



The Incidence and Severity of Musculoskeletal Disorders Among Nurses Working in Taiwan Medical Center

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Purpose

The purpose of this study is to investigate the incidence and severity of musculoskeletal disorders (MSDs) Among nurses working in Taiwan medical center.

Methods

This study used a cross-sectional descriptive design with the purposive sampling method. Between April 2013 and May 2013, structure questionnaires were used to survey nurses employed in the medical centers of southern Taiwan. A total of 992 questionnaires were distributed to all of the medical center nurses, and 906 questionnaires were returned. A response rate was 91.3.0%. Excluding the incomplete questionnaires, data of 639 valid questionnaires was analyzed. Descriptive and inferential statistics such as t tests, ANOVA and Post hoc Scheffe tests were performed by using SPSS version 17.

Results

The means and standard deviations were 30.5 ± 7.7 years of age, 21.6 ± 3.3 Kg/m² for body mass index, 7.9 ± 7.7 years for nursing practice, and 4.5 ± 5.0 years for employment respectively (Table 1). The incidence of MSDs was 86.5% in the medical centers nurses, and 65.8% reported moderate to severe degree of MSDs. The most frequently reported injuries in body were low back (52.0%), shoulder (41.8%), and neck (38.1%) (Table 2). Significant differences were found between age, years of nursing practice, years of employment, past disease history, designation, department and the severity of MSDs (Table 3). The most frequently reported protective materials is compression socks(73.9%), backrest(45.6%) and corset belt(36.8%) (Figure 1).

Conclusion

The MSDs is highly prevalent and the severity has an impact on nurses' work and daily life. The MSDs become more severe as a result of an increase of age, years of nursing practice, designation, and department. We suggest nursing managers to schedule appropriate breaks during the work hours, buy protective devices, arrange continue education about the prevention of MSDs.

Table 1 Personal characteristics in the respondent nurses (n= 639).

Variable	n	percentage	minimum	maximum	Mean \pm S.D
Age category (yrs)			20	56	30.5 \pm 7.7
≤ 25	213	33.3	..	..	..
26-31	224	35.1	..	..	..
> 32	202	31.6	..	..	..
Education					
diploma	20	3.1	..	..	..
2-year technical	301	47.1	..	..	..
4-year technical	39	6.1	..	..	..
college	248	38.8	..	..	..
master	28	4.4	..	..	..
BMI (Kg/m ²)			15.4	35.8	21.6 \pm 3.3
≤ 18.5	81	12.7	..	..	..
18.5-24	422	66.0	..	..	..
> 24	132	19.1	..	..	..
Past disease history					
none	551	86.2	..	..	..
spinal disease	44	6.9	..	..	..
others	44	6.9	..	..	..
designation					
N1	126	19.7	..	..	..
N2	129	19.2	..	..	..
N3 (RN)	267	41.8	..	..	..
included	122	19.1	..	..	..
Years of nursing practice (yrs)			0.17	34.6	7.9 \pm 7.7
≤ 7	393	61.5	..	..	..
8-14	104	16.3	..	..	..
≥ 14	142	22.2	..	..	..
years of employment(yrs)			0.25	25.0	4.0 \pm 5.0
≤ 7	532	83.3	..	..	..
8-14	63	9.9	..	..	..
≥ 14	42	6.6	..	..	..
Working schedule					
Shift rotation	607	95.0	..	..	..
Fixed shift	32	5.0	..	..	..
department					
Medical ward	205	32.1	..	..	..
Surgical ward	106	16.6	..	..	..
ICU	181	28.3	..	..	..
others	147	23.0	..	..	..

Table 2 Incidence, severity, and symptoms of MSDs (n=639)

	range	Mean \pm SD	frequency	percentage
Severity index (n=639)	0-32	6.7 \pm 9.1		
0-2 (mild)			219	34.3
3-8 (moderate)			196	30.7
> 9 (severe)			224	35.1
Occurrence of MSDs (n=639)				
Yes			548	85.8
No			91	14.2
Body injuries (n=639)				
1. Neck			279	43.7
2. Shoulder (Left/Right)			244/268	38.2/41.9
3. Upper back			80	12.5
4. Low back			362	56.7
5. Thighs			68	10.6
6. Hips			47	7.4
7. Hands (Left/Right)			23/26	3.6/4.1
8. Wrists (Left/Right)			37/71	5.8/11.1
9. Knees (Left/Right)			74/76	11.6/11.9
10. Feet (Left/Right)			109/111	17.1/17.4
11. Ankles (Left/Right)			33/38	5.2/5.9

Table 3 Differences of personal characteristics in the severity of MSDs (n= 639)

Variables	n	Mean \pm SD	F	p	Scheffe test
Age category (yrs)					
≤ 25	213	6.02 \pm 8.26	F = 6.19	.002	① V ② V ③ V
26-31	224	5.79 \pm 8.41			
> 32	201	8.61 \pm 10.4			
Education					
diploma	20	10.25 \pm 12.37	F = 1.30	.267	..
2-year technical	301	6.82 \pm 8.94			
4-year technical	39	5.92 \pm 8.66			
college	248	6.39 \pm 8.95			
master	28	8.93 \pm 10.6			
BMI (Kg/m ²)					
≤ 18.5	81	6.60 \pm 9.20	F = 1.98	.14	..
18.5-24	422	6.44 \pm 8.33			
> 24	122	8.30 \pm 10.2			
Past disease history					
none	551	6.05 \pm 8.53	F = 13.71	<.00	① V ② V ③ V
spinal disease	44	10.52 \pm 11.4			
others	44	12.32 \pm 11.0			
designation					
N1	126	5.40 \pm 7.59	F = 2.66	.047	① V ② V ③ V
N2	129	6.52 \pm 9.04			
N3 (RN)	267	6.52 \pm 9.04			
included	122	8.59 \pm 10.01			
Years of nursing practice (yrs)					
≤ 7	393	6.81 \pm 9.35	F = 10.69	<.001	① V ② V ③ V
8-14	104	6.22 \pm 8.41			
≥ 14	142	9.84 \pm 10.97			
years of employment(yrs)					
≤ 7	532	6.47 \pm 8.65	F = 3.46	.032	① V ② V ③ V
8-14	63	6.65 \pm 8.05			
≥ 14	42	10.25 \pm 11.2			
Working schedule					
Shift rotation	607	6.67 \pm 9.06	F = 1.079	.29	..
Fixed shift	32	8.69 \pm 10.36			
department					
Medical ward	205	5.89 \pm 8.45	F = 4.05	.07	① V ② V ③ V
Surgical ward	106	7.05 \pm 9.07			
ICU	181	7.89 \pm 9.85			
others	147	8.91 \pm 11.66			

Figure 1 The most frequently reported protective materials in the respondent nurses (n= 639)

