Depression and comorbidity in family medicine registrars' surgeries – pilot research

Depresija i komorbiditetne bolesti u ambulantama liječnika specijalizanata obiteljske medicine – pilot istraživanje

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──────────── **Summary** ────────────

Background. 50% of depressive disorders in primary health care are unrecognized. Depression is accompanied by comorbid diseases in 70%, and is the reason for poorer prognosis and poorer comorbidity outcomes.

Aim. To investigate the prevalence of depression in family medicine registrars' surgeries, the connection with socioeconomic factors, and to identify the most frequent comorbid diseases.

Subjects and Method. Cross-sectional research was provided in May 2006 in five family medicine registrars' surgeries from different parts of Croatia, and among 7228 patients in their care. Patients with diagnosis of depression according to ICD 10, code F32 – Depression and code F33 – Depression recurrences were identified. A questionnaire was constructed for this research and filled with data from medical records and data according to estimations of family physicians.

Results. Depression was diagnosed in 179 (2.4%) patients, most of them – 77 (43%) were in the age group from 45 to 65 years of age, 2.5 times more frequent among women – 128 (71%). Most of the depressive patients were among the retired -107 (60%). The socioeconomic status in 130 (73%) depressive patients was estimated as under average. According to family physicians' estimation 100 (56%) depressive patients had a good family relationship, and 158 (88%) of them had low job strain. 77 (43%) depressive patients were considered as "difficult" patients, and 46 (26%) depressive patients did not look depressed. In 26% of the depressive patients comorbid diseases were from the diagnostic group of diseases of the musculoskeletal system and connective tissue (M00-M99), in 23% diseases of the circulatory system (I00-I99), and in 15% diseases of the digestive system (K00-K99). There was a different distribution of comorbidity among age groups and gender.

Conclusion. The prevalence of only 2.4% depressive patients had a very low recognition percentage and implicated better family medicine registrars' education of depression according to recommendations created in family medicine.

Key words: depression, family medicine, socioeconomic factors, comorbidity

──────────── **Sažetak** ────────────

Uvod. U primarnoj zdravstvenoj zaštiti neprepoznato je 50% depresivnih poremećaja. Depresija je u 70% slučajeva praćena nekom komorbiditetnom bolešću i razlog je lošijoj prognozi, kao i ishodu te bolesti.

Cilj. Istražiti prevalenciju depresije u ambulantama liječnika specijalizanata obiteljske medicine, njezinu povezanost sa socioekonomskim čimbenicima, te utvrditi najčešće komorbiditetne bolesti.

Ispitanici i metoda. Istraživanje je provedeno u svibnju 2006., u pet ambulanti liječnika specijalizanata obiteljske medicine iz različitih krajeva Hrvatske – među 7228 pacijenata u njihovoj skrbi. Izdvojeni su

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pacijenti sa dijagnozom depresije prema MKB-10 pod šifrom F 32 – Depressio te šifrom F 33 – Depressio recurrens. Za ovo istraživanje sastavljen upitnik ispunjen je podacima iz zdravstvenih kartona te prema procijeni obiteljskih liječnika.

Rezultati. Depresija je dijagnosticirana 179 (2,4%) pacijenata, od kojih je većina – 77 (43%) bilo u dobi od 45 do 65 godina, 2,5 puta je češća bila među ženama – 128 (71%). Većina depresivnih pacijenata su bili umirovljenici – 107 (60%). Ispod prosječnog socioekonomskog stanja je bilo 130 (73%) pacijenata. Prema procjeni obiteljskih liječnika 100 (56%) depresivnih pacijenata imalo je dobre obiteljske odnose te 158 (88%) nije imalo probleme na poslu. "Teškim" pacijentima procijenjeno je 77 (43%) depresivnih pacijenata, a 46 (26%) depresivnih pacijenata nije izgledalo depresivno. Kod 26% depresivnih pacijenata komorbiditetne bolesti su bile iz dijagnostičke skupine – bolesti mišićnokoštanog sustava (M00-M99), kod 23% bolesti krvožilnog sustava (I00-I99), te kod 15% depresivnih pacijenata bolesti probavnog sustava (K00-K99). Različita je bila raspodjela komorbitenih bolesti po dobi i spolu.

Zaključak. Prevalencija od samo 2,4% depresivnih pacijenta je veoma niska i zahtjeva bolju edukaciju specijalizanata obiteljske medicine o depresiji prema preporukama napravljenim u samoj obiteljskoj medicini.

Ključne riječi: depresija, obiteljska medicina, socioekonomski čimbenici, komorbiditet

Introduction

Depression is one of the most frequent mental disorders, followed by immense patient's suffering. The clinical picture is dominated by: sadness, depression, weeping, anxiety, loss of interest, decreased energy and strength, loss of possible enjoyment in everyday things and activities, decreased concentration in resolving even small problems and thinking, tiredness, depreciation, loss of self-confidence and self respect. The depressed mood lasts longer than previously in life when it occurred only in a transient depressive state. Besides deep and lasting symptoms, depression is determined in patients by their inabilities to help themselves. Patients commonly have some disabilities in different areas of functioning.[1]

Numerous epidemiological studies find that depression is a disorder with increased prevalence in last century. According to the World Health Organization (WHO), in 1990 depression was in fourth place of all morbidity, and it is estimated that in 2020 it will be in second place of public health problems.[2]

In a cross-cultural study lead by WHO, providing in primary health care in 14 cities worldwide, the average prevalence of depression is 10.4%, from 2.6% in Nagasaki in Japan to 29.5% in Santiago in Chile.[3] Western European countries notice the prevalence of depression in 5%, with high comorbid psychiatric and somatic illnesses.[4]

According to recent researches in Europe and worldwide, the prevalence of depression is from 5% to 10%, and women more frequently suffer from depression. The ratio of depressed men against women is from 1:1.5 to 1:2.[5] Lifelong prevalence of depression among adults is estimated about 18%, lifelong risk even from 20 to 30%. Besides gender, other socioeconomic factors are single, low educational level, unemployment, inactivity, recently stressed events, poverty, social isolation, long-lasting difficulties, life.[6]

Depression is the main risk factor of auto destructive behaviours. According to particular studies, 2/3 suicides were committed by persons suffering from depression that needed treatment. Other studies find that 15 to 20% of depressive patients end their life by suicide.[7] Besides suicide, depression's mortality increases by somatic diseases, especially cardiovascular and cancers.[8] A follow up of elderly patients in primary health care during 2 years has found that depression has equal mortality achievement as myocardial infarction and diabetes.[9] Depressive disorders are followed by decreased productivity and three folds higher use of sick leaves among depressed than among not depressed patients.[10]

The connection of depression and other disorders is manifold: a/ depression is favourable to other diseases, b/ other diseases directly or indirectly cause depression, c/ both disorders have the same cause or e/ depression and other disorders independently exist in the same person. Simultaneously the appearance of depression and other diseases is unfortunately combined because they worsen each other in a circle and reciprocally make treatment more complicated. Their cause effect connection could be psychological, biological and very often a combination of both, especially when one of the diseases becomes chronic. The fact that the same psychological and somatic symptoms could be part of depression's clinical

picture as part of the other disease, it additionally worsens the diagnostic procedure and therapeutic decision.[11] Depression could be followed by psychical and somatic disorders. Among psychical, the most frequents are anxious disorders (panic, generalized anxious disorders, social, obsessive-compulsive and posttraumatic) and addictions (alcoholism, substance abuse). The most frequent somatic disorders following depression are cardiovascular (chronic heart disease, myocardial infraction), gastrointestinal, cerebrovascular, endocrine (hypothyroidism, hyperthyroidism, sy. Cushing, diabetes mellitus) pain syndromes, iatrogenic depression, malignant diseases especially in the terminal phase.[12]

The recommendation of the World Health Organization is that diagnostics and treatment of depression in primary health care should be the first step for a huge number of people to come in the health care system easier and faster, and it is necessary to recognize that many people at that level seek for help.[13] It is a way to avoid unnecessary investigations and inadequate unspecific treatment. To reach that goal, family physicians should participate in continuous medical education, in mental health disorder to advance recognition and treatment of mental health in primary health care settings.

In their every day practice family physicians meet many patients who belong to one of the different mental disorder groups. Unfortunately, many patients with short-lived symptoms of depression connected with neurotic state give diagnosis of depression; on the other hand, clear depression symptoms could be masked with somatic symptoms. These are some of the reasons, and also crowded primary health care surgeries, for not knowing the number of depressive patients in primary care settings.

It is well known from literature that successful implementation of recommendations for depression treatment in primary health care increases quality care and improves clinical outcome.[14]

There is no data about depression prevalence (only morbidity in second health care and hospitalizations) in our country, nor data on the connection with socioeconomic factors. Therefore, the intention of this study is to explore these parameters.

Hypotheses are that depression, as an "illness with a thousand faces", is poorly recognized in primary health care settings and is more frequent as a co-morbid condition than single disease.

The aim of this study is to find depression prevalence in family physicians residents' surgeries and to explore the connection between depression and socioeconomic factors, and the most frequent comorbid diseases.

Subjects and Method

The study was provided as a cross-sectional investigation in May 2006, in five family medicine registrars' surgeries from different parts of Croatia: Zagreb, Benkovac, Križevci, Kotoriba and Pula. In Pula and Zagreb the population was urban, while in the other three surgeries it was rural.

Samples were 7228 patients on lists of five family medicine registrars with different working experiences (two of them with five years of working experience, one 8 years, and 14 and 17 years of working experience).

Patients with diagnosis of depression according to ICD 10, code F32- Depression and code F33- Depression recurrences were identified from medical records.[15]

Medical records extracted data concerned the following:
- age and gender
- occupation and education (elementary school, secondary schooling, high school, retired and unemployed)
- diagnoses of chronic non communicable diseases according to ICD 10
- family history
- suicide attempt
- alcoholism
- benzodiazepine abuse*
- physical status

Family physicians estimated:
- socioeconomic status,
- family relationship
- job strain
- "difficult patient"
- appearance- depressed , not depressed (smiling)

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* benzodiazepine abuse was diagnosed according to criteria from Rational use of benzodiazepines, manual for family medicine physicians (use of benzodiazepine more than four weeks without break).[16]

Physical status as estimated by family physicians as functional status: independent, semi-independent and dependent. Only 2 patients were estimated as dependent and 10 semi-independent. One group was made with semi-independent and independent.

In the beginning physicians estimated socio-economic status on Likert scale from 1 to 5 (1 extremely low, 2 low, 3 middle, 4 high, and 5 extremely high) but only one examinee was estimated

as extremely high, no one was estimated as high and results were presented as two groups: low and middle socioeconomic status.

Living alone or with a family was the parameter of family relationship used in the study.

Statistical analysis

Results were described by parameters of descriptive statistics: qualitative data were presented in absolute and relative frequencies. Differences in researched parameters between genders were tested by chi-square test.

Values p < 0.05 were considered significant. Statistical analysis was performed on SPSS 9.0 software (SPSS Inc, Chicago, IL, USA).

Results

On five family medicine registrars' lists there were 7228 patients, 179 (2.4%) were diagnosed and treated for depression in 2006.

Depressive patients (n = 179) were distributed according to age groups and gender. Female depressive patients were 2.5 folds more than male (128 : 51) There was no significant difference among age groups between gender (p = 0.852) (Table 1).

According occupational status 107 (60%) of depressive patients were retired, 47 (26%) of them employed and 25 (14%) unemployed. There was no significant difference in occupational status between genders (P = 0.68) (Table 2). Most of employed depressive patients were with secondary schooling (38/44).

Socioeconomic status for the most depressive patients was under average 156 (88%). Only one female patient had socioeconomic status above average. There was no significant difference in socioeconomic status between genders (P = 0.159).

Most of the depressive patients 123 (69%) lived with a family. There was no significant difference in family status between genders (P = 0.417). Most of the patients were functionaly independent 158 (88%). There was no significant difference in functional status between genders (P = 0.831) (Table 2).

Disturbed family relationships, according to family physician estimation, had less than half of the patients, 66 (37%). In only 13 (7%) of patients the family physician was not familiar with family relationships. There was no significant difference in family relationships between genders (P = 0.437) (Table 3).

High job strain, according to family physician estimation, had only 18 (10%) of depressive patients. The family physicians did not estimate job strain in only three female patients. There was no significant difference in job strain between genders (P = 0.695) (Table 3).

Only 7 (4%) patients attempted suicide, three men and four women. For two female patients, physicians did not know if they had attempted suicide. Alcoholism was noticed among 29 (16%) depressive patients, among them 29 (16%) were men. It was the only characteristic significantly higher (P < 0.001) in men (Table 3).

Benzodiazepine abuse was noticed in 57 (32%) depressive patients. For two male patients there were no data about benzodiazepine abuse. There was no significant difference in benzodiazepine abuse between genders (P = 0.794) (Table 3).

Depressed appearances were presented in 133 (74%) patients, as we had expected, but even 46 (26%) patients had no depressed appearance.

Family physicians considered less than half of the patients – 77 (43%) as "difficult patient". There was no significant difference in gender in the estimation "difficult patient" (P = 0.597) (Table 3).

Table 1. Distribution of depressive patients (n = 179) according to age groups and gender
Tablica 1. Raspodijela depresivnih pacijenata (n =179) prema dobi i spolu

AGE (years) *DOB (godine)*	Gender / *Spol*		All *Sveukupno*	%
	Male *Muško*	Female *Žensko*		
< 45	10	30	40	22
45 - 65	23	54	77	43
> 65	18	44	62	35
ALL/ *SVEUKUPNO*	51	128	179	

P = 0.852

Table 2. Occupational, socioeconomic, family and functional status of depressive patients (n = 179) according to gender (n_male = 51, n_female = 128)
*Tablica 2. Radni, socijalno ekonomski, obiteljski te funkcionlni status depresivnih pacijenata (n = 179) prema spolu (muški = 51, ženski =128)*

Occupational status *Radni status*	N (%) of patients *Broj pacijenata*	Men *Muškarci*	P *P*	Women *Žene*
Employed / *zaposleni*	44 (26)	11		33
Retired / *umirovljeni*	107 (60)	34		73
Unemployed / *nezaposleni*	25 (14)	6	0.680	19
Socioeconomic status *Socijalno ekonomski status*				
Low / *niski*	156 (88)	48		108
Middle / *srednji*	22 (11)	3	0.159	19
Family status *Obiteljski status*				
Live with family / *žive s obitelji*	123 (69)	38		85
Single / *sami*	55 (31)	13	0.417	42
Functional status *Funkcionalni status*				
Independent / *samostalan*	158 (88)	45		113
Semi-independent and dependent *Djelomično samostalan i ovisan*	21 (12)	6	0.831	15

Table 3. Characteristics of depressive patients (n = 179) according to gender (n _male = 51, n _female =128)
Tablica 3. Karakteristike depresivnih pacijenata (179) prema spolu (muškarci = 51, žene = 128)

Characteristics *Karakteristike*	N (%) of patients *Broj (%) pacijenata*	Male *Muškarci*	P *P*	Female *Žene*
Disturbed family realtionship *Emocionalno poremećeni obiteljski odnosi*	66 (37)	16	0,437	50
Job strain *Pritisak na poslu*	18 (10)	4	0,695	14
Suicidal attempt *Pokušaj samoubojstva*	7 (4)	3		4
Alcocholism *Alkoholizam*	29 (16)	18	< 0.001	11
Benzodiazepin abuse *Zlouporaba benzodiazepina*	57 (32)	17	0.794	40
Depressed appearance *Depresivan izgled*	133 (74)	36	0.597	97
"difficult patient" *"težak pacijent"*	77 (43)	19	0.415	58
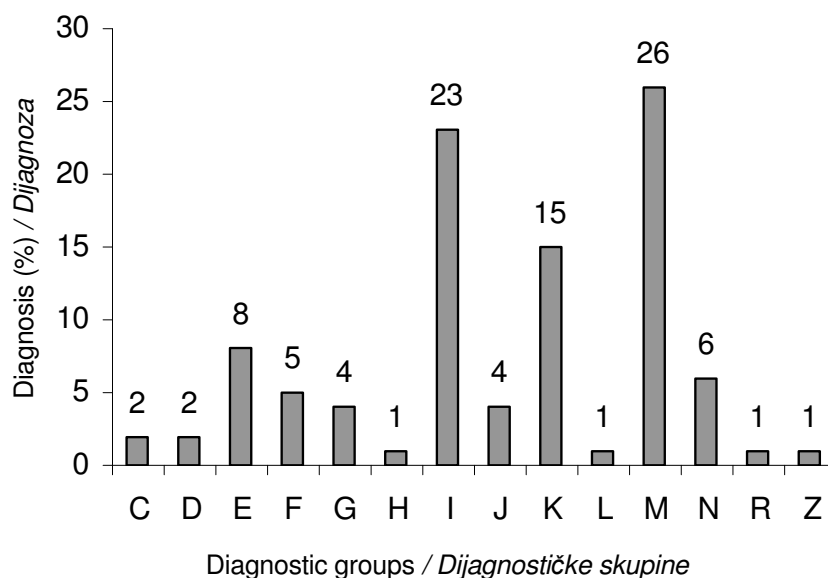
Picture 1. Frequency (%) of comorbid diagnostic groups of diseases ($n_{diagnosis}$ = 529) among depressive patients (n = 179), presented with letter of diagnostic group according ICD 10

Slika 1. Učestalost komorbiditetnih dijagnostičkih skupina bolesti ($n_{dijagnoza}$ = 529) među depresivnim pacijentima (n = 179), prikazane slovom dijagnostičke skupine prema MKB 10
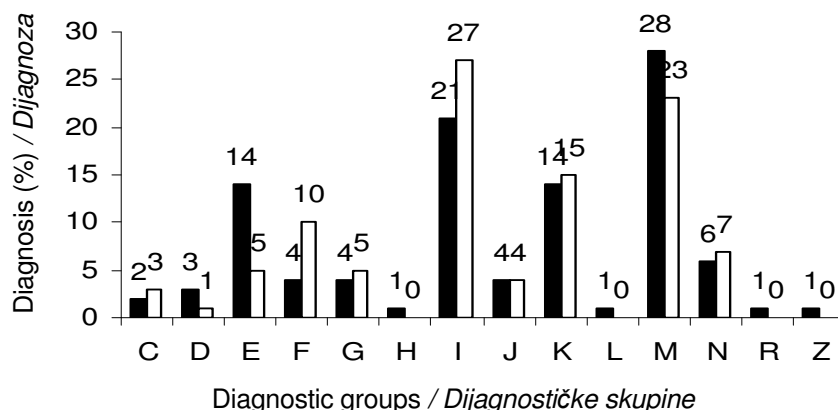
Picture 2. Frequency (%) of comorbid diagnostic groups of diseases ($n_{diagnosis}$ = 529) according to gender ($n_{diagnoses\ for\ men}$ = 155, $n_{diagnoses\ for\ women}$ = 371). Closed bars represent female, open bars represent male gender. Letters represent diagnostic groups of diseases according ICD 10.

Slika 2. Učestalost (%) komorbiditetnih dijagnostičkih skupina bolesti ($n_{dijagnoza}$ = 529) prema spolu ($n_{dijagnoze\ za\ muškarce}$ = 155, $n_{dijagnoze\ za\ žene}$ = 371). Zatvoreni stupci predstavljaju ženski spol dok otvoreni predstavljaju muški spol. Slova predstavljaju dijagnostičke skupine bolesti prema MKB 10.

C00-C99 – Neoplasms
D50-D89 – Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
E00-E97 – Endocrine, nutritional and metabolic disease
F00-F99 – Mental and behavioural disorders
G00-G99 – Diseases of the nervous system
H00-H95 – Diseases of the ear and mastoid proces
I00-I99 – Diseases of the circulatory system
J00-J99 – Respiratory system diseases

K00-K93 – Diseases of the digestive system
L00-L99 – Skin and subcutaneous tissue diseases
M00-M99 – Diseases of the musculoskeletal system and connective tissue
N00-N99 – Genitourinary system diseases
R00-R99 – Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified
Z00-Z99 – Factors influencing health status and contact with health services

The most frequent comorbid diagnostic groups of diseases among depressive patients were from diagnostic groups M00-M99 – Diseases of the musculoskeletal system and connective tissue, I00-I99 – Diseases of the circulatory system, K00-K93 – Diseases of the digestive system, E00-E97– Endocrine, nutritional and metabolic diseases, N00-N99 – Genitourinary System Diseases.

The most frequent comorbid diagnostic groups of diseases among men were from diagnostic groups in order: I00-I99 – diseases of the circulatory system, M00-M99 – diseases of the musculoskeletal system and connective tissue, and K00-K93 – diseases of the digestive system.

The most frequent comorbid diagnostic groups of diseases among women were from diagnostic groups in order: M00-M99 – diseases of the musculoskeletal system and connective tissue, I00-I99 – diseases of the circulatory system, and K00-K93 – diseases of the digestive system.
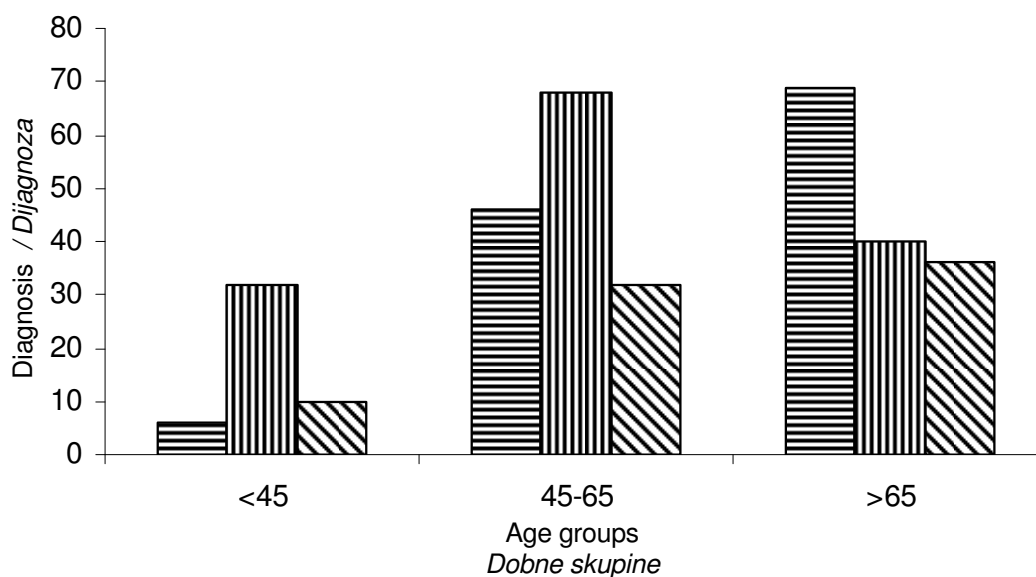
Picture 3. Frequency of comorbid diagnostic groups of diseases according to age groups
Bars with horizontal lines represent diagnostic group of diseases I00-I99 – diseases of the circulatory system, bars with vertical lines represent diagnostic group of diseases M00-M99 – diseases of the musculoskeletal system and connective tissue, bars with inclined lines represent group of diseases K00-K93 – diseases of the digestive system.

Slika 3. Učestalost komorbiditetnih dijagnostičkih skupina bolesti prema dobnim skupinama
Stupci s vodoravnim crtama predstavljaju dijagnostičku skupinu bolesti I00-I99 – bolesti sustava cirkulacije, stupci s okomitim crtama predstavljaju dijagnostičku skupinu bolesti M00-M99 – bolesti mišićno-koštanog sustava te veznog tkiva, stupci s kosim crtama predstavljaju skupinu bolesti K00-K93 – bolesti probavnog sustava.

Diagnostic group of diseases I00-I99 – diseases of the circulatory system was the most frequent in age group over 65, but their frequency decreased with age.
Diagnostic group of diseases M00-M99 – diseases of the musculoskeletal system and connective tissue, was included as comorbid diseases in 66% in age group under 45, and in 27% in the oldest age group over 65 years of age.   In fact, their frequency decreased with age. Diagnostic group of diseases K00-K93 – diseases of the digestive system, was in second place according to frequency in age group under 45, but in the other two age groups they were in third place after diagnostic group of diseases I00-I99 – diseases of the circulatory system and diagnostic group of diseases M00-M99 – diseases of the musculoskeletal system and connective tissue. In all age groups the diagnostic group of diseases K00-K93 – diseases of the digestive system, participated with 20% as comorbid diseases among depressive patients.

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Discussion

In our study provided in five family medicine surgeries from different parts of Croatia, depression prevalence was found in 2.4% of patients, two folds lower than in Europe[4] or four folds lower than in the WHO report for primary health care.[3] Depressive disorders were in 50% cases unrecognized, and more than 70% did not have adequate treatment.[17]

In Croatia, there is no data on depression prevalence in primary heath care. Depression data is incorporated in a group of other mental disorders with 19% of mental diseases in primary health care.[18]

Women were 2.5 folds more than men among depressive patients in our research, as in other researches in Europe, with a ratio between men and women of 1 : 2.[5] As a reason for hospitalization in Croatia, depression (code F32 Depression and code F33 Depression recurrences in 2002, according to ICD 10) was in second place for women, and in fourth place for men.[19]

The highest rate of depression in our study was noticed in the age group from 45 to 65 years, as in previous European researches with the highest rate of depression in older middle age (50-64 years). Some recent researches notice the highest prevalence in young adults, but others in elderly.[5] A new Canadian study reports the highest rate of depression (1.4% - 9.1%) among teenagers and adolescents from 12 to 24, the lowest rate among elderly over 65.[20] American authors also report frequent depression among youth, with prevalence of 0.8 to 2% in children and 4.5% in adolescents.

In our study, the highest rate of depression was among the retired and employed with secondary schooling, but both groups were, according to socioeconomic status, estimated under average and that was probably a more important risk factor for depression. Within the age group from 45 to 65 years, the retired had the highest percent of depression. Their premature retirement was not a researched reason, but it could be speculated that it was a risk factor for depression.

It was surprising that the lowest rate of depression in our study was among the unemployed, but it could be partly because of grey economy. European researches in primary health care show that patients with psychological and sociological problems two folds more visit their family physicians than somatic patients, but they present them with almost only somatic problems.[21]

In our study two folds more depressive patients lived in single families and most of them were functionally independent, which is contradictory with the data from other studies where there are combined socio-demographic factors connected with depression like single, stressful events, social isolation, city life.[6]

For most of our depressive patients family physicians estimated that they had a good family relationship and low job strain, which made us uncertain whether they really knew their patients. It is necessary to investigate that problem deeper in further researches.

In our study only 4% of depressive patients attempted suicide, three folds less than from Croatian data on suicide[8] and worldwide[18]. Maybe the explanation could be that the depression depth in our patients was mild or moderate, and that they had adequate therapy.

Comorbid alcoholism was found in 16% of our depressive patients and significantly more in male patients as in other studies with comorbid depression in alcoholism from 15 to 67%, and also higher among men.[22]

Benzodiazepine abuse in third depressive patients, and the estimation for half of them as "difficult patients", demand further and deeper investigation.

Three fourths of our depressive patients had, as it was expected, depressed appearance. With accordance to terminology in psychiatry, depression is a mood disorder, and it could be called an emotional disorder. Depressive patients have a strong possibility to express their depressiveness through their face and body posture, and very often through their environment.[1]

But it was not expected that one fourth of depressive patients had no depressed appearance, and even came smiling, which made it more difficult to recognize depression.

Our study found the most frequent depression comorbidity with diseases of the musculoskeletal system and connective tissue, diseases of the circulatory system, and diseases of the digestive system.

Sensory pain syndromes, back pains, neuralgias, chronic pains are often accompanied with depression. So anti-depressives are included in their therapy. It was noticed that anti-depressants relieve pain in these pain syndromes even if they do not find signs of depression.[23]

Pain and depression are two of the strongest expressions of human suffering. Every depression consists of the feeling of pain, but it could be a really painful experience by itself. Pain is not only a common sensory phenomenon. Experience of pain is an emotional state aggravated or ameliorated by psychological factors, and it becomes an independent emotional category and joins other mood syndromes.

The problem begins when it is necessary to distinguish objective sensory pain stimulus from emotional pain experience, and to treat it properly. Depression is considered an important amplifier of pain experience.[24]

Cardiovascular diseases are the main cause of mortality, disability and decreased quality of life in developed countries. Stressful life events are an unlimited source of appearance in both depression and cardiovascular diseases. Cardiovascular diseases have reciprocal influence on the appearance and development of depression. There is an important relationship between myocardial infraction and depression. After myocardial infraction, the patient is confronted with huge adaptive challenges and becomes depressive. Depressed patients with myocardial infraction die 3.4 folds more frequently in the first 6 months after myocardial infraction than patients without depression, but depression is also a risk factor for myocardial infraction development. Depression is also an important risk factor in the appearance and development of chronic heart diseases.[25]

The connection between gastrointestinal (GI) functional disorders with psychological disorders and depression was recognized in literature, and even recommendations exist for the treatment of these functional disorders with anti-depressives.[26]

The spectrum of functional GI disorders is huge: swallowing difficulties with soft or solid foods, heartburn without proved reflux, epigastric pain, meteorismus, flatulance, irritable bowels, abdominal pain, functional obstipation, globe in throat and so on.

In a Norwegian study, persons with one or more GI symptoms like nausea, heartburn, diarrhoea or obstipation were tested on depression and a strong correlation of GI symptoms was found in 15%, and depressive disorders in 10%.[27]

Limitation of our study was that we included only female family physicians with different work experiences. Although surgeries were from different parts of Croatia, and also patients were from rural and urban areas, it was not a representative sample for Croatia. Data of family relationships, socioeconomic status, and job strain depended on family physicians' subjective estimation, on the fact of how well family physicians knew the family and occupational situations of their patients.

Our study found low prevalence of depressive patients. The highest prevalence was in age group from 45 to 65, and 2.5 folds higher among women.

The most frequent comorbidity among depressive patients was, according to ICD 10, in diagnostic groups diseases of the musculoskeletal system and connective tissue (M00-M99), following diseases of the circulatory system (I00-I99), and then diseases of the digestive system (K00-K99).

These results implicated the necessity of family medicine registrars' better education on depression according to recommendations made in family medicine for depression recognition and diagnosis, socioeconomic status as a risk factor for depression development, and the most frequent chronic non communicable disease as comorbidity.

Literatura:

1. Folnegović-Šmalc V. Uvodnik. Medicus 2004;13:5-6.
2. Murray CJ, Lopez AD. Alternative projections of mortality and disability by cause 1990-2020: Global Burden of Disease Study. Lancet 1997;349:1498-504.
3. Goldberg D, Lecrubier Y. Form and frequency of mental disorders across centres. U: Üstün TB, Sartorius N, eds. Mental illness in general health care: an international study. Chichester: John Wiley & Sons; 2005, str. 323-4.
4. Paykel ES, Brugha T, Fryers T. Size and burden of depressive disorders in Europe. Eur Neuropsycho-pharmacol. 2005;15:411-23.
5. Lavikainen J. Depression. U: Lavikainen J, Lahtinen E, Lehtinen V, ur. Publich Health Approach on Mental Health in Europe. National Research and Development Centre for Welfare and Health, Stakes. Saarijarvi: Ministry of Social Affairs and Health; 2000, str. 76-82.
6. The World Health Report 2001. Mental Health: New Understanding, New Hope. Geneva: WHO; 2001, str. 21-30, 37-45.
7. Goodwin FK, Jamison KR. Suicide in manic – depressive illness. New York: Oxford University Press; 1990, p. 227-44.
8. Hrvatski zdravstvenostatistički ljetopis. Zagreb: Hrvatski zavod za javno zdravstvo. 1996-2003.
9. Gallo JJ, Bogner HR, Morales KH, Post EP, Ten Have T, Bruce ML. Depression, cardiovascular disease, diabetes. And two-year mortality among older, primary-care patients. Am J Geriatr Psychiatry. 2005 Sep;13:748-55.
10. Kessler RC, Barber C, Birnbaum HG, Frank RG, Greenberg PE, Rose RM, et al. Depression in the workplace: effects on short-term disability. Health Aff (Millwood) 1999;18:163-71.
11. Wittchen HU, Pittrow D. Prevalence, recognition and management of depression in primary care in Germany: the depression 2000 study. Hum Psychopharmacol 2002;17(Suppl 1): S1-11.
12. Filaković P. Terapija depresija kod bolesnika s komorbiditetom. Medicus. 2004;13:59-67.
13. The world health report 2001. http://www.who.int/whr/2001/chapter1/en/index.html (11 Oct. 2006)

14. Katon W, Von Korff M, Lin E, et al. Collaborative management to achieve treatment guidelines: impact on depression in primary care. *JAMA*. 1995;273:1026-1031.
15. MKB-10. Međunarodna klasifikacija bolesti i srodnih zdravstvenih problema – 10 revizija. Svezak 1. Zagreb: Medicinska naklada; 1994.
16. Zavod za javno zdravstvo grada Zagreba. Racionalna primjena benzodiazepina: priručnik za liječnike obiteljske medicine i ljekarnike. Zagreb: Zavod za javno zdravstvo grada Zagreba, 2004; str. 3-16.
17. US. Preventive Services Task Force. Screening for depression: recommendations and rationale. Ann Intern Med. 2002;136:760-764.
18. Silobrčić-Radić M, Hrabak-Žerjavić V, Tomić B. Veličina problema mentalnih / duševnih bolesti i poremećaja u Hrvatskoj. U: Hrabak-Žerjavić V, Silobrčić-Radić M, ur. mentalne bolesti i poremećaji u Republici Hrvatskoj. Zagreb: Hrvatski zavod za javno zdravstvo; 2004, str. 2-13.
19. Patten SB. Incidence of major depression in Canada. CMAJ 2000;163:714-5.
20. Zantinge EM, Verhaak PF, Bensing JM. The workload of GPs: patients with psychological and somatic problems compared. Fam. Pract. 2005;22(3):293-7.
21. Neal RD, Wickenden G, Cottrell D, Mason J, Rugiano J, Clarkson P, et al. The use of primary, secondary, community and social care by families who frequently consult their general practitioner. Health Soc Care Community 2001;9:375-82.
22. Nunes EV. Substance abuse and depression. Program and abstracts of the American Psychiatric Association 154th Annual Meeting. San Francisco, California; 2003, No S103A.
23. Walker Z, Katona C. Depression in elderly people with physical illness. U: Robertson MM, Katona CLE, ur. Depression and physical illness. Chichester : Wiley; 1997, str. 169-81.
24. Novy DM, Nelson DV, Francis DJ, Turk DC. Perspectives of chronic pain: an evaluative comparison of restrictive and comprehensive models. Psychol Bull 1995;118:238-47.
25. Keshavan MS. Iatrogenic depression. U: Robertson MM, Katona CLE, ur. Depression and physical illness. Chichester: Wiley; 1997, str. 537-50.
26. Bixquert-Jimenez M, Bixquert-Pla L, Antidepressant therapy in functional gastrointestinal disorders. Gastroenterol Hepatol 2005;28:485-92
27. Haug TT, Mykletun A, Dahl AA. Are anxiety and depression related to gastrointestinal symptoms in the general population? Scand J Gastroenterol. 2002;37: 294-8.