



Perceived discrimination and low back pain among 28,532 workers in South Korea: Effect modification by labor union status



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ABSTRACT

Objectives: This study investigated the association between workplace discrimination and low back pain among Korean workers and explored the role of labor union in the association.

Methods: We analyzed a cross-sectional survey of 28,532 workers from the 3rd Korean Working Conditions Survey (2011), a nationally representative dataset in South Korea. Experience of workplace discrimination for five different reasons was assessed using the questions: “Over the past 12 months, have you ever experienced workplace discrimination based on your: (a) age, (b) education, (c) birth region, (d) sex, and (e) employment status?” Experience of low back pain within a 12 month period was measured using a yes/no question. Labor union membership was coded into three categories: (1) workers at workplaces without a labor union; (2) workers without union membership at workplaces with a labor union; (3) workers with union membership.

Results: In workplaces without a labor union, low back pain was statistically significantly associated with workplace discrimination based on age (OR: 2.02, 95% CI: 1.73, 2.35), education (OR: 1.45, 95% CI: 1.23, 1.71), birth region (OR: 1.42, 95% CI: 1.10, 1.84), sex (OR: 2.22, 95% CI: 1.81, 2.73), and employment status (OR: 2.33, 95% CI: 1.99, 2.72) after adjusting for covariates including physical work factors. However, no significant association was observed among workers at workplaces with a labor union regardless of workers' union membership.

Conclusions: Workplace discrimination was associated with low back pain only in workplaces without a labor union. Presence of labor union at workplaces may have a protective effect on workers' low back pain against workplace discrimination.

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1. Introduction

Discrimination is not an abstract concept—it is a real experience and an affront to people who experience it. Although there are great efforts to overcome discrimination, including legislation and institutional initiatives, discrimination at work remains a common problem (ILO, 2011). Workplace discrimination is defined as “a different, usually less favorable work-related treatment or opportunity for which there is no objective or legitimate justification” (Haspels et al., 2012). It results from superiority that a dominant group has over a disadvantaged group, or favoritism toward a

specific group, usually carried over from general society into the workplace (Okechukwu et al., 2014). Discrimination may be perpetuated on multiple grounds, including race, gender, sexuality, age, and social origin (ILO, 2011).

A growing body of research demonstrates that workplace discrimination is a relevant risk factor for workers' mental and physical health (Okechukwu et al., 2014). Gender-based discrimination from supervisors and coworkers is associated with anxiety and depression (Bond et al., 2004). Further, other studies have shown that gender discrimination at work is associated with physical symptoms, such as nausea and headaches, as well as psychological symptoms, such as feeling tense and sad (Goldenhar et al., 1998). In addition, a study of racial discrimination at work found that experience of discrimination is associated with hypertension among African-Americans (Din-Dzietham et al., 2004).

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Another study showed that perceived workplace discrimination is associated with poor mental health, anxiety, poor self-rated health, and muscular problems among immigrant workers in Spain (Agudelo-Suárez et al., 2011).

Low back pain is one of the most prevalent work-related health problems (Schneider et al., 2010). It results in direct social costs, including insurance and compensation, and indirect social costs, including sick leave and reduced productivity (Schneider et al., 2010). In the United States in 2012 alone, workers reported an average of 7.7 bed days and 11.2 lost work days in the previous 12 months due to low back pain (United States Bone and Joint Initiative, 2014). According to the 5th European Working Conditions Survey (EWCS), nearly half (47% of women and 46% of men) of European workers reported having backache in 2012, the most common health problem reported (Eurofound, 2012). Also, in South Korea, low back pain is a critical issue for workers' health (Lee and Jung, 2008). The Korea Occupational Safety & Health Agency reported that low back pain accounts for 47% of occupational injuries from worker's compensation in 2014 (Ministry of Employment and Labor, 2015).

Although previous studies reported that workplace discrimination is an important determinant of worker's health (S. S. Kim and Williams, 2012; Okechukwu et al., 2014), little research has examined its association with musculoskeletal disorders. One previous study found that experience of workplace injustice is associated with increased risk of backache and muscular pain (Min et al., 2014). Further, a study of restaurant workers in New York City indicated an association between experience of discrimination from management and musculoskeletal symptoms including low back pain (H. Kim et al., 2013a). Although the evidence for an effect of psychosocial stressors is less clear-cut (Hoogendoorn et al., 2000, 2001), previous studies suggested the biological mechanism linking psychosocial factors and musculoskeletal pain with stress responses such as psychological and behavioral reactions (Bongers et al., 1993; Carayon et al., 1999). Also, several experimental studies showed that psychosocial work factors have influence on muscle activity and postures of body motion through stress-induced responses which, in turn, lead to musculoskeletal symptoms (Garza et al., 2013; Wang et al., 2011).

Because labor unions represent workers, unions can help protect workers against discrimination events such as interpersonal conflict or unfair treatment (Haspels et al., 2012; Morse et al., 2003). However, there has been little discussion to date about the potential role of labor unions in modifying the association between workplace discrimination and its health effects. To fill this knowledge gap, we examined whether workplace discrimination was related to low back pain among Korean workers and whether this association was modified by labor union membership by using a nationally representative survey of Korean workers. Specifically, this research sought to answer the following questions:

- (i) What is the prevalence of workplace discrimination and low back pain among Korean workers?
- (ii) Are there any associations between experience of workplace discrimination by age, education, birth region, sex, and employment status and low back pain among Korean workers?
- (iii) Does this association differ by membership in a labor union?

2. Materials and methods

2.1. Study population

This study analyzed data from the third Korean Working

Conditions Survey (KWCS), conducted by the Occupational Safety and Health Research Institute in 2011. The survey benchmarked the European Working Conditions Survey (EWCS) with modification of some criteria in consideration of cultural differences (Y. S. Kim et al., 2015). The object of KWCS was to identify psychosocial factors that influence working environment as well as mechanical, physical, and chemical hazards in the workplace. The sampling design of the survey was multi-stage random sampling, and the sampling frame was based on enumeration districts from the 2005 Population and Housing Census (Y. S. Kim et al., 2013c). The survey was conducted from a nationally representative sample of an economically active population of ≥ 15 -year-old individuals including waged workers, the self-employed/employer, unpaid worker for family business and others. Trained personnel collected data through in-person interviews at workers' homes between June and November of 2011. Quality was assured by a study of external and content validity and reliability of the KWCS (Y. S. Kim et al., 2013c) and the national quality report of the KWCS (Statistics Korea, 2014).

A nationally representative sample of 50,032 participants was collected in the third KWCS. For the present analyses, we removed the duplicate cases and restricted the study population to waged workers ($n = 29,697$). Workers engaged in agriculture/fisheries ($n = 158$) and soldiers ($n = 75$) were excluded because there were too few individuals to estimate stable associations within each occupation. After excluding workers who were < 18 years old ($n = 45$) and were missing information on other variables including labor union ($n = 42$), income ($n = 7$) and enterprise size ($n = 838$), in total, 28,532 workers (16,648 men and 11,884 women) were included in this study. The Korean Working Conditions Survey is a publicly released dataset, so this study was exempt from informed consent by the Institutional Review Board of Korea University.

2.2. Measures

2.2.1. Workplace discrimination

Experiences of workplace discrimination for five different reasons were measured by the questions, "Over the past 12 months, have you ever experienced workplace discrimination based on your: (a) age, (b) education, (c) birth region, (d) sex, and (e) employment status?" Workers could answer 'yes' or 'no' for each of the five questions. We created a variable, 'any workplace discrimination', to indicate workers who experienced discrimination based on any of the five reasons above.

2.2.2. Low back pain

Prevalence of low back pain was assessed with the yes/no question, "Over the past 12 months, have you ever experienced low back pain?"

2.2.3. Labor union membership

Labor union membership was measured with three items. Subjects were first asked the yes/no question, "In your workplace, is there any labor representative organization (labor union, labor-management council, etc.)?" If subjects answered "yes," they were asked another yes/no question: "Is there a (a) labor union, (b) labor-management council, or (c) others?" Lastly, respondents whose workplace had a labor union were asked, "Are you a member of a labor union?" Subjects could answer (a) member, (b) not a member, or (c) not eligible to be a member.

Labor union membership was coded into three categories: (1) workers at workplace without labor union; (2) workers without union membership at workplace with labor union (meaning that there was a labor union, but the worker was not a member or was not eligible to join the membership); and (3) workers with union membership.

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