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Research Article

Relating Factors for Depression in Korean Working Women: Secondary Analysis of the Fifth Korean National Health and Nutrition Examination Survey (KNHANES V)

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SUMMARY

Purpose: The purpose of this study was to investigate the health behaviors and risk factors for self-reported depression in Korean working women.
Methods: This study adopted a secondary analysis from the fifth Korean National Health and Nutrition Examination Survey (KNHANES-V) for the Health Examination Survey and Health Behavior Survey, using stratified, multi-stage, cluster-sampling design to obtain a nationally representative sample. Data were gathered on extensive information including sociodemographic, occupational characteristics, health behaviors and depression. Multiple logistic regression analysis was employed to compute the odds ratio (OR) between health behaviors and depression to identify the health behaviors and the risk factors for depression with adjustment for the complex sample design of the survey.
Results: The prevalence rate of depression was 15.5% among working women. Depression was more common in older female workers and in those with part-time job. Current smokers were significantly more likely to be depression-positive. In a multiple logistic regression analysis, significant variables of depression were marital status (OR = 2.02; 95% CI [1.05, 3.89]), smoking status (OR = 1.55; 95% CI [1.01, 2.38]), stress (OR = 0.20; 95% CI [0.15, 0.26]), employment condition (OR = 1.77; 95% CI [1.34, 2.33]) and health status (OR = 2.10; 95% CI [1.53, 2.87]).
Conclusions: Based on the study, factors leading to depression were marital status, current smoking, stress, employment condition and self-reported health status. Further studies are expected to unravel the characteristics of stress. Health care providers for women need to evaluate underreported depression and change their associated health behaviors. Also it is necessary to establish preventive strategies for female workers to control the negative effect of depression in the workplace.

Introduction

Lifetime prevalence rates for any psychological disorder are higher than previously thought; they are increasing in recent cohorts and affecting nearly half the population [1]. Depression in the workplace may lower work productivity and increase maladjustment in daily professional life, resulting in rising disability and depression-related absence [2–6].

Depression is a significant contributor to the global burden of disease and affects people in all communities across the world. According to the World Health Organization, depression is estimated to affect 350 million people globally [7] and can be a significant source of morbidity. This is true particularly among working women suffering from negative thoughts, self-denial that comes with everyday experiences, and losing hope to face the future. Changes in the workplace structure over the past years may have contributed to increased stress and psychiatric morbidity [2].

Depression is not only the most common women's mental health problem but may be more persistent in women than men, although further research is needed to establish the veracity of this assertion. Women are two to three times more likely to experience

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depression than men are [8]. The gender gap is probably influenced by hormonal fluctuations and psychosocial factors, including stress of multiple work and family responsibilities, sexual and physical abuse, sexual discrimination, lack of social support, and traumatic life experiences [9]. While depression in working woman has not gotten the interest of many researchers, its prevalence and risk factors have not been studied substantively. In Korea, there are few reports of depression among women working in small manufacturing industry [10,11]. However, studies that use a nation-wide sampling are rare.

Occupation is a fundamental right, enabling social interaction and financial support for the individual. However, it is an undeniable source of stress, with consequences for physical and mental health [1]. Work stress precipitates depression and anxiety in previously healthy young workers [12]. Current work schedule [1], work intensity [10], work and home stress are associated with anxiety and depression symptoms in both men and women [13]. Although most of workers feel blue day by day, they might not report their feelings. Less than half of those who meet diagnostic criteria for psychological disorders are examined by doctors [8]. To process the study, we use the term "depression" from here on, not according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), but according to self-reported depression.

According to the annual report on the economically active population survey 2010, the participation rate of the economically active working women was 49.4%, which translates to 10,256,000 people in Korea [14]. It is a lower level compared to 68.4% in United States, 63.2% in Japan, 61.8% in Organization for Economic Co-operation Development countries [15]. Ultimately the proportion of Korean working women was at a relatively lower level. The strategies employed for working women are necessary to improve their physical, social, and mental health in their workplace. However, few studies on female working population have been conducted in Korea [16,17].

In light of what has been reported, it is clear that the link between work and depression is complex among the many potential factors leading to depression. The study addresses three points. First, we used a nation-wide cross-sectional study data to solve the limitation of localized samples investigating this issue. Second, we considered the multifactorial influences of sociodemographics and occupational variables to predict the prevalence of depression. Third, the study also analyzed health behaviors such as health status, sleeping hours and smoking status.

The aim of this study was to identify the prevalence of depression and to estimate the health behaviors and risk factors associated with depression in working women using the Fifth Korean National Health and Nutrition Examination Survey (KNHANES-V).

Methods

Study design

This study was a secondary analysis design using population-based data from a nation-wide cross-sectional health survey, the KNHANES-V from January 2010 to December 2012.

Setting and sample

The basis for this investigation lies with the KNHANES-V, which is a government-approved statistical survey by the Korea Centers for Disease Control and Prevention [18]. A stratified multistage cluster-sampling design was used to obtain a nationally representative sample of the Korean population for the survey. About 576 national districts were selected for the Health Interview Survey, and 192 national districts were selected for the Health Examination Survey and Health Behavior Survey. Approximately 22–26 households from each district were included. The weighted sample for the KNHANES-V reflected the sampling fraction and nonresponse bias adjustments. Additional weight adjustments mirrored the structure of the 2012 sex and age specific population. A sample size of 4,803 female workers aged above 20 years was selected. Whereas a total number of 2,936 participated in the study, about 37 women who reported missing data or were working in a minority employment field such as agriculture and fishing were excluded from this study. Finally, 2,899 eligible respondents were included in the analysis.

Ethical consideration

This study did not need the approval of the institutional review board because it used de-identified data on the KNHANES-V which was open to the public through the website as a government-approved statistical survey and informed consent was obtained from all persons who participated in this survey [18].

Measurement and data collection

Education was categorized as elementary, middle school, high school and university or higher. Marital status was divided into three categories, single, married, and divorced/widowed/separated. While household income was classified into quartile, smoking status was classified into three groups (never, former, and current). Drinking status was classified into two groups (never, yes). Job type was classified into four categories (professionals, office workers, sales and service workers, and technical and labor workers) and employment condition was divided into part time and full time.

The KNHANES online repository consisted of four comprehensive questionnaires, including a Health Interview Survey, a Health Examination Survey, a Health Behavior Survey, and a Nutrition Survey. Study variables were collected from the Health Interview Survey and Health Behavior Survey. In those surveys, data were collected by trained interviewers. Subjective health status was measured by one question, answered as "good" or "poor". Stress was also evaluated by one question with four possible responses: never, controllable, stressful, or uncontrollable. The outcome variable "depression" was assessed through responses to the question, "During the recent 12 months, have you ever felt sad or hopeless almost every day for 2 weeks in a row that you stopped doing some usual activities?"

Data analysis

Descriptive statistics were used to examine the distribution of sociodemographic and occupational characteristics and health behaviors. Chi-square test and *t* test were used to estimate the difference in the existence of depression by background characteristics. Multiple logistic regression analysis was performed to identify the health behaviors and risk factors associated with depression after simple logistic regression analysis using PASW statistics 21.0 (SPSS Inc., Chicago, IL, USA). The odds ratio (OR) and 95% confidence intervals (CI) were calculated and all p values were considered to be statistically significant at less than 0.05. All estimates were calculated based on sample weights, which were evaluated by taking into consideration the stratified and cluster variables to generate the analysis-plan file. The analysis was adjusted for the complex sample design of the survey [18].