.'s data on perceived health status. In addition, perceived productivity loss percentage regarding healthy employees from our study matched rather well the figure for the control group in Lerner et al.'s study [29].

Regarding the productivity loss scale, we assumed that there was a linear relation between employees' perceived productivity loss and their perceived work ability. We were not able to measure real productivity loss and we do not know any previous research on the relation between perceived work ability and perceived productivity loss, even if Tuomi, Huuhtanen, Nykyri, et al. reported that high work ability level related statistically significantly to high productivity in one's work [35]. It is possible that the relation between perceived work ability and perceived productivity loss is linear, nonlinear, curve or a combination of them but we need other research to find that out. However, the developed Productivity Loss Scale seems to be more relevant than a scale where perceived work ability numbers from 0 to 10 are transformed directly into presenteeism from 100% to 0%. For example, in this research, the direct scale would give a tremendous mean value of a company's productivity loss, ~16%, whereas the developed scale resulted in 3.7%. In all, the Productivity Loss Scale seems to enable realistic estimation and prediction of presenteeism, and it may be considered a methodological solution in future research and in organizations aiming to carry out questionnaire surveys among their personnel without direct questions on presenteeism or perceived productivity loss.

Even if presenteeism is a hot topic, it is not every employee's problem. The result of this pilot study showed that distributions of the presenteeism and the sickness absence variables were skewed, i.e., many employees had no perceived productivity loss and/or no sickness absence at all. However, the result showed wide differences between office and factory workers.

The findings of earlier research on a higher share of presenteeism than sickness absence [16, 40] were confirmed regarding office workers, while in factory workers sickness absence was still dominant. The reason for the higher share of sickness absence than presenteeism among factory workers is that working in the food processing industry is strenuous and physically demanding [41, 42] especially on the shopfloor, where manual and repetitive work, in spite of high automation, is still necessary and the working environment is challenging [43]. Production workers may have as much as a ninefold relative risk for musculoskeletal symptoms compared to administrative workers [44]. Even if office work may seem to be less strenuous than factory work, musculoskeletal symptoms are also predominant because of the one-sided strain pattern of work [45, 46].

There has been an ongoing discussion about the job performance of older employees in the industry. Work ability, measured with the Work Ability Index, decreases over time, especially in physical work [47]. However, there is no research on a possible connection between perceived work ability-related productivity loss and ageing. We did not research the age question in this study but we recommend that it should be researched.

When an organization wants to gain an economic advantage and cut total productivity loss, it should monitor both presenteeism and sickness absence. Both are important when the focus is on maintaining the employees' health and on managing those with impaired perceived work ability. Such monitoring, however, is a sensitive topic, and should be approached transparently, i.e., in consensus between the employees and the employer and, obviously, according to legislation and ethical principles.

This study has three values. First, it is the first attempt to connect employees' perceived work ability and presenteeism. Second, the developed approach is not fixed to any recall period, which means that it can be used rather quicker and more easily at any time than other methods. Third, labor laws require Finnish employers to monitor and promote employees' working performance. The perceived work ability-related presenteeism indicator is a way for occupational health care to manage and follow up how well employees with decreased perceived work ability level can stay at work instead of taking sick leave.

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