

comunicação breve

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# Prevalence of depression in different groups of inpatients at the University Hospital of Bahia, Brazil

## Prevalência de depressão em diferentes grupos de pacientes internados no Hospital Universitário da Bahia

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**Abstract Introduction:** According to several epidemiological studies 10% to 20% of patients with medical diseases have depressive symptoms. However, only one third of these patients receive a diagnosis and 10% to 30% are adequately treated. The objective of this study was to estimate the prevalence of depression in inpatients at the University Hospital of Bahia.

**Method:** Adult inpatients admitted to the University Hospital of Bahia were randomly assigned in the different wards during the first semester of 2001, in order to answer the Beck Depression Inventory (BDI). The sample was divided into patients with medical, surgical and neoplastic diseases.

**Results:** Among the 196 patients, with mean age of 46.3±14.9 years, from both genders, significantly higher BDI scores ( $p=0.03$ ) were observed in patients with medical diseases compared with surgical patients and those with neoplastic diseases (16.4±11.7 vs. 12.2±6.5 and 11.8±8.0, respectively). After establishing cutoff scores for the BDI, the prevalence of depression was 51.5% (57.7 clinical vs. 42.9 surgical and 34.2 neoplastic) for scores  $\geq 14$  and 24.5% (29.2 clinical vs. 9.5 surgical and 15.8 neoplastic) for scores  $\geq 21$ , being also more prevalent in clinical inpatients ( $p=0.03$  and  $p=0.06$ ).

**Conclusion:** The high prevalence of depression in this study shows that more attention should be given to depressive symptoms observed in inpatients in general hospitals.

**Keywords** Depression. Depressive symptoms. Inpatients. Prevalence. Questionnaires.

**Resumo Introdução:** Diversos estudos epidemiológicos mostram que 10% a 20% dos pacientes com doenças clínicas apresentam sintomas depressivos. Todavia, apenas um terço desses casos é diagnosticado pelos clínicos e 10% a 30% recebem tratamento. O objetivo deste trabalho foi o de estimar a prevalência de depressão em grupos de pacientes internados no Hospital Universitário da Bahia.

**Método:** Pacientes adultos internados no Hospital Universitário da Bahia foram sorteados aleatoriamente nas diversas enfermarias do hospital no primeiro semestre de 2001. Foi aplicado o Inventário de Beck para Depressão (BDI), e a amostra foi dividida em grupos de pacientes com doenças clínicas, cirúrgicas e neoplásicas.

**Resultados:** Dentre os 196 pacientes com idade média de 46,3±14,9 anos, de ambos os gêneros, foram observados escores de BDI significativamente maiores ( $p=0,03$ ) naqueles com doenças clínicas se comparado aos pacientes com patologias cirúrgicas e neoplásicas (16,4±11,7 vs. 12,2±6,5 e 11,8±8,0, respectivamente). Estabelecendo-se pontos de corte do BDI, a prevalência de depressão foi de 51,5% (57,7 nos clínicos, 42,9 nos cirúrgicos e 34,2 naqueles com neoplasias) para  $\geq 14$  e 24,5% (29,2 clínicos, 9,5 cirúrgicos e 15,8 neoplasias) para  $\geq 21$ , sendo também mais prevalente entre os pacientes clínicos ( $p=0,03$  e  $p=0,06$ ).

**Conclusão:** A elevada prevalência de depressão neste estudo evidencia a necessidade de maior atenção sobre os estados depressivos em pacientes internados em hospitais gerais.

**Descritores** Depressão. Pacientes internados. Prevalência. Questionários.

## Introduction

The prevalence of depression in inpatients admitted to general hospitals has been the target of several studies in the last years, mainly after psychiatric wards and liason medicine services were included in these hospitals, what has contributed to a higher detection of affective disorders.<sup>1</sup>

Epidemiological studies show that 10% to 20% of patients with medical disorders presented with significant depressive symptoms and up to 5% severe pictures deserved a diagnosis of major depression. However, only one third of these cases are actually diagnosed by physicians and 10% to 30% receive adequate antidepressant treatment.<sup>2</sup>

The difficulty of prescribing antidepressants for depressed patients may be related to false beliefs, such as that depression is a normal reaction to a severe disease and does not need treatment or that conventional treatments are inefficient or harmful to the clinical and/or surgical condition. This can lead to unduly therapeutic nihilism towards depression and other psychological problems in these patients, leading physicians to ignore potentially efficient treatments and to give insufficient attention to the investigation and treatment of the specific causes of depression.<sup>2,3</sup>

The aim of our study was to determine the prevalence of depression in the University Hospital of the Federal University of the state of Bahia (HUPES/UFBA), and to assess its association with the kind of pathology that led to hospitalization.

## Method

According to the literature, the prevalence of depression was estimated around 20% and we accepted the  $\pm 4$ -percent precision point for the 95% confidence interval (95% CI). As the Hospital has 284 beds, we set the sample to 164 patients, adding 20% to prevent possible losses, reaching a total of 196 patients to be interviewed. Patients unwilling to answer the questionnaire were considered as losses and patients of the consecutive bed replaced them. The study was done in 13 out of 15 wards of the University Hospital Professor Edgard

Santos - HUPES (Salvador, Bahia), excluding the Pediatric and Psychiatric wards. Patients were interviewed from January to June 2001. The HUPES' Research Ethics Committee authorized the study.

The instrument to collect data was the Beck Depression Inventory, BDI,<sup>4</sup> with 21 items, consisting of statements of growing severity. The variation of the total score ranges from 0 (zero) to 63 (sixty-three) points. In the proposed model,<sup>4</sup> the patient reads the questions and chooses the statement considered as the most applicable to him/her in the prior week. However, in order to prevent biases in the assessment between literate and illiterate patients, the same interviewer read the questions and the patient indicated which answer best applied to his/her case.

We included patients of both genders, aging 18 to 70 years with physical and/or mental conditions to answer the questionnaire. To select the patients, we previously chose randomly the beds of each ward to be included in the study and created a randomic spare list to be consulted in case any of the previous patients was not able to participate. These allotments were performed using the *Epitable* List of Randomic Numbers of the software *EpiInfo* 6.0, what allowed us to maintain the sample originally estimated.

Although this study did not aim to distinguish between diagnostic categories, objective to which the BDI is inappropriate, we established cut-off points ( $\geq 14$  and  $\geq 21$ ) as criteria for depression, in order to increase the instrument's precision.

The sample was divided in three main groups, according to what caused the hospitalization, namely: clinical (cardiovascular, pulmonary, renal, gastrointestinal and systemic), surgical (general, gynecologic and orthopedic) and neoplastic pathologies.

The continuous variables were expressed by the mean value  $\pm$  standard deviation and were assessed by the Kruskal-Wallis' test and the Dunn's post-test. Categorical variables were described as ratios and compared using the chi-square test. The allotment of patients was performed using the *EpiInfo* 6.0 soft-

**Table 1 - General characteristics among studied groups of pathologies.**

General Characteristics	Total (N=196)	Clinical (N=137)	Surgical (N=21)	Neoplasias (N=38)	p
Age	46.3 $\pm$ 14.9	46.6 $\pm$ 15.1	43.9 $\pm$ 12.5	46.4 $\pm$ 15.4	0.73
Gender					
Male	93(47.4%)	65(47.4%)	10(47.6%)	18(47.4%)	1.00
Female	103(52.6%)	72(52.6%)	11(52.4%)	20(52.6%)	
Race					
Caucasian	31(15.8%)	25(18.2%)	2(9.5%)	4(10.5%)	0.36
Non-Caucasian	165(84.2%)	112(81.8%)	19(90.5%)	34(89.5%)	
Marital status					
Married	92(46.9%)	64(46.7%)	10(47.6%)	18(47.4%)	0.99
Not married	104(53.1%)	73(53.3%)	11(52.4%)	10(52.6%)	
Origin					
Capital of the state	99(50.5%)	64(46.7%)	12(57.1%)	23(60.5%)	0.26
Rest of the state	97(49.5%)	73(53.3%)	9(42.9%)	15(39.5%)	
Schooling					
Illiterate	33(16.8%)	24(17.5%)	1(4.8%)	8(21.1%)	0.26
Literate	163(83.2%)	113(82.5%)	20(95.2%)	30(78.9%)	
Work situation					
Unemployed	26(13.3%)	24(17.5%)	2(9.5%)	-	0.07
Retired	36(18.4%)	24(17.5%)	5(23.8%)	7(18.4%)	
Working	134(68.3%)	89(65.0%)	14(66.7%)	31(81.6%)	

ware and the analyses were done with the SPSS (Statistical Package for Social Sciences) software, version 10.0 for Windows. In the statistical analyses, the differences were considered as significant when the probability (*p*) of a type I error was ≤ % (*p*≤0.05).

## Results

Table 1 shows the overall characteristics of the 196 patients. Sampled people had a mean age of 46.3±14.9 years and were balanced between males and females, (respectively 47.4% vs. 52.6%). Age and gender had also similar means and ratios, respectively, between the three groups of studied pathologies, allowing, therefore, the overall analysis.

The mean hospitalization time was 14.4 days and there was no significant difference between groups (*p*=0.36), although clinical patients remained hospitalized in average 3.3 days more than those with neoplasias and 7.1 days more than surgical patients.

As a whole, the prevalence of depression was of 51.5% and 24.5%, respectively, considering the cut-off points of the BDI ≥14 and ≥21. In the total of patients as well, the mean score value was 15.0±10.7, being significantly different (*p*<0.03) in the three groups of patients, due to the fact that clinical patients had a higher mean (16.4±11.7) than surgical ones (12.2±6.5) and than the group with neoplasias (11.8±8.0), as shown in Table 2.

With the cut-off point of 14, the clinical group showed significantly higher prevalence than the other groups (*p*=0.03). When the cut-off point was 21, the analysis between the groups showed that clinical patients tended to more depressed (29.2% vs. 9.5% and 15.8%) (*p*=0.06).

## Discussion

We found a prevalence of depression of at least 24.5%, confirming data from other studies<sup>1,3,5</sup> and the impressions of several authors about the high rate of depression among patients with general medical diseases.

Brazilian studies on depression in hospitalized patients report rates even higher than found in this study. Machado et al<sup>5</sup> in 1989 determined that 36.6% of patients hospitalized in non-psychiatric wards of the University Hospital of Porto Alegre had BDI scores higher than 21 points. The study of Roithman et al,<sup>3</sup> in the same year and in the same city, determined that 35.0% of patients had BDI scores higher than 21.

Studies abroad point out to similar rates, although using preferentially the cut-off point of 14 points for the BDI. These rates have remained around 20% to 40% along the last three decades.<sup>6-9</sup>

The option to perform this analysis with three groups was based on the fact that some pathologies are more depressogenic due to inherent characteristics of the patient's general condition. Roithman et al<sup>3</sup> highlighted the fact that patients with neoplasias have higher scores for depression among clinical patients, what was justified by the fact that cancer is a chronic disease and its treatment is associated to several side effects.

We did not find this association in our study. The high rate of patients diagnosed with neoplasia aroused the possibility of making a separate analysis as there are specificities concerned to the prognosis of this group and consequently to the patient's degree of suffering. However, the fact that this group has shown rates of depression significantly lower than that of clinical patients was surprising and curious.

Another hypothesis to explain the different scores of depression in clinical patients and in those with neoplasia is that, possibly due to the low level of information of patients or to the difficulties that the assistant staff have to interact with the patients, most of patients with neoplasia of HUPES might have not the accurate notion about the severity of their illness.

The University Hospital of the Federal University of Bahia is a center of medical excellence, in the state of Bahia, for the treatment of patients with severe diseases, mainly chronic ones. Patients with medical diseases have usually a longer evolution than those under surgical treatments. It is possible that the quicker resolution with surgical treatment may explain the decrease in the scores of depression.

This study shows, as well as similar prevalence studies, the possibly inherent sources of biases that, in this case, may be associated to the fact that the used instrument is not the most adequate to diagnose depression. It is known that BDI scores are influenced by personality traits, that tend to overestimate the scores of depression, even when the cut-off point is raised to 21, increasing the instrument's specificity regarding the depressive symptomatology.

Another possible biasing factor for this study is the fact that the questionnaire of assessment, designed to be self-applicable, was read by the interviewer, even being him the only investigator. However, as we explained in the methodology, this decision was made aiming to allow allotted illiterate patients to be assessed. Nevertheless, this possible assessing bias is useful to reduce the impact of another bias, the selection one, that has more severe consequences as it excludes all patients not able to read the inventory.

## Conclusions

The high prevalence of depression in this study highlights the need to pay more attention on depressive conditions in pa-

**Table 2 - Other characteristics among studied groups of pathologies.**

General Characteristics	Total (N=196)	Clinical (N=137)	Surgical (N=21)	Neoplasias (N=38)	p
Hospitalization (days)	14.4±23.0	15.9±24.9	8.8±12.5	12.6±20.1	0.36
Beck score	15.0±10.7	16.4±11.7	12.2±6.5	11.8±8.0	0.03
Depression (BDI >14)	101(51.5%)	79(57.7%)	9(42.9%)	13(34.2%)	0.03
Depression (BDI >21)	48(24.5%)	40(29.2%)	2(9.5%)	6(15.8%)	0.06

tients hospitalized in general hospitals, mainly regarding the aspects connected to the medical diagnosis.

The diagnostic criteria for depression to be used in epidemiological studies have to be validated to reflect some specificities of the Brazilian population, such as the dramatic illiteracy rates (whether or not functional) that re-

strict the use of questionnaires similar to the BDI.

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