

THE PRESENCE OF ANXIETY AND DEPRESSION IN THE ADULT POPULATION OF FAMILY PRACTICE PATIENTS WITH CHRONIC DISEASES

PRISOTNOST ANKSIOZNOSTI IN DEPRESIJE V AKTIVNI POPULACIJI BOLNIKOV S KRONIČNIMI BOLEZNIMI

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Abstract

Background: The prevalence of multimorbidity in family practice is rising and psychiatric comorbidity presents a risk factor for premature mortality.

Objective: The aim of this study was to determine the prevalence of anxiety and depression in the adult population of family practice patients with chronic somatic diseases, aged between 18 and 64 years old.

Methods: We performed a cross sectional study in 500 consecutive patients from twelve family practices. Zung's self-assessment inventories for anxiety and depression were used to determine the presence of psychiatric comorbidity. The main outcome measures were depression and anxiety scores in patients with various comorbidities.

Results: The response rate was 90.4 %. 8.4 % of family practice visitors suffered from anxiety symptoms and 15.2 % from depressive symptoms. At least one chronic disease was present in 40.7 % of the patients. Significantly higher rates of depression and anxiety were found among patients with chronic somatic disease ($p=0.001$, $P<0.001$, respectively; χ^2 test) or chronic pain ($p<0.001$, $p<0.001$, respectively; χ^2 test). Significantly more patients with rheumatic diseases had depression in comparison to those without them ($p=0.018$; χ^2 test). Significantly more patients with migraine or rheumatic diseases had anxiety in comparison to those without them ($p=0.010$, $p=0.030$, respectively; χ^2 test). Chronic pain was present in significantly more patients with a particular chronic disease in comparison to the patients without it ($p<0.050$; χ^2 test).

Conclusions: Family doctors should actively search and treat psychiatric comorbidity also in the population of patients with chronic somatic diseases, aged between 18 and 64 years old.

Key words: family practice, anxiety, depression, chronic disease, pain

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Izveleček

Izhodišča: Pogostnost prisotnosti več sočasnih bolezni pri bolnikih v ambulantah družinske medicine narašča. Prisotnost psihiatričnih sočasnih bolezni pri bolnikih s kroničnimi boleznimi pa je dejavnik tveganja za prezgodnjo umrljivost.

Cilji: Cilj te raziskave je bil ugotoviti pogostnost anksioznosti in depresije med odraslo aktivno populacijo (starost med 18 in 64 let) s pridruženimi kroničnimi boleznimi v ambulantah družinske medicine.

Metode: Narejena je bila presečna raziskava na vzorcu 500 zaporednih obiskovalcev 12 ambulant družinske medicine. Za ugotavljanje prisotnosti anksioznosti in depresije sta bila uporabljena v slovenščino prevedena Zungova vprašalnika o anksioznosti in depresiji.

Rezultati: Odzivnost bolnikov je bila 90,4 %. Anksioznost je bila prisotna pri 8,4 % bolnikov, depresija pa pri 15,2 % bolnikov. 40,7 % bolnikov je imelo vsaj eno kronično bolezen. Depresija in anksioznost sta bili prisotni pri statistično značilno večjem številu bolnikov s pridruženimi kroničnimi boleznimi glede na bolnike brez kroničnih bolezni ($p=0.001$, $p<0.001$; zaporedno; test χ^2) in s pridruženo kronično bolečino glede na bolnike brez kronične bolečine ($p<0.001$, $p<0.001$; zaporedno; test χ^2). Statistično značilno več bolnikov z revmatsko boleznijo glede

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na bolnike brez le-tega je imelo prisotno depresijo ($p=0.018$; test χ^2). Statistično značilno več bolnikov z migreno oziroma revmatičnim obolenjem v primerjavi z bolniki brez teh bolezni je imelo prisotno anksioznost ($p=0.010$, $p=0.030$; zaporedno; test χ^2). Kronična bolečina je bila prisotna pri statistično značilno večjem številu bolnikov z določeno kronično boleznijo v primerjavi s tistimi brez nje ($p<0.050$; test χ^2).

Zaključki: Zdravniki družinske medicine naj aktivno iščejo in zdravijo pridružene psihiatrične bolezni tudi med aktivno populacijo bolnikov s kroničnimi boleznimi.

Ključne besede: družinske medicina, anksioznost, depresija, kronična bolezen, bolečina

1 Introduction

Family medicine differs from other medical disciplines in several ways, such as having a unique consultation process, which establishes a relationship over time, having a responsibility for the provision of longitudinal continuity of care, and providing a simultaneous management for both acute and chronic health problems of individual patients (1). Chronic conditions represent a large proportion of family doctors' workload (2-4). Also, the prevalence of multimorbidity in family practice patients is quite high (2, 5) and increases significantly with age in both men and women (2). Individuals with 4 or more chronic conditions are 99 times more likely to have incurred a hospitalization that could have been prevented with appropriate family practice care (6).

Among persons with chronic diseases psychological distress can intensify the effect of illness by increasing pain, functional limitations and disability, and by decreasing adherence to medical treatment protocols, all of which may lead to difficult clinical courses, such as poorer health outcomes and increased risks of complications (2, 5). Although psychiatric disorders account for almost a quarter of family practice attendees (7, 8), around 60 % of depressed patients in family practice are left unidentified and untreated (9). Depression and anxiety account for a great part of all psychiatric diseases in family practice and they are associated with each other in 50 to 70 % of the patients (10).

Somatic complaints are a risk factor for the development of depressive disorders (11-13). According to the findings of previous research up to 20 % of patients with chronic somatic disease suffer from major depression (14). At the same time, presence of mental disorder negatively impacts the prognosis of somatic diseases and vice versa (11, 15). Depressed patients have double mortality rate as compared to not depressed patients (16).

Untreated mental disorder deteriorates health status of the patients with time and affects working efficiency, quality of life, interpersonal relationships and other

medical conditions. Major depression, for example, is the fourth leading illness causing functional impairment, disability, and days lost from work (17). Depression is associated with reduced quality of life and functioning in a number of domains, including social, physical, self-care, work, and productivity (18). Furthermore, comorbid psychiatric disorders amplify the disability normally associated with many medical conditions (19-21) and worsen health status of those patients (22).

Despite the high prevalence of multimorbidity in family practice our knowledge about the relationship between medical multimorbidity and psychological distress is still relatively weak. This is especially true for the patients that are still working. The aim of our study was therefore to determine the prevalence of anxiety and depression in the adult population of primary care patients with chronic physical conditions, aged between 18 and 64 years old.

2 Methods

2.1 Type of study

We performed a prospective cross sectional study in 12 Slovenian family practices, located in Primary Health Care Centre Kranj. This centre provides primary health care services for 76,000 people.

We got an approval of the National Ethic Committee.

2.2 Study population

500 consecutive patients, who visited their family doctors in July 2005, were included in the study. We included male and female patients, aged from 18 to 64 years old (mostly economically active population). Patients, younger than 18 years old and older than 64 years old were excluded.

2.3 Data collection

Patients were approached by a nurse practitioner in the waiting room of their chosen family doctor's

practice. She explained the purpose and methods of the research and obtained their voluntary written approval. Afterwards they were given a self-rating questionnaire to fulfill it anonymously. They posted it back to the research unit.

For the assessment of depressive and anxious symptoms we used the Zung's self-rating depression scale (23) and the Zung's self-rating anxiety scale (24). Each scale consists of 20 depression-related (or anxiety-related) questions. All questions had to be answered according to 4 statements (most of the time/always – scored 4, often – scored 3, sometimes – scored 2 and never/rarely – scored 1). The composite score can range from minimal 20 points to maximal 80 points. The depression (or anxiety) is present if the composite score is 50 or more. Both questionnaires were translated from English to Slovene in accordance to translation standards.

Attached to both questionnaires was a sheet with questions about patients' sex, age, marital (married, divorced, widowed, single) and employment status (employed, unemployed, retired), the presence of chronic pain (defined as pain that lasts for more than one year), the level of chronic pain in the last two weeks, and the presence of physical comorbidity (defined as a chronic disease that lasts for more than one year). Patients could choose various psychological conditions from the list, containing the following chronic diseases: heart diseases, chronic obstructive pulmonary disease, bronchial asthma, post-stroke condition, cancer, rheumatic disease, migraine, high blood pressure, diabetes mellitus, and chronic gastritis. Patients marked level of chronic pain on a 10-point Visual Analog Pain Scale (VAS) (25), ranging from 0 (no pain) to 10 (the worst pain imaginable).

2.4 Statistical analysis

We used the SPSS 13.0 package (SPSS Inc, Chicago, IL, USA). Descriptive statistics were computed. We calculated the reliability coefficient (Cronbach's alpha) of the questionnaires. To identify the statistically significant differences between different variables independent samples t-test and χ^2 test were performed. P value < 0.05 was considered statistically significant.

3 Results

3.1 Demographic data

The participants returned 452 questionnaires (90.4 % response rate). Out of that, 277 (61.3 %) were female.

Mean (SD) age of the respondents was 44.2 (11.2). The majority of them were married (299; 66.2 %), others were single (90; 19.9 %), divorced (49; 10.8 %) or widowed (14; 3.1 %). Most of them finished high school (202; 44.7 %), following by university degree (100; 22.1 %), vocational school (94; 20.8 %) or primary school (53; 11.7 %). Most of the respondents were employed (346; 76.5 %) and others were retired (66; 14.6 %) or unemployed (40; 8.8 %).

3.2 Depression

The mean (SD) score on the Zung's depression scale was 38.0 (10.1) points. The total scores were ranging from 20 to 68 points. The reliability of the questionnaire was very good (Cronbach's alpha was 0.896). The depression was present in 69 (15.2 %) of the respondents. Significantly higher rate of depression was found in women than men, in older than 45 years old, in patients with only primary school education, in patients with chronic condition, and in patients with chronic pain (Table 1).

3.3 Anxiety

The mean (SD) score on the Zung's anxiety scale was 37.0 (13.7) points. The reliability of the questionnaire was very good (Cronbach's alpha was 0.853). The depression was present in 38 (8.4 %) of the respondents. Significantly higher rate of anxiety was found in the patients with only primary school education, in patients with chronic condition, and in patients with chronic pain (Table 2).

3.4 Chronic pain

Chronic pain was present in 250 (55.3 %) of patients. Mean (SD) of VAS score was 3.4 (3.4). 38.3 % of men and 42.4 % of women had chronic pain. The difference was not statistically significant. Chronic pain was more often present in older patients (47.5 (10.7) vs. 41.9 (11.1); $p < 0.001$; t-test). Also, patients, 45 years old and older had significantly higher scores on VAS scale (3.9 (3.3) vs. 2.8 (3.5); $p < 0.001$; t-test). Chronic pain was significantly more often present in patients with primary and vocational education in comparison to patients with high and university education (72.6 % vs. 59.9 %; $\chi^2 = 7.892$; $p = 0.006$; χ^2 test), in unemployed and retired patients in comparison to employed ones (89.7 % vs. 75.6 %; $\chi^2 = 14.685$; $p < 0.001$; χ^2 test). Patients with primary school education had significantly higher scores on VAS scale than others (5.0 (3.5) vs. 3.2 (3.4); $p < 0.001$, t-test). The same was also true for the patients with primary and vocational school in comparison to

Table 1. *Percentages of the patients with depression by their characteristics. χ^2 test was performed.*
 Tabela 1. *Delež bolnikov z depresijo, glede na njihove značilnosti (test χ^2).*

Characteristic	Depressed patients (%)	χ^2 value	p value
Sex (male vs. female)	10.9 vs. 18.1	4.290	0.044
Age (< 45 vs. 45 years old)	11.3 vs. 18.8	4.803	0.036
Marital status (married vs. other)	15.4 vs. 15.0)	0.010	1.000
Education (primary school vs. other)	34.0 vs. 12.6)	16.558	< 0.001
Employment status (employed vs. other)	14.7 vs. 13.6	0.054	1.000
Chronic condition (present vs. not present)	21.7 vs. 10.5	10.771	0.001
Chronic pain (present vs. not present)	23.2 vs. 5.4	27.227	< 0.001

Table 2. *Percentage of the patients with anxiety by their characteristics. χ^2 test was performed.*
 Tabela 2. *Delež anksioznih bolnikov glede na značilnosti (test χ^2).*

Characteristics	Anxious patients (%)	χ^2 value	p value
Sex (male vs. female)	5.7 vs.10.1	2.689	0.118
Age (< 45 vs. 45 years old)	5.7 vs. 10.8	3.912	0.061
Marital status (married vs. other)	8.4 vs. 8.5	0.002	1.000
Education (primary school vs. other)	7.1 vs. 18.9	8.398	0.008
Employment status (employed vs. other)	7.2 vs. 12.1	1.803	0.213
Chronic condition (present vs. not present)	14.1 vs. 4.5	13.109	< 0.001
Chronic pain (present vs. not present)	14.8 vs. 0.5	29.691	< 0.001

others (4.5 (3.4) vs. 2.9 (3.3); $p < 0.001$; t-test). Chronic pain was present in significantly more patients with a particular chronic disease in comparison to the patients without it (Table 3).

3.5 Chronic diseases

At least one chronic disease was present in 184 (40.7 %) of the patients. One chronic disease was present in 123 (27.3 %) of the patients, two in 48 (10.6 %) of the patients, three in 9 (2.0 %) of the patients, and four in 4 (0.9 %) of the patients. Chronic diseases were more present in older patients (47.5 (10.7) vs. 41.9 (11.1); $p < 0.001$; t-test). Significantly more patients with primary and secondary school had at least one chronic disease in comparison to the patients with high school and university education (72.6 % vs. 59.9 %; $\chi^2 = 7.892$; $p = 0.006$; χ^2 test). Significantly more unemployed and retired patients had at least one chronic disease

present in comparison to employed patients (89.7 % vs. 75.6 %; $\chi^2 = 14.685$; $p < 0.001$, χ^2 test). Significantly more patients with chronic pain had at least one chronic disease in comparison to the patients without chronic pain (100 % vs. 0 %; $\chi^2 = 451.000$; $p < 0.001$; χ^2 test). No differences were found according to patients' sex.

The following number and percentage of patients had various chronic diseases: migraine (53; 11.7 %), rheumatic disease (47; 10.4 %), bronchial asthma (29; 6.4 %), chronic obstructive pulmonary disease (26; 5.8 %), cancer (19; 4.2 %), cardiovascular diseases (20; 4.4 %), diabetes mellitus (11; 2.4 %), high blood pressure (11; 2.4 %), gastritis (5; 1.1 %), chronic post-stroke condition (4; 0.9 %), and other (38; 8.4 %). Significantly more patients with rheumatic diseases had depression in comparison to those without them (table 3). Significantly more patients with migraine or rheumatic diseases had anxiety in comparison to those without them (Table 3).

4 Discussion

We found high rates of depressed patients and patients with anxiety disorders which are in line with other studies (8, 26-28). The demographic factors, found to be associated with a greater prevalence of both mental disorders, are also in line with other studies (12, 28-30).

The rates of both mental disorders in patients with chronic somatic diseases were lower as in other studies (14, 31). Reasons for this difference could be three. Firstly, our study took place in July. It is known that the prevalence of depression and anxiety depends on the season; the so-called seasonal affective disorders are more often present in wintertime (32). Secondly, the depression and anxiety prevalence are known to vary by geography (8). And thirdly, our study had deliberately focused on the patients between 18 and 64 years old. It is known that the prevalence of both diseases is higher in older age (33, 34).

Still, a considerable number of patients with a particular chronic disease scored positive for depression or anxiety. Cancer patients showed as high depression rate as 31.6 %, which is in line with the findings of previous research, that 50 % of women with breast cancer in the first year after the first diagnosis develop depressive or anxiety disorder (35). Depression is one of the most prevalent comorbid conditions in migraine patients (36), a fact that was confirmed also in our study. Asthma and mental disorders are in the highlights of research community as asthma exerts higher rates of anxiety, which in vulnerable individuals evolves into panic attacks. We demonstrated a higher number of depressed patients in asthmatics, but we could not demonstrate four times higher prevalence of anxiety in asthma patients, found in other studies (37). We could demonstrate high rates of depression and anxiety in patients with rheumatic diseases as well in stroke patients, which is also in line with other studies (11). An important finding of our study are significantly higher rates of depression in rheumatic patients, and of anxiety in rheumatic patients and patients with migraine, when compared to the patients without those diseases. This is also in concordance with other studies, which revealed rheumatic diseases and migraine to be positively associated with both mental diseases (20, 38, 40).

The prevalence of depression and anxiety was significantly higher in patients suffering from chronic pain as compared to other patients, which is in line with the findings of other authors (13, 40-43). Moreover, the presence of each particular chronic somatic disease

was significantly connected with the presence of chronic pain. This finding points out to an ineffective management of chronic pain in family practice. Considering the fact, that chronic untreated pain might provoke the development of depression (44-46), it is of a huge importance that family doctors actively search for the presence of chronic pain in their patients with chronic diseases and effectively treat the pain.

This study is one of very few in the field of interrelation of medical and psychiatric comorbidity in the population, aged between 18 and 64 years old. Special merits of the study are high response rate, prospective design, broad range of physical complaints, and inclusion of two most prevalent psychiatric disorders in family practice and use of validated instruments for self-evaluation, thus excluding possible biases of the interviewer. Selection of a relatively neglected age group from 18 to 64 years yields additional important contribution to the literature from this field.

There are some limitations of this study. We included the use of self-report of chronic diseases, which can lead to inaccurate reporting. There is also a relatively low power of the study for the subgroups, which are expected to have low prevalence in family practice. So, some differences could not be confirmed by statistical analysis.

Further studies of greater statistical power can demonstrate statistically significant inference between other patient characteristics and comorbidity of mental disorders. The main focus should be put on an active population, especially the workers with chronic conditions. The consequences of mental problems and chronic pain comorbidity on health care costs and economic productivity should be studied and measures should be proposed.

5 Conclusion

This study proved higher rates of anxiety in depression in patients with chronic somatic comorbidities also in the age group from 18 to 64 years old. This is important because that population is mostly a working one and as such, when missing from work due to poor health, contributes a great deal to greater health care costs and economic losses (47, 48). Although older people represents a considerable burden of family doctors workload, they should focus also on the active part of the population, especially that with somatic chronic conditions. Here, they should actively seek for the presence of depression, anxiety and chronic pain, using internationally confirmed reliable tools, such as Zung's depression and anxiety scale, and VAS scale.

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Table 3. Percentages of patients with the presence of depression or anxiety or chronic pain according to different chronic conditions. χ^2 test was performed.

Chronic condition (present vs. not present)	Percentage of the patients with depression (%)	χ^2 value (depression)	p value (depression)	Percentage of the patients with anxiety (%)	χ^2 value (anxiety)	p value (anxiety)	Percentage of patients with chronic pain (%)	χ^2 value (chronic pain)	p value (chronic pain)
Cancer	31.6 vs. 14.5	4.081	0.054	15.8 vs. 8.1	1.404	0.208	100 vs. 38.2	28.783	<0.001
Migraine	22.6 vs. 14.3	2.525	0.152	17.0 vs. 7.3	5.732	0.030	100 vs. 32.9	87.149	<0.001
Rheumatic disease	27.7 vs. 13.8	6.229	0.018	19.1 vs. 7.2	7.860	0.010	100 vs. 34.1	74.331	<0.001
Bronchial asthma	20.7 vs. 14.9	0.705	0.422	10.3 vs. 8.3	0.151	0.725	100 vs. 36.7	44.973	<0.001
Chronic obstructive pulmonary disease	11.5 vs. 15.5	0.296	0.781	15.4 vs. 8.0	1.744	0.260	100 vs. 37.2	40.036	<0.001
Cardiovascular disease	20.0 vs. 15.0	0.363	0.526	20.0 vs. 7.9	3.652	0.077	100 vs. 38.1	30.368	<0.001
High blood pressure	0 vs. 15.6	2.031	0.386	0 vs. 8.6	1.035	0.611	100 vs. 39.3	16.361	<0.001
Diabetes mellitus	18.2 vs. 15.2	0.074	0.678	0 vs. 8.6	1.035	0.611	100 vs. 39.3	16.361	<0.001
Chronic gastritis	40.0 vs. 15.0	2.391	0.169	20.0 vs. 8.3	0.882	0.357	100 vs. 40.1	7.337	0.011
Post-stroke condition	25.0 vs. 15.0	0.310	0.481	25.0 vs. 8.3	1.437	0.298	100 vs. 40.3	5.856	0.027