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Comparison of job demands, control and psychosomatic complaints at different career stages of managers in Finland and the United States

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Research investigating the link between psychosocial factors at work and worker health (ie, job stress research) has generally treated age as a nuisance variable that is either ignored or controlled statistically. Recent studies (1, 2) suggest that this approach should be abandoned in that the relationships among psychosocial work factors and health status change according to stage of career development. It is therefore important to obtain a better understanding of age and career stage differences in the perception of stress and the effects of stress on health status.

This paper reports the results of a job stress survey of managers in Finland and the United States (US). A model of job stress developed by Karasek (3), in which both job demands (or job stressors) and job control (decision latitude) are viewed as important determinants of health status, is used as a conceptual framework. In this model, excessive demands are viewed as deleterious, while increased control is viewed as salubrious. The effects of six different psychological job demands and four different types (or domains) of job control on self-reported health symptoms were examined in each of the following three career stages: early (≤ 34 years), middle (35—50 years), and late (≥ 51 years).

Subjects and methods

The Finnish sample consisted of 708 male managers from the construction industry, while the US sample was comprised of 664 male managers employed by a northeastern state of the United States. In the Finnish sample, questionnaires were mailed to every fourth member (1465 individuals) of a union representing white-collar construction managers. In the US sample, questionnaires were distributed, by the state bureau of employee health, to all state employees (approximately 7000). A total of 4896 was returned, representing an overall response rate of 70%. With the use of the demographic information and job classification codes contained on the questionnaire, all male respondents employed in managerial jobs ($N = 664$) were included in the current study.

In both the Finnish and US samples job demands (work load, hours worked per week, lack of job clarity, intragroup and intergroup conflict, limited promotion opportunities) were assessed with the use of single-item measures. Job control (task, decision, resource, and environmental) was assessed with four multi-item scales. The frequency of psychosomatic complaints was assessed with a scale which included four separate symptoms (headache, heart symptoms, sleep problems and stomach trouble).

Analysis

Hierarchical multiple regression analyses were conducted separately at each career stage on both the Finnish and US data to determine the proportion of variance in the frequency of symptoms attributable to both job demands and job control. Three demographic variables (age, tenure, and marital status) were forced into the regression equation first so that their effects could be controlled for. The set of job demands (six variables) was entered into the equation in the second step, while the job control measures (four variables) were entered last, with the increment in R^2 computed at each step. Thus at the end of the last step, the proportion of variance accounted for in the frequency-of-symptoms measure was based upon all 13 variables.

Results

The means and standard deviations of the aggregate job demands, control, and symptom measures are presented in table 1. As can be seen from this table (see group comparison columns) there were no significant ($P < 0.01$) career stage differences in the total job demand scores for either the Finnish or the US samples. The US workers in all three career groups, however, reported significantly ($P < 0.01$) greater job demands than their Finnish counterparts. With respect to job control, the Finnish workers in the early and late stages of their careers perceived significantly less control than those in the middle stage, while the US workers in the late career stage perceived more control than those in the early and middle stages. The US workers perceived more control in their jobs in both

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Table 1. Means and standard deviations for job demands, job control, and symptom variables. (US = United States, NS = not significant, EL = early and late stage, M = middle stage, L = late stage, ME = middle and early stage)

Variable	Early stage				Middle stage				Late stage				Group comparison	
	Finnish managers (N = 231)		US managers (N = 106)		Finnish managers (N = 356)		US managers (N = 396)		Finnish managers (N = 120)		US managers (N = 162)		Finnish managers	US managers
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Job demands	11.43	2.15	13.96*	3.36	11.71	2.13	14.04*	3.43	12.12	1.89	12.73*	3.88	NS	NS
Job control	46.30	8.15	51.23*	9.67	49.14	9.74	49.97	9.75	46.69	9.33	51.34*	12.05	EL<M	L>ME
Symptoms	7.17	2.59	7.83	2.63	7.50	2.66	7.82	2.75	8.26	2.88	7.28	3.05	NS	NS

* P<0.01.

Table 2. Hierarchical multiple regression results. (US = United States)

Step	Early stage				Middle stage				Late stage			
	Finnish managers		US managers		Finnish managers		US managers		Finnish managers		US managers	
	R^2	ΔR^2	R^2	ΔR^2	R^2	ΔR^2	R^2	ΔR^2	R^2	ΔR^2	R^2	ΔR^2
Demographics	0.08**	·	0.03	·	0.01	·	0.01	·	0.03	·	0.04	·
Job demands	0.17**	0.09	0.11	0.08	0.10**	0.09	0.19**	0.18	0.13	0.10	0.08	0.04
Job control	0.24**	0.06*	0.14	0.05	0.12**	0.02	0.23**	0.05*	0.20	0.07	0.12	0.04

* P<0.01, ** P<0.001.

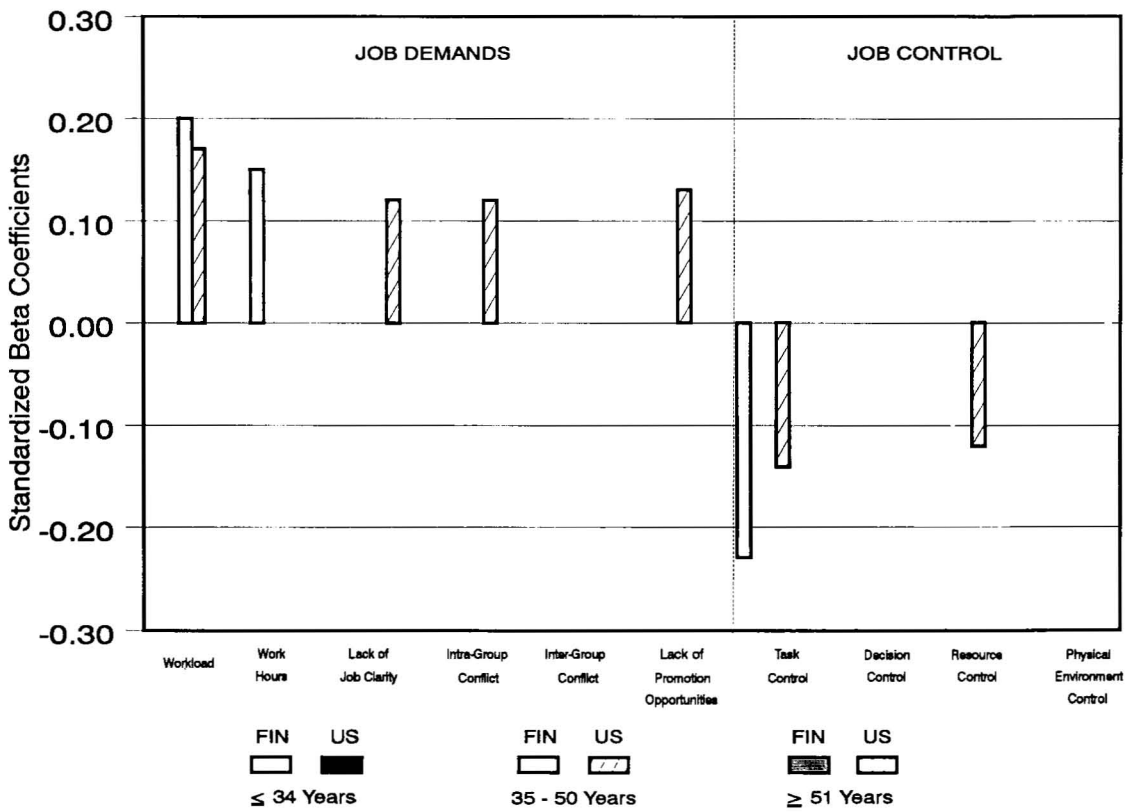

Figure 1. Significant (P<0.01) standardized beta coefficients from regression models predicting symptoms. (FIN = Finnish, US = United States)

the early and late stages than their Finnish counterparts. There were no significant career stage differences in overall symptom reporting in either the Finnish or US samples. Nor were there any significant cross-country differences in overall symptom reporting within career stage. While not shown in the table, it should be noted that there were significant ($P < 0.001$) differences between the Finnish and US samples on individual symptom reporting. In this respect the US workers reported more frequent headaches and sleep problems, whereas the Finnish managers reported more frequent heart symptoms.

The results of the regression analysis at each step are presented in table 2. As shown in table 2, both job demand and control variables were significant predictors of symptoms among the Finnish managers in the early career stage ($R^2 = 0.24$). Neither the job demands nor the control measures predicted symptom reporting for the US workers in the early stage. Job demands were predictive of symptom reporting for the Finnish managers in the mid-career stage ($R^2 = 0.10$); however, adding the control variables to the equation did not significantly ($P < 0.01$) improve the prediction. For the US managers in the mid-career stage, both demands and control measures predicted symptom reporting ($R^2 = 0.23$). Neither demands nor control measures predicted symptoms among the respondents (in either country) in the late stage.

Figure 1 displays standardized beta coefficients for significant ($P < 0.05$) predictors from the final regression equations. As shown in figure 1, two variables predicted the frequency of symptoms for the Finnish managers in the early career group. In this respect working longer hours (beta = 0.15) was positively associated with symptom reporting, and having control over work tasks (beta = −0.23) was negatively associated with symptom reporting. For the Finnish workers in the mid-career stage, symptom frequency was predicted only by work load (beta = 0.20). For the US managers in the mid-career stage, four job demand variables and two control variables predicted symptom reporting. Lack of job clarity (beta = 0.12), intragroup conflict (beta = 0.12), work load (beta = 0.12), limited job opportunities (beta = 0.13), and work load (beta = 0.17) were all positively associated with symptom reporting. Task control (beta = −0.14) and resource control (beta = −0.12) were negatively associated with symptom reporting.

Discussion

The results of this study seem to demonstrate that the relationships between job demand, job control, and health status change according to the stage of career development. That is, particular demands and control variables were shown to have a larger effect on health at various career stages. For the US managers, for example, none of the demand or control variables included in the study were found to have an impact on symptom reporting at the early or late career stages. By contrast, the US managers in the middle stage were affected by a number of demand and several control variables. Likewise, the Finnish workers in the early stage were negatively affected by lengthy workhours and benefited (in terms of reduced symptom reporting) from having greater task control, whereas these variables had no significant effects on symptom reporting in the middle or late stages.

The results also suggest that there are cross-cultural differences in the reporting and (possibly) the perception and importance of job-related demands and control characteristics. For example, while the Finnish managers in the early stage of career development reported fewer demands and less control than their US counterparts, the reported demands and control were significantly related to symptom reporting for the Finnish but not for the US workers. Similarly, the US managers in the middle stage benefited from increased task and resource control, while control had no effect on their middle-stage Finnish counterparts. It is also possible that these differences are a function of the difference in the samples (ie, construction managers in the Finnish sample and government managers in the US sample).

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