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Relationships between Occupational Stress and Depressive Symptoms among Prison Officers in Japan

Yasuhiko Deguchi[1)], Koki Inoue[1)], Tomohiro Muramatsu[1)], Shinichi Iwasaki[1)], Tsuneo Yamauchi[1)], Takehisa Nakao[1)], Masayo Muroya[1)], Yumi Kobayashi[1)], Yasuyuki Kato[2)], and Nobuo Kiriike[1)]

Department of Neuropsychiatry, Osaka City University, Graduate School of Medicine[1)]; and Osaka Medical Prison[2)]

Abstract

Background

The relationships between occupational stress and depressive symptoms in prison officers have rarely been studied in Japan. Thus, we analyzed the associations between occupational stress factors and depressive symptoms among Japanese prison officers.

Methods

This was a cross-sectional study involving 426 male prison officers (20-60-year-old). Depressive symptoms were assessed using the Zung Self-Rating Depression Scale. Using this scale and a cut-off point of 50, the subjects were divided into the "depressive group" and "non-depressive group". Occupational stress was evaluated using the Generic Job Stress Questionnaire. Comparisons among the groups were performed with multiple logistic regression analysis.

Results

Of the 426 subjects, 107 were included in the depressive group. After adjusting for demographic and occupational variables, higher scores for the physical environment, role ambiguity, and quantitative workload and a lower score for social support from co-workers were found to be associated with an increased odds ratio of depressive symptoms.

Conclusions

The physical environment, role ambiguity, quantitative workload, and social support from co-workers are associated with depressive symptoms in Japanese prison officers. We hope that educating prison officers about the results of this study and organizational/individual-based improvement strategies will reduce their risk of depression.

Key Words: Occupational stress; Depressive symptoms; Prison officers; GJSQ; Japan

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Correspondence to: Yasuhiko Deguchi, MD, PhD.
Department of Neuropsychiatry, Osaka City University, Graduate School of Medicine,
1-4-3 Asahimachi, Abeno-ku, Osaka 545-8585, Japan
Tel: +81-6-6645-3821; Fax: +81-6-6636-0439
E-mail: amaebi1976kiseki@yahoo.co.jp

Introduction

Correctional institutions, and especially prisons, are some of the most unusual and difficult places to work. Prison correctional staff were reported to be more likely to suffer from physical illnesses, such as heart disease, diabetes, asthma, and hypertension, than individuals in a range of other occupations[1]. Correctional staff belong to various categories, such as prison officers, correctional clerical staff, and correctional treatment staff (industrial, educational, medical staff, etc.), and the details of their roles differ. Prison officers, who maintain order and security in prisons, are also known as prison guards, security officers, and correctional (or correction/detention) officers in different countries[2]. Based on the effects of their duties on their physical health, psychological well-being, and job satisfaction, prison officers are considered to work in worse conditions than individuals in a variety of other occupations[3]. Prison officers were reported to be more likely to suffer from heart attacks, high blood pressure, and ulcers than the general population[4,5]; their mean life span (59 years) was reported to be sixteen years shorter than the national average in the United States[6]; and they display a higher prevalence of mood disorders than the general population[7]. Occupational stress has been identified as a risk factor for psychological problems, including depression[8]. Recently, the provision of support to prison officers at the workplace has been recognized as an important issue. Many previous studies have described the relationships between occupational stress and depressive symptoms among workers with various occupations[9-14]; however, only two studies have analyzed the relationships between occupational stress, work conditions, and depressive symptoms among correctional staff[15,16].

Therefore, we decided to study the associations between occupational stress and depressive symptoms in Japanese prison officers using a standardized questionnaire, the Generic Job Stress Questionnaire (GJSQ), which was developed by the National Institute for Occupational Safety and Health[17]. This is the first study to examine the relationships between occupational stress and depressive symptoms among prison officers in Japan.

Methods

Subjects and Procedure

This study examined Japanese prison officers in 7 out of the 8 prisons (not including a medical prison) in the Osaka correctional region, Kansai, Japan, from January to March in 2005. We handed out self-administered questionnaires to 686 prison officers (they were all men and regular workers) who ranged in age from 20-60 years, and 426 prison officers completed the questionnaires (response rate 62.1%). The candidate participants gave their informed consent to participate. The protocol of this study was approved by the Human Subjects Review Committee at Osaka City University.

Measures of occupational stress

Along with the demographic and occupational variables, we assessed occupational stress using the Japanese version of the GJSQ, which has been shown to have sufficient reliability and validity[18,19]. The GJSQ is a useful questionnaire for assessing various aspects of occupational stress including occupational stress and stress reactions at the group and individual levels. The original authors of the GJSQ permit the use of independent subscales for assessing depressive symptoms and occupational stress, and we used 7 subscales to assess occupational stress (the

physical environment, role conflict, role ambiguity, intragroup conflict, intergroup conflict, job control, and quantitative workload) and 2 social support subscales (from supervisors and from co-workers) as buffer factors, according to the results of previous studies[15,16,20-23]. In general, higher scores for the occupational stress subscales, except job control, indicate greater stress. In contrast, higher scores for job control and the social support subscales indicate lower stress.

Measures of depressive symptoms

Depressive symptoms were evaluated using the Japanese version of the Zung Self-Rating Depression Scale (SDS)[24], which has been used in previous studies and the clinical setting in Japan. The scores for the 20 items were added up, and the total score was converted to a 20-80 point scale. A higher total score indicates more severe depressive symptoms. Previous studies have demonstrated the reliability and validity of the SDS in both Japan and Western countries[8,25-27]. Based on previous studies, we defined the morbidity cut-off point on the SDS as 50[28,29]. Individuals with SDS scores of more than 50 were categorized as the "depressive group" and displayed moderate depressive symptoms, and those with SDS scores of less than 50 were categorized as the "non-depressive group" and did not display any depressive symptoms.

Statistical analysis

Univariate logistic regression analyses were used to estimate the odds ratios (OR) of the demographic variables, occupational variables, and 9 GJSQ subscales for belonging to the depressive group. Subsequently, in the multivariate model, the OR for belonging to the depressive group, including those associated with independent variables such as age, marital status, work pattern and the 9 GJSQ subscales, were estimated. We examined the significance of the two-factor interaction terms between age, marital status, work pattern and 9 GJSQ subscales (the physical environment, role conflict, role ambiguity, intragroup conflict, intergroup conflict, job control, and quantitative workload, social support from supervisors, social support from co-workers). However, none of these interactions were significant. All statistical analyses were performed using the SPSS version 19.0 software package (SPSS Inc., Chicago, IL).

Results

Table 1 shows the subjects' characteristics. The mean age and total SDS score of the study population were 37.7 years and 42.9, respectively. The depressive group consisted of 107 (25.1%) participants and displayed a mean SDS score of 55.5. The non-depressive group contained 74.9% of the participants and exhibited a mean SDS score of 38.6. In univariate logistic regression analysis, we did not find any significant relationship between depressive symptoms and any of the demographic or occupational variables.

Table 2 shows the subjects' mean GJSQ scores and the results of the univariate logistic regression analysis to examine the association between GJSQ scores and the presence of depressive symptoms. In the univariate logistic regression analysis, higher scores for the physical environment, role conflict, role ambiguity, intragroup conflict, intergroup conflict, and quantitative workload were associated with an increased odds ratio of belonging to the depressive group. On the other hand, a higher level of social support was associated with a reduced odds ratio of belonging to the depressive group. Table 3 shows the results of the multivariate logistic regression analysis examining the associations between the scores for each GJSQ subscale and the presence of depressive symptoms. After adjusting for demographic

Table 1. Subjects' characteristics

	Total (n=426)	Non-depressive group (n=319)	Depressive group (n=107)	Crude model OR	Crude model 95% CI
Age (years)	37.7±9.3	37.9±9.4	37.0±8.9	0.94 #	0.84-1.06 #
Marital status					
Married	320 (75.1%)	240 (75.3%)	80 (74.8%)	1.00	
Unmarried	94 (22.1%)	70 (21.9%)	24 (22.4%)	1.03	0.61-1.74
Other	12 (2.8%)	9 (2.8%)	3 (2.8%)	1.00	0.26-3.79
Service years	14.8±9.6	15.1±9.6	14.0±9.5	0.99	0.97-1.01
Work pattern					
Daytime	193 (45.3%)	152 (47.7%)	41 (38.3%)	1.00	
Shift work	233 (54.7%)	167 (52.3%)	66 (61.7%)	1.47	0.94-2.29

OR, Odds ratio.
OR and 95% CI per 5 years of age.

Table 2. GJSQ scores of the depressive and non-depressive groups

Occupational stress (range)	Total	Non-depressive group	Depressive group	Crude model OR	Crude model 95% CI
Physical environment (10-20)	16.0±2.7	15.7±2.8	17.0±2.3	1.22	1.11-1.34
Role conflict (8-56)	31.6±9.9	30.6±9.6	34.5±10.5	1.04	1.02-1.07
Role ambiguity (6-42)	18.8±6.1	17.8±5.7	21.6±6.3	1.11	1.07-1.16
Intragroup conflict (8-40)	20.1±5.5	19.4±5.3	22.4±5.4	1.11	1.07-1.16
Intergroup conflict (8-40)	19.8±5.9	19.0±5.8	22.0±5.7	1.09	1.05-1.14
Job control (16-80)	38.5±13.5	39.1±13.5	36.6±13.5	0.98	0.97-1.00
Quantitative workload (11-55)	39.7±7.1	39.0±6.8	41.7±7.7	1.06	1.02-1.09
Social support from					
Supervisors (4-20)	14.8±3.7	15.2±3.5	13.8±4.2	0.90	0.85-0.96
Co-workers (4-20)	16.0±3.1	16.4±2.8	14.8±3.6	0.84	0.78-0.91

OR, Odds ratio; and GJSQ, Generic Job Stress Questionnaire.

Table 3. Associations between GJSQ scores and belonging to the depressive group

	Multi-adjusted model OR	Multi-adjusted model 95% CI
Physical environment	1.14	1.02-1.27
Role conflict	0.98	0.95-1.01
Role ambiguity	1.09	1.04-1.15
Intragroup conflict	1.05	0.98-1.12
Intergroup conflict	1.01	0.95-1.08
Job control	1.01	0.99-1.03
Quantitative workload	1.05	1.02-1.10
Social support from:		
Supervisors	1.05	0.96-1.15
Co-workers	0.84	0.75-0.93

All 9 of the listed subscales and co-variants (age, marital status, and work pattern) were included in the multivariate logistic regression analysis.

OR, Odds ratio; and GJSQ, Generic Job Stress Questionnaire.

variables (age and marital status) and occupational variables (work pattern), higher scores for the physical environment (OR=1.14, 95% CI=1.02-1.27), role ambiguity (OR=1.09, 95% CI=1.04-1.15), and quantitative workload (OR=1.05, 95% CI=1.02-1.10), as well as lower scores for social support from co-workers (OR=0.84, 95% CI=0.75-0.93) were likely to be belonging to the depressive group among Japanese prison officers. On the other hand, role conflict, intragroup conflict, intergroup conflict, job control, social support from supervisors, and demographic variables were not associated with belonging to the depressive group.

Discussion

After adjusting for demographic and occupational variables, higher scores for the physical environment, role ambiguity, and quantitative workload and a lower score for social support from co-workers were associated with an increased odds ratio of belonging to the depressive group. On the other hand, none of the other GJSQ subscales (role conflict, intragroup conflict, intergroup conflict, job control, and social support from supervisors) significantly affected the depressive symptoms.

Only two previous studies (one from Turkey and one from France) have examined the associations between depressive symptoms and work conditions or occupational stress among prison officers/correctional staff. The Turkish study demonstrated that among prison officers 5 work-related stress factors (excessive work load, role conflict, role ambiguity, inadequacies in the physical conditions of the prison, and threat perception) as well as general problems such as economic problems, work-family conflict, and health problems were positively correlated with depression, and perceived social support was negatively correlated with depression[23]. In addition, the French study found that the depressive symptoms of correctional male staff were positively and significantly associated with their age; seniority; marital status; work conditions (type of prison, unsatisfactry task scheduling, problems with inmates' behavior); and their subjective experience of their work conditions, such as the difficultly of their work schedule, e.g., whether it includes night work, as well as low work satisfaction and a negative professional image. They also showed that prior experience; the quality and number of relationships male correctional staff had with their colleagues, superiors, and the central administration; and support at work helped to protect against depressive symptoms. Among male prison officers, their social relationships at work (i.e., the number and quality of their relationships with their colleagues, superiors, and the central administration) have been demonstrated to be correlated with the presence of depressive symptoms[15]. Our finding of significant relationships between the presence of depressive symptoms, and the physical environment, role ambiguity, quantitative workload, and social support are consistent with the results of the Turkish study, but the absence of an effect of role conflict is not. In comparison with the French study, our finding of significant associations between depressive symptoms and the physical environment, as well as social support, and the absence of significant relationships between intragroup conflict or intergroup conflict and being in a depressive state were consistent with their results, but they did not evaluate some of the other occupational stress factors that we evaluated. As for role conflict, prison officers in Japan perform dual roles: 1) maintaining order and security in prisons, e.g., preventing fights between inmates and escape attempts, and 2) facilitating inmates' rehabilitation through daily contact. This feature is unique to Japan as prison officers and

correctional treatment staff are assigned separately in Western countries. Furthermore, the French study paid attention to the depressive symptomatology of correctional staff. Thus, the aforementioned differences might have been due to cross-cultural factors, the questionnaires used, organizational factors (prison officers were examined in our study, and correctional staff were investigated in the French study), or the age distributions of the subjects.

Several reports have analyzed occupational stress and depressive symptoms separately. Below, we discuss the effects of the physical environment, role problems, quantitative workload, job control, group conflicts, social support, and background factors on the incidence of depressive symptoms. As for the physical environment, the threat of violence from inmates was reported to be a major source of stress[20,30-32]. As prisons are closed workplaces, the structural conflict between prison officers and inmates can easily escalate, and the risk of infection (e.g., with AIDS or hepatitis) is increased because a large number of inmates inject illegal drugs[22]. Prison officers also suffer from role problems because the objectives of the rehabilitation they are supposed to perform are usually rather vaguely described, and hence, they have little idea about what is expected of them with regards to prisoner rehabilitation[22]. In addition, the emphasis on rehabilitation and the recent influx of other professionals have increased the role problems of prison officers[20]. Although Japanese prison officers play two conflicting roles, guarding inmates and facilitating their rehabilitation, we did not find a relationship between role conflict and depressive symptoms. The tolerant temperament of Japanese people might explain this result. In previous studies, the quantitative workload of prison officers was indicated to be high[20-23], and prison officers who experienced high workloads reported more psychological distress[33]. In terms of the ratio of prison officers to inmates, each prison officer is responsible for 4.2-4.5 inmates in Japan; on the other hand, the ratio is 3.1 in the United States, 2.1 in Germany, 1.9 in France, and 1.6 in Britain (according to "White paper on crime 2004", http://hakusyo1.moj.go.jp/en/50/nfm/mokuji.html). Thus, the ratio is less favorable in Japan than in the United States and European countries, and the quantitative workload is also heavier in Japan. As for job control, it was noted that prison officers who experienced low job control and poor support reported more psychological distress[33], and stressful social contact with superiors, prisoners, and colleagues was suggested to lead to increased stress among prison officers[23]. In this study, job control was not related to depressive symptoms, and social support from co-workers was shown to buffer occupational stress in prisons. The discrepancies between the present and previous studies are interesting and might have been derived from cross-cultural or ethic differences or varying motivation levels.

We detected significant relationships between depressive symptoms among Japanese prison officers, and the physical environment, role ambiguity, quantitative workload, and social support from co-workers. Countermeasures must be taken to alleviate such occupational stress factors. According to previous reports[1,32,34-37], we recommend organizational-based approaches to improving the physical environment (e.g., stimulating teamwork to protect prison officers from the threat of violence from inmates, improving the prison's atmosphere, and allowing more flexibility to take account of individual preferences), reducing role ambiguity (e.g., clarifying the organizational structure and the roles, duties, and responsibilities of prison officers; establishing clear goals and a feedback system for them), reducing their quantitative workload (e.g., increasing the number of prison officers and monitoring their workload), and increasing social

support (e.g., creating opportunities for group discussion among correctional staff, promoting positive peer support regardless of generation, and employing experienced retired officers to coach the present prison officers). In addition, we also recommend individual-based approaches to coping with stress (e.g., engaging in hobbies, exercising, spending more time with family members, etc.).

This study has several limitations. First, it had a cross-sectional design; therefore, the direction of causality could not be determined. Second, although we used the SDS to evaluate depressive symptoms and defined an appropriate morbidity cut-off point of 50, which was higher than those used in previous studies, such symptoms do not always indicate the presence of clinical depression. Third, the moderate response rate to our questionnaire (62.1%) might resulted in selection bias. Finally, gender differences, educational level (in Japan all prison officers must have graduated from high school), prison category, and job-classification were not investigated in this study.

In conclusion, this study demonstrated that the physical environment, role ambiguity, quantitative workload, and social support from co-workers were significantly associated with depressive symptoms among Japanese prison officers. In the future, prospective studies are needed to analyze the causal relationships between occupational stress and depressive symptoms among prison officers, and we hope that educating prison officers about the results of this study and organizational/individual-based improvement strategies will reduce their risk of depression.

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