

Abstract

## The Relationship between Job Stress and Psychosocial Stress among Nurses at a University Hospital

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**Objectives:** This cross-sectional study investigated the relationship between job stress and psychosocial stress among nurses at a university hospital in Incheon, Korea.

**Methods:** A questionnaire survey was administered to 476 nurses, of which 320 (67.2%) questionnaires were returned and 299 (62.8%) were regarded as containing reliable data for analyses. A structured self-reported questionnaire was used to assess each respondent's sociodemographics, sleep quality, physical burden, job stress and psychosocial stress. Seven domains of occupational stress (e.g., Job demand, Insufficient job control, Interpersonal conflict, Job insecurity, Lack of reward, Organizational system and Occupational climates) according to the Korean Occupational Stress Scale (KOSS) were used and psychosocial stress was measured using Dr. Chang's PWI-SF (Psychosocial Well-being Index-Short Form). We estimated the relation of job stress to psychosocial stress using univariate and logistic regression analyses.

**Results:** The logistic regression analyses indicated that the groups with high stress in 'Insufficient job control' (OR=2.67, 95% C.I.=1.37-5.23), 'Interpersonal conflict' (OR=2.32, 95% C.I.=1.19-4.51), 'Job insecurity' (OR=2.51, 95% C.I.=1.17-5.36), 'Organizational system' (OR=2.80, 95% C.I.=1.39-5.63), and 'Lack of reward' (OR=2.98, 95% C.I.=1.55-5.74) were more likely to experience high psychosocial stress.

**Conclusions:** Our results tend to suggest that job stress is associated with psychosocial stress. The importance of job stress should be acknowledged and stress management programs need to be instigated to minimize the psychosocial stress caused by job stress.

**Key Words:** Job stress, Psychosocial stress, Nurses

(NIOSH, 1999)

(Ramirez et

al, 1996),

(Greiner et al,

1997; Golderhar et al, 1998)

(Chandola et al, 2005),  
 (Kopec & Sayre, 2004),  
 (Winkleby et al, 1988)

가

가

가 (Hardy et al, 1997; Wall et al, 1997).

2.

1)

2)

Pittsburgh Sleep Quality Index (PSQI) (Buysse et al, 1989)

(Suzuki et al, 2004).

(Ko et al, 1996: Ko & Yom, 2003).

(Park et al, 2002; Han, 2003; Lee, 2003; Yoon, 2003; Koh, 2004; Kwon, 2004).

Likert 4

가

0-1-2-3

0~21

6

Cronbach's alpha 0.712

3) A

A Framingham Type A Behavior Pattern (Haynes et al, 1978)

가

10

Likert 4

가

4-3-2-1

A

B

Cronbach's alpha 0.552

1.

476 2005 3 21

10 가  
 320 67.2%

21 299 (

62.8%)

4)  
(1)  
(2004)  
30,146

PWI-SF 0.892

3.

PWI-SF

27

( , , 가

), ( , , ,

), A ,

Chi-square

test

0.05

SPSS WIN (version 13.0)

1.

21.7 (

:6.9 ) . 299 75 (25.1%) 가

PWI 가 27

, 219 (73.2%) ‘

8 ‘ 5 (1.7%) (Fig. 1).

2.

5)

GHQ-60

20~24

35%가

PWI 45 18

25~29

27.7%, 30~34

22.2%, 35

PWI-SF(Chang, 2000)

10.3%가

가 가

. PWI-SF

(Chang,

2000).

Likert 4

0-1-

2-3

0~54

8

, 9~26

27

27

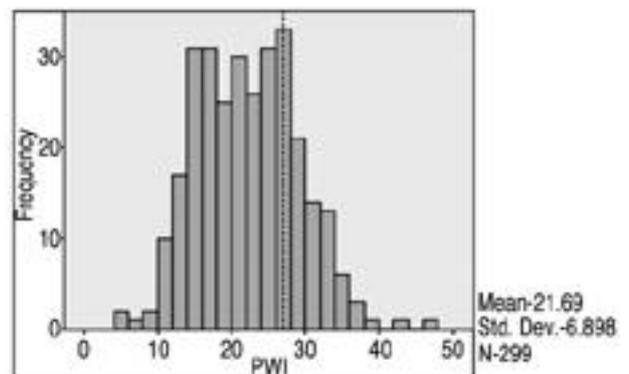


Fig. 1. Distribution of Psychosocial Well-being Index (PWI) Score Dotted line divides in two groups (High risk group vs low risk group).

(p=0.057). 가 1 1 ~ 3  
 28.4% 10.7% 27.1%, 7 31.4%, 32.5% 4 ~ 6  
 (P=0.006). 14.6%  
 (p=0.029).  
 , 가 , 13.8%가  
 (Table 1).

**Table 1.** Difference of psychosocial stress by general characteristics

| Variables        | N         | %   | Psychosocial stress |                    | p-value* |
|------------------|-----------|-----|---------------------|--------------------|----------|
|                  |           |     | Low risk<br>N (%)   | High risk<br>N (%) |          |
| Age (yr)         | 20~24     | 40  | 13.4                | 26 (65.0)          | 0.057    |
|                  | 25~29     | 148 | 49.5                | 107 (72.3)         |          |
|                  | 30~34     | 72  | 24.1                | 56 (77.8)          |          |
|                  | 35~       | 39  | 13.0                | 35 (89.7)          |          |
| Marital status   | unmarried | 190 | 64.0                | 138 (72.6)         | 0.211    |
|                  | married   | 107 | 36.0                | 85 (79.4)          |          |
| Housework time   | < 1hour   | 201 | 67.2                | 148 (73.6)         | 0.482    |
|                  | 1hour     | 98  | 32.8                | 76 (77.6)          |          |
| Drinking         | No        | 236 | 78.9                | 179 (75.8)         | 0.514    |
|                  | Yes       | 63  | 21.1                | 45 (71.4)          |          |
| Exercise/leisure | No        | 243 | 81.3                | 174 (71.6)         | 0.006    |
|                  | Yes       | 56  | 18.7                | 52 (89.3)          |          |

\*: by  $\chi^2$ -test

**Table 2.** Difference of psychosocial stress by work-related characteristics

| Variables     | N                      | %   | Psychosocial stress |                    | p-value*           |
|---------------|------------------------|-----|---------------------|--------------------|--------------------|
|               |                        |     | Low risk<br>N (%)   | High risk<br>N (%) |                    |
| Tenure (yr)   | < 1                    | 35  | 11.7                | 24 (68.6)          | 0.029              |
|               | 1~3                    | 83  | 27.8                | 56 (67.5)          |                    |
|               | 4~6                    | 85  | 28.4                | 62 (72.9)          |                    |
|               | 7                      | 96  | 32.1                | 82 (85.4)          |                    |
| Employed type | Formal                 | 265 | 88.6                | 195 (73.6)         | 0.206              |
|               | Informal               | 34  | 11.4                | 29 (85.3)          |                    |
| Shiftwork     | No                     | 65  | 21.7                | 56 (86.2)          | 0.023              |
|               | Yes                    | 234 | 78.3                | 168 (71.8)         |                    |
| Job title     | Staff nurse            | 232 | 77.6                | 165 (71.1)         | 0.019              |
|               | Supervisor nurse       | 52  | 17.4                | 46 (88.5)          |                    |
|               | Head nurse             | 15  | 5.0                 | 13 (86.7)          |                    |
| Department    | Wards                  | 138 | 46.2                | 101 (73.2)         | 0.287 <sup>†</sup> |
|               | Out patient department | 51  | 17.1                | 40 (78.4)          |                    |
|               | Intensive care unit    | 48  | 16.1                | 34 (70.8)          |                    |
|               | Neonatal care unit     | 17  | 5.7                 | 12 (70.6)          |                    |
|               | Emergency room         | 17  | 5.7                 | 11 (64.7)          |                    |
|               | Operative room         | 17  | 5.7                 | 15 (88.2)          |                    |
| Others        | 11                     | 3.7 | 11 (100.0)          | 0 ( 0.0)           |                    |

\*: by  $\chi^2$ -test

<sup>†</sup>: by Exact test

28.2% (p=0.023) 28.9% (13.3%, 11.5%) (Table 2).  
 39.2%, 15.6% (p<0.001) 27.0%, 35.1% (p=0.036) (Table 3).  
 3. A  
 4.  
 A 가 (KOSS)

**Table 3.** Difference of psychosocial stress by type A behavior pattern, sleep quality, physical burden status

| Variables       |          | Psychosocial stress |                    | p-value* |
|-----------------|----------|---------------------|--------------------|----------|
|                 |          | Low risk<br>N (%)   | High risk<br>N (%) |          |
| Behavior type   | Type B   | 139 (72.4)          | 53 (27.6)          | 0.211    |
|                 | Type A   | 85 (79.4)           | 22 (20.6)          |          |
| Sleep quality   | Good     | 151 (84.4)          | 28 (15.6)          | 0.000    |
|                 | Poor     | 73 (60.8)           | 47 (39.2)          |          |
| Physical burden | Low      | 86 (82.7)           | 18 (17.3)          | 0.036    |
|                 | Moderate | 100 (73.0)          | 37 (27.0)          |          |
|                 | High     | 37 (64.9)           | 20 (35.1)          |          |

\*: by  $\chi^2$ -test

**Table 4.** Difference of psychosocial stress by Korean job stress

| Variables                |                   | Psychosocial stress |                    | p-value* |
|--------------------------|-------------------|---------------------|--------------------|----------|
|                          |                   | Low risk<br>N (%)   | High risk<br>N (%) |          |
| Job demand               | Low <sup>†</sup>  | 168 (76.0)          | 53 (24.0)          | 0.452    |
|                          | High <sup>‡</sup> | 56 (71.8)           | 22 (28.2)          |          |
| Insufficient job control | Low <sup>†</sup>  | 179 (79.6)          | 46 (20.4)          | 0.002    |
|                          | High <sup>‡</sup> | 45 (60.8)           | 29 (39.2)          |          |
| Interpersonal conflict   | Low <sup>†</sup>  | 182 (78.8)          | 49 (21.2)          | 0.007    |
|                          | High <sup>‡</sup> | 42 (61.8)           | 26 (38.2)          |          |
| Job insecurity           | Low <sup>†</sup>  | 190 (76.9)          | 57 (23.1)          | 0.112    |
|                          | High <sup>‡</sup> | 34 (65.4)           | 18 (34.6)          |          |
| Organizational system    | Low <sup>†</sup>  | 183 (78.9)          | 49 (21.1)          | 0.006    |
|                          | High <sup>‡</sup> | 41 (61.2)           | 26 (38.8)          |          |
| Lack of reward           | Low <sup>†</sup>  | 180 (80.4)          | 44 (19.6)          | 0.000    |
|                          | High <sup>‡</sup> | 44 (58.7)           | 31 (41.3)          |          |
| Occupational climates    | Low <sup>†</sup>  | 176 (78.2)          | 49 (21.8)          | 0.030    |
|                          | High <sup>‡</sup> | 48 (64.9)           | 26 (35.1)          |          |
| Total job stress         | Low <sup>†</sup>  | 167 (81.1)          | 39 (18.9)          | 0.000    |
|                          | High <sup>‡</sup> | 57 (61.3)           | 36 (38.7)          |          |

\*: by  $\chi^2$ -test

<sup>†</sup>: Low group = first tertile & second tertile

<sup>‡</sup>: High group = third tertile

가 3.85(95% C.I.=2.16-6.87)  
 가 2.65(95% C.I.=1.19-5.89)  
 (Table 5).  
 가  
 (39.2%) (20.4%) ,  
 (38.2%) (21.2%) , 가 (KOSS)  
 가 (38.8%)  
 (21.1%) , (41.3%) (OR=2.67, 95% C.I.=1.37-5.23), (OR=2.32, 95% C.I.=1.19-4.51),  
 (19.6%) , (OR=2.51, 95% C.I.=1.17-5.36),  
 가 (35.1%) (21.8%) (OR=2.80, 95% C.I.=1.39-5.63),  
 , 가 (38.7%) (OR=2.98, 95% C.I.=1.55-5.74)  
 (18.9%) 7 7  
 (p<0.001). , 가  
 (Table 4). 가 2.90(95% C.I.=1.53-5.50) (Table 6).  
 5.

25.1%가

**Table 5.** Odds ratios of sleep quality, physical burden for high risk group of psychosocial stress by logistic regression

| Variables       |          | Unadjusted |           | Adjusted* |           |
|-----------------|----------|------------|-----------|-----------|-----------|
|                 |          | OR         | 95% CI    | OR        | 95% CI    |
| Sleep quality   | Good     | 1.00       |           | 1.00      |           |
|                 | Poor     | 3.47       | 2.01~5.99 | 3.85      | 2.16~6.87 |
| Physical burden | Low      | 1.00       |           | 1.00      |           |
|                 | Moderate | 1.77       | 0.94~3.33 | 1.60      | 0.82~3.13 |
|                 | High     | 2.58       | 1.23~5.44 | 2.65      | 1.19~5.89 |

\*: adjusted for age, tenure, shift work, and job title

**Table 6.** Odds ratios of Korean job stress for high risk group of psychosocial stress by logistic regression

| Variables                |                       | Unadjusted |           | Adjusted* |           |
|--------------------------|-----------------------|------------|-----------|-----------|-----------|
|                          |                       | OR         | 95% CI    | OR        | 95% CI    |
| Job demand               | High/Low <sup>†</sup> | 1.25       | 0.70~2.23 | 1.09      | 0.55~2.18 |
| Insufficient job control | High/Low <sup>†</sup> | 2.51       | 1.42~4.43 | 2.67      | 1.37~5.23 |
| Interpersonal conflict   | High/Low <sup>†</sup> | 2.30       | 1.28~4.11 | 2.32      | 1.19~4.51 |
| Job insecurity           | High/Low <sup>†</sup> | 1.76       | 0.93~3.36 | 2.51      | 1.17~5.36 |
| Organizational system    | High/Low <sup>†</sup> | 2.37       | 1.32~4.25 | 2.80      | 1.39~5.63 |
| Lack of reward           | High/Low <sup>†</sup> | 2.88       | 1.64~5.07 | 2.98      | 1.55~5.74 |
| Occupational climates    | High/Low <sup>†</sup> | 1.95       | 1.10~3.45 | 1.73      | 0.91~3.31 |
| Total job stress         | High/Low <sup>†</sup> | 2.70       | 1.57~4.66 | 2.90      | 1.53~5.50 |

<sup>†</sup>: High = third tertile ; Low = first tertile & second tertile

\*: adjusted for age, tenure, shift work, job title, sleep quality, and physical burden

73.2%가

1.7%

(Hwang et al, 1998)

78.3%가

가

(Koh, 2004),

(Park et al, 2002),

(Yoon et al, 1999)

가 가

(Lee,

가 가

2003),

가

(Schmieder & Smith, 1996)

(Han, 2003)

A

(Choi et al, 1999) A

(Kwon, 2004)

가

(Yoon,

가

2003)

(Han, 2003)

A

가

(Yoon, 2003)

A

가

가

5가

A

가 (additive effect),

(moderated effect)

(mediated effect)

가

가

(Burke, 1988; Edwards et al, 1990).

(Yoon et al, 1999)

2004)

가

(Chang,

가

가

(Schmieder & Smith, 1996).

(Gold et al, 1992)



(Korean Occupational Stress Scale;  
KOSS)

PWI-SF

Chi-square test

0.05

(OR=3.85, 95% C.I.=2.16-6.87),

가 (OR=2.65, 95% C.I.=1.19-5.89)

가 2.90 (95% C.I.=1.53-

5.50) (OR=2.67, 95%

C.I.=1.37-5.23), (OR=2.32, 95% C.I.=1.19-

4.51), (OR=2.51, 95% C.I.=1.17-5.36),

(OR=2.80, 95% C.I.=1.39-5.63),

(OR=2.98, 95% C.I.=1.55-5.74)

가 가

가

가

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