

Table 1. Distribution and Association of Musculoskeletal Complaints among Health-care Workers in Taiwan

	Doctors		Nursing staff		Medical technicians		Support staff	
	No.	Prevalence (%)	No.	Prevalence (%)	No.	Prevalence (%)	No.	Prevalence (%)
Affected workers	156	71.6	449	89.8	107	88.4	76	82.6
Association with work								
Yes	108	69.2	340	75.7	54	52.4	42	55.3
Possible	28	18.0	77	17.2	34	33.0	15	19.7
Uncertain	7	4.5	18	4.0	10	9.7	8	10.5
No	13	8.3	14	3.1	5	4.9	11	14.5

ple choices were allowed). A sketch of a human body was printed on the questionnaire to ensure that all participants used the same definitions of body parts. In addition, they were asked "Have you ever lost any workdays in the past 12 months because of musculoskeletal problems in this current job? [yes or no]" If the answer was "yes," the participant was then asked to report the number of workdays lost. The workers were also asked whether they thought their musculoskeletal discomfort was related to the current job. In addition, the questionnaire included questions on demographic variables such as age and gender, as well as questions on the participant's work such as duration of employment and job category. The questionnaire had previously been applied in studies of other occupations.³⁵

The data gathered through the questionnaire were coded and stored in a personal computer using Excel software. The statistical analysis was performed using StateView software. We used prevalence to describe musculoskeletal discomfort and chi-square test to evaluate the relation between prevalence of musculoskeletal discomfort and gender. The relations between prevalence of musculoskeletal discomfort and age as well as duration of employment were evaluated by two-tailed t-test.

RESULTS

In the medical center studied, a total of 1175 employees were qualified for our survey. Among them, 244 were taking vacation, refused to participate, or did not answer any of the questions providing information

for our analysis. Therefore, data from 931 (79.2%) workers were included in the analysis. The participants included 218 doctors, 500 nursing staff, 121 medical technicians, and 92 support personnel. The participation rate was 58.8% among doctors, 96.3% among nursing staff, 71.6% among medical technicians, and 79.3% among supporting staff. The participants included 614 (66.0%) females, and the average age was 29.9 years (range 19-59). When the survey was conducted, their duration of employment in the health-care profession mostly ranged from 4 to 8 years.

When a participant with multiple complaints was counted as a single affected worker, the prevalence of all 4 musculoskeletal complaints combined during the career as health-care workers was 71.6% among doctors, 89.8% among nursing staff, 88.4% among medical technicians, and 82.6% among support staff (Table 1). Soreness was the most common complaint, which was reported by 97.2% of all affected workers. Reported by 55.3% of all affected workers, the lower back was the most frequently affected body part. We found that dentists had the highest risk of musculoskeletal complaints among doctors, with a prevalence rate of 93%. The prevalence of musculoskeletal discomfort of the neck and shoulder was particularly high among dentists. The prevalence of musculoskeletal complaints among medical technicians was 88.4%. Among medical technicians, x-ray technicians had the highest risk of musculoskeletal complaints with a prevalence of 100%.

When a participant with multiple complaints was counted as multiple cases, among those with pain, the most frequently affected body part was the lower back