The relationship between organizational justice and work stress among nurses in a general hospital

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Objective: To determine the association between organizational justice and occupational stress among hospital nurses.

Methods: Four hundred forty-six nurses working in general hospitals in the Kanto region (excluding nurses in administrative positions; 20–66 years old, 33.7 ± 9.8 years old; 415 women [93%] and 29 men [6.5%]) were asked to anonymously complete and submit the Fourth Japanese Version of the Nursing Stress Scale (NSS-J4) and the Japanese version of the Organizational Justice Scale (OJS-J).

Results: Negative associations were observed between OJS-J procedural justice and the NSS-J4 inadequate preparation and death and dying subscales (P = 0.047, P = 0.019) and between interpersonal justice subscale and the lack of support subscale (P = 0.001). Conversely, there was a positive association between distributive justice and inadequate preparation (P = 0.010).

Conclusions: Overall, nurses were unlikely to experience stress due to a lack of support in organizations with higher interpersonal justice, while nurses were less likely to experience stress regarding inadequate preparation or patients’ death and dying in organizations with higher procedural justice. However, nurses were more likely to experience stress regarding inadequate preparation in an organization with higher distributive justice. Thus, organizational justice was associated with the nurses’ occupational stress.

Key words: organizational justice, nursing stress, hospital nurse, shift work

Introduction

Nursing services are stressful occupations.¹⁻⁵ In a study comparing stress levels among various occupations in the United States and Singapore, nurses tended to have higher stress than did medical practitioners, lawyers, pharmacists, engineers, teachers, and life insurance agents.⁶⁻⁷ Furthermore, a study using the Health Professions Stress Inventory in the United States revealed that registered nurses had the most stressful occupation when compared to primary care physicians and pharmacists.⁶ In a study comparing stress levels among six specialist jobs using a subjective scale in Singapore, the subjective stress of nurses was third only to that of teachers and lawyers,⁷ while in a study on stress in female nurses and physicians in China, nurses tended to feel significantly greater stress concerning role insufficiency and the physical environment and greater emotional exhaustion than did physicians.⁸

Stress has a detrimental impact on nurses. One study showed that nurse stress, as measured by the Nursing Stress Scale (NSS), had a positive association with scores on the short version of the Profile of Mood States and a negative association with job satisfaction.⁹ Furthermore, higher stress may lead to burnout and turnover among nurses, which can adversely affect patient care.¹⁰⁻¹² Therefore, improving nurses’ stress can also improve medical services.

Within this backdrop, numerous studies overseas have begun focusing on organizational justice as a possible nursing stressor. Organizational justice refers to an individual’s personal evaluation of whether or not an
organization has treated him or her fairly from an ethical and moral standpoint. Organizational justice has been studied widely by organizational researchers since it was initially conceptualized in the 1960s. Various tools have been developed to measure organizational justice, and researchers have used these tools to explore its association with various psychological constructs (e.g., job satisfaction), health, and lifestyle. A pilot study targeting Egyptian nurses and doctors showed a significant association between organizational justice and quality of performance, while a Chinese study targeting nurses found that organizational justice and emotional intelligence both have direct influences on work engagement, while organizational justice also mediates the relationship between emotional intelligence and work engagement. Furthermore, a study of registered nurses in Finland showed that organizational justice was positively associated with job involvement and performance and negatively associated with psychological distress and sleeping problems.

Based on these previous overseas studies, particularly the fact that organizational justice is associated with nurse stress and performance as well as quality of sleep, it seems important to conduct further investigations of the association between organizational justice and nurse stress. There are numerous studies on nursing stress in Japan, but those studies focus on the relationship of nursing stress with factors such as urinary cytokines and depression. To our knowledge, there is no study investigating the relation of NSS scores with organizational justice. Indeed, surveys that have employed measures of organizational justice, such as the Organizational Justice Scale (OJS), have focused on employees in the manufacturing industry. Therefore, studies on the relation between stress of nurses and organizational justice are warranted. At present, to the best of our knowledge, there are no published studies investigating the association between organizational justice and nurses' stress in Japan. Therefore, the present study attempts to begin to fill this gap.

Methods

Participants

Potential participants were 446 nurses working in private hospitals in the Kanto region (20—66 years old, 33.7 ± 9.8 years old; 415 women [93%] and 29 men [6.5%]). All the participants were employed in general nursing care. The exclusion criteria were nurses who had one or more unanswered items on measures of nursing stress (4th Japanese version of the NSS [NSS-J4]) and the Japanese version of the OJS (OJS-J), nurses who worked night duty only or who did not work the night shift at all, and nurses who worked as administrative staff such as head nurses. We excluded nurses working on night duty only and included nurses who were engaged in shift work because the NSS-J4 has items concerning the stress that occurs during night duty. Furthermore, we included nurses in charge of general nursing care only—excluding nurse supervisors, chief nurses, and nursing directors—because the items of the OJS-J included items asking about participants' relationship with their supervisor (e.g., "Has he/she treated you in a polite manner?"; "Has he/she treated you with dignity?") and about the justice concerning evaluation procedures (e.g., those for salary, pay raises, and roles).

Survey method

The study institution's consent to cooperate with the present study was obtained during an executive meeting of the nursing department of that institution. This study was explained to all participating nurses by the nursing directors in writing. Together with the written explanation, a self-administered, anonymous questionnaire was then distributed to the nurses. Submitting the questionnaire was regarded as consent to participate.

Ethical considerations

This study was conducted after obtaining the approval of the ethics committee of Fukuoka University Faculty of Medicine. The following information was explicitly provided to the nurses in writing: participation in this study is voluntary, the nurses would not be subjected to any disadvantages regardless of whether they ended up participating in the study or not, and the data collected would be used for research purposes only.

Survey content

General characteristics: The general characteristics of participants assessed were: sex, age, living circumstances (alone, living with one's family, and other), average daily hours of sleep in 1 week, drinking habit (yes or no), official post and rank (nurse in charge of general nursing care, nurse supervisor, chief nurse, or nursing director), and presence and frequency of night shift work (working both daytime and night shifts, working night duty only, or working the daytime shift only).

Evaluation of organizational justice: We used a self-administered questionnaire to measure the organizational justice. The OJS-J, or the Japanese version of Colquitt's Four-factor OJS, is comprised of 20 items in 4 subscales: procedural justice (i.e., whether the
organization's policy and decision-making in evaluating the members of the organization are fair, 7 items); distributive justice (i.e., whether or not rewards are fairly distributed to each member, 4 items); interpersonal justice (i.e., whether or not organization members' human rights are respected and there are fair personal relationships among members, 4 items); and informational justice (i.e., whether or not information such as the organization's decisions are provided to members fairly, 5 items). Participants responded to each question using a scale ranging from 1 to 5 ("strongly disagree" to "strongly agree," respectively), with higher scores indicating higher organizational justice. The validity of the OJS-J was verified by Shibaoka et al., who also developed it. Colquitt's original scale was developed through a construct validation study, and was considered to possess greater validity than previous scales with fewer factors, such as the two-factor scale by Moorman (which comprised factors of procedural justice and distributive justice) and a three-factor scale consisting of procedural justice, distributive justice, and interactional justice.24

Evaluation of stress: The NSS is a self-administered questionnaire developed by Gray-Toft and Anderson in 1981 in order to objectively measure nurse stress. It is based on 34 potentially stressful situations derived from interviewing nurses, physicians, chaplains (i.e., Christian ministers who serve in institutional and specialized settings, such as schools, hospitals, and prisons, but not churches).10 While there are various tools to measure nurses' stress,25,26 the NSS may be the most popular.27 It comprises 34 items in 7 subscales: death and dying (7 items), conflict with physicians (5 items), inadequate preparation (3 items), lack of support (3 items), conflict with other nurses (5 items), workload (6 items), and uncertainty concerning treatment (5 items). The NSS-J4, which was used in this study, was developed based on the NSS; and its reliability and validity was verified by Funashima et al.28 Participants were asked to respond to each question using a four-point scale, with response options of: "no," "occasionally," "frequently," and "always." Higher scores indicate greater awareness of stress.10

Statistical analysis
We analyzed all data using a generalized linear model. For the dependent variables, we used the NSS-J4's subscale scores (death and dying, conflict with physicians, inadequate preparation, lack of staff support, conflict with other nurses work load, and uncertainty concerning) and total score. For the independent variables, we used the OJS-J subscale scores (distributive justice, informational justice, and interpersonal justice). We further designed a model that adjusted for sex, age, living circumstances, average daily hours of sleep, and drinking habit. IBM SPSS Statistics 22 was used for analysis. The significance level was set at 5%.

Results
Four hundred forty-six self-administered questionnaires were obtained out of the 460 sent out (response rate = 9.70%). Of the received responses, those from 206 nurses in charge of general nursing care and engaged in shift work and who had no missing data for the OJS-J and NSS-J4 were analyzed. Table 1 shows the general characteristics of the subjects. The characteristics of 206 subjects were: 191 women (92.7%), 14 men (6.8%), with a sample mean age of 29.4 years (standard deviation [SD] 6.9). Regarding living circumstances: 98 nurses (47.6%) lived alone, 94 (45.6%) lived with family, and 14 (6.8%) lived in other circumstances. The average daily hours of sleep was 6.0 hours (SD 1.2). A total of 157 nurses (76.2%) had a drinking habit, which accounted for more than a half of the sample population.

Table 2 shows the results of the generalized linear model with scores of the NSS-J4 as the outcome variable and OJS-J subscale scores as explanatory variables. We observed positive associations between distributive justice and inadequate preparation and death and dying (P = 0.008, P = 0.028). We also found negative associations between procedural justice and inadequate

<table>
<thead>
<tr>
<th>Table 1. Subjects' characteristics (N = 206)</th>
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<tr>
<td>Variable</td>
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</tr>
<tr>
<td>Sex</td>
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<tr>
<td>Female</td>
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<tr>
<td>Male</td>
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<tr>
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<tr>
<td>Age, mean (SD)</td>
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<td>Missing data</td>
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<tr>
<td>Living arrangement</td>
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<tr>
<td>Alone</td>
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<tr>
<td>With family</td>
</tr>
<tr>
<td>Other</td>
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<tr>
<td>Average amount of sleep, mean (SD)</td>
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<tr>
<td>Drinking habit</td>
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preparation and death and dying ($P = 0.021, P = 0.002$) and between interpersonal justice and lack of support ($P = 0.000$). None of the justice subscales showed significant associations with the total score of the NSS-J4 or the scores for the workload, conflict with other nurses, conflict with physicians’ subscales, and uncertainty concerning treatment.

Table 3 shows the results of Table 2 after adjusting for sex, age, living circumstances, average hours of sleep, and drinking habit. For positive associations, only that between distributive justice and inadequate preparation remained significant ($P = 0.010$).

The negative association between procedural justice and inadequate preparation and death and dying ($P = 0.047, P = 0.019$) as did that between interpersonal justice and lack of support remained significant ($P = 0.001$).

**Discussion**

In the present study, we found negative associations between interpersonal justice and the lack of support subscale and between procedural justice and the inadequate preparation and death and dying subscales. Conversely, there was a positive association between distributive justice and inadequate preparation. These results indicated that nurses are less likely to experience stress regarding lack of support in organizations with higher interpersonal, and are less likely to experience

### Table 2. Organizational Justice Scale and Nursing Stress Scale

<table>
<thead>
<tr>
<th>NSS</th>
<th>OJS</th>
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<tr>
<td></td>
<td>Distributive justice</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Total Stress</td>
<td>0.59</td>
</tr>
<tr>
<td>Death and dying</td>
<td>0.30</td>
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<tr>
<td>Conflict with physicians</td>
<td>0.05</td>
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<tr>
<td>Inadequate preparation</td>
<td>0.17</td>
</tr>
<tr>
<td>Lack of support</td>
<td>-0.094</td>
</tr>
<tr>
<td>Conflict with other nurses</td>
<td>-0.015</td>
</tr>
<tr>
<td>Work load</td>
<td>0.05</td>
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<tr>
<td>Uncertainty concerning treatment</td>
<td>0.13</td>
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</tbody>
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NSS, Nursing Stress Scale; OJS, Organizational Justice Scale

*P < 0.05

### Table 3. Partial regression coefficient between Organizational Justice Scale and Nursing Stress Scale adjusted for sex, age, living arrangement, the average amount of sleep, and drinking habit

<table>
<thead>
<tr>
<th>NSS</th>
<th>OJS</th>
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<tr>
<td></td>
<td>Distributive justice</td>
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<tr>
<td></td>
<td>B</td>
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<tr>
<td>Total Stress</td>
<td>0.45</td>
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<tr>
<td>Death and dying</td>
<td>0.25</td>
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<tr>
<td>Conflict with physicians</td>
<td>0.03</td>
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<tr>
<td>Inadequate preparation</td>
<td>0.17</td>
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<tr>
<td>Lack of support</td>
<td>-0.099</td>
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<tr>
<td>Conflict with other nurses</td>
<td>-0.026</td>
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<tr>
<td>Work load</td>
<td>0.04</td>
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<tr>
<td>Uncertainty concerning treatment</td>
<td>0.09</td>
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</table>

NSS, Nursing Stress Scale; OJS, Organizational Justice Scale

*P < 0.05
stress regarding death and dying and inadequate preparation in organizations with higher procedural justice. However, nurses are more likely to experience stress regarding inadequate preparation in organizations with higher distributive justice.

Regarding the relationship between interpersonal justice and lack of support, in the OJS, items assessing interpersonal justice include whether or not the supervisor respects the staff and treats them politely (e.g., "Has [he/she] treated you in a polite manner?"; "Has [he/she] treated you with dignity?"). On the other hand, the items evaluating lack of support in the NSS-J4 related to stress triggered by the fact that negative emotions could not be shared with colleagues or staff working for other departments in the workplace. Previous studies have not clarified whether or not interpersonal justice influences lack of support. Although, in China, lack of support appears to be positively associated with cognitive anxiety sensitivity. Considering our findings, however, supervisors' appropriate and faithful relationship with staff might relieve their stress due to a lack of support.

Regarding the relationships of procedural justice with inadequate preparation and death and dying, procedural justice items refer to the fairness of the procedures used to evaluate staff (e.g., salary, pay raise, and role). In previous studies in foreign countries, an association between procedural justice and stress has been found; in particular, the intention to quit a job and psychological stress at work was found to increase with procedural unfairness. The items concerning inadequate preparation for the NSS-J4 are related to stress due to a lack of one's own ability. Our results indicate that in environments where the supervisor evaluates the staff through suitable workplace procedures, given the negative association between procedural justice and inadequate preparation. Regarding the relationship with death and dying, it seems that generally, procedural justice is not directly associated with the stress caused by facing the death of a patient. However, workplaces with high procedural justice are characterized by good communication between employees and supervisors, which might lead to a reduction in the stress due to the death of patients.

It should be noted that these negative associations do not contradict the results that interpersonal and procedural justice are the primary drivers of justice effects, as described in Colquitt et al.'s report on the association between organizational justice, work-family conflict, and stress. Furthermore, studies on organizational justice in occupations other than nursing have highlighted the importance of interpersonal and procedural justice. For example, in a cohort study conducted with Finnish health care professionals (e.g., doctors, nurses, other professionals, maintenance, and cleaning), health care professionals who felt lower procedural and interpersonal justice were more likely to be diagnosed with depression by a physician, compared to health care professionals with higher procedural and interpersonal justice. Furthermore, in a survey targeting university staff in 23 institutions in the United States, procedural and interpersonal justice showed strong positive, but indirect, associations with stress.

Meanwhile, there was a positive association between distributive justice and inadequate preparation, contrary to the correlation found in the above results. This indicates that higher distributive justice leads to stress resulting from inadequate preparation in nurses. To the best of our knowledge, this is the first study that reports that distributive justice has a negative influence on workers. Therefore, it will be necessary to examine this further in future studies.

A possible explanation for this relationship, based on the results of this study alone, is that nurses become more aware of the lack of their own abilities when distributive justice is higher. Indeed, the items measuring lack of preparation do not refer to situational or interpersonal sources of stress, as shown in subscales of the NSS-J4, but to a lack of their own abilities (e.g., "lack of ability to support patients’ families," "inability to answer questions posed by patients in a satisfactory manner," and "feeling of lacking the ability to mentally support patients"). This may mean that nurses evaluate themselves more severely when they work in an organization with high distributive justice.

Overseas, a number of intervention studies aiming to improve organizational justice have been conducted. For example, in Canada, organizational justice can be improved by training the managers of a labor union. Considering that intervention studies on organizational justice for other occupations have shown that it can be improved via activities in the workplace, we believe that organizational justice might be improved through the proper education of nurses. Our results, of course, only provide cross-sectional data on the relationships of interpersonal, procedural, and distributive justice with various stressors. Nevertheless, we hope to create educational programs to help improve organizational justice, with a primary focus on these three types of justice, as well as conduct interventional studies to elucidate the causal relationships between these factors. By doing so, it will be possible to examine whether or not organizational justice leads to a reduction in nurses' stress and helps to prevent mental disorders.
References


Appendix: Items for the Nursing Stress Scale

**Factor I. Death and dying**
3. Performing procedures that patients experience as painful
4. Feeling helpless in a case of a patient who fails to improve
6. Listening or talking to a patient about his/her approaching death
8. The death of a patient
12. The death of a patient with whom you developed a close relationship
13. Physician not being present when a patient dies
21. Watching a patient suffer

**Factor II. Conflict with physicians**
2. Criticism by a physician
9. Conflict with a physician
10. Fear of making a mistake in treating a patient
14. Disagreement concerning the treatment of a patient
19. Making a decision concerning a patient when the physician is unavailable

**Factor III. Inadequate preparation**
15. Feeling inadequately prepared to help with the emotional needs of a patient's family
18. Being asked a question by a physician for which I do not have a satisfactory answer
23. Feeling inadequately prepared to help with the emotional needs of a patient

**Factor IV. Lack of support**
7. Lack of an opportunity to talk openly with other unit personnel about problems on the unit
11. Lack of an opportunity to share experiences and feelings with other personnel on the unit
16. Lack of an opportunity to express to other personnel on the unit my negative feelings toward patients

**Factor V. Conflict with other nurses**
5. Conflict with a supervisor
20. Floating to other units that are short-staffed
22. Difficulty in working with a particular nurse (or nurses) outside the unit
24. Criticism by a supervisor
29. Difficulty in working with a particular nurse (or nurses) on the unit

**Factor VI. Work load**
1. Breakdown of computer
25. Unpredictable staffing and scheduling
27. Too many non-nursing tasks required, such as clerical work
28. Not enough time to provide emotional support to a patient
30. Not enough time to complete all of my nursing tasks
34. Not enough staff to adequately cover the unit

**Factor VII. Uncertainty concerning treatment**
17. Inadequate information from a physician regarding the medical condition of a patient
26. A physician ordering what appears to be inappropriate treatment for a patient
31. A physician not being present in a medical emergency
32. Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment
33. Uncertainty regarding the operation and functioning of specialized equipment