

Original**Association between Recovery Experience and Mental Health in Firefighters as Compared with Clerical Staff: A Cross-sectional Study**

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Abstract

Objectives: “Recovery experiences” are the way that workers spend their off-time to recover from work-related stress. Recovery experiences were reported to be associated with favorable mental health. In firefighters who are exposed to unique stressors, the significance of recovery experiences in maintaining mental health may differ from that of other occupations. However, few studies have examined the associations between recovery experiences and mental health in firefighters. Therefore, we examined the associations between recovery experiences and depressive symptoms in firefighters, in comparison with clerical staff.

Methods: This cross-sectional study was conducted in November 2013. Subjects were male firefighters and clerical staff working in a local municipality. Depressive symptoms were assessed using the Japanese version of the Center for Epidemiologic Studies Depression Scale. Those with a score of 16 points or higher were regarded as having depressive symptoms. Recovery experiences were assessed with the Japanese Version of the Recovery Experience Questionnaire (REQ-J). REQ-J has four subscales: psychological detachment, relaxation, mastery, and control. Each subscale score was calculated independently. Multiple logistic regression analysis was performed for each occupation with depressive symptoms as the dependent variable, and each recovery experience subscale as the independent variables. Adjusted odds ratios (AdjORs) and 95% confidence intervals (95% CI) were calculated.

Results: A total of 299 firefighters and 510 clerical staff were included in the analysis. The absence of depressive symptoms was significantly associated with a high relaxation score [AdjORs (95% CI) 2.05 (1.03–4.06)] in firefighters. Whereas, the absence of depressive symptoms was significantly associated with psychological detachment [1.36 (1.00–1.84)], relaxation [1.90 (1.26–2.86)], and mastery [1.49 (1.11–2.01)] in clerical staff.

Conclusions: Relaxation was the only dimension that was significantly associated with the absence of depressive symptoms in firefighters, whereas relaxation as well as psychological detachment and mastery were significant in clerical staff, showing a difference in the associations between firefighters and clerical staff. Therefore, measures focusing on relaxation to prevent depressive symptoms may be useful for firefighters.

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—Key words—

firefighters, recovery experiences, depressive symptoms

Introduction

Recently, the number of ambulance dispatches has been rapidly increasing in Japan and an emergency car, such as an ambulance, is dispatched once every 5.3 seconds, according to the report of the Ministry of Internal Affairs and Communications of Japan¹⁾. Firefighters are required to be ready for emergency calls and to take on various responsibilities, such as firefighting, emergency care, and/or rescue work. These responsibilities often come with the exposure to life-threatening situations and emotionally traumatic experiences. Fire-

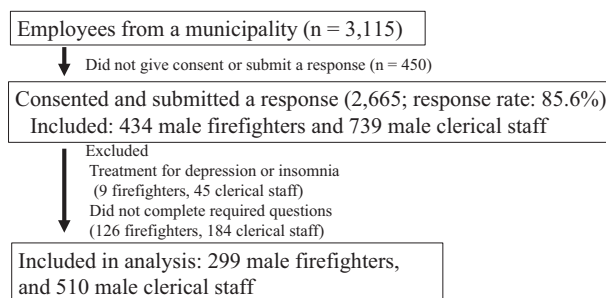


Fig. 1 Flowchart of participant recruitment

(firefighters and clerical staff) adjusted for all the variables, combining the data of firefighters and clerical staff. Statistical analyses were performed using IBM SPSS Statistics ver. 22.

Results

A total of 2,665 employees consented to the study and submitted responses (response rate: 85.6%). Among these, 434 male firefighters and 739 male clerical staff were included in the study. Of these, 9 firefighters and 45 clerical staff under treatment for depression or insomnia and 126 firefighters and 184 clerical staff who did not complete the required questions were excluded. Finally, 299 firefighters and 510 clerical staff were included in the analysis (Fig. 1).

The mean age was 40.4 ± 10.5 years for firefighters and 43.3 ± 11.5 years for clerical staff. The prevalence of depressive symptoms was 15.1% for firefighters, which was significantly less than the 23.3% for clerical staff ($P=0.005$). The mean scores for psychological detachment were 3.30 ± 0.83 and 3.38 ± 0.90 for firefighters and clerical staff, respectively. The mean scores for relaxation were 3.77 ± 0.77 and 3.70 ± 0.79 , for mastery 3.19 ± 0.80 and 3.00 ± 0.92 , for control were 3.86 ± 0.82 and 3.96 ± 0.76 . The detachment score and the control score of firefighters were marginally lower than those of clerical staff ($P=0.099$ for the detachment score and $P=0.074$ for the control score, respectively) and the mastery score of firefighters was significantly higher than that of clerical staff ($P=0.002$) (Table 1).

Correlation analyses among the four recovery experience subscales revealed weak or moderate correlations (<0.7). Cronbach's α coefficients for each subscale were within an acceptable range (0.82–0.89) (Table 2).

Logistic regression analyses demonstrated that relaxation was the only subscale significantly associated with the absence of depressive symptoms in the firefighters [AdjORs (95% CI) 2.05 (1.03–4.06)]. On the other hand, significant associations were observed between the absence of depressive symptoms and psychological detachment, relaxation, and mastery in clerical staff [psychological detachment AdjORs (95% CI) 1.36 (1.00–1.84), relaxation 1.90 (1.26–2.86), and mastery 1.49 (1.11–2.01)] (Table 3). Hosmer-Lemeshow goodness-of-fit tests demonstrated an adequate model fit ($P>0.05$). VIF values were all in an acceptable range (1.58 to 2.64 in firefighters and 1.38 to 2.26 in clerical staff). The interaction terms were significant between relaxation and occupation ($P=0.030$), mastery and occupation ($P=0.027$), and control and occupation ($P=0.016$), and marginally significant between psychological detachment and occupation ($P=0.075$) (data not shown).

Discussion

In the present study, we investigated the association between each dimension of recovery experiences and absence of depressive symptoms in firefighters compared with clerical staff working for a local municipality. We demonstrated the absence of depressive symptoms to be significantly associated only with relaxation in firefighters but with psychological detachment, relaxation, and mastery in clerical staff, showing a difference in the associations between firefighters and clerical staff. Furthermore, calculation of interaction terms of each recovery experience with occupation supported the differences in associations mentioned above.

The detachment score was marginally lower, meaning less detached, in firefighters compared to clerical staff, and there was no association of psychological detachment with depressive symptoms in firefighters. This

development (high mastery), but rather that a depressed mood actually disables workers from engaging in self-development. Therefore, longitudinal or intervention studies are needed for further clarification. Second, we did not investigate occupational stress factors, such as job demands, control, or dimensions of the effort-reward imbalance model^{133,134}. Although we used overtime work as a factor, we did not investigate any other stress factors. As a result, we could not confirm whether or not occupational stress factors are confounding variables. Thirdly, as all data were from employees in one particular municipality, it is unclear whether these results can be generalized, and we should take caution in extrapolating the data to other municipalities. Lastly, as previously stated, the small sample size of firefighters in this study may be also one of limitations. However, this is the first study in which the associations between each dimension of recovery experiences and psychological health were examined in firefighters.

Conclusion

Among the recovery experience dimensions, relaxation was the only dimension significantly associated with the absence of depressive symptoms in firefighters, whereas relaxation as well as psychological detachment and mastery were significant in clerical staff, showing a difference in the associations between firefighters and clerical staff. These results indicate that measures focusing on relaxation to prevent depressive symptoms may be useful for firefighters.

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利益相反：

Conflicts of interest

The authors declare that they have no conflicts of interest associated with this study.

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