Enomesečna prevalenca skeletno–mišične bolečine in vplivi nanjo

One month prevalence of self–reported musculoskeletal pain syndromes and correlates

Avtor / Author

Ustanova / Institute

Zalika Klemenc–Ketis[1,2], Janko Kersnik[1,2]

[1] Univerza v Mariboru, Medicinska fakulteta, Katedra za družinsko medicino, Maribor, Slovenija; [2] Univerza v Ljubljani, Medicinska fakulteta, Katedra za družinsko medicino, Ljubljana, Slovenija;

[1] University of Maribor, Faculty of Medicine, Department of Family Medicine, Maribor, Slovenia; [2]University of Ljubljana, Medical faculty, Department of Family Medicine, Ljubljana, Slovenia;

Ključne besede:
skeletno–mišični simptomi, bolečina, z zdravjem povezana kakovost življenja, prevalence, presečna raziskava.

Key words:
musculoskeletal symptoms, pain, health–related quality of life, prevalence, cross–sectional study.

Članek prispel / Received
04.07.2012
Članek sprejet / Accepted
16.10.2012

Naslov za dopisovanje / Correspondence
Zalika Klemenc–Ketis
Kersnikova 1, 3320 Velenje, Slovenija
Telefon +386 38963122
Fax +396 38963118
E–pošta
zalika.klemenc–ketis@uni–mb.si

Izvleček

Namen: *Namen raziskave je bil ugotoviti razširjenost mišično–skeletnih bolečinskih simptomov v reprezentativnem vzorcu slovenskih prebivalcev in ugotoviti dejavnike, povezane z njimi.*
Metode: *Izvedli smo opazovalno presečno raziskavo, ki je potekala v juniju 2011 na reprezentativnem vzorcu 1.002 naključno izbranih slovenskih državljanov, stratificiranem glede na spol in starost. Uporabili smo računalniško podprto metodo telefonskega anketiranja.*
Rezultati: *Vsaj en dan v preteklem mesecu je imelo 559 (55,7 %) prebivalcev mišično–skeletne simptome, 226 (22,5 %) pa vse dni v zadnjem mesecu. Višja starost, ženski spol, nižja izobrazba, nižji mesečni dohodek, iskanje laičnega nasveta, iskanje zdravniške pomoči, samozdravljenje, ljudje, ki so poročali o problemih z gibanjem,*

Abstract

Purpose: *The aim of this study was to determine the prevalence of 1 month musculoskeletal pain symptoms in a representative sample of the Slovenian general population and to determine factors associated with the symptoms.*
Methods: *We performed an observational cross–sectional study in June 2011 in a representative sample of 1,002 randomly selected Slovenian citizens, stratified according to gender and age, using a computer–assisted telephone interview method.*
Results: *At least 1 day in the past month, 559 participants (55.7%) experienced musculoskeletal symptoms; 226 participants (22.5%) experienced musculoskeletal symptoms everyday of the past month. Older age, female gender, lower education, lower monthly income, seeking lay*

težave pri samooskrbi, bolečine, težave pri dnevnih aktivnostih, tesnoba in/ali depresija, zaposlenost, upokojenci in prisotnost kronične bolezni so bili pogosteje povezani z dejstvom, da je bila mišično–skeletna bolečina prisotna v celotnem preteklem mesecu. V primerjavi z ostalimi v vzorcu so osebe z mišično–skeletnimi bolečinami pogosteje navajale težave z gibljivostjo in bolj pogosto poročali o prisotnosti bolečin.

Zaključek: *Kostno–mišični simptomi so zelo pogosti v slovenski splošni populaciji in predstavljajo velik javno–zdravstveni problem.*

advice, seeking medical advice, self–treatment, self–reported mobility problems, problems with self–care, pain, difficulties in daily activities, anxiety and/or depression, employment, retired, and a chronic disease were associated with the presence of musculoskeletal pain during the entire past month. When compared to the remainder of the sample, subjects with musculoskeletal pain had more often mobility problems and more often reported the presence of pain.

Conclusion: *Musculoskeletal symptoms are very common in the Slovenian general population and present a significant public health problem.*

INTRODUCTION

Musculoskeletal diseases are a significant public health problem worldwide, and are the most common cause of severe long–term pain and physical disability (1, 2). Previous studies have shown that the overall prevalence of musculoskeletal conditions in the general population is approximately 25% (3). It is estimated that osteoarthritis and low back pain affects approximately 10% of the general population (2–6), followed by soft tissue disorders (prevalence = 9%; 3) and inflammatory rheumatic disease (prevalence = 1%–3%; 1, 3, 7).

When managing musculoskeletal pain syndromes we should bear in mind that the prevalence of musculoskeletal disorders does not necessary reflect the proportion of the population that is actually suffering from pain, as the presence of musculoskeletal pain is frequently not related to organic disease (8, 9), as indicated by previous studies reporting a 15%–44% prevalence of current or chronic musculoskeletal pain (3, 7, 10–12). Furthermore, the prevalence of musculoskeletal pain appears to be on the rise, possibly due to increased reporting and awareness of such symptoms (9).

Musculoskeletal pain is associated with advanced age (3, 10, 12, 13), female gender (3, 10, 12, 13), completion of less education (13), lower social status (10), higher BMI (3), lower income (13), and a history of performing manual work (10, 13).

Musculoskeletal pain syndromes and related conditions are an important reason for seeking health care. In fact, nearly one–half of affected patients seek medical treatment (14), of which one–fourth visit a family physician (11). Another study showed that nearly all patients with at least 1 musculoskeletal symptom see a physician during the year; 1/5th of the patients see an orthopaedist, 10% see a physical therapist, and 6% see a rheumatologist (15). Factors, associated with a higher likelihood for consulting a family physician include mobility problems, urban living, and the intensity of the pain (14). In contrast, predictors of seeing a clinical specialist are higher education and having more co–morbidities (15).

In Slovenia, there is a lack of data on the prevalence of musculoskeletal pain among the general population. To date, studies have focused on the association between chronic low back pain, disability, and quality of life (2, 16), outcomes of physical therapy (17), and the effect of chronic conditions on health care utilization (18, 19). The aim of the current study was to

determine the prevalence of self–reported 1–month musculoskeletal pain in a representative sample of the Slovenian general population and to determine factors associated with musculoskeletal pain.

MATERIALS AND METHODS

The data presented herein were collected during a large observational cross–sectional study that took place in June 2011 in a representative sample of 1,002 randomly selected Slovenian citizens, stratified according to gender and age. We used a computer–assisted telephone interview (CATI) method to collect data (20). The questionnaire consisted of demographic questions (Table 1), questions about the prevalence and duration of preselected symptoms in the past month (muscle, joint, and low back pain) and questions about the presence of chronic diseases (defined as any disease present for > 6 months). The questionnaire also included an EQ–5D questionnaire (21) and the questions pertaining to health–seeking behaviour (self–treatment, seeking lay advice, and seeking medical advice; Table 1). The EQ–5D questionnaire assesses the health–related quality of life. The EQ–5D questionnaire consists of 5 items (problems with mobility, pain, problems with daily activities, problems with self–care, and the presence of anxiety and depression). Each item was answered on a 3–point scale (0 = no problems; 1 – minor problems; and 2 = major problems).

For the statistical analysis, we created new dichotomous variables from the EQ–5D questions, as follows: respondents who answered "no" were assigned to the "no problems group;" and the other respondents were assigned to the "problems group." Additionally, we created a new variable (musculoskeletal pain), which included the following variables: muscle pain; joint pain; and low back pain. Based on a variable that measured the duration of symptoms in 1 month (measured in days), we designated a higher quartile of the days as a cut–point (in all cases > 30 days) and formed new variables (suffering from muscle, joint, low back, and musculoskeletal pain throughout the month). We performed a descriptive analysis, bivariate analysis (independent t–test and chi–square test), and multivariate analysis (logistic regression), in which we included all variables that proved significant in bivariate analysis. For other statistical tests, we set the limit for statistical significance at a $p < 0.05$.

We obtained ethical approval from the Slovenian National Ethics Committee (No. 105/04/09).

RESULTS

Of 1002 people in the sample, 490 (48.9%) were men (Table 1). The average age ± standard deviation (SD) of the sample was 46.6 ± 18.2 years.

Musculoskeletal symptoms at least 1 day in the past month were reported by 559 (55.7%) participants, of whom 226 (40.4%) reported having musculoskeletal symptoms everyday in the past month. The prevalence of musculoskeletal pain everyday of the past month was reported by 226 (22.5%) of the entire sample.

Based on bivariate analysis, the elderly (57.8 + 17.3 years)were shown to have musculoskeletal pain throughout the past month significantly more often when compared to younger participants (43.4 ± 17.2 years, $p < 0.001$). Other factors that were shown to be associated with musculoskeletal pain everyday of the past month were female gender, lower education, lower monthly income, seeking lay advice, seeking medical advice, self–treatment, self–reported mobility problems, problems with self–care, pain, difficulties in daily activities, anxiety and/or depression, employment, retired, and a chronic disease (Table 1).

Based on multivariate analysis, the following factors were independently associated with the presence of musculoskeletal pain everyday of the past month: seeking medical help; mobility problems; and the presence of pain reported on the EQ–5D questionnaire (Table 2).

DISCUSSION

Musculoskeletal symptoms are very common in the Slovenian general population, with > 50% suffering from a musculoskeletal syndrome in the past month and one–fifth symptomatic everyday of the past month, which is in agreement with the findings from other studies (3, 7, 10–12). Older age, female gender, lower education, lower monthly income, seeking lay

Table 1. *Demographic characteristics of the sample and their associations with musculoskeletal pain everyday of the past month*

Characteristic	N (%) of the sample	N (%) of the sample with musculoskeletal pain everyday of the past month	p value
Gender			
Male	490 (48.9)	91 (18.6)	
Female	512 (51.1)	134 (26.2)	0.004
Education			
Secondary or higher	687 (68.6)	136 (19.8)	
Lower than secondary	315 (31.4)	90 (28.6)	0.003
Monthly income			
950 EUR or more	546 (54.5)	83 (15.2)	
Less than 950 EUR	456 (45.5)	142 (31.1)	< 0.001
Seeking lay advice			
Yes	372 (37.1)	120 (32.3)	
No	412 (41.1)	105 (25.5)	0.040
Seeking medical help			
Yes	410 (40.9)	167 (40.7)	
No	375 (37.4)	59 (15.7)	< 0.001
Self–treatment			
Yes	536 (53.5)	194 (36.2)	
No	249 (24.8)	31 (12.4)	< 0.001
Mobility problems			
Yes	228 (22.7)	138 (60.5)	
No	775 (77.3)	87 (11.2)	< 0.001
Problems with self–care			
Yes	35 (3.5)	21 (60.0)	
No	968 (96.5)	205 (21.2)	< 0.001
Pain			
Yes	290 (29.0)	156 (53.8)	
No	711 (70.9)	70 (9.8)	< 0.001
Difficulties in daily activities			
Yes	128 (12.8)	80 (62.5)	
No	874 (87.2)	146 (16.7)	< 0.001
Anxiety/depression			
Yes	150 (15.0)	65 (43.3)	
No	850 (84.8)	159 (18.7)	< 0.001
Employed			
Yes	573 (57.1)	71 (12.4)	
No	430 (42.9)	154 (35.9)	< 0.001
Unemployed			
Yes	96 (9.6)	18 (18.8)	
No	906 (90.4)	207 (22.8)	0.440
Retired			
Yes	312 (31.1)	130 (41.7)	
No	690 (68.9)	95 (13.8)	< 0.001
Chronic condition			
Yes	322 (32.1)	131 (40.7)	
No	681 (67.9)	94 (13.8)	< 0.001

Table 2. *Multivariate analysis* for self–reported musculoskeletal pain everyday of the past month*

Dependent variable	Independent variables	eB	95% C.I. for eB	p value
Self–reported musculoskeletal pain	Higher age	1.015	0.997–1.033	0.105
	Female gender	0.948	0.632–1.423	0.797
	Chronic disease	1.022	0.654–1.599	0.923
	Lower education	1.101	0.725–1.672	0.651
	Lower monthly income	0.904	0.593–1.378	0.638
	Seeking lay advice	1.065	0.708–1.601	0.763
	Seeking medical help	1.842	1.197–2.835	0.006
	Self–treatment	1.398	0.833–2.347	0.204
	Mobility problems	3.947	2.561–6.082	< 0.001
	Problems with self–care	1.980	0.679–5.777	0.211
	Pain	3.108	2.035–4.746	< 0.001
	Difficulties in daily activities	1.386	0.802–2.397	0.242
	Anxiety/depression	1.338	0.818–2.188	0.246
	Employed	1.027	0.526–2.006	0.937
	Retired	1.178	0.542–2.562	0.679

** Nagelkerke R2 = 0.420, Chi–square = 270.665, p < 0.001*

advice, seeking medical advice seeking, self–treatment, self–reported mobility problems, problems with self–care, pain, difficulties in daily activities, anxiety and/or depression, employment, retired, and a chronic disease were shown to be associated with musculoskeletal pain throughout the entire past month. After adjusting for demographic variables, we demonstrated that participants with musculoskeletal pain syndromes throughout the entire past month, when compared to the rest of the sample, more often had mobility problems and more often reported the presence of pain. These findings and correlates with patient characteristics, such as advanced age (3, 10, 12, 13), female gender (3, 10, 12, 13), lower education (13), and lower income (10, 13) in Slovenian citizens confirm the results from studies in other countries. Also, more frequently seeking medical help is in agreement with previous findings (11, 14) and clearly points to an area of future educational activities in family medicine (22). Musculoskeletal problems in general do not cause early mortality, but through disability and persistent pain seriously affect health–related quality of life in such patients (1, 16). This was also indirectly confirmed in the current study as mobility problem were independently associated with the presence of musculoskeletal pain. It also appears that such patients do not feel capable of self–managing their symptoms. Specifically, self–medication and seeking lay advice were not important independent factors associated with musculoskeletal pain. In fact, the only factor important in illness behaviour of such people was seeking medical help. Thus, the need exists for greater attention from family physicians in managing pain and in caring for a better quality of life in such patients.

The main strengths of our study, which is one of few epidemiologic studies on musculoskeletal problems in Slovenia, were the large sample, proven methodology (20) and the representative sample according to demographic features (23). Therefore, we can generalize the results of our study to the entire Slovenian population. Our study also had some limitations. The main limitation was the fact that this study was performed

in only one country, and therefore the generalizability of the findings to other countries should be done with caution. Another limitation was the self–reporting of the presence of musculoskeletal symptoms, which could not be verified using other methods. A cross–sectional methodology of the study did not allow us to draw causal relationships.

CONCLUSIONS

This study emphasizes the fact that musculoskeletal pain is a significant public health problem in the general population. Musculoskeletal pain inadvertently affects the work of family physicians as people suffering from musculoskeletal pain everyday of the past month more often require medical help. Further studies are needed to address chronic musculoskeletal pain among the general population and the effect on illness behaviour.

ACKNOWLEDGEMENTS

We acknowledge all Slovenian citizens who took part in the survey with appreciation.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

REFERENCES

1. Woolf Ad, Pfleger B. Burden of major musculoskeletal conditions. Bull World Health Organization 2003; 81: 646–56.
2. Klemenc–Ketis Z. Predictors of health–related quality of life and disability in patients with chronic non–specific low back pain. Zdrav Vest 2011; 80: 379–85.
3. Salaffi F, De Angelis R, Grassi W; Arche P. Pain Prevalence; Investigation group (MAPPING) study. Prevalence of musculoskeletal conditions in an Italian population sample. Results of a regional community–based study. I. The MAPPING study. Clin Exp Rheumatol 2005; 23: 819–28.
4. Picavet HSJ, Hoeymans N. Health related quality of life in multiple musculoskeletal diseases: SF–36 and EQ–5D in the DMC3 study. Ann Rheum Dis 2004; 63: 723–9.
5. Cardiel MH, Rojas–Serrano J. Community based study to estimate prevalence, burden of illness and help seeking behaviour in rheumatic diseases in Mexico City. A COPCORD study. Clin Exp Rheumatol 2002; 20: 617–24.
6. Carmona L, Ballina J, Gabriel R, Laffon R. The burden of musculoskeletal diseases in the general population of Spain: results from a national survey. Ann Theum Dis 2001; 60: 1040–5.
7. Picavet HSJ, Hazes JMW. Prevalence of self reported musculoskeletal diseases is high. Ann Rheum Dis 2003; 62: 644–50.
8. Hagen K, Linde M, Heuch I, Stovner LJ, Zwart JA. Increasing prevalence of chronic musculoskeletal complaints. A large 11–year follow–up in the general population (HUNT 2 and 3). Pain Med 2011; 12: 1657–66.
9. Harkness EF, Macfarlane GJ, Silman AJ, McBeth J. Is musculoskeletal pain more common now than 40 years ago? Two population–based cross–sectional studies. Rheumatology 2005; 44: 890–5.
10. Bergman S, Herrström P, Högström K, Petersson IF, Svensson B, Jacobsson LT. Chronic muscu-

loskeletal pain, prevalence rates, and sociodemographic associations in a Swedish population study. J Rheumatol 2001; 28: 1369–77.
11. Nakamura M, Nishiwaki Y, Ushida T, Toyama Y. Prevalence and characteristics of chronic musculoskeletal pain in Japan. J Orthop Sci 2011; 16: 424–32.
12. Slim ZN, Chaaya M, Habib RR, Aravssi T, Uthman I. High burden of musculoskeletal conditions: a problem that has only recently come to recognition. Chronic Illn 2011; 7: 311–20.
13. Cimmino MA, Ferrone C, Cutolo M. Epidemiology of chronic musculoskeletal pain. Best Pract Res Clin Rheumatol 2011; 25: 173–83.
14. Thorstensson CA, Gooberman–Hill R, Adamson J, Williams S, Dieppe P. help–seeking behaviour among people living with chronic hip or knee pain in the community. BMC Musculoskeletal Disorders 2009; 10: 153.
15. Cisternas MG, Yelin E, Katz JN, Solomon DH, Wright EA, Losina E. Ambulatory visit utilization in a national, population–based sample of adults with osteoarthritis. Arthritis Rheum 2009; 61: 1694–703.
16. Klemenc–Ketis Z. Disability in patients with chronic non–specific low back pain: validation of the Slovene version of the Oswestry Disability Index. Zdrav Var 2011; 50: 87–94.
17. Klemenc–Ketis Z. Outcomes of physical therapy in patients with chronic low back pain. Acta Medico–Biotechnica 2010; 3: 43–51.
18. Kersnik J, Svab I, Vegnuti M. Frequent attenders in general practice: quality of life, patient satisfaction, use of medical services and GP characteristics. Scan J Prim Health Care 2001; 19: 174–7.
19. Kersnik J, Kuralt M. Are frequent attenders also heartsink patients? Acta Medico–Biotechnica 2008; 1: 45–51.
20. Groves RM, Biemer PP, Lyberg LE, eds. Telephone survey methodology. New York: John Wiley and Sons; 2001.
21. Kind P, Dolan P, Gudex C, Williams A. Variations in population health status: results from a United Kingdom national questionnaire survey. BMJ 1998; 316: 736–41.
22. Kersnik J, Car J, Švab I. Management of chronic low back pain in family practice. Zdrav Var 2005; 44: 193–198.
23. Statistical Office of the Republic of Slovenia. 2011 [cited 2011December 6]. Available from: http://www.stat.si/.