

COMORBID SOMATIC DISEASES OF DEPRESSION IN A ROMANIAN CLINICAL SAMPLE DURING THE FIRST YEAR OF THE COVID-19 PANDEMIC

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ABSTRACT

Background: Depression is associated with most somatic diseases, with an impact of poor prognosis and evolution, higher medical costs, and a higher level of functional disability. The aim of this study is to provide an overall picture of the broad range of somatic disorders associated with depression and to emphasize the need for suitable management. **Methods:** We collected data from 59 adult patients diagnosed with mild, moderate, and severe depression who benefitted from inpatient care at one point from March of 2020 until February of 2021. Using these data, we calculated the prevalence of multiple groups of comorbid somatic diseases and highlighted the correlations between the severity of the depressive episode and the multimorbidity status of each patient. **Results:** The most prevalent diagnosis groups were "metabolic, nutritional and endocrinologic diseases", followed by "diseases of the circulatory system" and "diseases of the nervous system". Correlations between the severity of depression and the multimorbidity status in each diagnosis group were identified. **Conclusions:** Our findings illustrate the strong connection between depression and a broad spectrum of somatic diseases. Consequently, we underscore the importance of an integrative approach for the adequate management of these cases.

Keywords: depression, clinical sample, somatic comorbidities.

INTRODUCTION

Globally, depression is a leading cause of disability and one of the most significant determinants of the overall global burden of disease. About 5% of the Romanian population was suffering from one form of depression in 2017, the prevalence of major depression disorder being 1 878.26 cases per 100 000 population [1]. Its diagnosis and management are often a challenge for clinicians due to its unpredictability regarding evolution and response to treatment. Consequently, depression plays a role into poor quality of

life, functional impairment, higher mortality having at the same time a huge social and economic impact due to loss of performance and work/school absenteeism [2]. Depression can be conceptualized as a systemic disease due to the underlying mechanisms that explain its influence on other systemic conditions. Multiple processes such as inflammation, neuroendocrine activity, platelet activation and the regulating activity of the autonomic nervous system are affected by depression [3-5], therefore this diagnosis is not only a risk factor regarding most systemic disorders

but has implications in the occurrence, poor evolution, and prognosis of associated diseases. A large body of evidence has documented a strong connection between depression and most systemic disorders, most notably cardiovascular diseases, diabetes, and other metabolic disorders, osteoarticular disorders, gastrointestinal disorders, neurological disorders, infectious diseases, and cancers [6-10]. The importance of considering these types of comorbidities when treating depression relies upon the fact that a) the association of comorbid depression and somatic disorders has poor outcomes, higher levels of disability and disease burden than depression or physical illness alone [11-12], as well as the fact that b) comorbid illnesses imply higher medical costs and are the most significant part of the economic burden of depression [13]. Also, it is largely proven that patients suffering of physical illness register a higher depression occurrence rate. Patients suffering of chronic diseases are 3 times more likely to suffer from depression than the general population. According to WHO, approximately 9.3% up to 18% of the patients diagnosed with a somatic disease are also suffering from a form of depression in comparison to 3.2% of the patients who have never been diagnosed with any somatic diseases [11].

The aim of this study was to provide a depiction of the association between depression and its somatic comorbidities in a Romanian clinical sample in order to highlight the interconnection between depression and most somatic disorders and the need for adequate management of these cases.

METHOD

The study is a retrospective one and was carried out during a 12-month period, between March of 2020 and February of 2021. Data were collected from the patients' charts and other medical documents.

Sample. The data were collected from 59 psychiatric adult patients diagnosed according to the ICD 10 criteria with a depressive episode (F32.0 – F32.9). The adults included in the study were patients of the Emergency Clinical County Hospital of Cluj-Napoca, Department of Psychiatry, from March 2020 to February 2021. Inclusion criteria were adult patient benefitting from inpatient care in this clinic during the aforementioned period. Exclusion criteria were: underaged patient, another diagnosis at the time of discharge than a form of a depressive episode.

Data Analysis. The data collected were introduced into a SPSS database. Qualitative and quantitative data analysis were performed using the Hi-square statistical test, respectively the t test for independent samples. The qualitative data included consisted of sociodemographic characteristics (gender, level of education, occupation) and characteristics of the studied disorders (depression level of severity, comorbid diseases).

RESULTS

Data on patients' characteristics were analyzed on a population of 59 adult patients with ages varying between 25 and 78 years, with a mean age of 53.135. Most of the subjects included in the study were women. Regarding the status of employment of the subjects, most of them were retired. As for the level of education, it was not specified in the patients' charts from which the data were collected. (Table 1).

When analyzing the age correlations with the depression severity level for patients diagnosed with a mild-to-moderate depressive episode and patients diagnosed with a severe episode, we found no significant differences ($t=1.11$; $p=0.27$). The selected subjects present various levels of severity concerning the depressive episodes, 61% of them being diagnosed with a severe depressive episode, whereas 33% of the subjects were diagnosed

Table 1. Samples demographic description

Patient characteristics	N=59
Age Mean	53.135
Gender (%female)	61%
Level of education	
Less than 12 th grade	12 (20,33%)
High School Diploma	18 (30,5%)
Bachelor's degree	8 (13,55%)
Unspecified	21 (35,55%)
Employment status	
Unemployed	10 (16.94%)
Employed	14 (23.72%)
Retired	26 (44.06%)
Unspecified	9 (15.25%)

with a moderate depressive episode, while 5% being diagnosed with a mild depressive episode. Regarding the comorbid diseases, they were divided into eight groups: 1) diseases of the circulatory system, 2) metabolic, nutritional and endocrinologic disorders, 3) diseases of the nervous system, 4) diseases of the digestive system, 5) infectious diseases, 6) diseases of the musculoskeletal system, 7) neoplasms and 8) other diseases which don't fit into any of the previously mentioned groups (anemias, rheumatological diseases, renal diseases, allergies, ophthalmological disorders). Most of the somatic diseases that were analyzed fit into the metabolic, nutritional and endocrinologic disorders group, followed by cardiovascular diseases and neurological disorders. (Table 2)

Regarding the group of metabolic, nutritional and endocrinologic disorders group,

64.40% of the patients were diagnosed with at least one disorder from this group, 23.72% of the subjects being diagnosed with multiple disorders. As for the cardiovascular diseases group, 40.67% of the patients included were diagnosed with at least one disorder pertaining to this group, 11.86% of them presenting with multiple comorbidities belonging to this group, with hypertension summing up to 55% of the cardiovascular disorders, followed by cardiac valves diseases (19%) and diseases of the blood vessels (9%). In the neurological diseases group, 27.11% of the subjects presented with at least one disorder belonging to this group, 6.77% presenting with multiple neurological comorbidities, with 20% prevalence of stroke, 20% of discopathies, followed by Parkinson's Disease (10%) and epilepsy (10%). The group of disorders concerning the digestive system is

Table 2. Distribution of comorbid somatic disorders of depression

Comorbidities	N=174
Metabolic, nutritional and endocrinologic diseases	56 (32.18%)
Diseases of the circulatory system	42 (24.14%)
Diseases of the nervous system	20 (11.49%)
Diseases of the digestive system	12 (6.9%)
Infectious diseases	9 (5.41%)
Diseases of the musculoskeletal system	7 (4.02%)
Neoplasms	4 (2.29%)
Others	24 (13.79%)

Table 3. Most common somatic disorders

Somatic disorders	% Patients (N = 59)
Disorders of lipoprotein metabolism and other lipidemias	50.84%
Hypertensive disorder	38.98%
Diabetes mellitus	13.55%
Cardiac valves disorders	13.55%

represented by 13.55% of the subjects who are diagnosed with at least one disease included in this group. As for the types of pathologies, 50% of them consist of gastrointestinal disorders, followed by hepatobiliary disorders (20%). (Table 3)

We found significant correlations between the severity levels of depression and the multimorbidity status of each patient ($p=0,031$). Similarly, significant correlations were obtained between the depression severity levels and the multiple comorbidities status in the metabolic, nutritional and endocrinological diseases group ($p=0.013$), diseases of the circulatory system ($p=0.037$), diseases of the nervous system ($p=0.032$) and the diseases of the digestive system ($p=0.01$).

DISCUSSIONS

Main findings

In our study we analyzed the range of relatively common somatic disorders that were associated with depression in our population group, providing an overall picture of comorbid disorders of depression along with their prevalence. There is clear evidence concerning the association of depression and somatic disorder [8, 11, 14], with higher frequency of comorbid disorders for depressed patients compared with the nonclinical population [15]. Further, we will discuss our findings in the context of already available data. Within the data collected, disorders of lipoprotein metabolism and other lipidemias ranked first in terms of prevalence among the subjects included. Previous research studies have shown that symptoms of depression are linked to dyslipidemia characterized by

high levels of total cholesterol, triglycerides, and LDL cholesterol, as well as low levels of HDL cholesterol and increased BMI [16, 17]. We found hypertensive diseases to be the second most frequent diagnosis associated with depression within our data sample. These observations are supported by existent research data concerning the association of depression and hypertensive diseases [18-20]. Furthermore, we report that diseases of the circulatory system rank second regarding the prevalence of comorbid affections associated with depression (i.e., cardiac valves diseases, ischemic heart diseases). It is indicated that comorbid depression associated with the previously mentioned diseases is linked to poor prognosis and higher morbidity and mortality, being also an independent risk factor for development of cardiovascular diseases and their complications. In addition, depression and cardiovascular diseases appear to be related in a bidirectional way, although the underlying pathways are still undetermined [21, 22].

It is important to mention, the cardiovascular risk is also partially mediated through the interconnection between depression and metabolic disorders such as dyslipidemias and diabetes [7, 16]. Diabetes mellitus is another high-ranking disorder in terms of prevalence; 13.55% of the patients in our study were diagnosed with diabetes mellitus. There is also a bidirectional connection between the comorbidity of depression and diabetes mellitus with a higher risk of depression in patients diagnosed with diabetes and a higher risk of diabetes in patients diagnosed with a depressive disorder [23,

24]. Egede (2004) reported higher incidence of complications in diabetes and higher odds of functional disability in a study which analyzed data on 30,022 adults from the 1999 National Health Interview Survey [25]. Moreover, we analyzed the relation between the severity of the depressive episode and the multimorbidity status in a patient. In this sense, we obtained significant correlations for each group of disorders and the severity of the depressive episode.

A cross-sectional epidemiologic study has shown that disability caused by somatic symptoms, as well as an increased number of symptoms are strongly associated with increased depression severity and lower quality of life [26]. Our study findings suggest the need of an integrated approach in terms of comorbidity of depression and physical illness. Early detection and management of depressive symptoms are important keys to better outcomes and improved quality of life [27].

Study limits

One of the limitations of our study is represented by the design of the study which doesn't allow a causal relationship deduction. Also, the relatively small clinical sample and the recorded data collected from patients' medical records are important limits of this study.

CONCLUSIONS

This study provides an overall picture in terms of comorbidity of depression and physical illness. Significant correlations between the severity level of depression and the multimorbid status of the patient were found for most groups of diseases. Given the frequent association of depression and most somatic disorders, developing more efficient collaborative care would improve the clinical outcomes and the cost-effectiveness.

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