

## Survey of Musculoskeletal Disorders Among Nurses in a General Hospital

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### ABSTRACT

The objective of this study is to examine the prevalence of musculoskeletal disorders(MSDs) among nursing personnels. A self-reporting survey adapted from Nordic questionnaires was used as diagnostic tool, and conducted for 162 nurses working for a general hospital. The survey was performed five times every three months during a year. The MSDs were defined by using three criteria, depending upon the frequency, duration and pain intensity of the symptoms. The results showed that the 12-month prevalences of MSDs at any body site by criterion 1, 2, 3 were 56.8%, 53.7%, 45.7%, respectively, and that the shoulder was the most susceptible to MSDs, followed by knee/lower leg, lower back, hand/wrist, neck, ankle/feet, finger, etc. Only one statistically significant risk factor of departments or units was identified through the Chi-square test. The prevalence of MSDs was the highest in intensive care unit, second in surgical ward, while the prevalence was the lowest in emergency room. The MSDs prevalence of Korea at any body part or by body part was much lower than that of foreign countries such as Japan, USA, Sweden, etc. This implies that when considering poor working conditions and load in Korea, the incidence rate of MSDs may rapidly increase in Korea in the future.

Keyword: Musculoskeletal disorders(MSDs), Nurse, Prevalence of MSDs

1. (1999) 1,500  
(prevalence rate) 33.9%  
(2000) 2,460  
2003 68.4% 가  
4,532 148% 가 (2004)  
가 273  
( , 2004). 86.8%  
( , 1989), ( , 1997),  
가 ( , 1995),  
( , 1996),

\* , \*\*

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( , 1992) , , , , 5  
 가 . , , , , ,  
 35~90%, , ( , , , , ), ,  
 12 35~80%, 16~37% , ( , , , ), (가 , ,  
 (Knibbe and Friele, 1996), , ), 1  
 (incidence rate) , .  
 (Marras et al., 1999). - , , / , / , 가 ,  
 43~53%, 31~48% (upper back), (lower back), /  
 (Lagerstrom et al., 1995; (hip/thigh), / (knee/lower leg), / -  
 Ando et al., 2000). 1990 1998 , , ( ,  
 nursing home ) , , 가  
 가 ,  
 (Silverstein et al., 2001). 5 ,

, 5  
 가 (BLS, 1999). 2.3

가 , , , 3

가 , , ,  
 A 3 , 3  
 3 .

2.

2.1 , , , , , ' 5  
 .3 가 ,

A , , , , , 3 가 .  
 , , , , , 1 가 NIOSH  
 , , , , , 162 (U.S. Department of Health and Human  
 Services, 1997), 2, 3

(2003)

1: 1 1 1

2.2 1 1 1 (

);  
 Nordic (Kuorinka et al., 1987) 2: 1 + 가 ' '(  
 ' ' ) ;  
 3: 1 + 가 ' (  
 ' ' ) .

, 1 3

2.4

SAS 8.0  
Excel  
3 4  
, 4  
odds  
ratio(Hagberg et al., 1997)

3.

3.1

1  
29.9, 159.9cm,  
52.6kg, 93.3, 88  
, 67, 4  
. 5, 114  
, 27, 1, 10, 2  
0.3, 128 (84%)  
가  
8%, 7% (1).  
162 (30%),  
(19%), (16%), (11%),  
, 6% ( )  
2). 94%가 가  
(1%), (10%), (38%), (45%)  
가  
( 3).

3.2

2, 4 . 2 ' '  
가  
, / , / , /  
, 가  
(McLeod, 1999), / , /

1.

( )			
		29	: 59.7%
29.9 (6.3)	22~51	30~39	: 29.9%
		40~49	: 9.7%
		50	: 0.7%
		154cm	: 8.3%
		155~159cm	: 32.1%
159.9 (4.5)cm	150~171cm	160~164cm	: 43.6%
		165~169cm	: 14.7%
		170cm	: 1.3%
		44kg	: 3.95%
		45~49kg	: 24.34%
52.6 (6.1)kg	42~78kg	50~54kg	: 38.2%
		55~59kg	: 20.4%
		60~64kg	: 9.2%
		65kg	: 3.9%
		1	: 0.6%
		1~3	: 21.2%
		3~5	: 19.2%
93.3 (72.7)	9~348	5~10	: 30.1%
		10~20	: 23.7%
		20	: 5.1%
		1	: 2.6%
		1~3	: 29.0%
		3~5	: 18.1%
84.9 (72.7)	1~348	5~10	: 25.8%
		10~20	: 20.0%
		20	: 4.5%
		1	: 7.1%
		1~3	: 27.7%
		3~5	: 19.4%
67.1 (55.4)	0.5~264	5~10	: 39.0%
		10~20	: 15.5%
		20	: 1.3%

가  
1, 2, 3 56.8%,  
53.7%, 45.7%



1.



2.



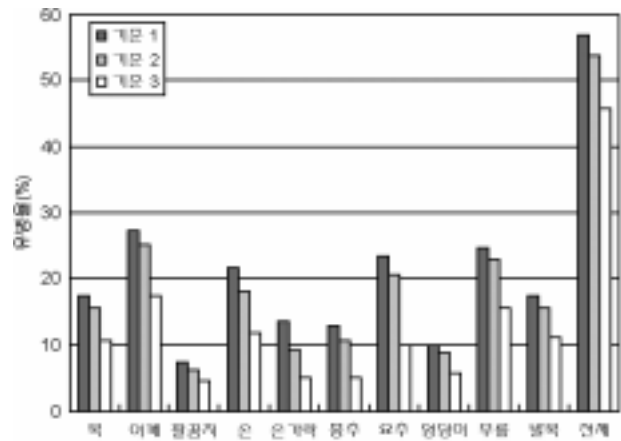
3.

3 63.5%  
 가 1 70  
 1 76.1%,  
 2 80.1%, 3 94.6% , 11  
 1.5%

2.

	1	2	3
	28(17.3)	25(15.4)	17(10.5)
	44(27.2)	41(25.3)	27(17.3)
/	12( 7.4)	10( 6.2)	7( 4.3)
/	35(21.6)	29(17.9)	19(11.7)
가	22(13.6)	15( 9.3)	8( 4.9)
	21(12.9)	17(10.5)	8( 4.9)
	38(23.4)	33(20.4)	16( 9.9)
/	16( 9.9)	14( 8.6)	9( 5.6)
/	40(24.7)	37(22.8)	25(15.4)
/	28(17.3)	25(15.4)	18(11.1)
	92(56.8)	87(53.7)	74(45.7)

( )



4.

3.3

47  
 1 1 ( , )  
 1 51.1%, 2 54.0%, , , , 5 , ,

1, 2, 3

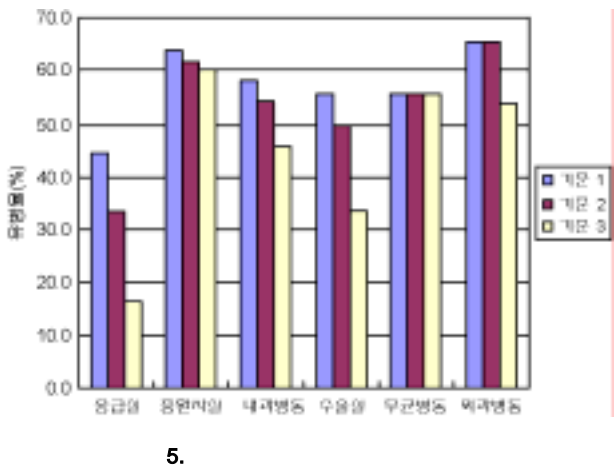
가 (category) 4~6  
 가 (α= 0.10).  
 6 156 가  
 가 5  
 가 5  
 가  
 odds ratio(Hagberg et al., 1997)  
 1 odds ratio 2.2  
 odds ratio가 1.0  
 3 odds ratio가 7.5,  
 6.3, 5.8  
 가  
 가 (가),  
 가  
 9  
 5 가

가 가

3. odds ratio

	1	2	3
	2.2	3.3	7.5
	1.7	2.4	4.2
	1.6	2.0	2.5
	1.6	2.5	6.3
	2.4	3.8	5.8

3.4  
 (Smith et al., 2002, Smith et al., 2003), (Trinkoff et al., 2002), (Yip, 2001), (Niedhammer and Marne, 1994), (Smedley et al., 1995), (Josephson et al., 1997), (Chiou and Lee, 1994), (Lusted et al., 1996), (Engels et al., 1994)  
 nursing home  
 NIOSH  
 1 4  
 home nursing  
 nursing home  
 56.8% (nursing home, rural hospital),  
 nursing home 65.4%  
 91.9% 가  
 35%  
 16%  
 82.6%  
 1/4  
 nursing home / / / / /



4. (%)

home		rural		home							
37.7	36.8	13.5	17.3	45.8	53.0	40.0	27.0				
41.0	61.1	44.2	27.2	35.1	60.0	60.0	22.0				
/	14.8	15.7	17.3	7.4							
/	9.7	14.2	26.9	2.6							
68.9	82.6	25.0	23.4	47.0	40.6	41.1	45.0	64.0	69.7	38.0	
/	14.8	19.4	19.2	9.9							
/	23.0	34.0	28.8	24.7							
/	8.2	9.3	15.4	17.3							
77.0	91.9	65.4	56.8	72.5	84.0						

home nursing home, rural rural hospital

4.

A 162

1

(Kuorinka et al., 1987), 3

1 1

NIOSH  
3가  
56.8%, 2 53.7%, 3 45.7%  
/ 2 가  
3 가  
(, 2003),  
가 가  
1

, 75% 가

(1.5%),

가

(, )

Smith et al.(2002, 2003), Lusted et al.(1996)

(lifting),

가  
18

가

. 1 2

(transfer),

(repositioning)

L5/S1 compressive force가 NIOSH  
3,400N

(Marras et al., 1999).

sit - stand transfer

aid, sling,

(Silverstein et al., 2001).

가

1

100 3.6

3.4

2.8



*ronmental Medicine*, 52, 160-163, 1995.

Smith, D. R., Atkinson, R., Kubo, H. and Yamagata, Z., A comparison of musculoskeletal disorders among female nursing home nurses in Japan and Korea, *Ergonomics Australia*, 16(3), 16-19, 2002.

Smith, D. R., Kondo, N., Tanaka, E., Hirasawa, H. and Yamagata, Z., Musculoskeletal disorders among hospital nurses in rural Japan, *Rural and Remote Health*, 3(3), 1-7, 2003.

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