

Original article

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Frequent attenders in occupational health primary care: a cross-sectional study

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Abstract

Aims: This study characterizes frequent attenders in primary care provided by occupational health services (OHS) in Finland.

Methods: This is a nationwide cross-sectional study using medical record data from an OHS provider in 2015. Frequent attenders were defined as persons who were within the top decile of annual visits to healthcare professionals (frequent attender 10%, FA10) at any of the OHS's 37 stations. FA10 within this study consulted the OHS primary care unit 8 or more times during 2015. We used logistic regression to analyze factors associated with frequent attendance in OHS primary care. The independent variables were age, gender, employer size and industry, health professionals visited and diagnoses given during visits to OHS. The dependent variable was belonging to the FA10 group.

Results: Altogether 31 960 patients met the inclusion criteria and were included in the study. FA10 included 3 617 patients, who conducted 36% of visits to healthcare professionals. The findings indicate that working within the manufacturing industry, health and social services or public administration and being employed in medium or large companies are associated with frequent attendance. Frequent attendance was also associated with being female, diagnoses of the musculoskeletal system or mental and behavioral disorders. In particular, depressive episodes and anxiety were associated with FA10.

Conclusions: This research characterized FA10 clients at a Finnish OHS. Illnesses of the musculoskeletal system and mental and behavioral disorders were accentuated among FA10. The stability of the FA10 group, along with their sickness absences and work disabilities should be investigated further.

Key Words:

frequent attender, frequent attendance, occupational health services, primary care, employee, healthcare utilization, working age

Background

Frequent attendance is widely recognized throughout health care systems internationally. Frequent attenders are often defined according to a chosen cut-off in consultation frequency or according to a fixed number of visits although the definitions vary between studies.^{1,2} They constitute a substantial proportion of visits to the physician – internationally the top 3% and top 10% of visitors make up to 15% and 40% of all face-to-face visits respectively and contribute a substantial proportion of healthcare costs.^{3,4} In Finnish frequent attendance studies in the private sector the top 5% of visiting clients used 40% of the costs and in specialized health care 15% of clients used 70% of the expenditure.^{5,6}

Because of the burden on the health care system, much research has recently been conducted on frequent attenders. However, studies have focused on general practice, specialized care or emergency services, and no research has been conducted on the working population attending occupational health care services (OHS).^{1,7,8} Research suggests that frequent attendance is linked to higher costs in both primary and specialized care but also to lower quality of life and worse self-perceived health.⁸⁻¹⁰ Frequent attenders are often chronically ill with multiple conditions, are prone to injuries and often have medically unexplained physical symptoms (MUPS) and ill-defined pathophysiology such as chronic pain.^{1,4,6,11,12} In addition mental disorders such as anxiety and depression are often present and when further examination is conducted on already examined frequent attenders, untreated depression and anxiety can be found.^{4,13} In studies on the general population frequent attendance has been associated with unemployment.^{1,14} Due to the beneficial health effects of employment it is crucial to examine occupational health (OH) frequent attenders as a separate group.¹⁵ As this heterogeneous group of patients appears to be vulnerable and burdened with multiple problems their services should be carefully planned and special attention should be paid to careful diagnostics.

Coordination of care and identifying FAs is particularly challenging in Finland, as the country has three different healthcare sectors in which primary care is provided: firstly, public or municipal, funded by the state with service fee; secondly, occupational health, funded mostly by employers (approximately 80-85%); and thirdly, private, funded by the individual and partly subsidized by the state. OHS coverage including prevention of occupational health hazards is legislated. In addition, most employers voluntarily purchase primary health care services from the OHS, which is currently available to 90% of Finland's workforce.¹⁶ Employees of organizations that have purchased OHS primary care services can use these services for free. The goal of OHS is to foster employee health and prevent working disability and OHS strive to find cost effective ways to fulfill this aim. It has been previously noted that chronic illnesses affecting working ability are associated with visiting OHS primary care.¹⁷ Categorizing patients in terms of contacts with OHS and diagnoses, for example through medical records would allow for directing resources and preventive measures to chosen patient groups.¹⁸ This would also allow investigating and managing possible underlying and unnoticed reasons for repetitive contacts.¹⁹⁻²¹ Interventions aimed at frequent attenders have achieved promising effects in management of depression, reducing visits and improving Quality of Life (QoL).¹⁹⁻²¹ To date, this categorization within OHS has not been possible, as primary care frequent attenders may use different health care professionals without being identified for more detailed follow up, and no studies have been conducted on frequent attenders in occupational health primary care in Finland or elsewhere.

Our study aims to characterize frequent attenders in OHS primary care and to explore how frequent attenders in private OHS differ from non-frequent attenders.

Methods

Setting and participants

This study was conducted using the register data of a large private Finnish OHS provider Pihlajalinna. Pihlajalinna had 37 OHS units around the country and altogether 68 370 registered OHS clients at the end of 2015. Pihlajalinna's clientele consists of a wide range of the working population around Finland from a variety of industries and lengths of employment history. In Pihlajalinna, as in other OHS, employees can use the services of occupational health nurses, physicians, physiotherapists and psychologists, all of whom usually are specialized in occupational health. Consultations with physiotherapists and psychologists are available after a referral from a nurse or physician. At each visit to a physician, the patient is evaluated and a diagnosis using ICD-10 is recorded. As part of protecting work ability, OHS can organize a confidential consultation between the employer, employee and the occupational health physician to discuss working ability (referred to as OH collaborative negotiation).

Data collection

Pihlajalinna extracted all data from 2015 on face-to-face primary care visits to physicians, nurses, psychologists and physiotherapists, consultations with other medical specialists, and OH negotiations held from electronic medical records and transferred these to a separate platform for pseudonymization. The pseudonymized data were sent to Tampere University Occupational Health Group for analysis. The data also contained demographic information including employee age and gender and size and main industry of the employer. No sampling was done.

The whole clientele consisted of 68 370 employees at the end of the year 2015. Of these 45 999 patients visited the OHS in 2015. The inclusion criteria were employees aged 18–68 years who had a comprehensive primary care plan and who had had at least one curative face-to-face contact with an OHS primary care unit in 2015. We excluded all visits that were general medical examinations, mandatory occupational safety examinations or not conducted face-to-face (telephone calls, prescription renewals). ICD-10 diagnoses were collected from visit data and only the first (i.e. the main) diagnosis recorded for the visit was considered in analysis.

Statistical analysis

We used the widely accepted definition of frequent attenders as the top decile of attenders (FA10).^{1,2} Data from all the visits to the above-mentioned professionals were used to determine the FA10 group. We examined the distribution of the dependent variable, FA10, in four age categories (18–34, 35–44, 45–54, 55–68), divided further by sex.

For the independent variables, of employer size, industry, and main diagnosis further categorization was done. Employers were divided to four groups according to the number of employees (micro 1–10, small 11–50, medium 51–250 and large >251 employees). Classification of industry was done according to Statistics Finland (TOL2008 / NACE Rev 2). The main diagnoses were categorized according to the chapter headings of ICD-10. From these, subgroups were defined in more detail based on the leading causes for disability pension and

sickness absence in Finland (for example depression, F32-F33) and linkage to frequent attendance in previous studies.^{4,12,13}

We compared the FA10 to the rest of the study population (referred to as non-frequent attender, non-FA). We used descriptive statistics to examine the number and distribution of visits between different professional groups, the distribution of diagnoses, attendance at OH collaborative negotiation, demographics, and data concerning the employer size and industry and FA10 status. Statistical significance was tested using the chi square -test. We used logistic regression analysis to test whether gender, age group, OH collaborative negotiation, employer size, industry and diagnosis group were independently associated with the dependent variable FA10. Diagnostic groups were analyzed as dummy variables (no/yes) and were adjusted for sex, industry and age (as a continuous variable). Odds ratios (OR) with 95% confidence intervals (CI) were determined. Team statistician NT conducted statistical analyses using IBM SPSS Statistics version 23. P values less than 0.05 were considered statistically significant.

Ethical considerations

The study was approved by Tampere University Hospital ethics committee (ETL R16041) and by the National Institute of Health and Welfare (THL/556/5.05.OO/2016). Individual consent is not required in Finland for large samples of register studies.

Results

Altogether 31 960 employees with mean age of 43 years visited OHS primary care during the study year and met the inclusion criteria. The mean number of visits was 3.7 per year per person and the top 10% (FA10) consulted the OH unit 8 or more times. FA10 (n = 3 617) accounted for 36% of all visits to the OHS primary care. Most consultations were with a physician (70%) and the rest were with a nurse, physiotherapist or psychologist (14%, 11% and 5% respectively). Although the entire dataset contained more men than women (n = 18 307, 57%), in FA10 the gender distribution was equal (male n = 1811, 50%). See table 1 for further descriptive data of FA10 vs. non-FA.

Table 1. Characteristics of frequent attender 10% (FA10) compared with non-frequent attender (non-FA) N = 31960

Characteristics	FA10		non-FA		p value
	n = 3 617		n = 28 343		
	n	(%)	n	(%)	
Sex					<0.001
Male	1 811	(50)	16 496	(58)	
Female	1 806	(50)	11 847	(42)	
Age					<0.001
18–34	840	(23)	8 307	(29)	
35–44	908	(25)	6 741	(24)	
45–54	983	(27)	7 654	(27)	
55–68	886	(25)	5 641	(20)	
Company size					<0.001
0–10	227	(6)	4 016	(14)	
11–50	862	(24)	8 049	(28)	
51–250	1 111	(31)	7 050	(25)	
>250	1 417	(39)	9 228	(33)	
Professionals visited in 2015					<0.001
Doctor	3 609	(100)	25 868	(91)	
Nurse	2 068	(57)	8 026	(28)	
Physiotherapist consultation	1 489	(41)	2 868	(10)	
Psychologist consultation	232	(6)	825	(3)	
Specialist consultation	901	(25)	2 224	(8)	
OH collaborative negotiation					<0.001
No	3 294	(91)	28 077	(99)	
Yes	323	(9)	266	(1)	
Industry					<0.001
Manufacturing	1 398	(39)	8 510	(30)	
Construction	124	(3)	1 706	(6)	
Wholesale and retail trade; repair of motor vehicles and motorcycles	313	(9)	3 214	(11)	
Transporting and storage	141	(4)	1 516	(5)	
Accommodation and food service activities	73	(2)	968	(3)	
Information and communication	119	(3)	1 421	(5)	

Professional, scientific and technical activities	183 (5)	1 680 (6)
Administrative and support service activities	78 (2)	1 002 (4)
Public administration and defence; compulsory social security	346 (10)	2 117 (8)
Human health and social work activities	433 (12)	2 584 (9)
Others	409 (11)	3 625 (13)

The results of the study are presented according to the latest industry classification system from 2008 that is based on the Statistical classification of economic activities according to NACE Rev 2.

The age distribution in FA10 group was fairly equal. More FA's were employed in medium or large employers than in micro and small organizations. FA10 were more often employed in the manufacturing industry, public administration and defence or human health and social work activities. FA10 consulted physiotherapists and psychologists more than non-FA. FA10 also used specialist consultations and OH collaborative negotiations extensively when compared with non-FA.

There was no linear association between age and FA10 (table 2). Women were more likely to be frequent attenders in OH primary care than men. OH collaborative negotiation and specialist visits, working in the manufacturing industry, public administration and human health and social work increased odds of belonging to FA10. Physiotherapist consultation and to a less extent psychologist consultation were also associated.

Table 2. Factors associated with frequent attender 10% (FA10) (adjusted for age, sex and industry where possible) N = 31960

Factor	Frequent attender 10% (FA10)	
	OR	95% CI
Sex		
Male	1.00	
Female	1.41	1.31 - 1.51
Age		
18-34	1.00	
35-44	1.07	0.93 - 1.26
45-54	0.84	0.65 - 1.08
55-68	0.86	0.61 - 1.22
OH collaborative negotiation	9.58	8.11 - 11.33
Professionals visited in 2015		
Specialist consultation	3.89	3.56 - 4.24
Nurse	3.43	3.19 - 3.68
Physiotherapist consultation	6.04	5.59 - 6.52
Psychologist consultation	2.12	1.82 - 2.47
Industry		
Manufacturing	1.65	1.53 - 1.78
Construction	0.64	0.53 - 0.77
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.74	0.66 - 0.84
Transporting and storage	0.78	0.65 - 0.93
Accommodation and food service activities	0.58	0.45 - 0.73
Information and communication	0.68	0.56 - 0.82
Professional, scientific and technical activities	0.88	0.75 - 1.03
Administrative and support service activities	0.63	0.50 - 0.80
Public administration and defence; compulsory social security	1.10	0.97 - 1.25
Human health and social work activities	1.18	1.05 - 1.32
Others	0.83	0.74 - 0.92

OR = Odds ratio, CI = Confidence interval, 1.0 = reference group in age and sex. In the analysis the other factors were used as dummy variables (No = reference group = 1.00).

The results of the study are presented according to the latest industry classification system from 2008 that is based on the Statistical classification of economic activities according to NACE Rev 2.

Mental and behavioral disorders and diseases of the musculoskeletal and connective tissue were associated with FA10 more than other ICD-10 chapters (table 3). Both mental and behavioral disorders and diseases of the musculoskeletal system increased the probability of being FA10 over four fold. In 2015 23% of FA10 had been diagnosed with a mental and behavioral disorder and 69% with disease of the musculoskeletal system, compared to 7% and 35% of non-FA respectively (data not shown). In addition, injuries and diseases of the nervous system stood out from the other ICD-10 chapters.

Table 3. Diagnoses associated with frequent attender 10% (FA10) (registered for physician consultations, adjusted for age, sex and industry) N = 29380

ICD-10		Number of FA10		Frequent attender 10% (FA10)	
		n	(%)	OR	95% CI
A00-B99	Certain infectious and parasitic diseases	480	(13)	2.43	2.18 - 2.71
C00-D48	Neoplasms	193	(5)	1.89	1.61 - 2.23
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	24	(1)	2.27	1.42 - 3.62
E00-E90	Endocrine, nutritional and metabolic diseases	199	(6)	1.52	1.29 - 1.78
F00-F99	Mental and behavioral disorders	838	(23)	4.34	3.96 - 4.76
G00-G99	Diseases of the nervous system	425	(12)	2.74	2.44 - 3.08
H00-H59	Diseases of the eye and adnexa	319	(9)	1.67	1.47 - 1.89
H60-H95	Diseases of the ear and mastoid process	365	(10)	2.15	1.90 - 2.43
I00-I99	Diseases of the circulatory system	461	(13)	1.82	1.63 - 2.03
J00-J99	Diseases of the respiratory system	2 105	(58)	2.47	2.30 - 2.66
K00-K93	Diseases of the digestive system	409	(11)	2.45	2.18 - 2.75
L00-L99	Diseases of the skin and subcutaneous tissue	566	(16)	2.18	1.97 - 2.41
M00-M99	Diseases of the musculoskeletal system and connective tissue	2 479	(69)	4.09	3.79 - 4.41
N00-N99	Diseases of the genitourinary system	339	(9)	2.31	2.03 - 2.63
O00-O99	Pregnancy, childbirth and the puerperium	16	(0)	1.45	0.84 - 2.50
P00-P96	Certain conditions originating in the perinatal	-	(0)	-	-
Q00-Q99	Congenital malformations, deformations and chromosomal abnormalities	14	(0)	2.51	1.35 - 4.64
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	1 036	(29)	2.92	2.69 - 3.17
S00-T98	Injury, poisoning and certain other consequences of external causes	1 093	(30)	3.11	2.87 - 3.38
V01-Y98	External causes of morbidity and mortality	39	(1)	1.70	1.19 - 2.42
Z00-ZZB	Factors influencing health status and contact with health services	359	(10)	2.12	1.88 - 2.40

OR = Odds ratio, CI = Confidence interval

The diagnostic groups were used as dummy variables (No = reference group = 1.00)

Specific chapters of ICD-10 were examined in more detail (table 4) to investigate the ICD-10 diagnoses associated with FA10 in more detail. The association of FA10 was most obvious with all mental and behavioral disorders. Depressive episodes increased the probability of being FA10 over six fold. In addition phobic and anxiety disorders, adjustment disorders and reactions to severe stress and bipolar disorders increased the odds of being FA10 over four fold. Illnesses of the back and spine and upper extremities and illnesses of the neck, cervical spine and tension headache increased the probability of belonging to FA10 over three fold.

Table 4. Diagnoses associated with frequent attender 10% (FA10) (registered for physician consultations, adjusted for age, sex and industry) N = 29380

Factor	Number of FA10		Frequent attender 10 % (FA10)	
	n	(%)	OR	95 % CI
Illnesses of the back and the spine	1 149	(32)	3.41	3.15 - 3.69
Illnesses of the neck, cervical spine and tension headache	562	(16)	3.51	3.16 - 3.91
Illnesses of the upper extremities	709	(20)	3.24	2.94 - 3.56
Brachial plexus disorders	19	(0.5)	6.25	3.34 - 11.69
Carpal tunnel syndrome	52	(1)	3.08	2.21 - 4.29
Illnesses of the lower extremities	578	(16)	2.75	2.48 - 3.05
Fibromyalgia	13	(0.4)	4.99	2.39 - 10.41
Nonorganic sleep disorders	254	(7)	3.44	2.94 - 4.01
Depressive episodes	272	(8)	6.39	5.41 - 7.55
Phobic and other anxiety disorders	211	(6)	5.14	4.30 - 6.16
Schizophrenia, psychotic and delusional disorders	6	(0.2)	8.13	2.46 - 26.84
Bipolar disorder	14	(0.4)	7.91	3.70 - 16.90
Reaction to severe stress and adjustment disorders	266	(7)	4.27	3.65 - 5.00
Burn-out	15	(0.4)	5.11	2.62 - 9.96
Other mental and behavioral disorders	330	(9)	3.93	2.95 - 5.24
Diabetes mellitus	63	(2)	1.27	0.96 - 1.66
Essential hypertension	221	(6)	1.40	1.20 - 1.63
Ischaemic heart diseases	17	(0.5)	1.85	1.08 - 3.18
Acute upper respiratory infections	1 797	(50)	2.58	2.40 - 2.77
Influenza, pneumonia and other acute lower respiratory inf.	661	(18)	2.39	2.17 - 2.63
Asthma and COPD	137	(4)	3.10	2.52 - 3.80
Gastroenteritis	251	(7)	2.79	2.40 - 3.24
Irritable bowel syndrome	37	(1)	2.24	1.54 - 3.25

OR = Odds ratio, CI = Confidence interval

The diagnostic groups were used as dummy variables (No = reference group = 1.00)

For the ICD-10 codes included in each group see table 5.

Discussion

This study found an association of FA10 with industry, public administration and human health and social services. We also found that FA10 are more often employed in medium and large organizations. These are novel findings not yet published elsewhere. The association of FA10 to musculoskeletal disorders, in particular that of back and neck and mental disorders was accentuated in this context. Given the link of these disorders to disability pensions in Finland, the findings suggest that frequent attenders in OHS primary care might be at risk of working disability.²²

Association of manufacturing with FA10 could be explained by manufacturing often being physically demanding and many employees having a low level of vocational education, which has been linked to frequent attendance previously.¹ In addition, the human health and social services, also linked to FA10 in this study, are often both physically and psychologically demanding and employees are predominantly women, which may contribute to the association.²³ Our finding that frequent attenders are more often employed in medium and large companies is interesting, and we can only speculate on the reasons behind it. One of these could be that large companies can afford to find replacement work for those with musculoskeletal disorders, whereas micro and small companies have more limited possibilities for shaping work around individuals' limitations.

In addition to the above factors, having attended an OH collaborative negotiation was associated with being FA10. OH collaborative negotiations are a unique feature of the Finnish OHS system, where negotiations are held when an employee's work ability is deemed to be at risk. These negotiations are often held when an employee is suffering from musculoskeletal or mental disorders, and the employees usually have prior sickness absence periods.²⁴ This suggests that at least some frequent attenders can be at risk of work disability, an issue that should be studied further.

Our study found association of musculoskeletal disorders with frequent attendance in OHS primary care similarly to previous studies in general practice context.^{2,9,12} A Swedish study of attendance in primary health care center found musculoskeletal disorders to be the most common diagnoses for frequent attender consultation in working age women and in men aged 45–64 years.¹² Our finding confirms this also for the working population in Finland. Musculoskeletal disorders are also the leading cause of sickness absence and disability pensions in Finland, again linking FA to potential disability.²⁵ In our study especially illnesses of the back and spine and illnesses of neck, cervical spine and tension headache were closely associated with FA10. Back pain has been associated with frequent attendance in primary care, and our study confirms this association.² Illnesses of the upper extremities had a stronger association with FA10 than illnesses of the lower extremities. We assume that diminished function or pain in the upper extremities affects work ability in most occupations of the employees included in this study more than that of lower extremities, which might explain this result. This result might be accentuated by the industries associated with frequent attendance as both manufacturing and human health and social services can be physically demanding. As musculoskeletal disorders are common with FA10, physiotherapists were extensively used in their care. In previous studies the association of frequent attendance with back pain and musculoskeletal disorders in general have been reported,

but our findings suggest that other musculoskeletal disorders are more closely associated with the phenomenon.^{2,12}

In addition to musculoskeletal disorders we found an increased probability of belonging to FA10 when diagnosed with mental and behavioral disorders. Similarly to previous studies, frequent attendance was associated with depression, anxiety and sleep disorders.^{4,26} Compared to a study in Spanish primary care, our findings suggest that anxiety disorders have a stronger association.²⁶ Reactions to severe stress and adjustment disorders also increased the probability of being FA10 in our study and association of frequent attendance and experienced stress and insufficient coping strategies has been perceived also in previous literature.²⁷ Some diagnostic groups, such as burn-out, schizophrenia and fibromyalgia are too small to draw any conclusions on their association with FA10. The association perceived with ICD-10 class R might be indicative of MUPS, connection also perceived in previous studies.⁴ It is alarming that although FA10 is associated with mental and behavioural disorders, psychologists are rather infrequently engaged in their care.

The top decile of attenders in OHS primary care made up to 36% of the visits. This is roughly in line with results from other settings.^{3,4} As FA10 comprised approximately 5% of the entire clientele of Pihlajalinnä it means that 5% of registered patients attend over one third of all consultations. As the employers mostly provide the services, it is crucial to study whether service use of this magnitude is a persistent phenomenon. If, as indicated by our research, certain characteristics are associated with persistent use of services the identification of these patients through electronic patient data and focusing resources to their care before their health problems lead them to frequent attendance should be explored. The top decile visited the OHS primary care 8 or more times during the year, the same number of visits that has been used in other studies as a cut off for frequent attendance.²⁸ We used visits to all OHS specialists to define the FA10-group which may affect the results by accentuating the illnesses that require use of physiotherapists and psychologists. However, in confirmatory analysis made with only physician appointments (data not included), the results remained fairly uniform with our initial analysis and the proportions were not altered. Similarly to other studies, being female was associated with FA, possibly as women tend to use services more than men.^{3,14} Age, however, had no linear association with FA10.

Our study has some limitations. The study population differs from other settings in terms of patient age and employment status, which might accentuate different factors from those in general practice setting. On the other hand this study offers unique insights to particularly this group, as our study includes participants from all industries and equally distributed age groups within the working age population and equal sex distribution, thus allowing for generalization outside this particular context. It is important to note that the working population may not have the most difficult illnesses, emphasizing less severe illnesses. The strengths of our study are the large sample and nationwide data. Though human error might affect individual results the size of the study dilutes this effect. For example, diagnostic codes were missing in only 1% of the sample. The gaps to our data include information on occupation and education, as it is not available in medical records. Parallel use of primary care services from other sectors is possible, but in a Finnish study 52% of all participants (not restricted to employees with primary care provided by the employer) consulted OHS as their sole primary care provider.²⁹ In this study we

did not have access to records from other healthcare providers. The cross-sectional retrospective study design limits the interpretation of causal relations. However this is the first study to characterize frequent attendance in OHS setting and provides unique information.

Conclusions

In OHS primary care frequent attendance was associated with female gender and medium or large employers, the manufacturing industry, public administration and human health and social services. In addition to these, frequent attendance in OHS primary care was closely associated with mental and behavioral or musculoskeletal disorders. As these are the leading causes of sickness absence and disability, this calls for further research on sickness absence and disability grants among OHS primary care frequent attenders. We suggest that OHS primary care units should screen frequent attenders especially when diagnosed with musculoskeletal and mental disorders to enable careful diagnostics and case management. In addition, the stability of frequent attendance in this context should be investigated.

Acknowledgements

The authors acknowledge the participation of the occupational health staff in the study and all the individual clients who are part of this study.

Declaration of Conflicting interest

The Authors declare that there is no conflict of interest.

Funding

This study is part of the “Effectiveness and Indicators of Occupational Health Services” supported by the European Social Fund [reference number S20659].

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Table 5 (additional information for table 4)

Diagnoses in table 4	ICD-10
Illnesses of the back and the spine	M40-M54
Illnesses of the neck, cervical spine and tension headache	G44.2, M43.3, M43.4, M43.5, M43.6, M47.8, M47.80, M50, M50.0, M50.1, M50.2, M50.3, M50.8, M50.9, M53, M53.0, M53.1, M53.3, M53.8, M54.2
Illnesses of the upper extremities	M18, M18.0, M18.1, M18.2, M18.3, M18.4, M18.5, M18.9, M65, M65.0, M65.1, M65.2, M65.3, M65.4, M65.8, M65.9, M70.0, M70.1, M70.2, M70.3, M75, M75.0, M75.1, M75.2, M75.3, M75.4, M75.5, M75.8, M75.9, M77.0, M77.1, M77.2,
Brachial plexus disorders	G54.0
Carpal tunnel syndrome	G56.0
Illnesses of the lower extremities	M16-M17, M20.1-M20.6, M23, M24.7-M24.8, M70.4-M70.7, M71.2, M72.2, M76; M77.3-M77.5, M79.4
Fibromyalgia	M79.7
Nonorganic sleep disorders	F51
Depressive episodes	F32-F33
Phobic and other anxiety disorders	F40-F41
Schizophrenia, psychotic and delusional disorders	F20-F29
Bipolar disorder	F31
Reaction to severe stress and adjustment disorders	F43
Burn-out	Z73.0
Other mental and behavioral disorders	F

Diabetes mellitus	E10-E14
Essential hypertension	I10
Ischaemic heart diseases	I20-I25
Acute upper respiratory infections	J00-J06
Influenza, pneumonia and other acute lower respiratory infections	J10-J22
Asthma and COPD	J44, J45, J46
Gastroenteritis	A09
Irritable bowel syndrome	K58