

Factors associated with psychological distress of medical doctor in Kagawa prefecture, Japan: a pilot study

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Received 6 September 2011; revised 15 November 2011; accepted 30 November 2011.

ABSTRACT

Objective: We evaluated the psychological distress of medical doctor using a 6-item instrument (the K6) in Kagawa prefecture, Japan. **Methods:** A total of 284 medical doctors (236 men and 48 women) were analyzed in a cross-sectional investigation study. The association between psychological distress and clinical factors were evaluated by the K6 instrument, with psychological distress defined as 13 or more points out of a total of 24 points. **Results:** A total of 17 doctors (6.0%) as defined as psychological distress. The significant relationships between the K6 score and age, experience duration as clinician were not noted. The K6 score in subjects with consciousness of suicide was significantly higher than that without. In addition, the K6 score in subjects without cooperation with specialists was higher than those without, but not at a significant level. **Conclusions:** Some factors *i.e.* consciousness of suicide and cooperation with specialists might be associated with psychological distress, as assessed by the K6 instrument, in medical doctor in Kagawa prefecture, Japan.

Keywords: Psychological Distress; The K6; Medical Doctor; Kagawa; Japan

1. INTRODUCTION

Mental health has become public health challenge in Japan. For example, over 30 thousand subjects suicide in a year for over 10 years [1]. About 14% of the global disease burden has been attributed to mental illness,

mostly due to the chronically disabling nature of depression and other common mental disorders [2].

Recently, the demand for medical doctors has been increasing in various areas because of a medical reform bill and government amendments to the medical service payment structure in Japan. In some literatures, the psychological distress of medical doctors in Japan has reported [3,4]. However, the evaluation of psychological distress of medical doctors in Japan still remains to be investigated.

Therefore, we evaluated the psychological distress of medical doctors by using the K6 instrument, the scale of psychological distress, in Kagawa prefecture, Japan and its relation to clinical factors in this cross-sectional investigation study.

2. SUBJECTS AND METHODS

2.1. Subjects

We used data of 334 respondents (37.8%) among 884 medical doctors (physician, surgeon and psychiatrist) in Kagawa prefecture, Japan, who met the following criteria; 1) they had completely answered the questionnaires (clinical characteristics and the K6); and 2) they provided informed consent. Therefore, we analyzed 284 (32.1%) medical doctors (236 men and 48 women), aged 55.8 ± 11.9 years in this cross sectional investigation study.

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 dis-

stress [8,9]. 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 every thing 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, 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 brevity and psychometric properties [5-7]. The Japanese version of the K6 has been recently developed, using the standard back-translation method, and has been validated [8]. As suggested by Kessler *et al.* [7], we classified participants with scores of 13 points or more as having psychological distress.

2.3. Measurement of Clinical Variables

The questionnaires for medical doctors consisted of the following details in sequence: age, sex, experience duration as clinician. In addition, we evaluated the consciousness of suicide in clinical practice, anxiety of preventing suicide and cooperation with specialist in their daily work.

2.4. Statistical Analysis

Data are expressed as mean \pm standard deviation (SD) values. A statistical analysis was performed using NOVA and Scheffe's F test. Simple correlation analysis was performed as well 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 4.3 ± 3.9 , and details were as follows: 1) nervous: 1.1 ± 1.0 ; 2) hopeless: 0.4 ± 0.7 ; 3) restless or fidgety: 0.8 ± 0.9 ; 4) so sad that nothing could cheer you up: 0.7 ± 0.8 ; 5) that every thing was an effort: 0.8 ± 0.9 ; 6) worthless: 0.5 ± 0.8 . A total of 17 medical doctors (6.0%) as defined as psychological distress. We evaluated the relationship between the K6 score and age (**Figure 1**), experience duration as clinician. The significant relationships between the K6 score and age ($r = -0.018$, $p = 0.7663$), and between the K6 score and experience duration as clinician ($r = -0.011$, $p = 0.8519$) were not noted in this study.

In addition we evaluated the factors *i.e.* consciousness of suicide, anxiety of preventing suicide and cooperation with specialist (**Table 1**). The K6 score in subjects with consciousness of suicide (most of the time) was significantly higher than that without (a little of the time). In addition, the K6 score in subjects with cooperation with specialist (most of the time) was lower than that in subjects without that, but not at a significant level.

4. DISCUSSION

We firstly evaluated the psychological distress of medical doctors using the K6 instrument in Kagawa prefecture, Japan.

According to the link between psychological distress and medical doctors, Hayasaka *et al.* has reported that work environment factors, particularly night duty, play important roles in modulating psychological distress among female doctors by using the thirty-item version of the General Health Questionnaire (GHQ-30) [3,9]. Wada *et al.* also showed that depressive symptoms were indi-

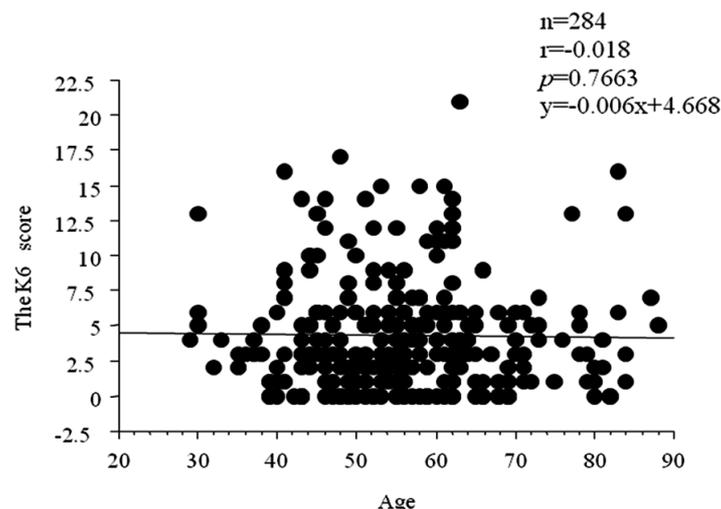


Figure 1. Relationship between the K6 score and age in medical doctor in Kagawa prefecture, Japan.

Table 1. Relation between the K6 score and clinical factors in medical doctor.

	Most of the time	Some of the time	A little of the time	None of the time
Consciousness of suicide				
Number of subjects	7	124	132	21
The K6 score	8.6 ± 7.8	4.7 ± 3.8	3.7 ± 3.3	a 5.0 ± 5.4
Anxiety of preventing suicide				
Number of subjects	111	153	16	4
The K6 score	4.4 ± 4.0	4.3 ± 3.9	4.6 ± 4.6	5.3 ± 5.6
Cooperation with specialist				
Number of subjects	21	115	101	47
The K6 score	3.7 ± 3.8	4.6 ± 3.9	4.2 ± 3.9	4.3 ± 4.2

a: $p < 0.05$ vs Most of the time.

cated in 8.3% of men and 10.5% of women, and 5.7% of men and 5.8% women were determined to exhibit suicidal ideation using the Japanese version of the Quick Inventory of Depressive Symptomatology (QIDS) [4]. The number of unreasonable demands and complaints in the previous 6 months was significantly associated with depressive symptoms and suicidal ideation [4]. In this study, we evaluated the psychological distress of medical doctors evaluated by the K6 instrument in Kagawa prefecture, Japan. Consciousness of suicide and cooperation with specialist in their daily work might be associated with psychological distress in medical doctors in Kagawa prefecture, Japan. Therefore, it seems reasonable to suggest that simply supporting in medical doctors in mental health and suicide is also required in Kagawa prefecture, Japan.

In some literatures, psychological distress by using the K6 has been reported. Kuriyama *et al.* reported that they evaluated psychological distress of 43,716 community-dwelling people aged 40 years or older living in Japan [10]. Subjective social status seems to be a stronger predictor of psychological distress among both men and women in the Japanese community than traditional socioeconomic status [11]. Inoue *et al.* showed that part time workers in men and temporary/contract workers in women were associated with poor mental health in a total of 9461 men and 7777 women employees. No clear relation in mental health was noted in company size or occupation [12]. However, there is no report of psychological distress of medical doctors evaluated by the K6 instrument in Japan. In this study, by using the K6, we evaluated the psychological distress of medical doctors in Kagawa prefecture, Japan. A total of 17 medical doctors (6.0%) was defined as psychological distress. The rate of psychological distress was similar to that previous report [10]. However, some factors in their daily work *i.e.* consciousness of suicide and cooperation with specialists might be associated with their psychological distress. This reference and pilot data obtained from this

study might be useful for preventing psychological distress in medical doctors in Japan.

Potential limitations still remain in this study. First, our study was a cross sectional and not a longitudinal study. Second, 284 medical doctors among 884 doctors in our study voluntarily underwent measurement in Kagawa prefecture, Japan: they were therefore more likely to be health-conscious compared with the average medical doctors. The third, most of them were physicians and there was no psychiatrist. To show this, further prospective studies and in other prefectures are needed in the Japanese.

5. ACKNOWLEDGEMENTS

This research was supported in part by Kagawa prefecture, Japan.

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