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JOB-SPECIFIC FACTORS AND PREVALENCE OF MULTIPLE AND DISABLING MUSCULOSKELETAL PAIN AMONG OFFICE WORKERS, NURSES, AND CAREGIVERS IN ESTONIA

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The aims of this study were to describe job-specific factors and prevalence of musculoskeletal pains (MSPs) by the occupation and body regions in the past 12 months and past month, to analyse multisite and disabling pain and sick leave among office workers (OW), nurses and caregivers (CG); and to find relationships between the observed indicators. The study groups were selected by random sample method. Questionnaire responses on demographic parameters, job-specific factors, and MSPs by body parts in the past 12 months (MSP-12) and past month (MSP-1) were analysed. A questionnaire was sent to 1291 participants. The response rate was 54%. Most of the participants were women, with mean age 41.2 (±11.5) years, working on average 42.8 (±6.7) hours per week and had service length more than five years. Repetitive movements of wrist/hands and working under time pressure were more often reported risk factors by the nurses. Lifting weights 25 kg and more, climbing up and down, kneeling more than one hour a day and piecework finished in the work shift were the most often reported job-related risk factors for the CGs. Use of a keyboard was the same frequent work-related risk factor for the OWs. The most prevalent MSP-12 was low back pain for CGs (66.3%) and nurses (56.1%) and neck pain for OWs (51.5%). The most often reported MSP-1 was shoulder pain for nurses and OWs (84.4% and 65.7%, correspondingly), and elbow pain for CGs (74.9%). In the the entire sampled group, low back pain (53.9%) in the past 12 months and shoulder pain (70.9%) in the past month were the most often reported pain regions. A higher prevalence of multiple and disabling MSP and sickness absence were reported by CGs, compared to other occupation groups ($p < 0.05$*). Correlation analysis showed positive relationships between job-related risk factors, like repetitive movements, physical load, and time demands, and MSPs and sick leave, especially among CGs (*$p < 0.05$*). Job-specific factors need more attention to prevent multiple and disabling pain and sick leave among office and hospital workers.*

Key words: *job-specific factors, musculoskeletal pain, office workers, nurses, caregivers.*

INTRODUCTION

Musculoskeletal disorders (MSD) are the dominating work-related health problems among the working population in Europe and also in Estonia (Anonymous, 2009; 2016). On average, low back pain (LBP) (28%), neck pain (NP), shoulder pain (SHP), and wrist/hand pain (WHP) (19%, in all cases) have been shown to be the most often reported occupational diseases in EU countries (Eurostat, 2009). Estonian statistics of work-related and occupational diseases have recorded high prevalence of MSDs (about 80% of the total records) during the last years (Anonymous, 2015).

The prevalence of MSPs differs depending on body region, occupation, and country. In the United Kingdom (UK), data processing workers have reported high prevalence of MSPs (86%) in the past year, where neck, lower and upper back, wrists/hands and shoulders were the most often pain regions and 56% reported discomfort and MSPs in the last week. Eighty-one per cent of computer workers attributed their muscle pain and discomfort to work, citing poor seating (49%), constant keying (24%) and sitting in the same position for hours (23%) as possible causes of MSP (Woods, 2005). Risk of musculoskeletal disorders (neck, shoulder, and forearm complaints) was greater among computer workers at the newspaper office, who conducted editing work and took uncomfortable positions (Ortis-Hernandez *et al*., 2003). Neck pain was noted by 55% and shoulder pain by 38% of employees working at visual display terminal workstations in Germany (Klussmann *et al*., 2008). In Finland, office workers (OWs) reported pain in all upper body parts (neck — 63%, lower arms — 35%, shoulders — 24%, wrist and fingers — 16%) (Sillanpää *et al*., 2003).

In American and Australian hospitals a high prevalence of MSPs among 72–80% nurses and nurse-students (Trinkoff *et al*., 2002; Smith and Leggat, 2004) has been recorded. In a number of studies, LBP was the dominating MSP among nurses (Trinkoff *et al*., 2002; Alexopoulos *et al*., 2003; Smith *et al*., 2005; Harcombe and McBridge, 2009). A high prevalence of NP and SHP was observed among about a half of operating room nurses in Shiraz City Hospitals (Choobineh *et al*., 2010).

Studies on multiple MSP have shown that about 2/3 of the groups of OW, nurses, and sale and operative workers reported multiple MSP, whereas the number of painful body sites was proportional with the physical work load, psychosocial demands, and beliefs on work causation (Solidaki *et al*., 2010).

The CUPID (Cultural and Psychosocial Influences on Disability) study demonstrated that disabling pain in two anatomical sites (wrist-hand and lower back) co-varied, while disabling LBP was more common in nurses and WHP in OWs (Coggon *et al*., 2011). In addition, a particularly low prevalence of WHP among OWs (6% in the past month) in Japan and few workers reported sick leave (3% nurses and 11% OWs) in the past year (Matsudaira *et al*., 2011).

Relationships between job-specific risk factors and MSP have been widely analysed among OWs and nurses, and some studies have been carried out among CGs. High job demands among OWs correlated positively with LBP, NP, and SHP (Lang *et al*., 2012). Low job control and poor social support among OWs were related to pain in lower extremities and LBP (Juul-Kristensen *et al*., 2004). High mental strain among nurses and OWs was associated with NP and WHP (Ortiz-Hernandez *et al*., 2003; Surawera *et al*., 2013). Physical work load among nurses, OWs, and postal workers was related to LBP, SHP, elbow pain (ELP), and WHP, whereas the strongest relation was detected between job strain and NP (Harcombe *et al*., 2010). Work in awkward postures increased the probability of NP among CGs (OR 1.76, 95% CI 1.11–2.78) (Luime *et al*., 2004).

The aims of the present study were to describe job specific factors and prevalence of MSPs by the occupation and body sites in the past 12 months and the past month, to analyse multisite and disabling pain and sick leave among OWs, nurses, and CGs, and to determine relationships between the observed indicators.

MATERIALS AND METHODS

The study was a part of the international research project "Cultural and Psychosocial Influences on Disability" (CUPID), managed by Southampton University (UK). The study was carried out in 18 countries from six continents. The CUPID study involved questionnaire responses by 12 426 persons who were nurses, OWs, and other (mostly manual) workers (Coggon *et al*., 2012).

Study sample. The cross-sectional study was carried out from October 2008 to January 2009 and a follow-up study was performed a year later. The study group was completed by random sample method. Three occupation groups were selected for the study: 1) OWs of the University of Tartu and Estonian University of Life Sciences, 2) nurses of the Tartu University Hospital, and 3) CGs from the nursing departments of Estonian hospitals. The sample group was selected to meet the following criteria: age 20–59 years, length of employment for at least 12 months in the present job, and repetitive movements with wrist and fingers or computer use for at least four hours per day. Computer use was applied only for the OWs. The study was approved by the Ethics Committee on Human Research of the University of Tartu.

Questionnaire. The questionnaire "International Survey of Work and Health" was developed for the CUPID study by Professor Coggon and co-workers (Coggon *et al*., 2012). The questionnaire was translated into Estonian and Russian languages and checked with back-translation by an independent professional. The questionnaire consisted of six sub-parts, of which three were analysed in the present study: 1) demographic parameters — gender, age, ethnic origin, questions about the length of service in the present occupation, work load (hours per week), smoking etc.; 2) current work — physical and psychological demands, work autonomy and support by supervisors and colleagues; 3) pain in different body sites (low back, neck, shoulder, elbow, wrist/hand, knee) lasting for more than one day in the past year and past month; the questions about MSP duration, difficulties in everyday activities and sick leave. Questions about general health (4), mood (5) and other pain (6) have not been analysed in the present article.

Job-specific factors in part two were the following: use of keyboard and repetitive movements of wrist and fingers for more than four hours in total; repetitive bending and

straightening of elbow; working with hands above shoulders; kneeling or squatting for more than one hour in total; lifting weights 25 kg and more; and climbing up and down more than 30 flights of stairs a day. Questions referring to psychological load were: working under pressure to complete tasks by a fixed time; piecework paid according to the number of tasks finished or expected to finish in the day; bonus payment when more articles have been finished in the day.

Duration of pain was assessed as short when it lasted for 1 to 6 days, average — 1 to 4 weeks, and long — 1 to 12 months. Multiple pain was described when two or more body sites were affected. Disabling pain was considered as difficulties in performing everyday duties in the past month and sick leave in the past 12 months, and was analysed by body site and occupation. Disabling pain was measured on a scale 0–2, where: 0 — no difficulty, 1 — difficult, and 3 — impossible. Questions also considered two restricted activities (GD — difficult or impossible to get dressed; HSW — difficult or impossible to do normal housework). Sickness absense was measured on a scale of 0–3, where: 0 — 0 days, 1 — 1 to 5 days, 2 — 6 to 30 days, and 3 — more than 30 days.

Statistical analysis. Data were analysed using software SPSS 18.0. Descriptive statistics, Chi-square test for analysis of group differences, and Spearman correlation were used to test relationships between different characteristics.

RESULTS

Study group. The questionnaires were sent by post to 1291 participants, of whom about half (n = 698) filled out the questionnaires and sent them back to the researcher. The response rate was 54% — higher (59%) among OWs and lower (47%) among CGs. Due to the selection criteria, 110 participants were excluded and in total 588 questionnaires were analysed (Table 1).

Among the sample group, 94% were female with average age 41.2 ± 10.2 years (OW 40.3 ± 10.1, nurses 38.7 ± 10.2, CG 45.7 ± 8.8). Two-thirds of them had service length more than five years. For most of the study group, the work load was from 40 to 60 hours per week (average 42.8 ± 6.7). Long working hours (more than 60 hours per week) were reported by 14% CGs. Two-thirds of the CGs and half of the nurses were regular smokers (Table 2).

Job-specific factors and occupation. Work-specific factors significantly differed between the occupations ($p < 0.05$). Almost all of the OWs used keyboards and about 2/3 of the nurses worked under time pressure, using repetitive wrist and fingers movements more than four hours in total, and some of them worked under time pressure because of bonus payment. About 80% of the CGs reported lifting weights 25 kg and more, two-thirds of them worked with repetitive bending of elbow and climbing up and down more than 30 flights of stairs a day, and less than half of them had kneeling and squatting for more than one hour a day (Fig. 1).

Table 1

COMPLETING OF THE ESTONIAN SAMPLE

Occupational group	Subjects approached (n)	Filled the questionnaire (n)	Respondents excluded (n)	Subjects analysed (n)	Response rate (%)
OW	415	243	39	204	59
Nurses	416	237	16	221	57
CG	460	218	55	163	47
Total	1291	698	110	588	54

OW, office workers; CG, caregivers

Table 2

GENERAL CHARACTERISTICS OF THE STUDY GROUP, N (%).

Variable	OW n = 204	Nurses n = 221	CG n = 163
Gender			
Female	173 (85)	221 (100)	161 (99)
Male	31 (15)	–	2 (1)
Age			
20–29	35 (17)	51 (23)	6(4)
30–39	65 (32)	78 (35)	38 (24)
40–49	54 (27)	52 (24)	49 (30)
50–59	48 (24)	40 (18)	67 (42)
Ethnic origin			
Estonian	194 (96)	190 (86)	110 (68)
Russian	5(2)	25 (11)	45 (28)
Other	3 (2)	6 (3)	6 (4)
Working years			
≥ 5	135 (66)	157 (71)	111 (69)
1–5	69 (34)	63 (29)	51 (31)
Hours per week			
≤ 40	18 (9)	58 (26)	9(6)
41–60	183 (90)	160 (73)	131 (80)
> 60	3 (1)	3 (1)	23 (14)
Regular smoking			
Yes	71 (35)	110 (49.8)	98 (60)
No	133 (65)	111 (50.2)	65 (40)

OW, office workers; CG, caregivers

Prevalence of musculoskeletal pain by body region and occupation. Table 3 shows prevalence of MSP-12 and MSP-1 by body region and occupation. MSP lasting for more than a day in body sites significantly differed between the occupations and assessment time ($p < 0.05$). For the past 12-month period, prevalence of WHP among the OWs and LBP, SHP and ELP among the CGs was significantly higher than for the nurses. For the past month period, nurses reported more often LBP, NP, and SHP compared to the other occupations. Also, for the entire sample group, we observed some interaction between the reported pain by the body site and asessment time — LBP (53.9%) had the high-

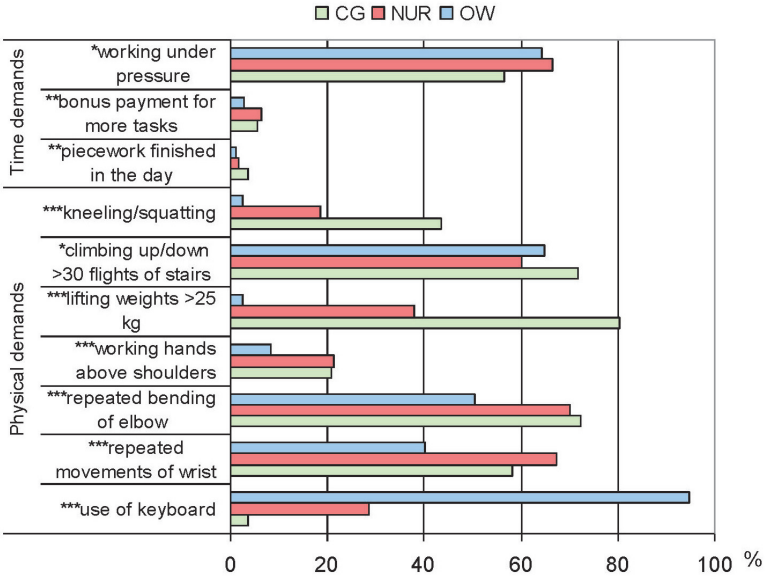

Fig. 1. Job specific factors — physical and time demands among the office workers (OWs), nurses (NURs), and caregivers (CGs) (*$p < 0.05$, **$p < 0.01$, ***$p < 0.0001$, statistically significant difference between the groups).

Table 3

PREVALENCE OF MSP-12 AND MSP-1 BY THE BODY REGION AND OCCUPATION

Body site	MSP-12				MSP-1			
	OW	Nurses	CG	Total	OW	Nurses	CG	Total
LBP	41.7	56.1	66.3***	53.9	55.3	73.9*	68.8	67.1
NP	51.5	52.0	44.8	49.8	62.9	74.8*	62.7	67.5
SHP	29.9	21.3	33.1**	27.5	65.7	84.4*	66.0	70.9
ELP	14.6	11.4	20.2*	15.0	59.9	65.2	74.9	67.4
WHP	34.3**	27.1	33.1	31.3	60.8	69.4	71.9	65.4
KNP	29.9	32.6	34.4	32.1	59.0	61.4	70.7	63.5

MSP-12, musculoskeletal pain for the past 12 months; MSP-1, musculoskeletal pain for the past month; OW, office workers; CG, caregivers; LBP, low back pain; NP, neck pain; SHP, shoulder pain; ELP, elbow pain; WHP, wrist/hand pain; KNP, kneel pain; *p,* statistically significant difference between the groups; *$p < 0.05$, **$p < 0.001$, ***$p < 0.0001$

est prevalence in the past twelve-month period while SHP (70.9%) had the highest prevalence in the past one month.

Duration of MSP by body region and occupation. Figure 2 shows the obtained results for pain duration in the past 12 months by body site and occupation. Group differences were observed in prevalence of SHP, WHP, and knee pain (KNP) ($p < 0.01$) and LBP ($p < 0.05$). Long-lasting pain (1–12 months) in wrists and hands and knees was more frequent among CGs, while pain in neck and lower back prevailed among OWs. Long-lasting SHP was reported by less than 1/5 of the nurses.

Prevalence of multiple pain by the number of pain sites and occupation. Figure 3 shows the prevalence of multiple MSP by the number of pain sites and occupation in the past one and 12 months. In the past month, a lower proportion of the OWs reported multiple pain in one or two body regions and also in three and more body sites, compared to pain reported by nurses and CGs ($p < 0.05$). But there were no significant differences between groups in multiple pain by pain sites in the past 12 months.

Prevalence of disabling pain by body region and occupation. Table 4 shows prevalence of disabling pain by body

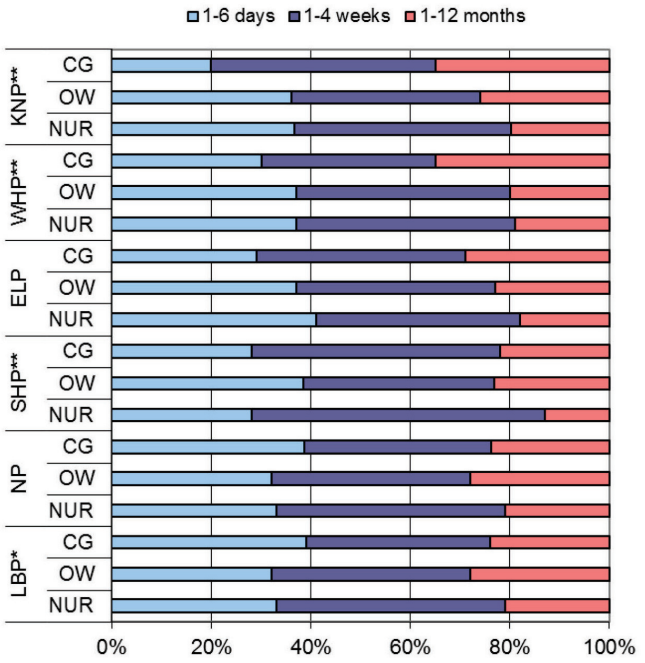

Fig. 2. Pain duration in the past 12 months by the body region and occupation (*$p < 0.05$, **$p < 0.001$, statistically significant difference between the groups). OW, office workers; NUR, nurses; CG, caregivers; KNP, knee pain; WHP, wrist/hand pain ELP, elbow pain; SHP, shoulder pain NP, neck pain; LBP, low back pain.

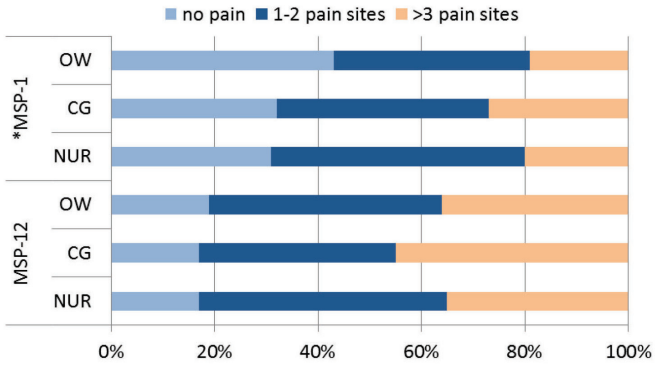

Fig. 3. Prevalence of multiple musculoskeletal pain for the past 12 months (MSP-12) and the last month (MSP-1) by the occupation (*$p < 0.05$, statistically significant difference between the groups). OW, office workers; NUR, nurses; CG, caregivers.

Table 4

PREVALENCE OF DISABLING MSP-1 BY THE BODY REGION AND OCCUPATION AND TYPE OF RESTRICTION

Disabling MSP-1	OW	Nurses	CG	*p*
LBP				
GD	25.5	22.9	38.2	0.002
HSW	57.4	59.5	66.2	–
NP				
GD	6.1	10.7	30.6	0.000
HSW	18.2	44.2	53.1	0.000
SHP				
GD	12.5	25.0	50.0	0.000
HSW	40.0	50.0	65.9	0.000
ELP				
GD	–	13.,3	33.3	0.007
HSW	16.7	60.0	66.6	0.014
WHP				
GD	4.8	16.7	27.3	0.006
HSW	45.2	51.6	59.1	–
KNP				
GD	11.9	13.9	22.8	0.005
HSW	33.4	37.2	61.3	0.002

MSP, musculoskeletal pain; OW, office workers; CG, caregivers; LBP, low back pain; NP, neck pain; SHP, shoulder pain; ELP, elbow pain; WHP, wrist/hand pain; KNP, kneel pain; GD, difficult or impossible to get dressed; HSW, difficult or impossible to do normal housework; *p*, statistically significant difference between the groups.

site and occupation ($p < 0.01$). More than 50% CGs reported difficulties in doing normal housework because of NP, SHP, ELP, and KNP. Half of them reported difficulties of getting dressed because of SHP, and 1/3 had restrictions in dressing with LBP, NP, or ELP. This indicates the seriousness of disabling pain in this occupation. Housework was difficult for more than a half of nurses because of SHP, ELP, or WHP. In total the prevalence of disabling pain among CGs was 58.9%, among nurses 44.3%, and among OWs 33.3%.

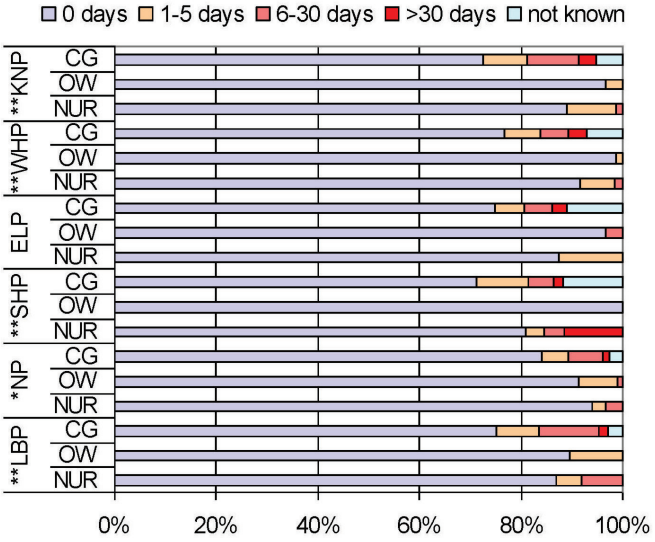

Fig. 4. Respondents (%) reporting sickness absence by the duration of musculoskeletal pain (MSP), body region and occupation in the past 12 months (*$p < 0.05$, **$p < 0.01$, statistically significant difference between the groups). For abbreviations see Figure 2.

Sickness absence because of MSP by body region and occupation. Figure 4 shows reported sickness absence because of MSP-12 by body region and occupation. In general, sick leave was reported by about 10% of respondents. Sick leave was more often reported by the CGs — about 1/4 of them has missed workdays because of SHP, KNP, or LBP and about 20% of them had sick leave because of NP. None of the OWs reported sickness absense because of SHP and some of them reported sickness absence because of WHP, ELP, or KNP. Significant differences in sick leave by body regions and occupation were observed ($p < 0.01$).

Correlation analysis. Correlation analysis showed positive relationship between MSP-12 and age (r = 0.15, $p = 0.001$), whereas service length or working hours was not correlated with MSPs or multiple or disabling pain. In the whole group of respondents, positive relationships between pain duration, disabling pain and sickness absence were observed ($r \geq 0.20$, $p = 0.05…0.001$).

Table 5 gives correlation coefficients of job-specific factors and sick leave because of MSP-12 by body regions and occupation ($r \geq 0.20$, $p < 0.01$). Relationships between job-specific factors and sick leave because of MSP-12 most often occurred in CGs and less in others. Repetitive movements with hands above shoulders and lifting weights more than 25 kg about one hour per day correlated positively with sick leave caused by SHP and LPB. Work with hands above shoulders correlated positively with sick leave because of NP, ELP, WHP, and KNP. Repetitive elbow bending correlated positively with sick leave because of SHP and KNP. Piecework correlated with sick leave because of NP, SHP, and ELP, and bonus-payed work with SHP. For nurses, bonus payment was correlated positively with sickness absence because of LBP and piece work with KNP. In the OWs, repetitive elbow bending was related to sick leave be-

Table 5

RELATIONSHIPS BETWEEN JOB SPECIFIC FACTORS (PHYSICAL AND PSYCHOLOGICAL DEMANDS)*

Job specific factors	LBP			NP			SHP			ELP			WHP			KNP		
	OW	Nurses	CG	OW	Nurses	CG	OW	Nurses	CG	OW	Nurses	CG	OW	Nurses	CG	OW	Nurses	CG
Repetitive wrist movements	-	-	0.20	-	0.16	-	-	-	0.22	0.14	-	0.,21	-	-	0.18	-	-	-
Repetitive elbow bending	-	-	0.22	-	-	0.34	-	0,15	0.25 0.33	0.36	-	0.17	-	-	0.20	-	-	0.16 0.37
Hands above shoulders	0.31	-	0.17 0.24	-	-	0.17 0.23	-	.14	0.28 0.34	-	-	0.25 0.39	-	-	0.19 0.38	-	-	0.32
Lifting weights more than 25 kg	-	0.14	0.18 0.25	-	-	-	-	-	0.17 0.30	-	-	0.16	-	-	0.27	-	-	0.19
Climbing up and down	-	-	-	-	-	-	-0.14	-	-	-	-	-	-	-	-	-	-	0.32
Kneeling	-	-	0.28	-	-	-	-	0.15	-	0.19	-	-	-	-	-	-	-	0.29
Use of keyboard	-	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19	-
Piecework	-	-	0.26	-	-	0.31	0.14	0.14	0.44	-	-	0.43	-	-	-	-	0.33	-
Bonus payment	-	0.22	-	-	-	-	-	-	0.32	-	-	-	-	-	-	-	-	-
Time pressure	-	-	-	-	-	-	-	-	-	-	0.18	-	0.14	-	-	-	-	-

* MSP (musculoskeletal pain)-12 lasted for more than one day and caused sick leave (framed), by the body region and occupation (r = 0.14–0.44, $p < 0.001$). OW, office workers; CG, caregivers; LBP, low back pain; NP, neck pain; SHP, shoulder pain; ELP, elbow pain; WHP, wrist/hand pain; KNP, kneel pain

cause of ELP, and work with hands above shoulders was related to sick leave because of LBP.

Weak relationships between MSP-12 lasting more than one day in wrist/hands, elbow and shoulders, and repetitive movements in these body regions were observed.

DISCUSSION

Up until the international CUPID study, no research had been conducted in Estonia on prevalence of MSDs by different occupations. This project allowed the authors of this stuy to use an internationally validated questionnaire to obtain information on the prevalence of MSPs among OWs and nurses (including CGs) in Estonia (Coggon *et al*., 2012). In this article the CGs group was separately considered in analysis, because of their work specificity in the nursing centres. Because of high physical and emotional demands and low salaries, this profession is not popular among young people in Estonia. By comparison of this group's socio-demographic status with that of other professions, persons tended to be older, worked significantly longer hours and reported more sick leaves because of MSPs. They reported also longer pain duration, multiple and disabling pain.

Our study showed a higher prevalence of MSDs than in other European countries (Anonymous, 2009). The prevalence of MSPs by body regions and occupation in the Estonian sample was similar to that reported in earlier studies conducted in other countries (Trinkoff *et al*., 2002; Smith and Leggat, 2004; Smith *et al*., 2006; Harcombe *et al*., 2009; Solidaki *et al*., 2010).

The analysis of job-specific factors by profession showed that working under time pressure and repetitive movements with wrist and fingers were the typical job demands for nurses. Repetitive elbow bending, lifting weights more than 25 kg, kneeling or squatting and climbing up and down more than one hour per day were the main work-related risk factors for CGs. Use of keyboard more than four hours per day was the most often job-related risk factor of MSP for OWs.

Our study showed variability in prevalence of MSP by body site and occupation and even the assessment time. In an earlier New Zealand study, no group differences regarding MSPs were observed among OWs, nurses, and postal workers (Harcombe and McBridge, 2009). The prevalence of MSP-12 among CGs showed a significantly higher percentage of lower back, shoulder, and elbow pain than the other observed occupational groups. The prevalence of WHP among OWs was significantly higher than for nurses. The prevalence of LBP, NP, and SHP in the past month among nurses was higher compared to other observed occupation groups. In the whole sample, a difference in reporting of MSP-12 and MSP-1 was observed, where the dominating MSP-12 was LBP and dominating MSP-1 was SHP.

The present study adds some knowledge about the multiple character of MSPs among service occupations. Sick leave of CGs because of LBP was not only related to lifting weights and kneeling or squatting (Choobineh *et al*., 2010), but was also related to repetitive movements of wrist and fingers and work with hands above shoulders. We confirmed the findings of the earlier studies that showed relation of NP to work with hands above shoulders and repetitive elbow

bending (Luime *et al*., 2004; Choobineh *et al*., 2010). Also, we demonstrated that SHP, ELP, and WHP were not only correlated with repetitive movements of elbow, wrist, or fingers, but also strongly related to lifting of weights. Our study showed close relationships between physical demands, MSPs, and sick leave among the CGs. In contrast, no relationship between the recurrence of shoulder/neck pain and physical demands were observed in a Dutch study (Luime *et al*., 2004).

Similarly to earlier studies, our results showed that multisite and disabling pain correlated positively with physical and time demands (Heuvel *et al*., 2004; Hannan *et al*., 2005; Harcombie *et al*., 2009). We confirmed that CGs is an occupation with high job demands strongly related to MSP in almost all body sites — neck, shoulder, elbow, wrist-hand, and knee (Lang *et al*., 2012).

CGs more often have reported sick leave because of only serious pain problems. About one-fourth of them reported sickness absence because of SHP, KNP, or LBP in the past 12 months. Based on the Estonian law (Anonymous, 2013), sickness absence during the first three days is not compensated to the employees, and because of fear to lose income or to get fired the employees often do not use sickness absence days. In spite of long pain duration, multiple and disabling pain most of the participants from Estonia continued working, as well as it has been reported for other countries (Matsudaira *et al*., 2011).

CONCLUSIONS

The present study confirmed a high prevalence of MSPs in different body regions not only among CGs and nurses, but also among OWs. Reported pain in body parts showed differences by occupation and depended on the time of assessment. Wrist-hand pain in the past 12 months was prevalent among the OWs, and LBP, SHP, and ELP were prevalent among the CGs. In the past month LBP, NP, and SHP were highly prevalent among nurses. The CGs reported a longer duration of MSPs and a higher prevalence of multiple and disabling pain and sickness absence. Correlation analysis showed that physical and psychological demands were more often related to LBP and upper limb pain, and also with multiple pain and sick leave.

More complex statistical methods could be implemented in further analysis to test for relationships between job-specific factors, MSP, multiple and disabling pain, and sick leave among clinical professions and office workers.

Thus, musculoskeletal disorders are the most prevalent work-related diseases among OWs, NURs and CGs in Estonia. Job-specific factors, multisite and disabling pain and sickness absence were related to MSP localisation and occupation.

It is very important to pay more attention on work-specific factors in health care and computer work. To reduce disability and sickness absence among CGs, NURs, and OWs, it is needed to take regular breaks and diminish physical loads using special equipment.

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DARBA ĪPAŠIE APSTĀKĻI UN VAIRĀKU ZONU UN INVALIDITĀTI IZRAISOŠU MUSKUĻU UN SKELETA SISTĒMAS SĀPJU IZPLATĪBA BIROJA DARBINIEKIEM, MEDICĪNAS MĀSĀM UN APRŪPĒTĀJIEM IGAUNIJĀ

Pētījuma mērķis bija analizēt specifiskos darba apstākļus un muskuļu un skeleta sistēmas sāpju izplatību dažādās ķermeņa daļās pēdējo 12 mēnešu laikā un pēdējā mēneša laikā biroja darbiniekiem, medicīnas māsām un aprūpētājiem. Pētījuma grupas tika atlasītas pēc nejaušās izlases metodes. Tika analizēti demogrāfiskie parametri, darba vietas specifiskie apstākļi un respondentu atbildes uz jautājumiem par muskuļu un skeleta sistēmas sāpju izplatību dažādās ķermeņa daļās. Anketas tika izsūtītas 1291 dalībniekam; atbildes saņemtas no apmēram puses (RR = 54%). Lielākā daļa respondentu bija sievietes ar vidējo vecumu 41,2 (±11,5) gadi, kas strādāja vidēji 42,8 (±6,7) stundas nedēļā; darba stāžs vairāk nekā pieci gadi. Medicīnas māsu biežāk ziņotie riska faktori bija rokas/plaukstas atkārtotas kustības un laika trūkums pienākumu veikšanai. Aprūpētāji par biežāk satopamajiem riska faktoriem uzskatīja smaguma celšanu (25 kg un vairāk), kāpšanu pa kāpnēm uz augšu un uz leju, atrašanos uz ceļiem vairāk nekā vienu stundu dienā, akorda darba veikšanu maiņā. Biroja darbinieki kā biežāko riska faktoru minēja tastatūras biežo lietošanu. Divpadsmit mēnešu laikā muguras sāpes visvairāk bija izplatītas aprūpētājiem (66,3%) un medicīnas māsām (56,1%), kakla sāpes — biroja darbiniekiem (51,5%). Viena mēneša laikā skeleta muskuļu sāpes visbiežāk bija sastopamas medicīnas māsām un biroja darbiniekiem (attiecīgi 84,4% un 65,7%), sāpes elkonī — aprūpētājiem (74,9%). Korelācijas analīze parādīja pozitīvas attiecības starp ar darbu saistītiem riska faktoriem un vienveidīgām kustībām, fizisko slodzi un laika trūkumu un muskuļu un skeleta sistēmas sāpēm un slimības atvaļinājumu, jo īpaši aprūpētājiem ($p < 0.05$). Secināts, ka lielāka uzmanība jāpievērš biroju un slimnīcas darbinieku darba specifiskiem faktoriem, lai novērstu invaliditātes izraisīšanu un samazinātu slimības atvaļinājumu ņemšanu.