

# 가

가 1)  
2)  
3)

1) . 2) . 3) . . .

## Abstract

### Analysis of the Role of Social Support on Job Stress and Psychosocial Stress in Automobile Factory Workers Using Structural Equation Model

Dong-Hee Koh, Sun-Sil Han<sup>1)</sup>, Hyoung-Ryoul Kim<sup>2)</sup>, Sei-Jin Chang<sup>3)</sup>,  
Sun-Haeng Choi, Jong-Uk Won, Jae-Hoon Roh

*Institute for Occupational Health, Yonsei University College of Medicine, Graduate School of Public Health and Management, Yonsei University<sup>1)</sup>,  
Department of Preventive Medicine and Industrial Medical Center, The Catholic University of Korea<sup>2)</sup>, Department of Preventive Medicine and Institute of Occupational Medicine, Wonju College of Medicine, Yonsei University<sup>3)</sup>*

**Objectives:** Social support was previously regarded as acting only a stress modifier, but many recent studies have found a direct effect on stress. The purpose of this study is to evaluate the role of social support on job stress and psychosocial stress to determine whether it acts via direct effect or indirect effect.

**Methods:** This study was performed in May 2003. The study population consisted of 425 male workers in an automobile factory in Korea. Data were collected with structured self-administered questionnaires. We used JCQ(Job Contents Questionnaires) to measure job stress and social support, and PWI-SF(Psychosocial Well-being Index-Short Form) to measure stress outcome. We analysed the relationships using Structural Equation Modeling software AMOS4.

**Results:** It was found that social support acts both as a direct stressor and an indirect stressor via job stress. However the direct effect was double the indirect effect.

**Conclusions:** The direct effect of social support on stress was the more major. Therefore social support is an independent stressor rather than a stress modifier in automobile factory workers.

**Key Words:** Social support, Stress, Job stress

(Seward, 1990),

(Sakong et al, 1997)

가 (Houtman et al, 1994).  
 (stressor),  
 (distress),  
 (modifier),  
 (coping style), (personality)  
 (social support)  
 가 (Koh & Yom,  
 2003; Baker et al, 1988) 가

가  
 425  
 2003 3  
 14 2003 3 21 30  
 2.

가  
 가  
 (buffering effect) (indirect  
 effect)  
 (direct effect) (Koh & Yom, 2003).

JCQ(Job Content Questu-  
 onnaire) (Chang et al,  
 1997)  
 5  
 (decision authority)(3 ) (skill  
 discretion)(6 ) 9 14  
 ; ‘ 가  
 ‘ 4 (4-point Likert  
 scale) , 1, 2, 3, 4

가  
 McLean - (Person-Environment  
 Fit model) 가  
 (Job Strain model, Demand-Control  
 model)  
 (demand)  
 (control) 가  
 3  
 3

가  
 가  
 가  
 3.

(Karasek & Theorell, 1990). 가  
 가  
 가

JCQ(Job Content Questuon-  
 naire) (Chang et al,  
 1997) (4 )  
 (4 ) , ‘  
 (3 ) , ‘ (2 ) , ‘  
 (1 ) 가

(Structural Equation Model, Covariance  
 Structure Analysis)

4. ( )  
 (Chang, 1993) GHQ-  
 60(General Health Questionnaires)  
 PWI(Psychosocial  
 Well-being Index) PWI PWI-SF(PWI-  
 Short Form) . PWI-SF  
 Likert 4 0-1-2-3

가

PWI-SF 0-54 가

1.

PWI-SF 18 38 ,

11.5 (Chang, 2001) PWI-SF 27

2 , 3 , 9 26 , 8

4 (eigenvalue)가 1 4 3가

25

19.67 (Chang, 2001)

5. (Table 1).

( )

2.

1 1.123 (p=0.004)

1 4.957 (p=0.007)

(Kim, 2001; Huh & Choi, 2000). (modification index)

(p<0.001)

(p=0.026)(Fig. 1).

3. 가

SAS 8.1 가

AMOS4

2

**Table 1.** Characteristics of the study subjects

variable	This study		Reference <sup>†</sup>	
	Mean	SD*	Mean	SD
age	38.01	5.58		
work year	11.46	5.37		
job demand	33.82	5.94	33.20	5.85
job control	50.78	11.58	59.59	11.10
supervisor support	8.46	2.72	10.58	2.59
coworker support	10.34	2.55	11.38	2.01
PWI-SF <sup>‡</sup>	25.00	8.39	19.67	7.57
factor 1	12.63	4.31		
factor 2	2.02	1.86		
factor 3	8.47	3.12		
factor 4	1.48	1.38		

\*, standard deviation

<sup>†</sup>, national survey results by Chang(2001)

<sup>‡</sup>, Psychologic Well-being Index-Short Form

(Table 2).

4.

가 (multivariate normality) (skew) 8.123, (kurtosis) 7.468 Bollen-Stine bootstrap 250 p=0.625 가 가  $\chi^2 = 7.915(9), p=0.543$  GFI(Goodness of Fit Index)=0.995, AGIF(Adjusted GFI)=0.983, RMSEA(Root Mean Squared Error Approximation)<0.001 가 NFI(Normed Fit Index)=0.985, NNFI(Non-Normed Fit Index)=1.005

가 (distress) (Dormann et al, 1999). 가 (Baker et al, 1996; Dignam et al, 1988; Marcelissen et al, 1988).

가 (mediating effect) (Huh, 1999). 가

가 가 가 (p=0.114) AMOS4

2 가 가 가

(work overload), (machine pacing and hectic work)

4 (low strain group) 가 (passive group) (active group) (high strain group)

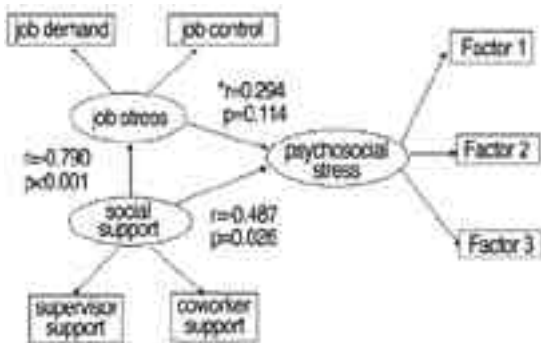


Fig. 1. Structural Equation Modeling on the effect of social support  
\*, unstandardised regression weight

Table 2. Direct and indirect effect of social support

effect of social support	direct*	indirect*	total*
job stress	-0.790		-0.790
psychosocial stress	-0.487	-0.232	-0.719

\*, unstandardised regression weight

(Karasek & Theorell, 1990).

(quadrant model),

(quotient model),

(multiplicative interaction),

(main effect)

(confirmatory factor analysis)

(Lee, 2000).

가 ,

가

Cronbach alpha 0.456, 0.756,

0.880, 0.884

가

가

가

가

PWI

1( ) ,

3( ) ,

. PWI-SF PWI가

가

18

. Lee & Lee, (1996) PWI

(Chang, 1993)

가

PWI 4

가

PWI-SF

가

$X^2=34.353(2) p<0.001$ , GFI=0.883, AGFI=0.417, NFI=0.799, RMSEA=0.364

가

SF

가

PWI-

PWI-SF Cronbach alpha=0.8914

가

가

가

가

:

가

가

가

: 2003 5

425

가 JCQ(Job Contents Questionnaires)

, PWI-SF(Psychosocial Well-being Index-Short Form)

AMOS4

: 가

2

:

:

- Baker E, Israel B, Schurman S. Role of control and support in occupational stress: an integrated model. *Soc Sci Med* 1996;43(7):1145-55.
- Chang SJ. Standardization of collection and measurement for health data. Kyechukmunhwasa, Seoul. 2000. pp 121-59.
- Chang SJ. The study for assessment of stress status and development of stress management program and infrastructure in Korean employees. Ministry of Health and Welfare, 2001.
- Chang SJ, Cha BS, Koh SB, Kang MK, Koh SY, Park JK. Association between job characteristics and psychosocial distress of industrial workers. *Korean J Occup Environ Med* 1997;30(1):129-44.(Korean)
- Dignam JT, West SG. Social support in the workplace: tests of six theoretical models. *Am J Community Psychol* 1988;16(5):701-2.
- Dormann C, Zapf D. Social support, social stressors at work, and depressive symptoms: testing for main and moderating effects with structural equations in a three-wave longitudinal study. *J Appl Psychol* 1999;84(6):874-8.
- Houtman ILD, Bongers PM, Smulders PGW, Kompier MAJ. Psychological stressor at work and musculoskeletal problems. *Scand J Work Environ Health* 1994;20: 139-45.
- Huh HK. The relationship between role conflict, family support and quality of life in patients with arthritis. *J Korean Acad Adult Nurs* 1999;11:63-72.
- Huh J, Choi IK. Structural Equation Modeling using AMOS and Path Analysis. SPSS Academy, Seoul. 2000. pp 1-15.
- Karasek R, Theorell T. *Healthy Work: Stress, productivity, and the reconstruction of working life*. Basic, New York, 1990. pp 40-76.
- Kim KS. AMOS Structural Equation Model analysis. SPSS Academy, Seoul. 2001. pp 315-430.
- Koh JW, Yom YH. The role of social support in the relationship between job stress and job satisfaction/organizational commitment among hospital nurses. *J Korean Acad Nurs*. 2003;33(2):265-74.(Korean)
- Lee CY, Lee JY. Reliability and Validity of PWI(Psychologic Wellbeing Index). *Korean J Occup Environ Med* 1996;29(2):255-64.(Korean)
- Lee SM. *The Basis of Factor Analysis*. Kyoyukmunhwasa, Seoul. 2000. pp 107-26.
- Marcelissen FH, Winnubst JA, Buunk B, de Wolff CJ. Social support and occupational stress: a causal analysis. *Soc Sci Med* 1988;26(3):365-7.
- Sakong J, Chung JH, Kim HS. The effect of job stress on psychosomatic symptom and gastrointestinal symptom. *Korean J Occup Environ Med* 1997;9(3):530-42.(Korean)
- Seward JP. *Occupational stress*. Prentice-Hall Inc, 1990. pp 467-80.