

# Burnout and Related Factors among Hospital Nurses

|                              |  |
|------------------------------|--|
| 著者                           | Higashiguchi Kazuyo, Morikawa Yuko, Miura Katsuyuki, Nishijo Muneko, Tabata Masaji, Ishizaki Masao, Nakagawa Hideaki |
| journal or publication title | Journal of Occupational Health   |
| volume                       | 41   |
| number                       | 4  |
| page range                   | 215-224  |
| year                         | 1999-10-01   |
| URL                          | <a href="http://hdl.handle.net/2297/37533">http://hdl.handle.net/2297/37533</a>                                      |

doi: 10.1539/joh.41.215

## Burnout and Related Factors among Hospital Nurses

Kazuyo HIGASHIGUCHI<sup>1,2</sup>, Yuko MORIKAWA<sup>2</sup>, Katsuyuki MIURA<sup>2</sup>, Muneko NISHIJO<sup>2</sup>, Masaji TABATA<sup>2</sup>, Masao ISHIZAKI<sup>3</sup>, and Hideaki NAKAGAWA<sup>2</sup>

<sup>1</sup>Department of Nursing, <sup>2</sup>Department of Public Health, Kanazawa Medical University, and

<sup>3</sup>Health Care Center, Kanazawa Medical University

**Abstract: Burnout and Related Factors among Hospital Nurses: Kazuyo HIGASHIGUCHI, et al. Department of Nursing, Kanazawa Medical University**—The overall goal of this study is to examine the relationship between burnout in hospital nurses and three parameters: occupational factors, individual attributes, and workplace stressors. Two hundred and sixty-eight female nurses from two public general hospitals were surveyed. Three forms were used: first, a demographic data form to ascertain personal attributes; second, the Japanese version of the Maslach Burnout Inventory (MBI) to assess burnout; and third, the Japanese version of the Job Content Questionnaire (JCQ) to assess workplace stressors. The Japanese version of MBI consists of three subscales: Physical Exhaustion (PE), Emotional Exhaustion/Depersonalization (EE+DP), and Personal Accomplishment (PA). The results were as follows: 1. There was a significant correlation between both PE and EE+DP and years of nursing experience, as well as the age of children. 2. There was a significant correlation between PE and the work schedule or workplace. 3. There was no significant correlation between the Japanese MBI subscales and job rank, marital status, or the number of children. 4. There was a significant correlation between the three subscales of Japanese MBI and the Japanese JCQ scales. These findings are discussed.

(J Occup Health 1999; 41: 215-224)

**Key words:** Burnout, MBI (Maslach Burnout Inventory), JCQ (Job Content Questionnaire), Hospital nurses, Related factors

In the 1970s Freudenberg<sup>1)</sup> coined the term “Burn-Out”, and ever since researchers have been looking at how people working in service-related jobs react to occupational stress. Although there have been several

scales developed for measuring burnout<sup>2-4)</sup>, the Maslach Burnout Inventory (MBI)<sup>4)</sup> is the most widely used by foreign researchers. Psychometric properties of the MBI have been examined by many studies<sup>5-13)</sup>, hence it is highly regarded for its practical applications<sup>14)</sup>. The MBI has been translated into Japanese<sup>15, 16)</sup>, but few researchers in Japan have adopted it. We found that, because the two existing Japanese MBI had translation inadequacies<sup>17)</sup>, with the consent of Maslach *et al.*, we have revised the Japanese version of MBI for use in the study<sup>17)</sup>. The original MBI consists of three subscales: Emotional Exhaustion (EE), Depersonalization (DP), and Personal Accomplishment (PA). A number of studies have supported the three-factor structure which Maslach and Jackson<sup>4)</sup> postulated<sup>7, 9-11)</sup>, but some studies have analyzed only two factors in the MBI: one defined as Emotional Exhaustion and Depersonalization and another defined as Personal Accomplishment<sup>6, 12, 13)</sup>. Emotional Exhaustion/Depersonalization is tentatively identified as the “core of burnout” by Walkey and Green<sup>13)</sup>. In the item factor analysis we performed, by principal factoring with an oblique rotation, we discovered a three-factor structure somewhat different from the original MBI: namely, Physical Exhaustion (PE), Emotional Exhaustion/Depersonalization (EE+DP) and Personal Accomplishment (PA). The results<sup>17, 18)</sup> we obtained with the data from Japanese nurses supports this finding. Of special interest, it was found that Physical Exhaustion, which had not been identified in English-speaking countries, was extracted as an additional factor.

The present study measures burnout among hospital nurses using this new version of the Japanese MBI, with the intention of examining the relationship between burnout and three parameters: occupational factors, individual attributes, and workplace stressors.

### Subjects and Methods

#### 1. Subjects

The target population was nursing staff employed at two public general hospitals (Hospital N: n=196, Hospital

Received June 16, 1998; Accepted June 3, 1999

Correspondence to: K. Higashiguchi, Department of Public Health, Kanazawa Medical University, 1-1 Daigaku, Uchinada-machi, Kahoku-gun, Ishikawa 920-0293, Japan

T: n=482) in Ishikawa Prefecture. Self-report questionnaires were distributed to the nursing staff through the director of nursing in both hospitals and then collected later. All nurses at Hospital N participated in the survey, but a random selection of only 100 nurses from Hospital T participated. These 100 subject nurses at Hospital T were chosen from several workplaces: surgery, internal medicine, and obstetrics/gynecology wards, operating room, and dialysis center.

## 2. Measurements

### 1) Measurement of Burnout

The Japanese version of MBI<sup>17)</sup> (Table 2) was used as the measure of burnout. This self-report questionnaire consists of 22 questions with 7 possible answers ranging from "never", "a few times a year", "monthly", "a few times a month", "every week", "a few times a week" to "every day" to assess the frequency of occurrence of the three aspects of the burnout syndrome: Physical Exhaustion (PE), Emotional Exhaustion/Depersonalization (EE+DP), Personal Accomplishment (PA). Cronbach's alpha coefficients for each subscale on the first analysis showed a reliability of .88 for PE, .90 for EE+DP, and .70 for PA. The test-retest reliability coefficients were .61 for PE, .73 for EE+DP, and .70 for PA<sup>17)</sup>.

The PE subscale measures feelings of being physically exhausted by one's work. A second subscale, EE+DP, measures feelings of being emotionally overextended by one's work, and having an impersonal and unfeeling attitude toward patients. Psychologically, workers feel that they are unable to continue giving of themselves because their emotional resources are depleted. As one's sense of depersonalization increases, one becomes negative, cynical and callous. In practice, depersonalization is a problem that manifests itself as a deterioration in the quality of patient care, with nurses treating patients as "objects"<sup>4)</sup>. A third subscale, PA, measures feelings of competence and achievement in one's work with people. A person who burns out has less of a sense of personal accomplishment and is, consequently, less productive<sup>19)</sup>.

### 2) Measurement of Workplace Stressors

To measure stressors occurring in the workplace, a self-report questionnaire called the Job Content Questionnaire (JCQ), developed by Karasek<sup>20)</sup>, was used. The Japanese version of JCQ was developed by Kawakami *et al.* in collaboration with Karasek. The reliability and validity of the measure are continually being strengthened by ongoing research<sup>21, 22)</sup>. In the present study, the Japanese version of JCQ: 45-item recommended version 4/23/96 was adopted, but five new questions on world trade were excluded from the survey (Appendix). There are four possible answers to each question: strongly disagree, disagree, agree, and strongly agree.

### 3) Occupational Factors and Individual Parameters

To measure occupational factors, the subjects were

asked questions about the years of nursing experience, work schedules, job rank and workplace. To assess individual parameters, the subjects were asked their age, sex and marital status, as well as questions about the number and ages of their children.

## 3. Statistical Analysis

The item scores from the MBI were calculated on a scale of zero to six, where an answer of "never" counted for 0 point and an answer of "every day" counted for 6. Factor analysis was carried out by the principal factoring method with an oblique rotation, and the factor structures of the Japanese MBI were examined. Next, Cronbach's alpha coefficients for each subscale were calculated for assessing internal consistency reliability. Items with more than .40 factor loadings were added, then divided by the number of items for each subscale score.

The item scores from the JCQ were calculated on a scale of one to four, where a "strongly disagree" answer counted for 1 point and a "strongly agree" answer counted for 4.

As on the Japanese version of JCQ, 7 scale scores recommended by Kawakami *et al.*<sup>22)</sup> were calculated. The seven scales were job demand (demand), decision latitude (control), job insecurity, supervisor support, coworker support, physical exertion, and isometric load (Appendix).

### 1) Burnout and Its Relationship to Occupational Factors and Individual Parameters

The relationship between the Japanese MBI and the occupational factors and individual parameters listed below was examined. The comparison of mean values was carried out by the t-test and the one-way analysis of variance (ANOVA). Statistical significance was defined as  $p < .05$ .

- a) Years of Nursing Experience: Nurses with less than 3 yr of experience are commonly regarded as juniors, those with 4–9 yr as seniors, and those with more than 10 yr as veterans. We therefore divided respondents into four groups: less than 3 yr, 4–9 yr, 10–19 yr, and more than 20 yr.
- b) Work Schedule: Respondents were divided into three groups on the basis of work schedule: Group A worked on three revolving shifts; Group B worked on day shifts; and Group C worked mainly on day shifts, although this group had night duty from time to time. The numbers of nurses in Group B (n=15) and Group C (n=55) were so small that those two schedules were grouped together under the heading "other types". In this way, revolving three-shift work was compared with other types of work schedules.
- c) Job Rank: Head nurses and charge nurses were considered to be in administrative positions. All other nurses were categorized into staff.
- d) Workplace: The nurses' workplaces were subdivided into 7 departments or wards: surgery, general medicine, internal medicine, obstetrics/gynecology,

- operating room, dialysis center, and out-patient unit.
- e) Age: Respondents were divided into four groups: under 25 yr of age, 25–30 yr of age, 31–40 yr of age, and over 40 yr of age.
  - f) Marital Status: Subjects were asked whether they were married, unmarried, divorced, or widowed, but there were so few who answered divorced or widowed (n=9) that the lot was narrowed to two groups, married and unmarried excluding those 9 respondents.
  - g) Children: Married subjects were subdivided into two groups: those with and without children.
  - h) Children's Age: Subjects with children were subdivided further into those with children below and above the age of 12.

With the exception of the category of workplace, the other categories were correlated with years of experience, so that each of the remaining categories was analyzed according to its years of experience ranking.

2) Burnout and its Relationship to Workplace Stressors

The relationship between the Japanese MBI and the Japanese JCQ was examined with a multiple regression analysis being carried out on the object variables of the three subscales on the Japanese MBI, and the explanation variables of the seven scales on the Japanese JCQ/years of nursing experience. Continuous variables for the JCQ were used. Years of nursing experience were divided

into four groups: less than 3 yr, 4–9 yr, 10–19 yr, and more than 20 yr, and dummy variables for years of experience were used. A stepwise multiple regression analysis was carried out and then explanation variables with a variable fluctuation (F-Ratio) value of 2 were selected. Statistical significance was defined as  $p < .01$ . All statistical analyses were performed by means of a statistical program package, HALBAU.

**Results**

The response rate from both hospitals was 100%, but only 96 questionnaires from Hospital T were filled out correctly (effective response rate of 96.0%), and 172 from Hospital N (effective response rate of 87.8%), for a total of 268 effective responses. Table 1 presents the demographic characteristics of samples. All of the subjects from both hospitals were female with an average age of 36.2 yr (21–57 yr) and with average nursing experience of 14.5 yr (1–29 yr).

Tables 2 and 3 present the results of the factor analysis of the Japanese MBI. The same three factors as in earlier studies<sup>17, 18)</sup> were extracted. With the exception of items 5 and 15, all items showed a factor loading of more than .40. Cronbach's alpha coefficients for the subscales were .80 for PE, .82 for EE+DP, and .79 for PA. Lastly, the subscale scores were calculated excluding items 5 and 15. Higher scores on the subscales for PE and EE+DP

**Table 1.** Demographic Characteristics of Samples

|                 |                | n (%)     | Years of Nursing Experience |           |           |           |
|-----------------|----------------|-----------|-----------------------------|-----------|-----------|-----------|
|                 |                |           | –3                          | 4–9       | 10–19     | 20–       |
| Age             | under 25       | 29 (10.8) | 23 (82.1)                   | 6 (10.7)  | 0         | 0         |
|                 | 25–30          | 55 (20.5) | 5 (17.9)                    | 50 (89.3) | 0         | 0         |
|                 | 31–40          | 93 (34.7) | 0                           | 0         | 85 (86.7) | 8 ( 9.3)  |
|                 | over 40        | 91 (34.0) | 0                           | 0         | 13 (13.3) | 78 (90.7) |
|                 | subtotal       | 268       | 28                          | 56        | 98        | 86        |
| Work Schedule   | three shift    | 198       | 25                          | 38        | 74        | 61        |
|                 | other types    | 70        | 3                           | 18        | 24        | 25        |
|                 | subtotal       | 268       |                             |           |           |           |
| Job Rank        | administrative | 48        | 2                           | 1         | 6         | 39        |
|                 | staff          | 220       | 26                          | 55        | 92        | 47        |
|                 | subtotal       | 268       |                             |           |           |           |
| Marital Status  | unmarried      | 72        | 24                          | 31        | 14        | 3         |
|                 | married        | 187       | 3                           | 25        | 80        | 79        |
|                 | subtotal       | 259       |                             |           |           |           |
| Children        | without        | 19        | 2                           | 9         | 4         | 4         |
|                 | with           | 168       | 1                           | 16        | 76        | 75        |
|                 | subtotal       | 187       |                             |           |           |           |
| Age of Children | under 12       | 103       | 1                           | 16        | 68        | 18        |
|                 | over 12        | 65        | 0                           | 0         | 8         | 57        |
|                 | subtotal       | 168       |                             |           |           |           |

**Table 2.** Factor Loadings after Oblique Rotation for the Japanese Version MBI

| Variables  | Factor 1           | 2     | 3     | Communality |
|--|--------------------|-------|-------|-------------|
| <b>Emotional Exhaustion/Depersonalization (EE+DP)</b>                                      |                    |       |       |             |
| (10) I've become more callous toward people since I took this job.                         | .62                | -.07  | .03   | .40         |
| (11) I worry that this job is hardening me emotionally.                                    | .56                | .04   | .07   | .33         |
| (13) I feel frustrated by my job.  | .54                | -.03  | .36   | .51         |
| ( 8) I feel burned out from my work.   | .52                | .08   | .37   | .48         |
| (22) I feel patients blame me for some of their problems.                                  | .51                | .07   | -.14  | .53         |
| (16) Working with people directly puts too much stress on me.                              | .48                | -.06  | .24   | .34         |
| ( 6) Working with people all day is really a strain for me.                                | .47                | -.08  | .29   | .36         |
| (20) I feel like I'm at the end of my rope.  | .46                | .01   | .31   | .37         |
| ( 5) I feel I treat some patients as if they were impersonal 'objects'.                    | .32                | -.17  | .11   | .16         |
| (15) I don't really care what happens to some patients.                                    | .18                | .03   | -.03  | .03         |
| <b>Personal Accomplishment (PA)</b>  |                    |       |       |             |
| (18) I feel exhilarated after working closely with my patients.                            | -.11               | .72   | .15   | .54         |
| (19) I have accomplished many worthwhile things in this job.                               | .05                | .72   | .12   | .53         |
| (17) I can easily create a relaxed atmosphere with my patients.                            | -.16               | .65   | .05   | .46         |
| ( 7) I deal very effectively with the problems of my patients.                             | .05                | .63   | .05   | .39         |
| ( 9) I feel I'm positively influencing other people's lives through my work.               | .15                | .58   | -.01  | .36         |
| (21) In my work, I deal with emotional problems very calmly.                               | -.01               | .56   | -.18  | .35         |
| ( 4) I can easily understand how my patients feel about things.                            | .04                | .54   | .10   | .31         |
| (12) I feel very energetic.  | .04                | .51   | -.17  | .29         |
| <b>Physical Exhaustion (PE)</b>  |                    |       |       |             |
| ( 2) I feel used up at the end of the workday.   | -.05               | .03   | .83   | .68         |
| ( 1) I feel emotionally drained from my work.  | .04                | .04   | .81   | .67         |
| ( 3) I feel fatigued when I get up in the morning and have to face another day on the job. | .22                | -.09  | .62   | .49         |
| (14) I feel I'm working too hard on my job.  | .25                | .19   | .49   | .38         |
|  | Eigenvalue         | 4.29  | 3.65  | 1.04        |
|  | Contribution Ratio | 19.52 | 16.57 | 4.73        |

(Factor structure matrix after oblique rotation is not shown.)

**Table 3.** Inter-Factor Correlations for the Japanese Version of MBI

| Factor | 1    | 2    | 3    |
|--------|------|------|------|
| 1      | 1.00 |      |      |
| 2      | -.01 | 1.00 |      |
| 3      | .21  | -.02 | 1.00 |

reflect a higher degree of burnout. Conversely, lower scores on the subscale for PA reflect a higher degree of burnout. As the total mean PE and EE+DP scores indicate, respondents reported levels of PE over twice as high as that of EE+DP (Table 4).

#### 1. Burnout and its Relationship to Occupational Factors and Individual Parameters

Table 4 presents subscale scores of the Japanese version of MBI by occupational and individual factor category.

a) Years of Nursing Experience: A significant difference

in PE and EE+DP was found between these groups. Nurses with less than 3 years' experience had the highest scores of PE. The 10–19 yr group had the second highest scores and the over 20 yr group had the third. The 4–9 yr group had the lowest scores. The EE+DP scores were ranked similarly. Nurses with more experience had higher PA scores than those with less experience, but there was no significant difference.

- b) Work Schedule: PE scores for those doing three-shift work were significantly higher, but there was no noticeable difference in their EE+DP and PA scores. Ranked by years of experience, nurses with over 20 yr, who were also working on revolving shifts, had significantly high PE scores ( $p < .01$ ).
- c) Job Rank: Compared with staff nurses, head nurses and charge nurses had only slightly lower PE scores, lower EE+DP scores, and higher PA scores, but there was no significant difference. The nurses in administrative positions often had more than 20 years'

**Table 4.** Subscale Scores of the Japanese Version of MBI by Occupational and Individual Factors Category

|                  |                       | n   | PE<br>Mean ± SD | EE + DP<br>Mean ± SD | PA<br>Mean ± SD |
|------------------|-----------------------|-----|-----------------|----------------------|-----------------|
| Years of Nursing | under 3 years         | 28  | 4.21 ± 1.03     | 2.37 ± 1.19          | 3.50 ± .80      |
|                  | 4–9                   | 56  | 3.68 ± 1.14     | 1.70 ± .81           | 3.42 ± 1.03     |
|                  | 10–19                 | 98  | 4.14 ± 1.14     | 2.17 ± 1.02          | 3.62 ± 1.10     |
|                  | over 20               | 86  | 3.80 ± 1.29     | 1.91 ± .92           | 3.62 ± 1.15     |
|                  | subtotal              | 268 | *               | **                   | NS              |
| Work Schedule    | three shift           | 198 | 4.08 ± 1.18     | 2.05 ± .95           | 3.53 ± 1.07     |
|                  | other types           | 70  | 3.54 ± 1.15     | 1.92 ± 1.09          | 3.67 ± 1.10     |
|                  | subtotal              | 268 | **              | NS                   | NS              |
| Job Rank         | administrative        | 48  | 3.90 ± 1.33     | 1.87 ± .98           | 3.74 ± 1.21     |
|                  | staff                 | 220 | 3.95 ± 1.16     | 2.04 ± .99           | 3.53 ± 1.04     |
|                  | subtotal              | 268 | NS              | NS                   | NS              |
| Workplace        | surgery               | 47  | 3.94 ± 1.08     | 1.80 ± .88           | 3.37 ± 1.21     |
|                  | general medicine      | 69  | 4.12 ± 1.10     | 2.14 ± .98           | 3.56 ± 1.12     |
|                  | internal medicine     | 53  | 4.37 ± 1.29     | 2.22 ± 1.03          | 3.62 ± .93      |
|                  | obstetrics/gynecology | 28  | 3.48 ± 1.29     | 1.67 ± .72           | 3.64 ± 1.10     |
|                  | operating room        | 24  | 3.57 ± .92      | 1.79 ± 1.01          | 3.40 ± 1.14     |
|                  | dialysis center       | 15  | 3.92 ± .84      | 2.35 ± .78           | 3.55 ± .75      |
|                  | out-patient unit      | 32  | 3.52 ± 1.30     | 2.00 ± 1.16          | 3.85 ± .99      |
|                  | subtotal              | 268 | **              | NS                   | NS              |
| Age              | under 25 years        | 29  | 4.01 ± 1.08     | 2.23 ± 1.14          | 3.63 ± .76      |
|                  | 25–30                 | 55  | 3.72 ± 1.13     | 1.74 ± .89           | 3.35 ± 1.06     |
|                  | 31–40                 | 93  | 4.20 ± 1.11     | 2.26 ± .99           | 3.57 ± 1.07     |
|                  | over 40               | 91  | 3.76 ± 1.29     | 1.85 ± .91           | 3.67 ± 1.16     |
|                  | subtotal              | 268 | *               | **                   | NS              |
| Marital Status   | unmarried             | 72  | 3.89 ± 1.27     | 2.10 ± 1.07          | 3.37 ± .93      |
|                  | married               | 187 | 3.94 ± 1.18     | 1.98 ± .97           | 3.64 ± 1.11     |
|                  | subtotal              | 259 | NS              | NS                   | NS              |
| Children         | without               | 19  | 3.53 ± 1.10     | 1.73 ± .74           | 3.33 ± 1.13     |
|                  | with                  | 168 | 3.99 ± 1.18     | 2.01 ± .98           | 3.68 ± 1.10     |
|                  | subtotal              | 187 | NS              | NS                   | NS              |
| Age of Children  | under 12 years        | 103 | 4.24 ± 1.06     | 2.18 ± .99           | 3.63 ± 1.10     |
|                  | over 12               | 65  | 3.59 ± 1.25     | 1.75 ± .92           | 3.75 ± 1.11     |
|                  | subtotal              | 168 | ***             | **                   | NS              |
| Total            |                       | 268 | 3.94 ± 1.20     | 2.01 ± .99           | 3.57 ± 1.08     |

t-test, or one-way ANOVA. NS: Not significant, \*:  $p < .05$ , \*\*:  $p < .01$ , \*\*\*:  $p < .001$ .

experience. Therefore, staff nurses with over 20 years' experience were compared to the administrative nurses, but no significant difference was found.

d) Workplace: There was no significant difference in EE+DP and PA scores between workplaces. The general and internal medicine wards had somewhat higher PE scores than those of the operating room, the out-patient unit or the obstetrics/gynecology ward.

e) Age: A significant difference in PE and EE+DP was found between these groups. The group 31–40 yr of age had the highest PE scores. Nurses under 25 yr of age had the second highest scores and nurses over 40 yr of age had the third highest. The group 25–30 yr of age had the lowest scores. The EE+DP scores were ranked similarly. There was no significant difference in their PA scores.

f) Marital Status: There was no distinguishable

**Table 5.** Scale Scores of the Japanese Version of JCQ

|                  | Demand<br>Mean ± SD | Control<br>Mean ± SD | Insecurity<br>Mean ± SD | S support<br>Mean ± SD | C support<br>Mean ± SD | Phys. exert<br>Mean ± SD | Iso. load<br>Mean ± SD |
|------------------|---------------------|----------------------|-------------------------|------------------------|------------------------|--------------------------|------------------------|
| Years of Nursing |                     |                      |                         |                        |                        |                          |                        |
| under 3 years    | 36.6 ± 3.9          | 68.6 ± 6.6           | -3.5 ± 1.4              | 11.9 ± 1.5             | 11.7 ± 1.2             | 10.2 ± 1.1               | 5.5 ± 1.3              |
| 4-9              | 37.5 ± 4.2          | 70.1 ± 5.4           | -3.3 ± 1.5              | 11.4 ± 2.0             | 12.3 ± 1.3             | 10.4 ± 1.4               | 5.4 ± 1.2              |
| 10-19            | 37.3 ± 4.3          | 69.2 ± 7.2           | -4.1 ± 1.3              | 11.3 ± 1.9             | 11.8 ± 1.0             | 10.1 ± 1.4               | 5.2 ± 1.3              |
| over 20          | 37.3 ± 4.2          | 70.5 ± 6.1           | -4.0 ± 1.6              | 11.1 ± 2.1             | 11.8 ± 1.4             | 9.9 ± 1.4                | 5.2 ± 1.3              |
| Total            | 37.3 ± 4.2          | 69.7 ± 6.5           | -3.8 ± 1.5              | 11.3 ± 2.0             | 11.9 ± 1.3             | 10.1 ± 1.4               | 5.3 ± 1.3              |

\*\*

one-way ANOVA. \*\*: p&lt;.01.

**Table 6.** Relationship of Burnout to Workplace Stressors: Pearson Correlation Matrix (n=268)

|            | PE     | EE + DP | PA     |
|------------|--------|---------|--------|
| Demand     | .33*** | .21***  | .06    |
| Control    | -.02   | -.10    | .21*** |
| Insecurity | -.17   | -.22*** | .17    |
| S support  | -.04   | -.14    | .11    |
| C support  | -.04   | -.11    | .18    |
| Phys.exert | .38*** | .19     | .05    |
| Iso.load   | .36*** | .26***  | .07    |

\*\*\*: p&lt;.001.

difference in the three subscales between married and unmarried nurses, even for those in the 4-9 and the 10-19 years' experience group.

- g) Children: PE and EE+DP scores were higher for nurses with children. PA scores were also somewhat higher, but not significantly so. Nurses in the 4-9 years' experience group with children had higher PA scores than those without children (p<.05).
- h) Children's Age: Nurses with children under 12 yr of age had significantly higher PE and EE+DP scores than those with children over 12.

## 2. Workplace Stressors

In Table 5 the Japanese version JCQ scale scores are shown. There was no significant difference in the six JCQ scale scores: demand, control, supervisor support, coworker support, physical exertion, and isometric load among groups for years of nursing experience, but job insecurity varied significantly. Nurses with more experience reported higher scores of job insecurity than those with less experience.

## 3. The Relationship between Burnout and Workplace Stressors

Table 6 presents the one-to-one correlation for each

**Table 7.** Predictors of Burnout Using Stepwise Multiple Regression Analysis: Standard Partial Regression Coefficient

|                  | PE    | EE + DP | PA    |
|------------------|-------|---------|-------|
| Demand           | .17** | .16**   |       |
| Control          |       |         | .16** |
| Insecurity       | -.14  | -.16**  | .16   |
| S support        |       | -.12    |       |
| C support        |       |         | .15   |
| Phys. exert      | .21** |         | .11   |
| Iso. load        | .19** | .20**   |       |
| Years of nursing |       |         |       |
| ( - 3/4-9)       | .15   | .22***  | .06   |
| (10-19/4-9)      | .19   | .20**   | .17   |
| (20- /4-9)       | .07   | .07     | .15   |

\*\*: p&lt;.01, \*\*\*: p&lt;.001.

criterion on the Japanese MBI and the Japanese JCQ. Statistical significance was defined as p<.001. There was a significant positive correlation between job demand and PE and EE+DP and between job control and PA. In addition, a significant positive correlation was also observed between physical exertion and PE and between isometric load and PE and EE+DP. There was a significant negative correlation between job insecurity and EE+DP. There was no significant correlation between supervisor support and coworker support and subscales of the Japanese MBI.

The relationship between burnout and years of nursing experience having been clearly established and adjusted, the results were submitted to multiple regression analysis in order to show the influence of workplace stressors (Table 7). The Japanese MBI subscales were significantly related to workplace stressors in the following way: job demand with PE and EE+DP, job control with PA, job insecurity with EE+DP, physical exertion with PE, and isometric load with PE and EE+DP.

## Discussion

### 1. Relationship of Burnout to Occupational Factors and Individual Parameters

Researchers have consistently reported that young nurses who are less experienced are more prone to burnout than those who are more experienced<sup>23-26</sup>. We obtained similar results and also new findings indicating burnout reappeared in nurses with 10–19 years' experience. To elaborate, new nurses would carry out their duties feeling inspired about helping and serving people, but when faced with the realities of a busy hospital they would feel stressed by their inability to cope. The inability of nurses to learn effective ways of dealing maturely with stress allows stress to build. And, as the mind and body becomes tired, nurses become potential victims of burnout, but why is it then that burnout reappears in nurses with 10–19 years' experience—nurses who are thought of as veterans? Unlike junior nurses, these veteran nurses are thought to have learned how to deal with stress by maintaining a professional distance in their relations with patients. A closer examination of these nurses' situation allowed us to draw a picture of those who are prone to burnout. Those working shifts while trying to maintain their roles as housewives and mothers were the most likely to succumb, especially those with preschool-age children. This group is affected by a mixture of two factors: age of children and shift work, which is significantly related to burnout. Even veteran nurses can be burned out if they become overwhelmed.

Nurses working shifts were more likely to be burned out than those working night duty<sup>27</sup>. Shift nurses reported being more emotionally exhausted, feeling more alienated, and having less of a sense of accomplishment<sup>23</sup>, but in our findings there was no relation between work schedules and emotional exhaustion/depersonalization or personal accomplishment. Nonetheless, work schedules were found to be significantly related to physical exhaustion. It has been reported that administrative nurses have a greater sense of personal accomplishment and feel less emotionally exhausted than staff nurses<sup>24</sup>. Nurses in our study showed a similar tendency, though it was not statistically significant. Nevertheless, contrary to these reports, it has been reported that administrative nurses are more depersonalized and have less of a sense of accomplishment, even though they are less emotionally exhausted<sup>25</sup>. Further research is needed into the factors that influence burnout—factors such as differences in work schedules and administrative vs. non-administrative positions.

Although there was not a significant relation between different workplaces and emotional exhaustion/depersonalization, the workplace was a significant factor in physical exhaustion. Nurses working in the surgery, general medicine, and internal medicine wards generally

reported higher JCQ scale scores of physical exertion and isometric load compared with nurses working in the obstetrics/gynecology ward, operating room, dialysis center, and out-patient unit. It is thought that the difference in these JCQ scale scores reflects the difference of physical exhaustion.

As for age and the relation to burnout, we obtained similar results for years of nursing experience and the relation to burnout. In foreign countries such as the United States, people enter the nursing school at different ages. Therefore the correlation between age and years of nursing might be low. On the other hand, in Japan, almost all those people who want to be a nurse go to a nursing school right after high school. Hence there is a high correlation between age and years of nursing as can be seen in Table 1.

Compared with single nurses, married nurses reported a lower level of emotional exhaustion<sup>25</sup>. It has also been reported that married nurses feel less emotionally consumed by the job, more humane towards patients, and more fulfilled by their profession<sup>24</sup>. In the present study, marital status was not a significant factor in burnout and the age of the children was a primary factor related to physical exhaustion and emotional exhaustion/depersonalization. Married nurses with preschool-age children in need of care and instruction must expend a lot of energy, both mental and physical, at home. This lays the groundwork for burnout. Research has been conducted on the relationship between burnout and age, marital status, and other individual parameters<sup>23-25, 27-31</sup>, but there has been little research that looks at the existence of children of different ages as a factor in burnout. In women's studies particularly, it is essential to analyse the effect that having children has on burnout, and with this in mind, further examination is needed into the various effects that contribute to burnout—effects such as differences in marital status and the existence of children of different ages.

### 2. Workplace Stressors and their Relation to Burnout

Attempts to apply other criteria used for evaluating general workplace stressors, such as the JCQ based on the Job Demand-Control Model (JD-C Model), usually do not reveal enough detail of the specific work environment of the clinical nurse<sup>31</sup>. On the other hand, it is possible to compare workplace stressors in different types of jobs. This method is often seen in burnout research in foreign countries<sup>32, 33</sup>, but Japanese researchers have not chosen it yet. In comparison with a normal workplace<sup>22</sup>, a hospital is an environment that places higher demands on its workers. It cannot be said that a hospital is a workplace that gives nurses a lot of decision latitude. The JD-C model reveals that workers who are faced with high job demand but not allowed much latitude to make decisions often react with high levels of stress.



This had been shown to be related to mental breakdowns, a loss of job and/or life satisfaction, the consumption of tranquilizers, job absenteeism, and heart disease<sup>34,35</sup>. In this study, the JD-C model was also related to burnout.

Physical exertion and isometric load were significant factors in physical exhaustion. This is easily explained by the fact that in nursing work there is a lot of physical labor, such as the moving and turning of patients. But what is the explanation for the connection between static posture work and emotional exhaustion/depersonalization? It is believed that long periods of static posture causes feelings of tenseness and are thus a psychological stressor. This point deserves further investigation. Since a nursing position is commonly considered to be a very stable job, we predicted that job insecurity would not be a big concern, but, contrary to our predictions, job insecurity was related to emotional exhaustion/depersonalization.

In a report by Constable *et al.*<sup>32</sup>, which compared social support from supervisors, coworkers, spouse, family and friends, they found that support from supervisors had a buffer effect on feelings of mental and physical exhaustion. In the current study, support from supervisors as well as coworkers was not significantly related to all three subscales of the Japanese MBI.

Since the samples in this study were taken from only two public general hospitals, the sample numbers were quite low, and one should be careful not to make over-generalizations based on the results.

*Acknowledgments:* We would like to express our gratitude to all of the nurses who cooperated in this study and to Dr. Norito Kawakami of the Public Health Department of Gifu University for his invaluable advice in the use of the Japanese JCQ.

The Japanese version of the Maslach Burnout Inventory is the Research Edition Translation performed by Higashiguchi, K. on August 9, 1996. Translated and reproduced by special permission of the Publisher, Consulting Psychologists Press, Inc., Palo Alto, CA 94303 from Human Services Survey by Christina Maslach and Susan E. Jackson. Copyright 1986 by Consulting Psychologists Press, Inc.. All rights reserved. Further reproduction is prohibited without the Publisher's written consent.

## References

- 1) Freudenberger HJ. Staff Burn-Out. *J Soc Issues* 1974; 30: 159-165.
- 2) Jones J. The Staff Burnout Scale for health professionals. Park Ridge, IL: London House Press, 1980.
- 3) Pines A, Aronson E, Kafry D. Burnout; From tedium to personal growth. New York: Free Press, 1981.
- 4) Maslach C, Jackson SE. The measurement of experienced burnout. *J Occup Behav* 1981; 2: 99-113.
- 5) Iwanicki EF, Schwab RL. A cross validation study of the Maslach Burnout Inventory. *Educ Psycho Meas* 1981; 41: 1167-1174.
- 6) Brookings JB, Bolton B, Brown CE, MaEvoy A. Self-reported job burnout among female human service professionals. *J Occup Behav* 1985; 6: 143-150.
- 7) Powers S, Gose KF. Reliability and construct validity of the Maslach Burnout Inventory in a sample of university students. *Educ Psychol Meas* 1986; 46: 251-255.
- 8) Green DE, Walkey FH. A confirmation of the three-factor structure of the Maslach Burnout Inventory. *Educ Psychol Meas* 1988; 48: 579-585.
- 9) Lahoz MR, Mason HL. Maslach Burnout Inventory; Factor structures and norms for USA pharmacists. *Psychol Rep* 1989; 64: 1059-1063.
- 10) Koeske GF, Koeske RD. Construct validity of the Maslach Burnout Inventory; A critical review and reconceptualization. *J Appl Behav Sci* 1989; 25: 131-144.
- 11) Gold Y, Bachelor P, Michael WB. The dimensionality of a modified form of The Maslach Burnout Inventory for university students in a teacher-training program. *Emotion Psychol Meas* 1989; 49: 549-561.
- 12) Williams CA. Empathy and burnout in male and female helping professionals. *Res Nurs Health* 1989; 12: 169-178.
- 13) Walkey FH, Green DE. An exhaustive examination of the replicable factor structure of the Maslach Burnout Inventory. *Educ Psychol Meas* 1992; 52: 309-323.
- 14) Arthur NM. The assessment of burnout; A review of three inventories useful for research and counseling. *J Counsel Dev* 1990; 69: 186-189.
- 15) Inaoka F. Burnout phenomenon and burnout scales. *Jpn J Nurs Res* 1988; 21: 147-155 (in Japanese).
- 16) Masuko E, Yamagishi M, Kishi R, Miyake H. Burnout syndrome of human services professionals; Doctors, nurses, caregivers, teachers and clerks (1). *Jpn J Ind Health* 1989; 31: 203-215 (in Japanese with English abstract).
- 17) Higashiguchi K, Morikawa Y, Miura K, et al. The development of the Japanese version of the Maslach Burnout Inventory and the examination of the factor structures. *Jpn J Hyg* 1998; 53: 447-455 (in Japanese with English abstract).
- 18) Higashiguchi K, Morikawa Y, Miura K, et al. The factor structures of the Japanese version of the Maslach Burnout Inventory. *Jpn J Hyg* 1998; 53: 360 (in Japanese).
- 19) Perlman B, Hartmen EA. Burnout; Summary and future research. *Human Relations* 1982; 35: 285-305.
- 20) Karasek R. Job Content Questionnaire and User's Guide. Lowell: University of Massachusetts at Lowell, 1985.
- 21) Kawakami N, Kobayashi F, Araki S, Haratani T, Furui H. Assessment of job stress dimensions based on the Job Demands-Control model of employees in telecommunication and electric power companies in Japan; Reliability and validity of the Japanese version of the Job Content Questionnaire. *Int J Behav Med*

- 1995; 2: 358–375.
- 22) Kawakami N, Fujigaki Y. Reliability and validity of the Japanese version of Job Content Questionnaire; Replication and extension in computer company employees. *Ind Health* 1996; 34: 295–306.
- 23) Koda S, Hisashige A, Ogawa T, Aoyama H, Kurumatani N, Nakagiri S. A study of burnout among hospital nurses. *J UOEH* 1989; 11: 604–608.
- 24) Kubo M, Tao M. Burnout among nurses; The relationship between stress and burnout. *J Exp Soc Psychol* 1994; 34: 33–43 (in Japanese with English abstract).
- 25) Kishi R, Miyake H. Burnout syndrome of human services professionals; Doctors, nurses, care-givers, teachers and clerks (2). *Jpn J Public Health* 1988; 35(suppl): 423 (in Japanese).
- 26) Hisashige A, Koda S, Ogawa T, Nakagiri S. The relationship between burnout syndrome and health condition among nurses. *Jpn J Ind Health* 1991; 33: 721 (in Japanese).
- 27) Doi T.: *Burnout Syndrome*. Tokyo: Kongo Shuppan, 1988: 23–95 (in Japanese).
- 28) Inaoka F, Matsuno K, Miyazato K. A study of burnout and related factors among nurses. *Kango* 1984; 36: 81–104 (in Japanese).
- 29) Yamamoto A, Minami Y, Ota K, et al. Influences of life, job stress, and social support on burnout phenomenon among nurses. *Jpn J Nurs Res* 1987; 20: 219–230 (in Japanese).
- 30) Hisashige, A., Koda, S., Kurumatani, N., Nakagiri, S. Occupational influences on burnout phenomenon among hospital nurses. *J UOEH* 1989; 11: 454–464.
- 31) Mori T, Kageyama T. A cross-sectional survey on mental health and working environment of hospital nurses. *J Occup Health* 1995; 37: 135–142 (in Japanese with English abstract).
- 32) Constable JF, Russell DW. The effect of social support and the work environment up on burnout among nurses. *J Human Stress* 1986; 12: 20–26.
- 33) Robinson SE, Roth SL, Keim J, Levenson M, Flentje JR, Bashor K. Nurse burnout; Work related and demographic factors as culprits. *Res Nurs Health* 1991; 14: 223–228.
- 34) Karasek R, Theorell T. *Healthy work*. New York: Basic Books, 1990.
- 35) Karasek RA. Job demand, job decision latitude, and mental strain; Implications for job redesign. *Adm Sci Q* 1979; 24: 285–308.

## Appendix

### The Japanese Version of JCQ: The 45-Item Recommended Version 4/23/96

Item score: Strongly disagree = 1 point  
 Disagree = 2  
 Agree = 3  
 Strongly agree = 4

#### Job demand (Demand)

- (10) My job requires working very fast.  
 (11) My job requires working very hard.  
 (13) I am not asked to do an excessive amount of work.  
 (14) I have enough time to get the job done.  
 (17) I am free from conflicting demands that others make.  
 (18) My job requires long periods of intense concentration on the task.  
 (19) My tasks are often interrupted before they can be completed, requiring attention at a later time.  
 (20) My job is hectic.  
 (23) Waiting on work from other people or departments often slows me down on my job.
- scoring = (J10 + J11) \* 3 + (15 - J13 - J14 - J17) \* 2

#### Decision latitude (Control)

- (1) My job requires that I learn new things.  
 (2) My job involves a lot of repetitive work.  
 (3) My job requires me to be creative.  
 (4) My job allows me to make a lot of decisions on my own.  
 (5) My job requires a high level of skill.  
 (6) On my job, I have very little freedom to decide how I do my work.

- (7) I get to do a variety of different things on my job.  
 (8) I have a lot of say about what happens on my job.  
 (9) I have an opportunity to develop my own special abilities.  
 scoring =  $(J1 + J3 + J5 + J7 + J9 + (5 - J2)) * 2 + (J4 + J8 + (5 - J6)) * 4$

#### Job insecurity (Insecurity)

- (24) My job security is good.  
 (25) My prospects for career development and promotions are good.  
 (26) In five years, my skills will still be valuable.  
 (38) How steady is your work?  
 (39) During the past year, how often were you in a situation where you faced job loss or layoff?  
 (40) Sometimes people permanently lose jobs they want to keep. How likely is it that during the next couple of years you will lose your present job with your employer?  
 scoring =  $J38 - J24 + J39 + J40 - J25 - J26$

#### Supervisor support (S support)

- (27) My supervisor is concerned about the welfare of those under him.  
 (28) My supervisor pays attention to what I am saying.  
 (29) There are some problems as to the human relations with my boss.  
 (30) My supervisor is helpful in getting the job done.  
 (31) My supervisor is successful in getting people to work together.  
 scoring =  $J27 + J28 + J30 + J31$

#### Coworker support (C support)

- (32) People I work with are competent in doing their jobs.  
 (33) People I work with take a personal interest in me.  
 (34) There are some problems about human relations with my fellow workers.  
 (35) People I work with are friendly.  
 (36) The people I work with encourage each other to work together.  
 (37) People I work with are helpful in getting the job done.  
 scoring =  $J32 + J33 + J35 + J37$

#### Physical exertion (Phys. exert)

- (12) My job requires lots of physical effort.  
 (15) I am often required to move or lift very heavy loads on my job.  
 (16) My work requires rapid and continuous physical activity.  
 scoring =  $J12 + J15 + J16$

#### Isometric load (Iso. load)

- (21) I am often required to work for long periods with my body in physically awkward positions.  
 (22) I am required to work for long periods with my head or arms in physically awkward positions.  
 scoring =  $J21 + J22$

#### 5 items on new questions of world trade

- (41) Is your job insecure because of competition from world trade?  
 (42) Do you have to work harder than you otherwise would because of competition from world trade?  
 (43) Do you lose power and influence over the way things go at your workplace because of competition from world trade?  
 (44) There is little I can do to change the important things in my life.  
 (45) What happens in the future mostly depends on me.