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Self-rated health of the temporary employees in a Nordic Welfare State: findings from the Finnish Public Sector Study

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Objective: This nine-year follow-up study explores a possible association between temporary employment and declining health.

Methods: Years in temporary employment from 2004 to 2008/09 were measured for a cohort of 26,886 public sector employees. Self-rated health was measured by surveys in 2004 (baseline), 2008/2009 (short-term follow-up) and 2012/2013 (long-term follow-up).

Results: Compared to the permanently employed, the baseline health adjusted odds of poor health were lower both in the short-term and long-term follow-up, but the differences became non-significant when adjusted for sociodemographic and work-related factors.

Conclusions: The results would suggest that temporary employment in public sector of a Nordic welfare state does not entail health risks. Future research is needed to elucidate if this is true also among those exposed to non-permanent employment in the private labor market, in particular those with most atypical jobs and unstable job careers.

1. Background

The link between unemployment and poor health seems to be universal, and questions for further research concern the direction of causality and the magnitude of the effect rather than the association as such (1). A corresponding link between non-standard employment and health has also been explored (2,3,4), but the associations proved less universal. In the most recent review (4), Kim et al. suggest that inconsistency of the results may be rooted in the model of the welfare state, emphasizing that the Nordic model of universal social security systems and employee protection provides an environment where non-standard employment may not necessarily have adverse health effects. Important limitations, however, were identified in the research evidence, such as scarcity of longitudinal studies and failure to consider the diversity of the socio-occupational realities. In this study we aim to remedy these limitations and to add to what is known about the associations between non-permanent employment and health in the realm of the public sector of Finland, which is counted among the countries subscribing to the principles of the Nordic welfare state model (5). This model means, by definition, production of the welfare services through an extensive public sector. In Finland, about 30 per cent of wage and salary earners are employed in governmental, state or municipality administered organizations (6). Statistics moreover show that the use of non-permanent contracts is more widespread in the public than in the private sector. For instance, in the municipalities the proportion of temporary employees is 20%, compared to 9% in the private sector (7).

The present study draws on the Finnish Public Sector (FPS) Study on the health of municipal and hospital employees. According to an earlier report of the FPS Study (8) focusing on employees who had temporary contracts at baseline and were working in the same organization two years later, 26% of temporary employees had moved into a permanent job while 74% were still working on a temporary basis. The figures indicate that it is not uncommon for temporary contracts to be kept in chained into years of temporary employment status. On the other hand, the report raises the question about those

temporary employees who left the organizations during the two follow-up years. The data subsequently accumulated in the FPS Study afforded a unique setting for studying the associations between health and temporary employment, also covering employees who did not continue in the service of the target organizations.

In theory, a positive association between the permanency of the employment contract and the well-being of the employee sounds generic: psychological theories (9) give reason to assume that working on a non-permanent basis may in the longer run have adverse health effects, and from the sociological point of view temporary employees may suffer from a deficiency of the 'latent functions' of the work as defined by Jahoda (10), such as time structure, social contacts, collective purpose, social identity/status, and activity. Referring to the 'vitamin model' (11), in the long run there may be 'overdosage' of the factors initially thought to be necessary in maintaining well-being, such as the opportunity to apply current skills and to acquire new ones, variety of the tasks and job contexts, and contacts with others. The vitamin model suggests that the adverse health effects do not appear until the amount of exposure, in our case the duration of temporary employment, has risen above a certain threshold.

Our question was whether a longitudinal study estimating the amount of exposure to temporary employment over time might, in contrast to several earlier findings (8,12,13,14,15,16,17,18) and in line with some findings (19,20), reveal adverse health effects even in the Nordic context. Assuming that earlier zero-findings are due to relatively short follow-up times, we expected that longer duration of temporary employment status leads to poor health.

2. Materials and methods

2.1. The sample

The FPS Study comprises an open register based cohort of employees entering and leaving the service of ten municipalities and 21 municipally owned hospitals, representing more than 20 per cent of Finland's public sector employees. In addition to the employer registers, repeat survey data has been collected among the entire full-time personnel at work at the time of the survey in 1997/98, 2000/02, 2004, 2008 and 2012 (excluding those on very short contracts). Those participants who had left the organizations after responding to an earlier questionnaire, were surveyed in 2005, 2009 and 2013. The questionnaires included some 40 sections or single items on health, health related behavior and working conditions. The study was approved by the ethics committee of the Helsinki and Uusimaa hospital district.

The baseline survey of this study was distributed in 2004 in the organizations through internal mail and returned to the researchers by post. It yielded 56,801 responses (response rate 67%). The first follow-up survey was conducted in two parts: in 2008 those responding to the baseline survey who had not left the organizations received the questionnaire by internal mail, and in 2009 those who were no longer employed at the organizations received the questionnaire by post. The numbers of respondents (response rates) were 29,361 (83%) and 14,149 (68%). The second follow-up survey was conducted in 2012/13 among all those responding to the 2004 survey, except those who had died or moved abroad. We included to this study those participants who had responded to all three study waves (baseline 2004, short-term follow-up 2008/09 and long-term follow-up 2012/13) and were employed in 2008/09. After the exclusions (see flow chart in Figure 1) the study sample consisted of 22,851 employees who had stayed in the original organizations (the stayers) and 4,305 employees who had left (the leavers) by the 2008/09 follow-up survey, and also had responded in the second follow-up survey.

2.2. Variables

2.2.1. Exposure to temporary employment

There are, echoing the definitions of OECD, two types of non-permanent employees in the FPS study: those having “*fixed-term contracts, that have a specified duration or a predetermined ending date*” and those having “*replacement contracts, for example, to replace workers on leave for family-related reasons*” (21, p.170), while the rest of the contracts defined in the OECD report (*seasonal; specific task; trainee; probation; government subsidized job creation scheme*) are not included. From now on the fixed-term and replacement employees of the FSP Study are pooled and designated as ‘temporary’.

Exposure to temporary employment during the five-year time window from 2004 to 2008 was measured in two ways. Regarding the stayers, the total time as a temporary employee was obtained from the register with an accuracy of 0.1 years, and regarding the leavers, data on the employment status were obtained from the follow-up survey in 2009, eliciting whether the respondent had been permanently or temporarily employed during each year from 2004 to 2008. It was possible to mark both positions for one year, and the employment status of the year was defined as temporary if the respondent had had a temporary but not a permanent contract. Based on these exposure estimates, the time as a temporary employee was classified into six categories: 0, >0 to 1, >1 to 2, >2 to 3, >3 to 4, and >4 to 5 years.

2.2.2. Self-rated health

Self-rated health was measured in the 2004, 2008/09, and 2012/13 surveys, i.e., at the beginning of the exposure period, and immediately as well as four years after the exposure period. The respondents were asked to rate their overall health status on a five-option scale, and a dichotomous ‘self-rated health’ variable was created by classifying the replies into good (very good or good) and poor (average, fairly poor, poor).

2.2.3. The covariates

Data on age, gender, and occupational title were taken from the employers' personnel registers. Based on occupational titles, the participants were classified into upper white-collar, lower white-collar, and blue-collar employees (22). The survey data were used for recording marital status (married or cohabiting vs. single, divorced or widowed) in 2008/09. Job insecurity was measured by a single question about threat of layoff: those replying 'very much', 'quite a lot' or 'some' on the five-option scale were classified as perceiving insecurity, whereas the reply 'quite little' or 'very little' was considered to indicate no job insecurity. Job demands were measured with a 3-item and job control with a 9-item questionnaire (23), scored into corresponding variables, dichotomized at the median, and those scoring high on demands and low on control were deemed to experience job strain.

2.3. Statistical analysis

Binary logistic regression analyses were used to analyze self-rated health in 2008/2009 and in 2012/2013 according to exposure to temporary employment from 2004 to 2008. Analyses of the short-term effects (in 2008/2009) were adjusted first for age, gender, occupational class and marital status, and change of employer, and then for health in 2004. In the analyses of long-term effects (in 2012/2013) health in 2009 was added into the model. The trends of the associations were studied by defining the exposure as a linear variable.

3. Results

Descriptive statistics of the sample (Table 1) show that among the stayers, 19,029 employees (83.3%) had not been exposed to temporary employment, and 225 (1.1%) had had temporary contract(s) for more than four years during the five-year time window. Among the leavers the corresponding figures were 3,254 (75.6%) and 311 (7.2%). The exposed were younger, more often women, and better

educated than those with no temporary contracts. Among the exposed, those with longest exposure stood out as being relatively commonly men and upper white-collar employees and scoring highest on job insecurity and lowest on job strain. The figures for poor self-rated health in 2008/09 tended to become lower along with increasing exposure. As the cohort aged, the proportions of those reporting poor self-rated health increased evenly in all exposure classes.

Compared to the stayers, the leavers were younger, more frequently female, better educated and healthier (figures not shown, available on request).

Compared to the constantly permanent employees, the baseline health adjusted odds ratios for poor self-rated health were significantly lower among the temporary employees in all exposure classes at the follow-up in 2008/09 (Table 2) as well as at the long-term follow-up in 2012/13 (Table 3). Moreover, the more years in temporary employment, the lower the odds for poor self-rated health ($p_{\text{trend}} < 0.001$ at both time points). However, the differences turned non-significant and the trend disappeared when regressed on all the covariates. When analyzed separately, the results of the leavers and the stayers were quite similar (figures not shown, available on request).

4. Discussion

In this longitudinal study of initially temporary employees in the Finnish public sector, our hypothesis concerning poor health among temporary employees gained no support: the duration of the temporary employment spell(s) was not associated with deteriorating health compared to being permanently employed. Rather, the health tended to improve along with increasing duration, but in the fully adjusted model the differences became non-significant, suggesting that demographic and work-related factors explain the link. Our findings thus support the conception of the Nordic welfare state as an environment that protects employees against the adverse effects of temporary employment.

Several cross-sectional studies mainly on public sector employees in Finland have shown that temporary employees report better self-rated health, fewer chronic diseases, better work ability, and less sickness absence than their permanently employed counterparts (9,12), but the difference largely disappears when age, gender, and socioeconomic status are controlled for, and no associations have been found in longitudinal analyses (8,14,24). There is also a study among the personnel of a Finnish hospital district showing that temporary employees experience less exhaustion than do permanent employees (25). Moreover, a study based on a random sample of Finland's working aged population found in a cross-sectional setting and with the total core-periphery range of non-permanent employment that there is a health gradient, but this is located between temporary and the more atypical employment contracts, such as on-call or agency work, rather than between permanent and temporary employees (15), independently of the sector (public or private) of the labor market (26). Indications of a similar difference between more and less atypical employment have also been reported in a Swedish study (27) that differentiated five types of non-permanent employment according to the position on the core-periphery axis (28) and followed up a population cohort for 12 years. An Australian study, however, found no significant differences in mental health between permanent and less (temporary) and more (casual) peripheral employees (18). Moreover, a cross-sectional study among Swedish healthcare workers (17) found no health differences between permanent and temporary employees.

The present study extends this body of research with novel designs. First, with a longer follow-up and larger sample, we confirmed the zero-finding of an earlier study (14) on the transition from temporary to permanent employment. Transitions in the opposite direction likewise seem to be health-neutral (18). Indeed, the health effects of such transitions are not as evident as in the case of the transitions between non-employment and employment (29). Moreover, by virtue of the follow-up design it was possible to take into account variation in the exposure to temporary employment and whether it took place in-house or at the labor market, and to assess also the delayed effects of the exposure. The design also

enabled control of health related selection into permanent posts, but not the 'healthy worker effect' due to exit into unemployment or out of the labor market during the exposure time window. Concentrating on those who remained employed throughout the whole time window was, however, congruent with our intention to compare the health of temporary and permanent employees in a setting focusing exclusively on these two labor market statuses.

The relative uniformity of the sample with repeat measurements of exposure to temporary employment is a strength rather than a limitation of the study; "*Simply distinguishing permanent from non-permanent employment is out of date*" (30, p. 15), also as regards the type of contract as a correlate of the health of the employees (17). Moreover, the sampling controlled for the socio-occupational reality pointed out by Kim et al. (4): due to the occupational profile it is evident that the leavers, too, still had similar jobs as before and were likely to be employed under collective agreements of the public sector.

There were employees who continued to be temporary at the end of the time window both among the stayers and among the leavers. A rather surprising finding was that their health had developed quite positively. On the other hand, the more common job insecurity indicates that their temporary employment was real. In the context of the present study we conclude that their proportions are not negligible, and that the well-being of such very long-term temporary employees would deserve a study of its own.

Temporary employment is by definition a transient, unstable labor market status. This complicates its research, in particular in a longitudinal setting. Moreover, there are no population level registers of the type of the employment contract, and employers' registers, if available, differ in the accuracy of recording the contract and cover only people employed in those organizations. In the present study we had access to personnel registers that can be assumed to be as fairly consistent, although in the case of

the leavers follow-up of the contract status had to be based on self-reports. However, the largely parallel findings in the leavers and the stayers indicate that there is no major recall bias or incongruence between the reported and the registered contract type.

There is a two-tier connection between public sector labor force and the welfare state. First, in general terms, the public sector employees are citizens of the state that has assumed characteristics of the Nordic, or ‘social-democratic’, model (31), which differs from the central and southern European and Anglo-American models in terms of the universalism of the welfare regimes, relatively generous governmental benefits, significant influence of the union movements on the labor legislation and the industrial relations, commitment to full employment of both men and women and associated extensive use of active labor market policy measures among the unemployed. Second, in FPS cohort the studied employees work in organizations and occupations providing services of the welfare state, which means that the employer (public sector) is likely to adhere comprehensively to the aforementioned principles and industrial relations. Linked to the expansion to the public sector, the differing development of non-standard employment in the Scandinavian countries compared to the rest of Europe can be traced at least to the 1980s (32). Here, a particular feature of the labor market has been that, instead of staying in the ‘trap’ of atypical contracts and unemployment, considerable groups of non-standard employees in fact are on a ‘bridge’ towards acquiring further skills and more stable employment.

An observational study on health effects always leaves room for questions about reverse causality, which in the setting of the present study means selection because of change in health during the exposure time window. Even if remaining in the cohort throughout the window, those with deteriorating health may have had reduced – and those with improving health enhanced – chances of securing a permanent post. Transitions from temporary to permanent employment were much more common than exits to unemployment, but as the latter may be more closely related to declining health

than the former to improved health, the net effect of the opposite selection processes remains speculative.

In line with the aim to reveal the lagged associations between exposure and health, labor market status during the post-exposure follow-up is not considered. According to the 2012/13 survey, 89% of the leavers and 86% of the stayers were employed, but data on types of contracts is missing. Those out of work were predominantly on various pensions.

Self-rated health is an outcome that, having once deteriorated, is assumed to improve relatively seldom. In other words, we assume that exposure leaves long-term 'scars' on perceived health. On the other hand, working individuals construct conceptions of their health status largely in relation to their work, and it is possible that the changes do not reflect a change in an individual's functional capacity but rather changes in how they perceive their health in relation to their work. Indeed, receiving a permanent job contract after temporary employment seems to be associated to an increase in sickness absence, a reflection of a reduction in presenteeism and the wearing off of health related selection (14). This implies that the high odds to report poor health after receiving a permanent contract may be due to the new employment status.

Non-permanent employment is commonly suggested to be related to poor working conditions, and consequently to have adverse effects on well-being and health. Supporting this, a change from temporary to permanent employment is followed by favorable changes in job security and job satisfaction (14). In line with this, in the present study job insecurity was more common in the more exposed. On the other hand, the most exposed reported least job strain. Our conclusion is that the included 'proximal' psychosocial working conditions are relatively unimportant with respect to the

study questions, and the explanations for the results lie more 'distally', in the practices of the organizations and structures of the labor market that have developed along with the welfare state.

5. Conclusions

In sum, considering the inevitable limitations of an observational follow-up study, such as post-baseline health-related selection, our results suggest that working as a temporary employee or as a substitute in the municipalities and public sector hospitals studied may not even in the long run pose a health risk to those who remain employed. Evidently, the findings can be generalized to similar organizations and types of non-permanent employment in the Finnish public sector, but it remains to be confirmed if similar associations between temporary employment and health could be found in Finland's private sector labor market characterized by less female dominated organizations and occupations. It therefore remains unclear how far the present results are specific to the conditions of the public sector, and how far they may be attributed to the universal social security and employee protection of the Nordic welfare state model. Definitely, this study cannot be interpreted as a sign of absence of ill effects of any non-permanent employment in Finland. Rather, the findings tend to support the conception that there is a core-periphery health gradient among non-permanent employees: although temporary job contracts that are relatively stable and continue year after year do not seem to pose health risks, there may be risks in the more atypical jobs. Future research should concentrate on the well-being of employees with more atypical contracts, in particular in the private labor market. Finally, the findings do not warrant dismissal of the concerns regarding the well-being of public sector temporary employees; nevertheless, attention should also be paid to the promotion of health among those who attain permanent posts.

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Figure 1. Flow-chart of the study participants.

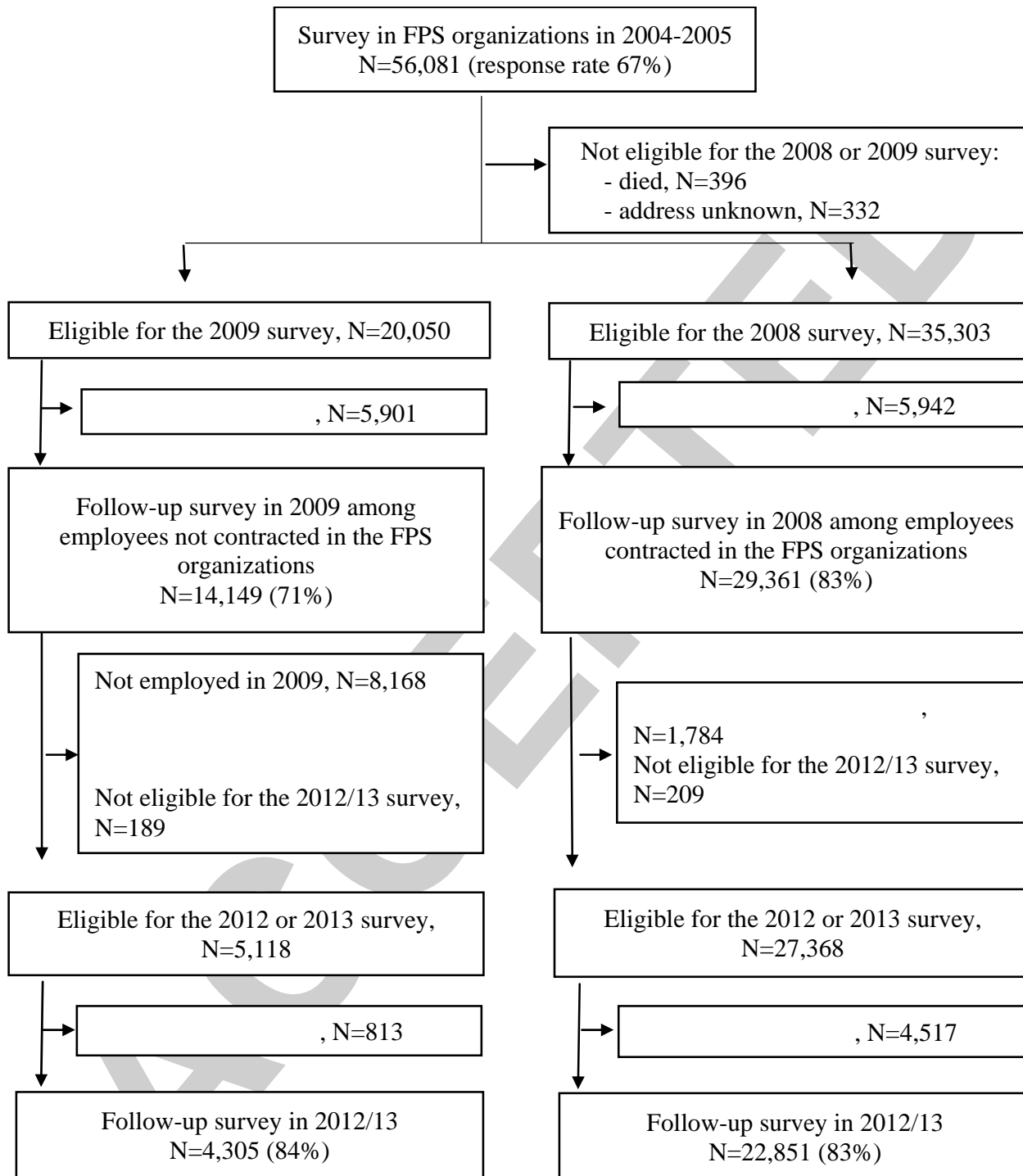


Table 1. Descriptive statistics according to exposure to temporary employment 2004-2008 of the Finnish Public Sector (FPS) Study cohort (n=27,156).

	Exposure					
	no	>0-1 years	>1-2 years	>2-3 years	>3-4 years	>4-5 years
N	22,274	1,961	1,127	729	499	566
Employed by FPS organization in 2008/09						
- yes (stayers)	19,029	1,739	925	576	327	255
- no (leavers)	3,245	222	202	153	172	311
Age in 2008 (mean)	50.6	46.2	45.0	44.0	43.1	45.2
Gender (women)	82%	86%	87%	89%	89%	82%
Occupational class						
- upper white collar	18%	22%	22%	24%	29%	35%
- lower white collar	41%	48%	52%	51%	41%	41%
- blue collar	41%	30%	26%	25%	30%	25%
Marital status (married or cohabiting in 2008/09)	77%	77%	74%	75%	77%	74%
Job insecurity in 2008/09	4%	4%	3%	5%	14%	26%
Job strain in 2008/09	24%	21%	22%	21%	21%	14%
Poor self-rated health						
- in 2008/09	26%	20%	18%	17%	16%	14%
- in 2012/13	27%	23%	20%	21%	19%	16%

Table 2. Odds ratios (OR) and (95% confidence intervals) for poor self-rated health in 2008/09 by exposure to temporary employment 2004-2008. The Finnish Public Sector Study cohort, n=27,156.

Exposure (years)	Crude ¹	Baseline health adjusted ²	Baseline health and sociodemographics adjusted ³	Fully adjusted ⁴
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
0	1	1	1	1
>0-1	0.69 (0.62-0.78)	0.78 (0.69-0.89)	0.90 (0.79-1.03)	0.95 (0.83-1.09)
>1-2	0.63 (0.54-0.73)	0.74 (0.63-0.88)	0.89 (0.75-1.07)	0.98 (0.82-1.17)
>2-3	0.59 (0.48-0.72)	0.72 (0.58-0.89)	0.90 (0.72-1.12)	0.93 (0.74-1.17)
>3-4	0.53 (0.42-0.68)	0.64 (0.49-0.84)	0.83 (0.63-1.09)	0.88 (0.66-1.17)
>4-5	0.48 (0.38-0.61)	0.61 (0.47-0.79)	0.72 (0.56-0.94)	0.80 (0.60-1.06)
trend	p<0.01	p<0.01	p<0.01	p=0.07

1 Unadjusted

2 Adjusted for self-rated health in 2004

3 Adjusted as in 2 and age, gender and marital status

4 Adjusted as in 3 and occupational status, change of employer in 2004-2008, job insecurity in 2008/09 and job strain in 2008/09

Table 3. Odds ratios (OR) and (95% confidence intervals) for poor self-rated health in 2012/13 by exposure to temporary employment in 2004-2008. The Finnish Public Sector Study (FPSS) cohort (n=27,156).

Exposure (years)	Crude ¹	Baseline health adjusted ²	Baseline health and sociodemographics adjusted ³	Fully adjusted ⁴
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
0	1	1	1	1
>0-1	0.79 (0.71-0.88)	0.91 (0.80-1.02)	0.99 (0.87-1.13)	1.01 (0.88-1.15)
>1-2	0.66 (0.57-0.76)	0.77 (0.65-0.91)	0.86 (0.72-1.03)	0.90 (0.76-1.08)
>2-3	0.70 (0.59-0.84)	0.86 (0.70-1.05)	1.01 (0.82-1.25)	1.07 (0.87-1.33)
>3-4	0.62 (0.50-0.78)	0.79 (0.62-1.02)	0.92 (0.74-1.20)	0.97 (0.74-1.27)
>4-5	0.50 (0.40-0.62)	0.62 (0.48-0.80)	0.72 (0.56-0.94)	0.82 (0.62-1.07)
trend	p<0.01	p<0.01	p=0.02	p=0.29

1 Unadjusted

2 Adjusted for self-rated health in 2004 and 2008/09

3 Adjusted as in 2, and age, gender and marital status

4 Adjusted as in 3, and occupational status, change of employer in 2004-2008, job insecurity in 2008/09 and job strain in 2008/09