Relationships Among Self-Efficacy, Communication, Self-Management Skills and Mental Health of Employees at a Japanese Workplace

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Abstract: We investigated relationships among self-efficacy, self-management skills, communication with superiors and mental health of employees at a Japanese workplace. The subjects were 426 employees in a medium-sized manufacturing company in Kyushu. In 1999, with agreement of the company, we mailed a self-administrated questionnaire which included questions on age, gender, job rank, communication with superiors, a General Self-Efficacy Scale (GSES), a Self-Management Skill scale (SMS) and the Japanese version of the 12-item General Health Questionnaire (GHQ-12). Eighty percent of the subjects returned the questionnaire. Excluding senior managers and insufficient answers, the final response rate was 55 percent. By multiple regression analysis, we found that job rank contributed significantly and positively, and that age, communication with superiors and self-management skills contributed significantly and negatively to the GHQ-12. Our results implied that age, job rank, communication with superiors and self-management skills would contribute to the mental health of Japanese employees.

Key words: mental health, communication, self-management skill, self-efficacy, workplace.

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Introduction

In recent years, there has been an increasing focus on the mental health of the Japanese workers due to a growing number of suicides among middle-aged and older workers [1]. To improve the mental health status of workers and to prevent their suicides, the Ministry of Health, Labour and Welfare, in 2000, published a guideline for the promotion of workers'
mental health [2-4]. The guideline detailed four procedures to achieve this goal: self-care, care by managers, care by on-site occupational health staff and care by off-site health professions. The self-care consisted of awareness of stress, coping and voluntary consultations. At the same time, managers and on-site occupational health staff have their roles to play in the education and support their workers.

In the well-known model of job stress and health developed by the National Institute for Occupational Safety and Health (NIOSH) [5], job stressors induce illnesses through acute reactions such as depression, somatic complaints and accidents. However, individual factors, non-work factors and buffer factors such as social support, interfere with this process. On the other hand, Lewinsohn et al. [6, 7] indicated that the process from stressors to illness was interfered with by personal social skills.

In Japan, several studies have reported that stress reduction programs [8, 9] or active listening training [10-13] of supervisors improved the mental health status of employees. The active listening training was one element of communication training which was provided to improve relationships among staff, colleagues and superiors.

Bandura [14, 15] suggested that self-efficacy was an individual’s perception of his/her ability to perform specific health behaviors and to influence his/her own health status. Individuals with high self-efficacy in performing health behaviors are more likely to seek preventive care, exercise more, overcome the smoking habit and rate their health more favorably than individuals with low self-efficacy. Self-efficacy could also be raised by education. Sakano et al. [16] developed the General Self-Efficacy Scale (GSES) to measure self-efficacy of the Japanese, and applied GSES clinically.

Takahashi [17, 18] suggested that social skills were important to perform actual health behaviors, and they were easily improved by education. Individuals with more social skills are more likely to bridge the gap between knowledge, motivation and behavior, and carry out health behaviors more successfully than individuals with less skills. He developed a Self-Management Skill scale (SMS) to measure social skills regarding self-management, and applied SMS to improve health education.

The above studies indicated that self-efficacy, self-management skills and communication skills could be raised through the education of employees and managers. We hypothesized that the mental health status of employees was influenced by demographic factors (age, gender, job rank), self-efficacy, self-management skills and communication with superiors. We investigated the relationship between the demographic factors, self-efficacy, self-management skills, communication with superiors and mental health to certify our hypothesis.

Materials and Methods

The subjects were manufacturing workers in a medium-sized company in the Kyushu area. The manufacturing company had 426 employees (327 males and 99 females) in 1999. The
company has been actively cooperating with occupational health studies. We explained the purpose of our study and the protection of privacy to its safety and health committee members before the study. We could not obtain the data regarding employees’ present histories because of their ethical considerations.

In August 1999, with agreement of the company we mailed a self-administered questionnaire which included age, gender, job rank (manager or non-manager), communication with superiors, a General Self-Efficacy Scale (GSES), a Self-Management Skill scale (SMS) and the Japanese version of the 12-item General Health Questionnaire (GHQ-12). The questionnaires with respondents’ own names were returned by October 1999. We removed the data of senior managers because of small sample size and difference between job characteristics of senior managers and those of middle-class managers.

Gender was categorized into male (0) and female (1), and job rank was categorized into non-manager (0) and manager (1).

The scale of communication with superiors (SCS) was developed with reference to a previous report [19] and after conducting interviews with several workers. We made a 4-item questionnaire (Appendix). To every question, the respondents were requested to indicate from “1: very undescriptive” to “4: very descriptive”. The score is the sum of all questions and ranges from 4 to 16. The higher scores denote better communication with superiors.

The GSES is a 16-item questionnaire measuring the self-efficacy of Japanese people [16], in which each answer is selected from “yes (1)” or “no (0)”. The score of GSES ranges from 0 to 16, and the higher scores denote higher self-efficacy.

The SMS is a 10-item questionnaire, and includes self-management skills such as collecting sufficient information before acting, reflecting on failure and creating an easier work environment. The score ranges from 10 to 40, with the higher scores denoting greater self-management skills.

In the GHQ-12, each answer was calculated using a likely score from “0: none” to “3: frequently”. The higher sum of the 12 items denotes poorer mental health [20]. We employed the GHQ-12 as an index of the employees’ mental health status in our study.

We compared the scale of communication with superiors (SCS), GSES, SMS and GHQ-12 responses of the male workers with those of the female workers by the t-test, and also studied the statistical differences of the SCS, GSES, SMS and GHQ-12 between the younger workers (< 40 years-old) and older workers (≥ 40 years-old) by the t-test. We studied Pearson’s correlation among age, gender, job rank, SCS, GSES, SMS and GHQ-12 to certify their relationships. Multiple regression analysis (not stepwise method) was performed to estimate the factors contributing to the mental health of the employees among age, gender, job rank, SCS, GSES and SMS in order to certify our hypothesis. In the analysis, we defined the GHQ-12 as a dependent factor and other factors (age, gender, job rank, SCS, GSES and SMS) as independent factors. The calculations were performed with SPSS 10.0 J.
Results

Three hundred and forty-one (80%) of the subjects returned the questionnaire. Excluding 8 senior managers, 234 respondents returned sufficient answers for analyses and the final response rate was 55 percent. One hundred and seventy-eight (76%) of the respondents were male and 54 (23%) of them were managers. The mean age (SD) of all the respondents was 44.9 (10.7) years old, with the mean age for males and females being 44.1 (10.8) and 46.6 years old respectively.

Table 1. Mean (SD) of factors examined according to demographic factors

<table>
<thead>
<tr>
<th></th>
<th>SCS</th>
<th>GSES</th>
<th>SMS</th>
<th>GHQ-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12.3 (2.5)</td>
<td>5.7 (1.9)**</td>
<td>28.9 (4.2)</td>
<td>14.7 (5.2)</td>
</tr>
<tr>
<td>Female</td>
<td>12.0 (2.7)</td>
<td>4.8 (1.9)**</td>
<td>29.4 (3.8)</td>
<td>13.2 (4.8)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 40</td>
<td>12.1 (2.5)</td>
<td>5.4 (1.9)</td>
<td>27.6 (3.6)**</td>
<td>16.0 (5.6)**</td>
</tr>
<tr>
<td>≥ 40</td>
<td>12.2 (2.5)</td>
<td>5.5 (1.9)</td>
<td>29.8 (4.1)**</td>
<td>13.6 (4.7)**</td>
</tr>
<tr>
<td>Total</td>
<td>12.2 (2.5)</td>
<td>5.5 (1.9)</td>
<td>29.1 (4.1)</td>
<td>14.4 (5.1)</td>
</tr>
</tbody>
</table>

SCS: Scale of Communication with Superiors
GSES: General Self-Efficacy Scale
SMS: Self-Management Skill scale
GHQ-12: the Japanese version of the 12-item General Health Questionnaire
** P<0.01 by the t-test

Table 2. The correlation matrix among age, gender, job rank, SCS, GSES, SMS and GHQ-12

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
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<th>4</th>
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<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>0.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Job rank</td>
<td>0.27**</td>
<td>−0.31**</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>SCS</td>
<td>0.08</td>
<td>−0.06</td>
<td>0.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSES</td>
<td>0.00</td>
<td>−0.19**</td>
<td>−0.02</td>
<td>−0.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMS</td>
<td>0.26**</td>
<td>0.05</td>
<td>0.11</td>
<td>0.12</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>GHQ-12</td>
<td>−0.30**</td>
<td>−0.13</td>
<td>0.08</td>
<td>−0.30**</td>
<td>0.10</td>
<td>−0.29**</td>
</tr>
</tbody>
</table>

SCS: Scale of Communication with Superiors
GSES: General Self-Efficacy Scale
SMS: Self-Management Skill scale
GHQ-12: the Japanese version of the 12-item General Health Questionnaire
** P<0.01
Males had a significantly higher GSES score than females. The respondents under 40 years old had significantly lower SMS and higher GHQ-12 scores than the others (Table 1).

Table 2 shows the results of correlation among background items, SCS, GSES, SMS and GHQ-12. Job rank correlated significantly with age positively, and correlated significantly with gender negatively. GSES correlated significantly with gender inversely. SMS was related significantly to age positively. GHQ-12 was related significantly to age, SCS and SMS inversely. The internal consistent reliability of SCS was considered to be acceptable, because its Cronbach’s alpha coefficient was 0.79 [21].

Table 3 shows the results of the multiple regression analysis (df = 6, F = 12.47, P < 0.001, R² = 0.25, Adjusted R² = 0.23). Job rank significantly contributed to GHQ-12 positively. However, age, SCS and SMS significantly contributed to GHQ-12 inversely.

**Discussion**

Our study found that age contributed significantly to the GHQ-12 of the employees inversely. This finding corresponded with the Sakurada’s study[22], which showed that age contributed negatively to depressive mood in male employees in Japanese companies. We found that job rank also contributed positively to the GHQ-12. Most of the managers in our results were middle-level managers. This result was compatible with the other studies.

Takeda et al.[23] indicated that managers tended to have more symptoms of general fatigue than non-managers at Japanese workplaces, and Tanaka[24] suggested that Japanese managers received a larger quantity of work than non-managers. This also was considered

<table>
<thead>
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<th>Independent variables</th>
<th>B</th>
<th>T-value</th>
<th>P-value</th>
</tr>
</thead>
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<tr>
<td>Age</td>
<td>-0.273</td>
<td>-4.376</td>
<td>0.000</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.035</td>
<td>-0.557</td>
<td>0.578</td>
</tr>
<tr>
<td>Job rank</td>
<td>0.186</td>
<td>2.897</td>
<td>0.004</td>
</tr>
<tr>
<td>SCS</td>
<td>-0.264</td>
<td>-4.509</td>
<td>0.000</td>
</tr>
<tr>
<td>GSES</td>
<td>0.078</td>
<td>1.322</td>
<td>0.187</td>
</tr>
<tr>
<td>SMS</td>
<td>-0.209</td>
<td>-3.486</td>
<td>0.001</td>
</tr>
</tbody>
</table>

B : Standardized partial regression coefficient
SCS : Scale of Communication with Superiors
GSES : General Self-Efficacy Scale
SMS : Self-Management Skill scale
GHQ-12: the Japanese version of the 12-item General Health Questionnaire

(7.9) years old, respectively.

Table 3. Factors affecting the GHQ-12 of the respondents
reasonable, because managers, especially middle-level managers, had more job-demand than non-managers but less job-control than senior managers.

Our results found that the communication with superiors significantly affected the GHQ-12 negatively. This finding was compatible with a previous study[25], in which poor relationships with superiors, which were induced by poor communication with superiors, were significantly related to the mental health of Japanese employees. Kawakami et al.[26] indicated that poor human relations may induce the onset of major depression. The relationship or communication with superiors is considered a type of social support which reduces subjective job stress of employees and improves their psychological well-being.

We found that self-management skills, a kind of social skill, had a significant and negative effect on the GHQ-12 of employees. Self-management skills are considered the base of coping strategies, because they include collecting information needed to carry out tasks, identifying core problems, and a feasible pace and planning of such tasks [17]. Irie et al.[27] indicated that difficulty in dealing with stress, and negative and malfunctional coping strategies were relative to the negative mental health of Japanese workers. Previous studies have suggested that when social skill training was introduced to those with mental disturbance and the training skills maintained, a favorable effect on the relapse rate or symptoms of mental diseases resulted [28—34]. Furthermore, Ferris et al.[35] indicated that social skills have a high correlation with job performance in workers. Social skills training might be considered important to improve psychological well-being and job performance.

In the present study, self-efficacy was not a significant factor contributing to the mental health status of the employees. This finding was considered reasonable in that the GSES measured a general tendency to perceive self-efficacy but not a specific tendency to perceive self-efficacy of coping strategies.

The present study also had a cross-sectional design. We had a limitation of estimating causal relationships among age, job rank, communication with superiors, self-management skills and mental health status in Japanese employees. However, the present study was considered important to certify our hypothesis generally.

We had three further limitations. The first was the validity of the questions regarding communication with superiors. If we are to measure employees’ communication with superiors exactly, it is necessary to observe the whole of their communication. However, we developed and employed the questionnaire regarding the communication to certify the general relationship between employees’ psychological well-being and their communication. Further study should investigate SCS’s validity more exactly. The second was that we employed the GHQ-12 as a mental health index in our study. There are several indices of mental health such as Zung’s Self-rating Depression Scale, Cornell Medical Index Health Questionnaire and Psychiatric Outpatient Mood Scales [36]. Further study should investigate the factors contributing to mental health of employees, using other mental health scales with reference to our results. The third was that we did not measure other factors contributing to
the GHQ score, such as stressors, marital status, work characteristics, lifestyle, physical health status and financial issues. We considered it was important to highlight the relationships among communication with superiors, self-management skills and mental health of employees, and we did not employ other factors because of the questionnaire’s volume. Further study should investigate the relationships between them precisely, using questionnaires which include stressors, marital status, work characteristics, lifestyle, physical health status, number of staffs and financial issues.

In conclusion, our results indicated that psychological well-being was affected negatively by job rank and positively by age, communication with superiors, and self-management skills in the medium-sized Japanese company. Our results implied that age, job rank, communication with superiors and self-management skills would contribute to the mental health of Japanese employees.

Appendix

The questions regarding communication with superiors
1. Can you confer with your superiors even over minor matters?
2. Do your superiors always listen carefully to what you have to say?
3. Do all employees in your section share work-related information?
4. Do your superiors give clear and adequate instructions?

References


某日本企業における従業員の精神的健康度と自己効力感，コミュニケーション，自己管理スキルの関係

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2千葉大学 教育学部
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要 旨： 我々は某日本企業における従業員の精神的健康度と自己効力感，上司とのコミュニケーション，自己管理スキルの関係について調べた。対象者は九州の某中規模製造業企業の従業員426名である。1999年に年齢・性別・職位・上司とのコミュニケーション度・一般セルフエフィカシー尺度・自己管理スキル尺度・日本語版GHQ-12項目版（GHQ-12）からなる自記式質問紙を配布した。対象者の80％が回答し，部長以上と不十分な回答を除いた結果，最終的に55％の回答率を得た。重回帰分析の結果より，GHQ-12に対して，職位は有意に正の影響を与え，年齢・上司とのコミュニケーション度・自己管理スキルは有意に負の影響を与えることがわかった。今回の結果から，従業員の年齢・職位・上司とのコミュニケーション・自己管理スキルが精神的健康度に影響を与える可能性が示唆された。

キーワード： 精神的健康度，コミュニケーション，自己管理スキル，自己効力感，企業。

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