

A pilot study evaluating the factors associated with psychological distress of school teachers in Kagawa Prefecture, Japan

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ABSTRACT

Objective: We investigated the psychological distress of school teachers using a 6-item instrument (the K6) in Kagawa prefecture, Japan. **Methods:** A total of 670 school teachers (328 men and 342 women) were analyzed in this cross-sectional investigation study. The association between psychological distress and clinical factors was evaluated by using the K6 instrument, with psychological distress defined as 13 or more points out of a total of 24 points. **Results:** A total of 55 teachers (8.2%) were classified as having psychological distress. No significant relationships between the K6 score and sex, age, duration of experience as a teacher, school grade and title were noted. The K6 score in teachers with consciousness of suicide among students was higher than that without, but not at a significant level. **Conclusion:** Some teachers were defined as having psychological distress in Kagawa prefecture, Japan. However, no relevant effects of basic characteristics such as age and sex on psychological distress were recognized.

Keywords: Psychological Distress; K6; School Teacher; Kagawa Prefecture; Japan

1. INTRODUCTION

Psychological disorders and their related problems

have become a public health challenge in Japan and about thirty thousand people are reported to commit suicide annually [1]. According to data on school teachers in Japan, over five thousand school teachers a year (0.6%) were absent from school due to mental disease over a four year period [2]. The average working hours, especially overtime work, of school teachers are relatively long. In addition, the level of some of their working hours is extremely high [3,4]. Therefore, appropriate provision to address the psychological distress of school teachers is urgently required, and recommendations based on their actual circumstances have been presented by the Ministry of Education, Culture, Sports, Science and Technology, Japan [5]. In some studies in the literature, the mental health of school teachers has been reported [6-12]. However, the link between psychological distress of school teachers by using the K6 and clinical factors in Japan has not been fully discussed.

In this study, we evaluated the psychological distress of school teachers in Kagawa prefecture, Japan using the K6 scale and its relation to clinical factors.

2. SUBJECTS AND METHODS

2.1. Subjects

We used data on 670 respondents (73.3%) among 914 school teachers (8 primary schools, 9 junior high schools and 9 high schools) in Kagawa prefecture, Japan, who met the following criteria: 1) they had completely answered the questionnaires (clinical characteristics and the

K6) from Nov 2010 to Mar 2011; and 2) they provided informed consent (**Table 1**).

Ethical approval for the study was obtained from the Ethical Committee of Faculty of Medicine, Kagawa University, Japan.

2.2. Psychological Distress

The K6 was used as an indicator of psychological distress [13]. The 6 questions were as follows: “Over the last month, how often did you feel: 1) nervous, 2) hopeless, 3) restless or fidgety, 4) so sad that nothing could cheer you up, 5) that everything was an effort, 6) worthless?” Participants were asked to respond by choosing “all of the time” (4 points), “most of the time” (3 points), “some of the time” (2 points), “a little of the time” (1 point), and “none of the time” (0 points). Therefore, the total point score ranged from 0 to 24. The K6 has been developed using modern psychometric theory and has been shown to be superior to some existing scales in terms of brevity and psychometric properties [14-16]. A Japanese version of the K6 has been developed using the standard back-translation method, and has been validated [13]. As suggested by Kessler *et al.* [16], we classified participants with scores of 13 points or more as having psychological distress.

2.3. Measurement of Clinical Variables

The questionnaires for school teachers consisted of the following details in sequence: sex, age, duration of

Table 1. Clinical characteristics of enrolled teachers in Kagawa prefecture, Japan.

Number of teachers	670
Men/Women	328 (49.0%)/342 (51.0%)
Age	44.8 ± 9.4 ^a
Duration of experience as a school teacher	20.7 ± 9.9
School grade ^b	
Primary school	8 schools, 198 teachers
Junior high school	9 schools, 194 teachers
High school	9 schools, 270 teachers
Title	
Principal	13
Vice-principal	34
Teacher	591
School nurse	20
Others	12

^aData were expressed as mean ± SD; ^b8 teachers were excluded because they belonged to both junior high and high schools.

experience as a school teacher, school grade and title. In addition, we evaluated the consciousness of suicide among students, anxiety about preventing suicide, and participation in programs for mental health by asking the following questions. 1) Do you ever worry about suicide of children in your daily work as a teacher? 2) If you had to do something individually to prevent the suicide of a child (children) in your daily work as a teacher, how much anxiety would you feel? 3) Have you ever participated in a training/education program about the mental health of teachers?

2.4. Statistical analysis

Data are expressed as the mean ± standard deviation (SD) values. Statistical analysis was performed using the unpaired *t*-test, ANOVA and Scheffe's *F* test. Simple correlation analysis was also performed to test for the significance of the linear relationship among continuous variables, where *p* < 0.05 was considered to be statistically significant.

3. RESULTS

The total K6 score was 5.6 ± 4.7, and the details were as follows: 1) nervous: 1.3 ± 1.1; 2) hopeless: 0.6 ± 0.9; 3) restless or fidgety: 1.0 ± 1.0; 4) so sad that nothing could cheer you up: 1.0 ± 1.0; 5) that everything was an effort: 1.0 ± 1.0; 6) worthless: 0.7 ± 0.9. A total of 55 school teachers (8.2%) were defined as having psychological distress. We investigated the relation between the K6 score and sex, age, duration of experience as a school teacher, school grade and title. There were no significant relationships between the K6 score and age (*r* = -0.004, *p* = 0.910), duration of experience as a school teacher (*r* = 0.031, *p* = 0.425), or other basic characteristics (**Table 2**).

Next, we also evaluated the factors, *i.e.* consciousness of suicide, anxiety about preventing suicide, and participation in programs for mental health. The K6 score in subjects with consciousness of suicide (most of the time) was higher than that without (a little of the time), but not at a significant level. No effect of anxiety about preventing suicide and participation in programs for mental health on psychological distress was recognized (**Table 3**).

4. DISCUSSION

We evaluated the psychological distress of school teachers using the K6 instrument in Kagawa prefecture, Japan.

In community-dwelling people aged 40 years or older living in Japan, Kuriyama *et al.* reported that the rate of subjects with psychological distress was 6.7% by using the K6 [17]. We also showed that the rates of medical doctors and public health nurses with psychological distress by using the K6 were 6.0% and 5.9% in Kagawa

Table 2. Relationship between the K6 score and basic characteristics of school teachers in Kagawa prefecture, Japan.

Factors	K6 score	<i>p</i>
Sex		
Men	5.7 ± 4.7 ^a	0.347
Women	5.4 ± 4.7	
School grade ^b		
Primary school	5.4 ± 4.8	0.714
Junior high school	5.7 ± 4.6	
High school	5.6 ± 4.8	
Title		
Principal	2.8 ± 3.0	0.261
Vice-principal	5.9 ± 4.0	
Teacher	5.6 ± 4.8	
School nurse	5.6 ± 3.8	
Others	6.6 ± 5.5	

^aData were expressed as mean ± SD; ^b8 teachers were excluded because they belonged to both junior high and high schools.

Table 3. Relationship between the K6 score and clinical factors of school teachers in Kagawa prefecture, Japan.

Factors	Number of teachers	K6 score	<i>p</i>
Consciousness of suicide among students			
Most of the time	76	6.8 ± 5.2 ^a	0.096
Some of the time	374	5.5 ± 4.4	
A little of the time	201	5.4 ± 4.9	
None of the time	19	4.8 ± 6.1	
Anxiety about preventing suicide			
Most of the time	372	5.9 ± 5.0	0.116 ^b
Some of the time	275	5.1 ± 4.4	
A little of the time	21	6.0 ± 4.0	
None of the time	2	5.0 ± 5.7	
Participation in programs for mental health			
Yes	207	5.4 ± 4.4	0.507
No	463	5.6 ± 4.9	

^aData were expressed as mean ± SD; ^b2 teachers were excluded because of a small samples size.

prefecture, Japan [18,19]. Fushimi *et al.* reported that 10.8% of Japanese employees had high psychological distress in Akita prefecture, Japan [20]. In this study, a total of 8.2% of school teachers were defined as having

psychological distress in Kagawa prefecture, Japan. Therefore, the rate of school teachers with psychological distress was higher than that of Japanese general people, medical doctors and public health nurses [17-19], and similar to that of Japanese employees [20]. According to data on the mental health of school teachers in Japan, the proportion of teachers with minor psychiatric disorders was higher than that among civil servants [6] by using the Japanese version of the General Health Questionnaire (GHQ) [21]. The rate of burnout status in school teachers was higher than that in medical doctors and nurses by using the Japanese version of the Burnout Measure [7]. These previous studies and our studies indicate that school teachers may have more mental health problems than other workers.

Factors associated with the mental health of school teachers have been reported in the literature. There were differences in burnout status between the two sexes in primary and junior high school teachers [8-10]. Duration of experience as a school teacher was associated with burnout status [11]. Teachers at junior high schools had higher burnout status compared with those at primary schools [9]. Principal and vice-principal teachers also had lower burnout status [9,10]. However, in this study, we could not find any significant effect of basic characteristics on psychological distress by using the K6 in school teachers in Kagawa prefecture, Japan. Misawa reported that duration of experience as a school teacher was not associated with burnout status [8]. ITO did not recognize any sex differences in burnout status, either [11]. In addition, clinical factors *i.e.* consciousness of suicide, anxiety about preventing suicide and participation in programs for mental health were not associated with psychological distress in our study. Ochiai recommended that not only individual factors, but also socio-cultural factors, were important when evaluating burnout in school teachers [12]. Taken together, many complicated factors may be associated with psychological distress in school teachers. Therefore, to prevent and improve the psychological distress of school teachers, we should more carefully consider their socio-cultural situations.

Potential limitations remain in this study. First, our study was cross-sectional and not longitudinal. Second, the 26 schools in which we evaluated psychological distress were not randomly selected. In addition, 670 school teachers among 914 teachers in our study voluntarily underwent measurements in Kagawa prefecture, Japan, so they were more likely to be health-conscious compared with other teachers. Third, we could not investigate other confounding factors such as alcohol drinking, family mental history and socio-cultural factors in this study. Therefore, ongoing longitudinal investigation studies are required to prove such links.

5. ACKNOWLEDGEMENTS

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