Prevalence of Burnout among Public Health Nurses in Charge of Mental Health Services and Emergency Care Systems in Japan

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Abstract

Objectives: The Community Health Act came into effect in 1997 in Japan. This act altered the work system for public health nurses (PHNs) in public health centers (PHCs) nationwide from region-specific to service-specific work. Such major changes to working environment in the new system seem to be exposing PHNs to various types of stress. The present study examined whether prevalence of burnout is higher among PHNs in charge of mental health services (psychiatric PHNs) than among PHNs in charge of other services (non-psychiatric PHNs), and whether attributes of emergency mental health care systems in communities are associated with increased prevalence of burnout.

Methods: A questionnaire including the Pines burnout scale for measuring burnout was mailed to 525 psychiatric PHNs and 525 non-psychiatric PHNs. The 785 respondents included in the final analysis comprised 396 psychiatric PHNs and 389 non-psychiatric PHNs.

Results: Prevalence of burnout was significantly higher for psychiatric PHNs (59.2%) than for non-psychiatric PHNs (51.5%). When prevalence of burnout in each group was analyzed in relation to question responses regarding emergency service and patient referral systems, prevalence of burnout for psychiatric PHNs displayed significant correlations to frequency of cases requiring overtime emergency services, difficulties referring patients, and a feeling of “restriction”.

Conclusions: Prevalence of burnout is high among psychiatric PHNs, and inadequate emergency mental health service systems contribute to burnout among these nurses. Countermeasures for preventing such burnout should be taken as soon as possible.

Key words: burnout, public health nurses, emergency mental health service systems

Introduction

The term “burnout” is used to indicate a syndrome characterized by emotional exhaustion, depersonalization and reduced feelings of personal accomplishment (1). Burnout can be viewed as a response to stressful environmental factors, rather than stressful personal factors (2). Numerous studies have investigated burnout, revealing that the condition is more likely to develop in human service professions, particularly the medical and educational professions (3, 4). Burnout is con-

sidered to result from a long-term accumulation of stressors associated with occupation and working environments (5).

Increasing tension has been developing in the circumstances surrounding medical professions owing to the problems associated with an aging society, the introduction of increasingly complex medical technologies and increased demands for high-quality medical care (6–8). Medicoeconomic crises have triggered various reforms to medical care systems and institutions such as health insurance (9, 10). In April 1997, the Community Health Act came into effect in Japan. The enforcement of this act changed the work system for public health nurses (PHNs) in public health centers (PHCs) nationwide, from a region-specific work system to a service-specific work system (11–13). Such major changes to working environments in the newly introduced system seem to be exposing PHNs to various types of stress.

The present study focused on PHNs who were in charge

Received Nov. 24, 2004/Accepted Jul. 28, 2006

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of mental health services (psychiatric PHNs). Psychiatric PHNs are often said to be more likely to develop burnout than PHNs in charge of other services (non-psychiatric PHNs) (14). This is attributed to greater mental and physical fatigue arising from the frequent need to work overtime and the specific characteristics of the patients they deal with (14). However, no survey or study confirming this view has yet been published. The authors posited that prevalence of burnout may be higher among psychiatric PHNs than among non-psychiatric PHNs, and that such prevalence of burnout among psychiatric PHNs may be associated with a lack of well-functioning emergency mental health care systems in communities. To test the validity of these hypotheses, the present study compared prevalence of burnout between psychiatric and non-psychiatric PHNs under the recently introduced service-specific work system at PHCs. Correlations of burnout with emergency patient referral systems and the feelings of PHNs providing mental health services were examined.

Methods

Throughout Japan, 448 PHCs are administered by individual prefectures (15). Since the introduction of the Community Health Act, the new service-specific work system has been adopted in 356 PHCs. Information was not available regarding the existence of psychiatric PHN posts in 27 of these 356 PHCs. PHNs stationed at the remaining 329 PHCs were therefore requested to participate in this survey. Only one psychiatric PHN was stationed at 133 of these 329 PHCs; thus, the questionnaire was mailed to all 133 PHNs. The remaining 196 PHCs retained the services of two or more psychiatric PHNs. The questionnaire was mailed to two of these PHCs. For the PHCs with two or more psychiatric PHNs, the two PHNs who responded to the questionnaire were determined at the PHCs. The total number of psychiatric PHNs enrolled for the survey was 525. As controls, 525 non-psychiatric PHNs were enrolled. These PHNs were selected from the same PHCs as the selected psychiatric PHNs. These nurses were primarily engaged in health services for adults and the elderly ($n=132$), mother-child health services ($n=132$), health services related to tuberculosis and other infections ($n=131$) or health services related to intractable diseases ($n=130$). On 5 November 2002, a questionnaire was mailed to the 525 psychiatric PHNs and 525 non-psychiatric PHNs. To minimize the potential for bias, the questionnaire was answered anonymously and respondents sealed and mailed the return envelope themselves. This was also considered as a means to alleviate respondent anxiety that questionnaire responses may be seen by supervisors or colleagues. After the initial deadline for responses, requests to participate in the survey were again mailed to all nurses, to increase the response rate. The questionnaire included a section for obtaining informed consent from each respondent for the use of the data in our study of working environments and mental health of PHNs.

The 21-item burnout scale devised by Pines A. was used for measuring burnout (16, 17). The scale includes items corresponding to the three components of burnout: physical exhaustion; emotional exhaustion; and mental exhaustion. Of

the 21 items, 17 are negative and four are positive. Responses to all items are made using a 7-point frequency scale. The composite burnout score is determined as the mean response to all items, with positive items reversed. The present study adopted criteria that were used in a previous study to identify the prevalence of burnout among healthcare professionals (18). Depending on composite burnout score, PHNs were divided into 3 groups. PHNs scoring less than three were rated as mentally stable and healthy PHNs (Group A). PHNs scoring in the range of 3–3.9 were rated as displaying some signs of burnout (Group B). PHNs scoring four or higher were regarded as exhibiting burnout (Group C). Groups B and C were regarded as nurses suffering from burnout. This scale was previously validated on the basis of a sample of more than 5000 individuals, comprising Americans, Canadians, Japanese, Australians, and Israelis (19). Construct validity was established using discriminant validity methods, which utilize correlation-type analysis of the target test, with several other relevant measures. The burnout scale has also shown high test-retest reliability and internal consistency (19). Furthermore, a separate questionnaire was prepared to investigate emergency mental health service and patient referral systems involving the PHNs. This questionnaire also contained items asking about individual characteristics (e.g., age of the respondent, population size of region covered by the PHC, and length of nursing career).

The Pearson chi-square test was used to compare proportions of subjects with burnout between the psychiatric and control groups. In order to evaluate the relationship between burnout and risk factors, the significance of monotonic trends was assessed by treating the categorical answers as continuous variables in multiple logistic regression models that included age and number of years in current service. These analyses were performed for both groups. Values of $p<0.05$ were considered statistically significant. All statistical analyses were two-tailed probabilities. SPSS software (SPSS Inc., Chicago) was used for statistical analysis.

Results

Of the 1050 PHNs to whom questionnaires were sent, 858 (81.7%) responded, including 423 psychiatric and 435 non-psychiatric PHNs. Of the 858 responses, 625 were returned by the original deadline (primary responses), and 233 were collected after the reminder (secondary responses). No significant differences were observed between primary and secondary responses in terms of answering trends to any of the questions contained in the questionnaire. Some of the 858 respondents answered that they were in charge of ≥ 2 categories of public health service, instead of specializing in one particular category of service. These respondents were excluded from the present analysis. As a result, 785 respondents were included in the final analysis, including 396 psychiatric and 389 non-psychiatric PHNs.

Table 1 shows the comparison of characteristics between psychiatric and non-psychiatric PHNs. Psychiatric and non-psychiatric PHNs showed significant differences in the number of years in current service. Table 2 shows the prevalence of

Table 1 Characteristics of PHNs

Characteristic	In charge of		p
	Psychiatric health care, n=396	Others, n=389	
Age	41.4 [8.2]	40.4 [8.5]	0.077*
Population covered by public health center (×1000)			
<100	124 (32)	126 (33)	
100–200	143 (36)	145 (38)	
200–300	67 (17)	57 (15)	
300<	58 (15)	56 (15)	0.307†
Career as PHN (years)	18.0 [8.1]	17.1 [8.4]	0.125*
Number of years in current service	3 [1, 5]	2 [0, 4]	<0.001†

No. (%) or mean [SD] or median [25 percentile, 75 percentile].

* Student's *t*-test.

† Wilcoxon rank-sum test.

Table 2 Percentages of PHNs assigned to Group B (signs of burnout) or C (burnout present) in relation to emergency services and patient referrals

Factor	In charge of						Psychiatric/other services comparison
	Psychiatric health care			Others			
	Total	%	p for trend*	Total	%	p for trend*	p [†]
Total	387	59.2	—	377	51.5	—	0.035
Patient referral							
Overtime emergency service requirements							
Never	39	41.0		215	48.4		
1–10 times a year	218	58.3		125	54.4		
11+ times a year	121	66.1	0.010	31	54.8	0.321	
Cases requiring urgent decisions							
Never	19	57.9		201	49.8		
1–4 times a year	140	57.1		126	53.2		
5+ times a year	223	60.5	0.410	34	61.8	0.249	
Frequency of patient referral							
Never	77	51.9		319	52.0		
1/2 times a year	61	55.7		31	61.3		
3+ times a year	240	62.5	0.083	9	22.2	0.461	
Frequency of difficult patient referral [‡]							
Never	3	33.3		8	62.5		
Rarely	25	44.0		9	44.4		
Sometimes	97	60.8		15	53.3		
Always	175	65.1	0.025	8	62.5	0.681	

* Adjusted for age and number of years in current service using logistic regression.

† Chi-square test.

‡ Asked only to those with patient referrals (i.e., those in psychiatric health care, excluding the 77 participants responding “never” to frequency of patient referral).

burnout and responses to questions pertaining to emergency services and patient referral in each group. “Frequency of difficult patient referral” was asked only to those with patient referrals, excluding participants responding “never” for “frequency of patient referral.”

Prevalence of burnout was significantly higher for psychiatric PHNs than for non-psychiatric PHNs. When prevalence of burnout in each group was analyzed in relation to the responses to questions pertaining to emergency services and patient referral systems, prevalence of burnout among psychiatric PHNs demonstrated significant correlations to frequency of cases requiring overtime emergency services or in which difficulty was encountered in referring the patient. Table 3

shows the relationship of burnout prevalence in each PHN group to several feeling states. In Table 3, the respondents for the first (feeling tension) and second (feeling restrained) questions were those PHNs who had been required to provide overtime emergency service. This analysis reveals that prevalence of burnout in psychiatric PHNs correlates significantly with frequency of a feeling of “restriction” during work.

Discussion

Past studies of burnout have frequently addressed burnout among hospital nurses and physicians (20–22). The present study investigated burnout among PHNs engaged in community

Table 3 Percentages of PHNs assigned to Group B (signs of burnout) or C (burnout present) in relation to feeling state

Feeling state	In charge of					
	Psychiatric health care			Others		
	Total	%	p for trend*	Total	%	p for trend*
Total	387	59.2	—	377	51.5	—
Feeling tension during overtime work [†]						
Never	17	23.5		42	47.6	
Rarely	64	56.3		51	49.0	
Sometimes	144	63.2		59	59.3	
Always	122	68.0	0.002	29	72.4	0.029
Feeling restrained during overtime work [†]						
Never	14	14.3		39	46.2	
Rarely	62	54.8		56	57.1	
Sometimes	147	63.9		56	57.1	
Always	122	68.9	<0.001	28	64.3	0.169
Feeling work is burdensome						
No	6	16.7		10	10.0	
Little	63	30.2		150	32.7	
Some	206	57.3		155	60.6	
Much	101	82.2	<0.001	45	80.0	<0.001

* Adjusted for age and number of years in current service using logistic regression.

[†] Asked only to those with overtime emergency service requirements (i.e., those in psychiatric health care, excluding the 39 participants responding “never” for overtime emergency service requirements).

health services, and found that prevalence of burnout was significantly higher for psychiatric PHNs than for non-psychiatric PHNs. Analysis of the results in relation to emergency services and patient referral systems revealed marked differences in the prevalence of burnout associated with several items. Of the items pertaining to emergency services and patient referral systems, frequency of overtime work requirements and difficulty in referring patients were found to significantly increase the prevalence of burnout. Of the feeling states, a feeling of restriction during work was found to markedly affect prevalence of burnout. The finding of significantly higher prevalence of burnout among psychiatric PHNs compared to non-psychiatric PHNs supports our hypothesis that a high prevalence of burnout among psychiatric PHNs may be associated with a lack of well-functioning community emergency mental health care systems.

The present study focused on working environments for psychiatric PHNs providing emergency services and the working environment related to referring patients to medical facilities. As the frequency of overtime emergency services and the number of difficult patient referrals increased, the prevalence of burnout among psychiatric PHNs increased significantly. In Japan, when a mentally ill patient needs treatment at night or on holidays, a request to arrange diagnosis and treatment by a qualified psychiatrist or for the protection of the patient is often made to psychiatric PHNs by people such as citizens and policemen (23). The PHNs receiving this request must then attempt to contact a qualified psychiatrist or medical facility. However, it is not uncommon for the PHNs to be unable to contact a psychiatrist or find a medical facility that can accept such a request. According to a report from a 2002 survey concerning patient referrals pursuant to Article 34 of the amended Mental Health and Welfare Act, requests from PHCs

are not always accepted by psychiatrists, and hospitals often refuse to accept patients for examination, treatment or admission after normal admission hours (24). The present study reveals that excessive overtime loads and difficulty in fulfilling duties on the job contribute to an increased prevalence of burnout among psychiatric PHNs.

The basic difference between the burden of providing psychiatric health services and the burden of providing other health services is said to be the “the existence of overtime for psychiatric health services” (23). Under the current system, psychiatric PHNs are placed in the situation where they are not free from work even outside their duty hours, which leads to them becoming psychologically exhausted. We tried to clarify a clear difference between psychiatric PHNs and non-psychiatric PHNs in terms of the three major presumable psychological states that lead to psychological exhaustion, namely, feeling tension, feeling restrained, and feeling burdened. When analyzed in relation to several states of feeling of PHNs, prevalence of burnout among psychiatric PHNs was found to increase significantly as frequency of experiencing a feeling of restriction during work increased. The number of mentally ill patients for whom examination by qualified psychiatrist is requested or who are reported to the PHC pursuant to the provisions of the relevant law has been increasing recently (25). However, emergency psychiatric service systems able to satisfy urgent needs at night or on holidays are often absent or inadequate (26), and psychiatric PHNs tend to experience difficulty in dealing with urgent cases. Under such circumstances, psychiatric PHNs are understandably anxious about receiving calls for urgent arrangements, and are not free from this anxiety even after normal working hours (e.g., weeknights and off-duty holidays). As a result, psychiatric PHNs have a sensation of continued restriction in their job. Working environments in

which individuals must work for prolonged periods or cannot see an end to their work can serve as malignant stressors that have been considered a factor responsible for burnout (27). Psychiatric PHNs who often experience these sensations of restriction are likely to develop burnout.

This is a cross-sectional study. The type of work and the working conditions of PHNs were examined and the prevalence of burnout at a point in time was measured in this study. Generally, PHNs rotate every few years among five major areas of service. As shown in Table 1, psychiatric PHNs experienced three years on average and the other PHNs experienced two years on average. Also, the length of their careers as PHNs was in the range of seventeen to eighteen years. Therefore, most psychiatric and control PHNs might have been involved in every type of service. The influence of past service should be examined. Further examination of the questionnaire responses is required to analyze the association of past work service with burnout involving, for instance, the question of service and term of service, because in this study, we did not examine these.

The present study displays several limitations. First, because survey questionnaires were mailed to the PHCs, selection of respondents was not random. Therefore, it is possible, for instance, that the respondents were non-psychiatric PHNs who had the time to reply to the questionnaires and who were calm and composed and as a result, the prevalence of burnout might be lower. Second, the prevalence of burnout among non-psychiatric PHNs was not uniform, as following reveal: 64.6% for mother-child health services; 56.7% for health services related to tuberculosis and other infections; 42.9% for health services related to intractable diseases; and 40.3% for health services for adults and the elderly. However, because the aim of this study is to compare the prevalence of burnout between psychiatric and non-psychiatric PHNs, a study design was adopted that designated psychiatric PHNs as subjects and non-psychiatric PHNs as controls, allowing the comparison of these two groups in order to collect a sufficient number of psychiatric PHNs. Thus, the results obtained from

such a study design should be interpreted cautiously. In future, a comparison of the prevalence of burnout in each PHN category should be carried out if sufficient numbers in each category can be collected. Third, support from psychiatric PHN supervisors and the amount of paperwork they do were not analyzed in the present study. These factors might influence the prevalence of burnout.

Based on the present results, one way to prevent burnout among psychiatric PHNs would appear to involve the establishment of well-functioning emergency mental health service systems that can cope with demands at night and on holidays. In 1995, the Japanese government started a program to improve emergency mental health service systems in each prefecture, and this program has gradually been implemented (28). Some prefectures, however, still lack systems that are capable of coping with demands on holidays or at night, and other prefectures have systems that do not work efficiently (24). PHNs are sometimes unable to contact psychiatrists when needed, or have difficulty in finding a hospital able to accept the patient. Establishing well-functioning emergency mental health service systems should therefore be a priority in all prefectures. Examples of potential improvements include organizing independently operated emergency mental health service systems and providing adequate education to psychiatrists so that they can recognize the need for emergency mental health services.

In conclusion, the present study revealed through the first nationwide survey that prevalence of burnout is high among psychiatric PHNs. Inadequacy of emergency mental health service systems was identified as a cause of the high prevalence of burnout among these nurses. Countermeasures to prevent such burnout should be taken as soon as possible.

Acknowledgments

This study was partially supported by a grant from the Japan Public Health Association within the framework of the 2002 Program for Promotion of Community Health.

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