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ORIGINAL RESEARCH

Risk Factors for Musculoskeletal Symptoms Among Korean Broadcast Actors

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Abstract

BACKGROUND Musculoskeletal diseases (MSDs) are functional disabilities in the musculoskeletal area that occur when continuous damage to the muscles or tissues is caused by performing a repetitive task. These diseases are usually found in the waist, shoulder, neck, arm, and wrist. MSD is also referred to as cumulative trauma disorder, repetitive strain injury, occupational overuse syndrome, and visual display terminal, depending on the country. The condition is now commonly referred to as work-related musculoskeletal disorder.

OBJECTIVES The aim of this study was to develop a prevention plan against musculoskeletal disease and to provide better health care to broadcast actors by understanding the association between musculoskeletal symptoms and working conditions. The results of the study can be utilized to maintain effective systematic resources to treat such diseases.

METHODS A survey was conducted in Seoul between January 1 and May 10, 2014 with broadcast actors working in the South Korean entertainment industry.

FINDINGS Tests with respect to musculoskeletal symptoms indicated that the study participants were likely to experience having musculoskeletal symptoms in the shoulders, waist, neck, leg/foot, hand/wrist/finger, and arm/elbow. Most of the participants reported pain on both sides of their shoulders and in their legs/feet or on the right side of the arm/elbow and in hand/wrist/finger. Pain lasted between 1 and 7 days, with an incidence of 33.8% in the neck, 36% in the shoulders, 33.3% in the arm/elbow, 47.4% in the hand/wrist/finger, 34.7% in the waist, and 39.3% in the leg/foot.

CONCLUSIONS This study should prove useful in determining systematic and effective resources to prevent broadcast actors from developing MSD in the future.

KEY WORDS arm/elbow, broadcast actors, hand/wrist/finger, leg/foot, musculoskeletal disease

INTRODUCTION

With the frequency of musculoskeletal diseases (MSDs) on the rise, a continuous economic loss has been noted. MSDs are functional obstructions that usually occur in the areas including the waist, neck, shoulder, arm, and wrist. MSDs occur largely in musculoskeletal parts and are related to posture while working; repetition of motion; weight; force; vibration; speed; and other personal issues.

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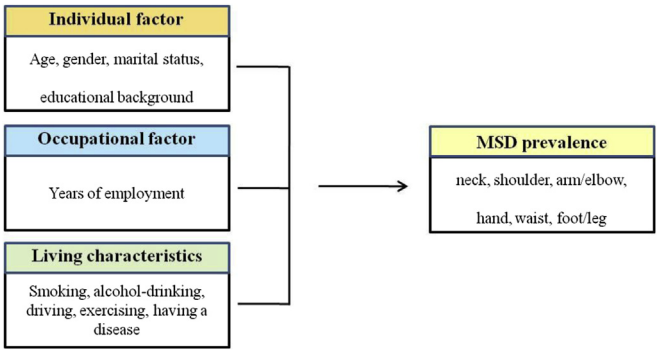

Figure 1. **Study model. MSD, musculoskeletal disease.**

However, injuries from unexpected accidents, such as a slip, fall, or crash, are not included as causes of MSDs.[1–3] In the past, jobs that required simple repetitive work, heavy lifting, machine handling, computer work, assembly, wrapping, and manufacturing were considered to be high-risk positions for MSD. In contrast, the probability of suffering from MSD occurs in a wide range of work environments, such as hospitals, hotels, distribution, office jobs, and service positions. For this reason, the study of MSDs is still an ongoing process.[4–6] However, to our knowledge, a study of MSD among broadcast actors has never been conducted.

Because broadcast actors perform repetitive activities at different places and times and in different environments, they have a greater chance of suffering from MSD. One group of researchers[7] performed a study to determine the source of stress. Their study revealed that the following affected the levels of stress, especially with respect to the accumulation of fatigue and fear of injury: psychological (30.9%), social (27.5%), physical (17.4%), environmental (16%), and other factors (5%). Because actors are highly likely to experience MSDs and stress, there also is a high risk for depression and panic disorders. Thus, it is not surprising that many actors commit suicide.

In current society, people are unwilling to investigate the difficulties of a process but focus only on the outcomes. Therefore, to our knowledge, not a single study has been conducted to determine what it is like to be an entertainer.[8] To study MSD in this population, it is necessary to investigate their working environments, conditions, and individual lifestyle. Therefore, this study should be useful in helping to maintain systematic and effective resources to prevent broadcast actors from developing possible MSDs in the future.

STUDY METHOD

Study Model. The study model, shown in Figure 1, was designed by considering results of previous studies and the purpose of this study. Its dependent variable was the presence of MSD symptoms, which were divided into 6 body parts, including the neck, shoulders, arms/elbows, hands, waist, and feet/legs. Independent variables affecting the prevalence included 4 individual characteristics: (age, sex, marital status, and educational background); 1 occupational characteristic (years of employment); and 5 lifestyle characteristics (smoking, alcohol consumption, driving, exercising, and the pre-existence of a disease).

Data Collection. The survey was conducted in Seoul, South Korea, between January 1 and May 10, 2014 with broadcast actors working in the South Korean entertainment industry. Of the 250 actors polled, 235 responses were collected for a 94% rate of return. Of these, only 210 were properly answered and could be used for an analysis. The survey was a self-administered questionnaire, and the purpose of the study and how to answer it was explained to the participants. The existence of symptoms was calculated based on the National Institute for Occupational Safety and Health diagnosis standard to understand the existence of actual MSDs for each individual. All participants signed a written informed consent form approved by the

Table 1. **Reliability Analysis of the Questionnaire**

Division	Classification	Scale	Cronbach-α value
General characteristics	Individual characteristics	Categorical	0.977*
	Occupational characteristics	Categorical	0.932*
Lifestyle characteristics	Lifestyles	Binary	0.872*
	Disease/accident	Binary	0.930*

Interaction effect was determined by a reliability analysis.
* $\alpha > 0.8$.