EVIDENCE BASED PUBLIC HEALTH POLICY AND PRACTICE

Organisational justice and smoking: the Finnish public sector study

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Objective: To examine the extent to which the justice of decision-making procedures and interpersonal relationships is associated with smoking.
Setting: 10 municipalities and 21 hospitals in Finland.
Design and participants: Cross-sectional data derived from the Finnish Public Sector Study were analysed with logistic regression analysis models with generalised estimating equations. Analyses of smoking status were based on data provided by 34 021 employees. Separate models for heavy smoking (⩾20 cigarettes/day) were calculated for 6295 current smokers.
Results: After adjustment for age, education, socioeconomic position, marital status, job contract and negative affectivity, smokers who reported low procedural justice were about 1.4 times more likely to smoke ⩾20 cigarettes/day compared with their counterparts who reported high levels of justice. In a similar way, after adjustments, low levels of justice in interpersonal treatment was significantly associated with an increased prevalence of heavy smoking (OR 1.35, 95% CI 1.03 to 1.77 for men and OR 1.41, 95% CI 1.09 to 1.83 for women). Further adjustment for job strain and effort–reward imbalance had little effect on these results. No associations were observed between justice components and smoking status or ex-smoking.
Conclusions: The extent to which employees are treated with justice in the workplace seems to be associated with smoking intensity independently of established stressors at work.

Organisational justice refers to the extent to which employees are treated justly in the workplace,[1 2] and it can be divided into a procedural component and an interactional component. The procedural component indicates whether decision-making procedures include input from affected parties, are consistently applied, suppress bias and are accurate, correctable and ethical.[3] The interactional component refers to the polite and considerate treatment of individuals by supervisors when procedures are implemented.[4 5]

In more general terms, organisational justice is a construct defining the quality of social interaction at work.[6 7] Justice, altruism and equity are among the most fundamental questions concerning social relationships and the organisation of society.[8–10] Just treatment at work is important because it may communicate status and value.[11]

Poor organisational justice has been associated with various indicators of ill health such as minor psychiatric morbidity, poor self-reported health, absence from sickness and incident coronary heart disease.[11–15] However, the mechanisms underlying these associations are not well known. In principle, organisational justice, like other psychosocial factors, could be related to health outcomes directly through physiological stress mechanisms and indirectly through health-risk behaviours, such as smoking.[16]

Earlier research on psychosocial work-related factors and smoking has concentrated on job strain and effort–reward imbalance (ERI). The demand–control model posits that job strain occurs when excessive job demands are combined with low job control.[17 18] Exposure to job strain elicits sustained stress reactions with negative long-term consequences for health. The ERI model considers the impact of labour market conditions on health in addition to more proximal job conditions.[19] According to this model, health risk derives from the mismatch between efforts expended at work and rewards received in turn in terms of money, social approval, job security and career opportunities.

Some studies have found an association between high job strain and smoking.[20–22] However, null results have also been reported,[23–26] and higher strain has been related to a lower prevalence of smoking.[27] In a recent study,[28] high job strain was associated with more intensive smoking among current smokers and with a higher likelihood of current smoking among ever-smokers. Moreover, high ERI has been associated with a greater likelihood of smoking.[29] In contrast, the relationship between organisational justice and smoking has largely remained unexamined. Low procedural justice was associated with increased prevalence of smoking in female hospital employees.[14] However, uncertainty remains as to whether organisational justice is only a marker for other work-related psychosocial factors that might influence smoking.

The objective of this study was to investigate whether justice at work is associated with smoking among public sector employees, and whether this association is independent of other psychosocial characteristics of the work environment, such as job strain and ERI.

METHODS

Study population

Data were drawn from the ongoing prospective Finnish Public Sector Study,[30 31] which focuses on the entire personnel of 10 towns and 21 hospitals. In 2000–2, data on organisational justice, smoking habits and other factors were collected through self-administered questionnaires from 39 255 women and 9337 men aged 17–65 years. The response rate was 68%,

Abbreviations: ERI, effort–reward imbalance; GEE, generalised estimating equations

Table 1 Characteristics of participants* and the levels of organisational justice (tertiles) by background factors

	Women							Men						
		Procedural justice			Interactional justice				Procedural justice			Interactional justice		
	n (%)	Low	Intermediate	High	Low	Intermediate	High	n (%)	Low	Intermediate	High	Low	Intermediate	High
All	27 121	31	32	36	31	34	35	6900	33	30	37	31	37	32
Age (years)														
17–29	2191 (8)	24	34	42	26	33	41	430 (6)	27	30	43	22	33	46
30–39	6170 (23)	34	24	33	31	34	36	1582 (23)	35	30	35	30	38	32
40–49	9581 (35)	33	32	35	32	33	35	2276 (33)	36	30	34	33	36	32
50–59	8647 (32)	30	31	39	31	34	35	2384 (35)	31	29	40	33	37	30
60–64	532 (2)	26	30	44	27	33	41	228 (3)	23	25	52	23	39	38
		p<0.001			p<0.001				p<0.001			p<0.001		
Education														
Common school	5483 (20)	25	33	42	31	33	36	1884 (27)	37	32	32	36	35	28
Comprehensive/middle school	7942 (29)	32	32	36	32	33	34	1941 (28)	36	31	33	34	37	29
High school	13 696 (51)	34	32	34	30	34	36	3075 (45)	29	28	44	26	37	37
		p<0.001			p<0.001				p<0.001			p<0.001		
Socioeconomic status														
Manual	3262 (12)	26	33	41	36	32	32	2303 (33)	39	33	28	37	37	26
Lower non-manual	16 126 (59)	33	33	33	31	34	35	1966 (28)	36	29	35	32	36	32
Upper non-manual	7733 (29)	28	30	42	28	33	39	2631 (38)	25	27	48	25	37	38
		p<0.001			p<0.001				p<0.001			p<0.001		
Job contract														
Permanent	22 343 (82)	32	32	36	32	34	34	5986 (87)	34	29	36	33	37	31
Temporary	4778 (18)	27	34	39	26	33	41	914 (13)	24	31	46	22	35	43
		p<0.001			p<0.001				p<0.001			p<0.001		
Marital status														
Married/cohabiting	20 290 (75)	31	32	37	30	34	36	5575 (81)	33	29	38	30	37	32
Other	6831 (25)	31	32	37	33	32	35	1325 (19)	33	31	36	35	34	31
		p=0.838			p<0.001				p=0.517			p=0.005		
Negative affectivity														
Low	20 318 (75)	28	33	39	27	34	38	5147 (75)	29	27	41	30	37	36
High	6803 (25)	40	32	28	42	32	27	1753 (25)	43	30	27	42	35	23
		p<0.001			p<0.001				p<0.001			p<0.001		

*Those with no missing data for procedural and interactional justice, smoking status, or any of the covariates in model B in tables 2 and 3.

and the sample did not substantially differ from the eligible population. In the 10 town subsample, figures for participants versus eligible population (n = 47 351) were as follows: mean age 44.9 vs 44.5 years, proportion of women 77% vs 72%, proportions of upper non-manual, lower non-manual and manual employees 34%, 46% and 20% vs 35%, 42% and 22%, respectively. The corresponding figures for the hospital subsample (n = 23 610) were as follows: mean age 43.1 vs 43.1 years, proportion of women 87% vs 84%, proportions of upper non-manual, lower non-manual and manual employees 16%, 77% and 8% vs 13%, 81% and 7%, respectively.

This study included those 27 121 women and 6900 men who provided complete data on smoking status, organisational justice and all covariates.

Approval was obtained from the ethics committee of the Finnish Institute of Occupational Health, Helsinki, Finland, for the study.

Measurements

Organisational justice

The procedural justice scale (seven items, Cronbach's $\alpha = 0.91$) requested the degree to which respondents considered the procedures used in the workplace to be designed to collect accurate information necessary for making decisions, to provide opportunities to appeal or challenge the decision, to generate standards so that decisions could be made with consistency and to hear the concerns of all those affected by the decision.[1]

The interactional justice scale (six items, Cronbach's $\alpha = 0.92$) requested whether respondents thought that their supervisors were able to suppress personal biases, to treat subordinates with kindness and consideration, and to take steps to deal with subordinates truthfully.[1] In both scales, responses were given on a five-point scale ranging from 1, strongly disagree to 5, strongly agree.

Higher scores on both scales indicated higher levels of perceived justice. For the analyses, all participants were divided into three groups based on the distribution of the mean scores, the bottom third indicating a low level, the middle third indicating an intermediate level and the top third indicating a high level of justice.

Smoking

Smoking was measured in standard ways using the following questions:

- ''Do you smoke or have you previously smoked regularly, that is, daily or nearly daily?''
- ''If you have smoked, do you still smoke regularly?''
- ''How many cigarettes do you smoke (or did smoke) a day on average?''

From this information, we derived the smoking status (non-smoker vs smoker), ex-smoking status (ex-smoker vs current smoker) for ever-smokers, and smoking intensity (the number of cigarettes smoked per day) for current smokers. Smoking intensity was dichotomised (1–19 and ⩾20 cigarettes/day).

Other measurements

Several covariates were used. The following sociodemographic characteristics were measured: sex, age, education (common school, comprehensive or middle school, high school), marital status (married or cohabiting vs single, divorced or widowed), socioeconomic position and type of job contract (permanent vs temporary). Sex, age, occupational status and type of job contract were obtained from the employers' registers. Age was grouped into five categories. Occupational titles were categorised into occupational positions of upper non-manual, lower non-manual and manual, according to the Statistics Finland five-digit occupational classification.

To reduce bias arising from individual differences in response styles, we used the Trait Anxiety Inventory (six items; Cronbach's $\alpha = 0.85$) to control for negative affectivity.[32] The scale was dichotomised using the highest quartile as a cut-off point.

The job-strain measure was derived from the Job Content Questionnaire.[33 34] Job control was assessed with nine questions about the worker's ability to use and develop skills and exert decision authority (Cronbach's $\alpha = 0.83$). Two questions addressed the demands of the job—that is, having high workload and working at a fast pace (Cronbach's $\alpha = 0.7$). The responses were given on a Likert scale of 1, very little, to 5, very much. The total scores for each of the two constructs were computed.

To construct the job-strain measure, the job demand and job control scales were first dichotomised at their median points. The resulting variables were then used to form the job-strain indicator, which had the following four categories: low job strain (low demands and high control), active jobs (high demands and high control), passive jobs (low demands and low control) and high job strain (high demands and low control).[18]

A standard measure of ERI in Finnish was not available in this study. This questionnaire included one question about effort in work and three questions about rewards. These measures were used to construct the proxy measure of ERI. Effort in work was measured with the following question: ''How much do you feel you invest in your job in terms of skill and energy?'' Rewards were assessed with a scale containing three questions about feelings of getting in return from work in terms of (1) income and job benefits, (2) recognition and prestige, and (3) personal satisfaction (Cronbach's $\alpha = 0.64$).[28 35] The response format for all the questions was a five-point Likert scale ranging from 1, very little, to 5, very much. The indicator of ERI was obtained by calculating the ratio between the response score in the effort scale and the mean response score in the reward scale. The resulting quotient was divided into tertiles to indicate low, intermediate and high ERI.

If half or more of the component items were missing, a value of missing was recorded in the total scores of control, demands and rewards.

Data analysis

We used the SAS V.9.1 program package for all analyses. Cross-tabulations were used to assess differences in the levels of procedural and interactional justice between women and men, age groups and other background factors.

The data were likely to be clustered, as employees who work in the same work unit might be expected to have something in common.[14] The responses could be affected by other employees in the same work unit. The number of work unit levels was 3113 (mean 10.9 (SD 13.9), range 1–348).

To take the clustered nature of the data into account, we used the logistic regression with generalised estimating equations (GEE) method, with an exchangeable correlation structure corresponding to a random effect to correct for work unit level.[36] Sex-specific odds ratios (ORs) and their 95% CIs are presented. Separate models were calculated for heavy smoking (⩾20 cigarettes/day) among current smokers.

The hypothetically most favourable condition (highest tertile) was selected as a reference category in each indicator of organisational justice in all analyses. Adjustments were made in three steps to distinguish the different types of confounders. In the first step, only age was adjusted for. In the second step, education, marital status, socioeconomic position,

Table 2 Associations of procedural and interactional justice with smoking status: adjusted ORs and their 95% CIs from logistic regression models with generalised estimating equations

		ORs (95% CI), adjusted for:		
	Participants, n	Age (A)	A + education, SEP, marital status, job contract and NA (B)	B+job strain and ERI (C)
Women	27 121			
Procedural justice				
High	9888	1.00	1.00	1.00
Intermediate	8740	0.96 (0.89 to 1.04)	0.95 (0.88 to 1.03)	0.94 (0.87 to 1.02)
Low	8493	1.05 (0.96 to 1.13)	1.05 (0.96 to 1.13)	1.02 (0.94 to 1.11)
Interactional justice				
High	9642	1.00	1.00	1.00
Intermediate	9095	0.97 (0.90 to 1.05)	0.96 (0.89 to 1.04)	0.96 (0.88 to 1.03)
Low	8384	1.09 (1.01 to 1.19)	1.01 (0.93 to 1.10)	0.99 (0.91 to 1.07)
Men	6900			
Procedural justice				
High	2581	1.00	1.00	1.00
Intermediate	2047	1.07 (0.93 to 1.24)	0.96 (0.83 to 1.11)	0.96 (0.83 to 1.10)
Low	2272	1.11 (0.96 to 1.29)	0.96 (0.83 to 1.11)	0.94 (0.81 to 1.09)
Interactional justice				
High	2227	1.00	1.00	1.00
Intermediate	2521	1.05 (0.91 to 1.22)	1.00 (0.86 to 1.15)	1.00 (0.86 to 1.15)
Low	2152	1.11 (0.96 to 1.29)	0.97 (0.83 to 1.13)	0.95 (0.82 to 1.11)

ERI, effort–reward imbalance; NA, negative affectivity; SEP, socioeconomic position.

job contract and negative affectivity were added. In the third step, job strain and ERI were also included. Analyses were performed separately for women and men.

RESULTS

In all, 17% of women and 24% of men were current smokers; 16% of women and 24% of men were ex-smokers. Men smoked more heavily: 29% of male smokers compared with 9% of female smokers smoked ⩾20 cigarettes/day ($p<0.001$).

Table 1 gives the characteristics of the participants and the level of the components of organisational justice (tertiles) by background factors. The levels of procedural and interactional justice were highest among the youngest and the oldest respondents. In addition, organisational justice was higher among upper non-manual employees than among lower non-manual and manual employees, with the exception that among women the level of procedural justice was equally high among manual and upper non-manual employees ($p<0.001$ in all cases).

Table 2 shows the results from logistic regression analyses with GEE on the associations between the two components of organisational justice and smoking status. In the age-adjusted model, low interactional justice was significantly associated with prevalent smoking among women (OR 1.09, 95% CI 1.01 to 1.19). However, the significant relationship disappeared after adjustment for other factors. Low levels of procedural justice was not associated with a higher likelihood of smoking in women. In men, the associations between organisational justice components and smoking status were not significant in either age-adjusted or fully adjusted models.

Table 3 presents adjusted ORs (95% CI) from logistic regression models with GEE for heavy smoking. Compared with conditions of high justice, low levels of justice in decision-making procedures was associated with a 34% higher likelihood of smoking ⩾20 cigarettes/day in women and a 44% higher likelihood in men after adjustment for age, education, marital status, socioeconomic position, job contract and negative affectivity. These associations remained after job strain and ERI were added to the models.

After adjustment for age, education, marital status, socioeconomic position, job contract and negative affectivity, female smokers in the lowest tertile of interactional justice had 1.4-fold odds for smoking ⩾20 cigarettes/day compared with the female smokers in the highest tertile of interactional justice (OR 1.41, 95% CI 1.03 to 1.77). Again, these ORs did not change after additional adjustment for job strain and ERI.

With regard to heavy smoking, we tested whether there were any significant interaction effects between the two dimensions of organisational justice and job strain or ERI by adding the interaction terms to the model. No significant interactions were found (data not shown).

Finally, we tested the associations between organisational justice and ex-smoking among female and male ever-smokers. However, no significant associations were found (data not shown).

DISCUSSION

This study explored the extent to which the level of organisational justice was associated with smoking intensity in a large sample of Finnish public sector employees. According to our results, smokers who experienced lower levels of justice at work in terms of decision-making procedures and interpersonal treatment were more likely to exhibit heavy smoking. This association was not accounted for by age, education, socioeconomic position, marital status, job contract, negative affectivity (a proxy for response style) or clustering of data. Furthermore, the contribution of procedural and interactional justice largely persisted after controlling for the two leading models of work stress, job strain and ERI. This suggests that organisational justice is not just a marker for other work-related psychosocial factors that might influence smoking intensity.

Earlier studies on work-related psychosocial factors and smoking were mainly related to the models of job strain and ERI. Research on organisational justice is recent compared with research published on these established models. It is possible that there is overlap between some items of organisational justice and job control measures, as well as between organisational justice and reward measures. For example, consideration of subordinates' viewpoints partly overlaps with job control (participation in decision making). In our data, relatively weak correlations (0.16–0.2, $p<0.001$ in all cases) were observed

Table 3 Associations of procedural and interactional justice with heavy smoking (⩾20 cigarettes/day) among current smokers: adjusted ORs and their 95% CIs from logistic regression models with generalised estimating equations

		ORs (95% CI), adjusted for:		
	Participants, n	Age (A)	A+education, SEP, marital status, job contract and NA (B)	B+job strain and ERI (C)
Women	4666			
Procedural justice				
High	1705	1.00	1.00	1.00
Intermediate	1458	1.06 (0.81 to 1.38)	1.03 (0.79 to 1.35)	1.01 (0.77 to 1.33)
Low	1503	1.44 (1.12 to 1.82)	1.34 (1.04 to 1.73)	1.32 (1.02 to 1.71)
Interactional justice				
High	1617	1.00	1.00	1.00
Intermediate	1505	1.24 (0.96 to 1.60)	1.20 (0.93 to 1.56)	1.19 (0.92 to 1.53)
Low	1544	1.57 (1.22 to 2.02)	1.41 (1.09 to 1.83)	1.39 (1.06 to 1.81)
Men	1629			
Procedural justice				
High	571	1.00	1.00	1.00
Intermediate	495	1.22 (0.93 to 1.59)	1.01 (0.76 to 1.33)	1.03 (0.77 to 1.36)
Low	563	1.66 (1.23 to 2.17)	1.44 (1.09 to 1.90)	1.48 (1.10 to 2.00)
Interactional justice				
High	502	1.00	1.00	1.00
Intermediate	595	0.97 (0.74 to 1.28)	0.90 (0.68 to 1.20)	0.92 (0.69 to 1.23)
Low	532	1.59 (1.22 to 2.07)	1.35 (1.03 to 1.77)	1.38 (1.03 to 1.83)

ERI, effort–reward imbalance; NA, negative affectivity; SEP, socioeconomic position.

between the job control scale and the three items in the procedural justice scale referring to making or challenging decisions. In addition, both dimensions of organisational justice were only moderately correlated with job strain and ERI. The correlations ranged from −0.25 to −0.29 ($p<0.001$ in all cases).

Conditions of low control and low organisational justice can occur simultaneously in the same work environment.[37] This was also the case in this study, as 44% of participants with high job strain and 45% of participants with high ERI were also in the lowest tertile of procedural justice. Considering this co-occurrence, it is possible that adjustments for these models represent overcontrolling. On the other hand, an error in the measurement of these concepts increases the risk of insufficient adjustment and residual confounding. However, such an error is also likely to lead to underestimation of the association between justice and smoking intensity.

Conceptually, the job-strain model mainly focuses on the task-level characteristics, whereas the model of organisational justice emphasises work-related social contexts and processes.[12] In other words, job demands, job control and social support deal with the person's job characteristics or situations in which the employee needs help, whereas the dimensions of organisational justice may capture more basic elements of the social structure in which these characteristics are operating.[12 38 39]

The model of organisational justice also differs from the ERI model. The model of justice is not limited to the specific exchange process between efforts and rewards, but it aims to capture the whole range of unjust treatment at work experienced or witnessed by employees.[12]

We hypothesise that organisational injustice is one type of psychosocial job stressor, which affects psychological, physical and behavioural reactions.[13] Because we found that organisational justice was associated with smoking independently of job strain and ERI, we see it as a distinctive type of job stressor. Similarly, we assume that these three models are complementary, capturing partly different stressors that independently affect smoking behaviour. This view is also supported by studies on other outcomes, such as psychiatric disorders,[40] self-rated health[12] and coronary heart disease.[11]

No evidence was found to support the hypothesis that organisational justice would be associated with smoking status. This may be partly because smoking is usually initiated before adulthood and is maintained by a wide range of cultural and social factors.[24] On the other hand, smoking intensity can vary during adulthood. It seems likely that workplace factors such as organisational justice might influence, in particular, the number of cigarettes smoked rather than the smoking status. In fact, there is also more evidence for an association between job strain and smoking intensity than between job strain and smoking status.[28]

These results indicate that some smokers may use heavy smoking as a means of coping with the injustice they experience at their workplaces. However, this is probably not the case for all smokers, as there are individual differences in the mode or pattern of behavioural responses to adverse psychosocial factors,[41] such as low levels of organisational justice. The neutralising effect of variables going in different directions for different people can lead to the overall finding of no relationship or only a weak relationship between organisational justice and smoking habits.

Strengths and weaknesses of the study

This study had several strengths. To the best of our knowledge, this was the first study focusing on the association between organisational justice and smoking. Second, information was obtained from a large survey with a satisfactory response rate and the respondents represented the target population well in terms of age, sex and socioeconomic position. This limited the potential for selection bias. Third, although the sample was not truly representative of the Finnish working population, it represented a fairly heterogeneous group of workers. Fourth, these data included measurements of major work-related psychosocial factors, such as job strain and ERI. This enabled us to determine whether the addition of justice would add to risk estimates based on established psychosocial risk factors. Fifth, several potential confounders were adjusted for. A major bias in our study is unlikely. Although not very large, the size of the effect was comparable and the results were in line with those

What is already known

- Previous studies on psychosocial work-related factors and smoking have focused on job strain and effort–reward imbalance, but the relationship between organisational justice and smoking has been poorly described.
- In this study, we examined the extent to which the justice of decision-making procedures and interpersonal relationships at work is associated with smoking status and heavy smoking.

What this paper adds

- The justice of decision-making procedures and interpersonal treatment by supervisors was associated with heavy smoking among current smokers, independently of established occupational stressors such as job strain and effort–reward imbalance.
- The findings reported here shed some light on the potential mechanisms underlying the association between low levels of organisational justice and ill health.

obtained for the established psychosocial factors, such as job control,[28] job strain[21 22 28] and ERI.[28 29]

The main limitations when interpreting these findings also need to be addressed. First, the observational and cross-sectional design of this investigation does not permit conclusions of the causal relationships. Heavy smoking may pre-date the experience of low justice. For example, heavy smokers may take several cigarette breaks during the working day and if their supervisor does not see it as acceptable, these workers may find their treatment unjust. Moreover, both heavy smoking and low levels of organisational justice can be caused by some other underlying factors.

Second, this study assessed organisational justice and smoking with self-reports, which can cause recall and response bias. As justice was self-reported, it is unclear whether actual managerial and interpersonal treatment or the characteristics of the respondent determined the level of justice. Self-report data on substance use can be subject to under-reporting. Besides, common method variance may artificially inflate relationships between variables and may bias the results concerning bivariate associations in cross-sectional data.[42]

Third, although we performed multiple adjustments, it is still possible that some other factors may underlie the observed associations. We cannot totally rule out the possibility that heavy smokers have been selected into job conditions with lower levels of justice by virtue of personality or poor health. Moreover, home stress, individual coping strategies, job-related smoking opportunities, smoking behaviours of fellow employees and workplace norms or policy might modify the relationships. For example, applications of smoking restrictions may have slightly varied between different workplaces. There is evidence showing an association between the workplace smoking restriction policy and employees' smoking behaviour.[43] Further research needs to be conducted to test whether these or other potential confounders might be responsible for the association.

Fourth, the standard measure of ERI was not available in this study. However, both studies using original and proxy measures have found support for the ERI model, indicating an effect of ERI regardless of the measure.[44] A previous report of this study cohort showed an association between high ERI and higher smoking intensity,[28] and this can be seen as an indication of the predictive validity of our ERI measure. Despite this, there is a possibility that our crude measure did not fully capture the ERI model, and the Cronbach's α for the reward scale was rather moderate.

Finally, our evidence was based on a female-dominated hospital and municipal sector. Further studies in prospective design, in other countries and in the private sector are needed to confirm and develop our findings as well as determine their generalisability.

Policy implications

- Decision-making procedures and interpersonal treatment of employees might be among the factors to focus on in attempts to cut smoking.

Practical implications

Because the pursuit of justice is a fundamental aspect of any social organisation,[39] it is important to pay attention to decision procedures and interpersonal treatment in the workplace. Just treatment by important group members leads to positive feelings and is associated with the perceived quality of social relationships between individuals and decision makers.[45 46] Moreover, this study, together with earlier evidence, indicates that improving organisational justice in the workplace might have a favourable effect on employees' health, and should be among the important factors in attempts to minimise psychosocial risk at work.

The workplace is a potentially feasible area for health promotion and interventions. This study provides information that could be used to plan worksite health-promotion strategies. Our findings suggest that decision-making procedures and interpersonal treatment of employees might be among the factors to focus on in attempts to cut smoking. Other studies suggest that changes in justice may also reduce levels of absence from sickness and risk of health problems.[12 13]

CONCLUSION

This is apparently the first study to show that the extent of procedural and interactional justice in the workplace is associated with the intensity of smoking among current smokers. The contribution of organisational justice to heavy smoking was not attributable to relationships between other major work-related psychosocial factors and smoking. This indicates that the organisational justice model might provide supplementary information on important stressors in the psychosocial work environment in general and on potential work-related determinants of heavy smoking in particular. The findings reported here shed some light on the potential mechanisms underlying the association between low levels of organisational justice and ill health found in previous studies.

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