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# Screening for Depression Disorders in Patients with Chronic Somatic Illness

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## ABSTRACT

*Depression is one of the most common complications in patients with chronic somatic illnesses. Comorbidity of depression with physical illness often remains unrecognized and untreated, additionally aggravating the somatic illness itself, its treatment and prognosis. The aim of this study was to investigate the prevalence of depression in chronic somatic patients suffering from diabetes, epilepsy, asthma, chronic obstructive pulmonary disease (COPD) and hypothyroidism. Patients, who were regularly attending control examinations in neurological and internal medicine out-patient departments, were tested for the presence of depression with Beck Depression Inventory. The sample comprised 2153 chronic somatic patients aged between 18 and 80 years. Out of this total, 228 patients (10.6%) did not complete the study, (5.12%) refused to participate, and (5.5%) of the patients were technical failures. 1925 patients completed the study, and 1383 of them were not depressive. In 542 patients (28.5%) depression was confirmed, being almost twice more frequent in women, 346 (64%) vs. 196 (36%) male. Among these depressed examinees, mild depression was found in 284 (52.4%), major in 186 (34.3%) and severe in 72 (13.3%) chronic somatic patients. The majority of patients were aged over 55 yrs (49%). This population contained the largest number of depressed examinees (49.9%). The prevalence of depression with regard to subgroups shows that (25.6%) of asthma patients were depressed, as well as (26.6%) of those with COPD. These two groups did not present statistically significant differences regarding gender. The depression level of (32.2%) was found in patients with diabetes, of (29.6%) in patients with epilepsy and of (24.2%) among those with hypothyroidism. As for gender, statistically significant difference was found in the last three groups of patients ( $p < 0.001$ ).*

**Key words:** depression, chronic somatic illness, comorbidity

## Introduction

Depression is a serious and frequent disorder, influencing the whole life of a patient<sup>1</sup>. Out of fear and numerous stigmatizing attitudes, depressed patients hardly accept or even deny the fact that they are actually ill<sup>1,2</sup>. Due to ignorance and numerous somatic symptoms accompanied by anergy and fatigue, the suffering people and their relatives and friends often do not recognize depression<sup>1</sup>. The doctors often fail to observe it as well. Because of theoretical and practice biases, there is a strong tendency for a medical practitioner to focus on somatic rather than on emotional aspects of functioning and disease<sup>3</sup>. Symptoms of depression as fatigue and lethargy can aggravate the energy loss in many chronic

conditions, thus being one of the most common complications of a chronic illness<sup>3,4</sup>. Depression and illness may often occur together, because physical changes associated with the illness can trigger depressive mood<sup>1,3</sup>. The occurrence risk for depression is generally (10–22%) for women and (5–12%) for men<sup>1,4</sup>. However, those with chronic illnesses face a much higher risk<sup>4</sup>. This fact is an important public health issue, because depressive disorders generally have been associated with the outcomes of chronic diseases and have contributed to the high health care costs<sup>5</sup>. The risk of suicide has been estimated to be 10 times higher than in general population<sup>6</sup>. The lifetime risk of developing a depressive episode now approaches

(15%)<sup>1,5</sup>. World Health Organization ranks depression as the world's fourth greatest public health problem<sup>7</sup>. This situation is growing even more problematic, because the age of onset of the first depressive episode is becoming progressively younger, causing greater risks of recurrence and chronicity<sup>4</sup>. WHO estimates that in the year 2020, depression would be the second leading cause of morbidity in the world<sup>7</sup>. Women have about two times greater lifetime risk of developing a major depressive episode<sup>7,8</sup>. The co-morbidity of mental and physical illness is currently of considerable interest. It is generally accepted that a somatic illness creates an increased risk of psychiatric impairment<sup>4,9</sup>. The physical illness itself is often considered a reason enough to be depressed<sup>1,9</sup>. Symptoms of depression like low mood, fatigue, insomnia and loss of interest may exacerbate symptoms of chronic somatic illnesses<sup>4,10</sup>. Having in mind the cited facts, the goal of the study was to investigate and to point to a large number of unrecognized and untreated depressions in patients with somatic illnesses, in order to additionally sensitize physicians in somatic medicine (internists, neurologists) and psychiatrists for the mentioned problem. According to literature survey (1970–2004), no clinical trials in Croatia have so far compared chronic somatic illnesses and the prevalence of depression. The prevalence of co-morbid depression with type 1 or type 2 diabetes was found to be (30%) in uncontrolled, (32%) in clinical and over (21%) in controlled studies<sup>11,12</sup>. In epilepsy, the prevalence of depression is higher than in a matched population, ranging from (20%) to (55%) in patients with recurrent seizures and (20%) to (30%) in patients with controlled epilepsy<sup>13,14</sup>. Asthma has historically been considered a psychosomatic disease where emotional stress exacerbates symptoms<sup>15</sup>. Several studies have shown high rates of mood disorders with the prevalence ranging from (14%) to (25%)<sup>15,20</sup>. Patients with COPD have been characterized as a population of chronically ill patients with a higher than normal prevalence of psychiatric disorders, depression being found in (19–26%)<sup>16</sup>. Patients with hypothyroidism have also a higher prevalence of depressive disorders than the general population, (15–25%)<sup>17</sup>.

## Material and Methods

The level of depressiveness was examined in chronic patients who regularly come to medical examination in neurological and internal medicine out-patient departments. It was measured by the self-report Beck Depression Inventory (BDI). The patients were asked to complete BDI while waiting for their routine out-patient appointment. The BDI is an effective screening test for depression in chronic somatic patients, verified in a significant number of published studies<sup>18,19</sup>. The participants, depending on the obtained BDI scale points, were separated into those who, according to their answers, were not depressive, or had mild, major and severe depression respectively. The examinees with the positive score for depression were referred to an obligatory psychiatric examination. The presence and level of depres-

sion was confirmed during a psychiatric screening according to the ICD-10, Classification of mental and behavioral disorders, 10 revision<sup>10</sup>. The investigation enrolled patients suffering from diabetes, epilepsy, asthma, chronic obstructive pulmonary disease (COPD) and hypothyroidism. The initial sample consisted of 2153 chronic somatic patients aged between 18 and 80 years, who voluntarily accepted to participate in the research and signed an informed consent approved by the Ethical Committee. Examinees were first divided according to gender, and then into three age groups: 18–35 yrs, 36–55 yrs, and over 55 years. The next division into five subgroups was done according to their diagnoses. Included patients were stable, took prescribed medication and came to control examinations in regular time spans. They were under continual treatment due to somatic disease for more than a year. The total of 2153 patients with chronic somatic illnesses underwent statistical analysis. Out of this total, 228 (10.6%) patients did not complete the study, because 110 (5.1%) refused to participate, and 118 (5.5%) patients were already treated for depression, or did not correctly fill in the questionnaire, or dropped out due to some other technical reason. The patients with a high degree of depression established on the basis of BDI scale and psychiatric opinion, with or without suicidal thoughts, were referred to hospital psychiatric treatment. The significance of differences in qualitative measures levels was tested by the  $\chi^2$ -test.

## Results and Discussion

The study was successfully completed by 1925 patients, while 1383 of them did not fulfill the criteria for a depressive disorder. The depressive disorder was found in 542 of them (28.2%), mild in 284 (52.4%), major in 186 (34.3%) and severe in 72 (13.3%). The results are presented in (Figure 1). The results related to gender showed depression in 346 women, mild in 179 (52%), major in 122 (35%), severe in 45 (13%), and in 196 male examinees, mild in 107 (55%), major in 64 (33%), severe in 25 (12%). The results are presented in (Figures 2a and 2b). The prevalence of depression was also calculated in five subgroups according to their chronic somatic disease. The number and degree of depression in regard to age and gender were analyzed in 356 examinees with asthma, 301 with COPD, 510 with epilepsy, 456 with dia-

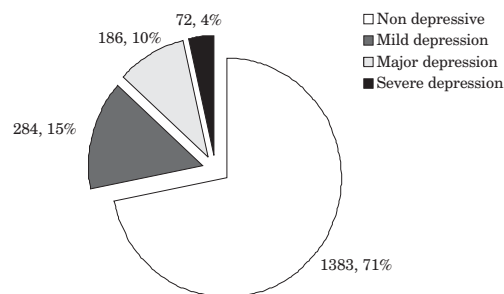


Fig. 1. Prevalence of depression in 1925 patients with chronic somatic illness.

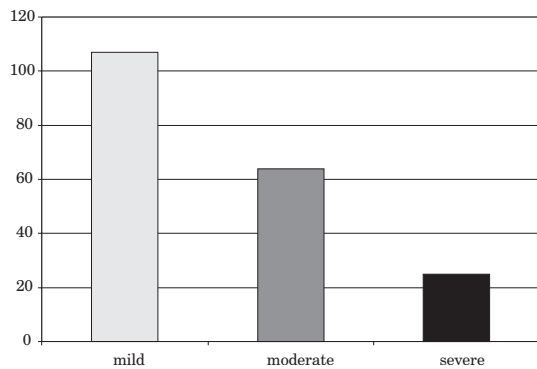


Fig. 2 a) Distribution of 136 male chronic somatic patients according to depression.

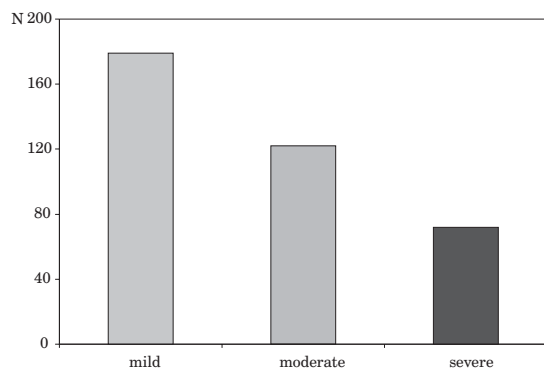


Fig. 2 b) Distribution of 346 female chronic somatic patients according to depression.

betes and 302 examinees with hypothyroidism. The results are presented in (Figure 3) and (Figure 4). Out of 356 tested asthma patients, depressive disorder was found in 91 (25.6%), 52 female and 39 male. Statistically significant difference was not found in relation to gender. Mild depression was found in 52 (57%), major in 27 (30%) and severe in 12 (13%) patients. Among 301 patients with COPD, depressive disorder was registered in 80 (26.6%), 44 female, 36 male. As for gender, statistically significant difference was not observed either. Mild depression was found in 42 (52.5%), major in 28 (35%) and severe in 10 (12.5%) patients. Among 510 patients with epilepsy, depressive disorder was revealed in 151 (29.6%), 99 female and 52 male patients. The statistically signifi-

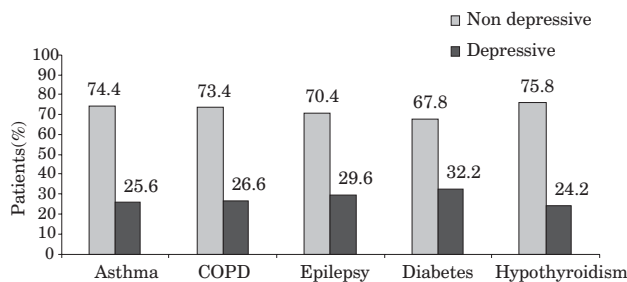


Fig. 3. Percentage of depressive chronic somatic patients divided according to chronic illnesses.

cant difference ( $p < 0.001$ ) related to gender was found here. Mild depression was established in 79 (52%), major in 52 (35%) and severe in 20 (13%) patients. Depressive disorder was present in 147 (32.2%), 99 female and 48 male diabetic patients. In depressed diabetic patients, statistically significant difference ( $p < 0.001$ ) was also observed in connection to gender. Mild depression was found in 73 (50%), major in 54 (37%) and severe in 20 (13%) of them. Among 302 patients with hypothyroidism, depressive disorder was found in 73 (24.2%), 52 female and 21 male. Statistically significant difference ( $p < 0.001$ ) was again connected with gender. Mild depression was found in 38 (55%) patients, major in 25 (34%) and severe in 10 (11%). Regarding age, the examinees were divided into three groups: the first up to the age of 30, 325 (15%), the second aged 31 – 55 yrs, 756 (36%), and the third group over 55 years, 1072 (49%) examinees. Out of 542 depressed chronic somatic patients in the first group, aged up to 30 years, 78 (14%) depressives were found, in the second, aged 31–55 years, 194 (36%), and in the third aged over 55, 270 (49.9%). The study results show that the average prevalence of depression in the five groups of chronic medical patients was (28.2%). According to depression prevalence data in literature, they had a 2.5 times greater risk for depression than general population<sup>1,4</sup>. The obtained results connected with gender revealed 346 female and 196 male depressed patients. This finding confirms the results from the literature, which stress that women having chronic somatic illnesses are 2 to 3 times more depressive than men<sup>1,7–10</sup>. The division according to the degree of depression also confirms some of the already known results. They showed the occurrence of major depression of about (30%)<sup>7,10</sup>. Our investigation gave the result of (34.3%), without significant differences regarding gender. Interesting is the number of 72 (13.3%) severely depressed examinees, to whom an obligatory psychiatric consultation and hospital treatment were recommended. The results connected with age point that the majority of examinees were over 55 years of age. This population presented the largest number of depressive examinees (49.9%). The examinees aged 36–55 were depressive in (36%), while the number of depressives with chronic so-

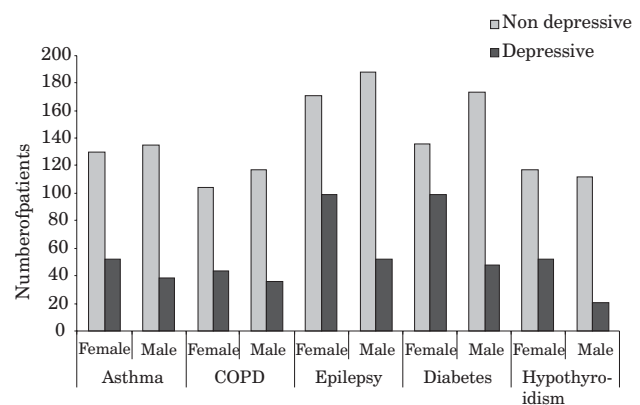


Fig. 4. Number of chronic somatic patients regarding depression and gender.



matic diseases was 78 (14.1%). This finding confirms the literature data<sup>1,4</sup>. The results of depression prevalence show that (25.6%) of the patients treated for asthma were depressive. Statistically significant differences regarding age were not found in this group, but in it prevail examinees under 35, and those aged 36–55 yrs. In comparison with several similar studies, the prevalence of mood disorders ranges from (14–25%)<sup>20</sup>. The presence of asthma has been associated with increased anxiety and depression, both being found among patients with an acute life-threatening asthma attacks<sup>20,21</sup>. Depression can also contribute to asthma attacks by hampering the immune system<sup>21</sup>. Patients with COPD have been characterized as a population of chronically ill patients with a higher than average prevalence of psychiatric disorders like depression<sup>22,23</sup>. In studies published in various journals a relatively high prevalence of depression (19–26%) was found both in patients and controls<sup>23</sup>. The results in our study show depression in (26.6%) examinees with COPD, the majority of these patients are over 55 years of age (89%). According to literature, the prevalence of co-morbid depression in type 1 or type 2 diabetes was found to be (30%) in uncontrolled and over (21%) in controlled studies, while (31%) were assessed by self-report questionnaires<sup>12,24</sup>. The rate of co-morbid depression is significantly higher in diabetic women (28%) than in men (18%)<sup>24</sup>. Our study revealed a high rate of depression in diabetic patients (32.2%). Statistically significant difference was found in relation to gender ( $p < 0.001$ ). The same statistically significant differences ( $p < 0.001$ ) regarding gender were also found in the groups of examinees with epilepsy and hypothyroidism, with 2 to 2.5 times greater number of female depressives. Depression was found in (29.6%) of the epileptic examinees, and (35%) of them presented major depression. The litera-

ture data point that the prevalence of depression in epilepsy is higher than in a matched population of healthy control subjects<sup>9,25</sup>. It ranges from (20%) to (55%) in patients with recurrent seizures, and from (20%) to (30%) in patients with controlled epilepsy<sup>25</sup>. Interictal depression (symptoms occur independently from the seizure occurrence) is the most frequently type of mood disorder<sup>25,26</sup>. The degree of depression in examinees with hypothyroidism in our study is (24.2%), found mostly in female population aged 36–55 yrs. According to literature, patients with hypothyroidism have a higher prevalence of depressive disorders than the general population (15–25%), but the relationship with depression has not been adequately studied yet<sup>27</sup>. Depression symptoms, as psychomotor retardation, guilt, muscle pain, energy loss and fatigue have overlapping features that can cause misdiagnosis in the acute phase<sup>27,28</sup>. Mood disorders are often unrecognized and untreated in patients with chronic somatic illness, and appear in co-morbidity with alcoholism and other substance abuses<sup>29</sup>. Such patients are at higher risk for depression and life stresses than other cultural groups. Thus, it is important that physicians make referrals for psychiatric treatment. Doctors should also be made aware that chronic illnesses, like epilepsy, diabetes, asthma, chronic obstructive pulmonary disease and hypothyroidism are more difficultly diagnosed and treated in depressed patients. Depression caused by a physical illness, or as a comorbidity of a chronic illness, often aggravates the somatic illness itself, especially if the condition causes pain, fatigue, or disruption of social life. Depression also aggravates social functioning by driving people into isolation<sup>1,4</sup>. Pharmacological and psychotherapy treatments for depression are relatively well developed and play an important role in reducing the adverse impact of depression<sup>30</sup>.

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## **ISPITIVANJE UČESTALOSTI DEPRESIVNOG POREMEĆAJA U BOLESNIKA KOJI BOLUJU OD KRONIČNIH TJELESNIH BOLESTI**

### **S A Ž E T A K**

Depresija je jedna od najčešćih komplikacija u bolesnika koji boluju od kroničnih somatskih bolesti. Depresija kao komorbiditet kroničnih tjelesnih bolesti često ostaje neprepoznata i neliječena, što pogoršava tijek, liječenje i prognozu tjelesnih bolesti, te stanje oboljelog. Cilj ovog ispitivanja je ispitati prevalenciju i stupanj depresije u kroničnih somatskih bolesnika koji boluju od dijabetesa, epilepsije, astme, kronične opstruktivne plućne bolesti (KOPB) i hipotireoidizma. Prisutnost simptoma i stupanj depresije ispitivani su u vremenu od 12 mjeseci, na bolesnicima koji se liječe ambulantno i redovito pohode kontrolne internističke ili neurološke preglede. Ispitivanje je provedeno Bekovim upitnikom za ispitivanje stupnja depresije. Uključeni su pacijenti u stanju remisije s obzirom na njihovu somatsku bolest. Uzorak se sastojao od 2153 kroničnih somatskih bolesnika u dobi od 18 do 80 godina. Statistički nije obrađeno 228 (10.6%) ispunjenih upitnika ispitanika, jer (5.12%) nije valjano ispunilo upitnik, a (5.5%) ispitanika je ispalo zbog tehničkih pogrešaka. Rezultati ispitivanja u 1925 kroničnih somatskih bolesnika, potvrđuju depresiju u 542 (28.5%) ispitanika, dva puta češće u žena 346 (64%) nego u muškaraca 196 (36%). Značajan broj ispitanika stariji je od 55 godina (49%). Od ukupnog broja depresivnih bolesnika, blaga depresija utvrđena je u 284 (52,4%), srednje teška depresija u 186 (34.3%) i težak oblik depresije u 72 (13.3%) kroničnih somatskih bolesnika. Depresija je u ovom ispitivanju utvrđena u (25.6%) bolesnika koji boluju od astme, (26.6%) oboljelih od KOPB-a. Statistički značajna razlika vezana uz spol u navedene dvije bolesti nije utvrđena. Depresija je utvrđena i u (32.2%) ispitanika oboljelih od dijabetesa, (29.6%) ispitanika oboljelih od epilepsije, te u (24.2%) ispitanika oboljelih od hipotireoidizma. U posljednje tri skupine ispitanika utvrđena je i statistički značajna razlika po spolu ( $p < 0.001$ ).