

# Relationship between depression, work, and grade of impairment in leprosy

## Associação entre sintomas depressivos, trabalho e grau de incapacidade na hanseníase

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### ABSTRACT

Depression is the most common psychiatric disorder in leprosy and with high depressive symptoms. **Objective:** The aim of this study was to determine the prevalence and frequency of depressive symptoms and their relationship to WHO impairment grading (IG), and sociodemographic variables. **Method:** We applied a survey containing sociodemographic, clinical aspects and IG. The original scale of the BDI was applied to identify the frequency of depressive symptoms (21 items), as well as the cognitive subscale BDI-Short Form-BDI-SF (items 1-13), recommended to assess depressive symptoms in individuals with defined pathologies. Descriptive statistical analysis was used, with the frequency distribution to characterize the sample, and to the intersection of the variables, the Chi-square Test-corrected (Yates) was applied, considering significant results  $p$  - value  $< 0.05$ . **Results:** 130 patients who have or have had leprosy were evaluated. The mean age of patients was 49.64 (SD = 14.04). There was a predominance of males (64.6%), those living with family (87.7%), with incomplete primary education (66.2%), stable civil union (61.6%), which did not work (75.4%) and receive retirement or health aid (63.9%). Regarding clinical aspects, 94.5% were multibacillary, 74.6% had multidrug therapy and most have loss of protective sensation and/or deformities (31.5% IG1; 37% IG2). Among the cases evaluated, 43.1% had depressive symptoms of moderate to severe intensity. There was no significant correlation between BDI-SF and IG ( $p$  - value = 0.950). However, the individuals without an occupation or job ("which did not work") were associated with depressive symptoms (BDI-FS;  $p$  - value  $< 0.05$ ). Somatic apprehension was the most frequent symptom (80.7%), followed by difficulty with work (78.5%), irritability (68.5%), fatigue (67.7%), self-blame (62.3%) and tearfulness (60%). **Conclusion:** It is concluded that moderate and severe depressive symptoms assaulted 43.1% of the cases evaluated, regardless of whether or not physical disabilities (IG1 and 2). Individuals who did not work were the most affected by depressive symptoms compared to those who had some sort of occupation.

**Keywords:** Disabled Persons, Leprosy, Depression, Work

### RESUMO

A depressão é o transtorno psiquiátrico mais comum na hanseníase e com alto índice de sintomas depressivos. **Objetivo:** Verificar a frequência dos sintomas depressivos e sua relação com o grau de incapacidade (GI) da OMS e variáveis sociodemográficas. **Método:** Aplicou-se um questionário, contendo aspectos sociodemográficos, clínicos e o GI. Foi aplicada a escala original do BDI para identificar a frequência dos sintomas depressivos (21 itens) e a subescala cognitiva chamada BDI-Short Form - BDI-SF (1-13 itens), recomendada para avaliar sintomas depressivos em indivíduos com diagnóstico de alguma patologia. Foi utilizada análise estatística descritiva, com distribuição de frequência para a caracterização da casuística e para o cruzamento das variáveis, foi utilizado o Teste *Chi-square-corrected* (Yates), considerando resultados significantes valor -  $p < 0,05$ . **Resultados:** Foram avaliados 130 pacientes que tem ou tiveram hanseníase. A idade média dos pacientes foi de 49,64 (SD 14,04). Houve predomínio do sexo masculino (64,6%), dos que vivem com familiares (87,7%), com ensino fundamental incompleto (66,2%), união civil estável (61,6%), não trabalham (75,4%) e recebem aposentadoria ou auxílio saúde (63,9%). Em relação aos aspectos clínicos, 94,5% são multibacilares, 74,6% concluíram a poliquimioterapia e a maioria apresenta perda da sensibilidade protetora e/ou deformidades (31,5% grau 1 e 37% grau 2). Dentre os casos avaliados 43,1% apresentou sintomas depressivos de intensidade moderada a grave. Não houve correlação significativa entre BDI-SF e GI (valor -  $p = 0,950$ ), mas, "não trabalhar" associou-se com sintomas depressivos (BDI-SF) (valor -  $p < 0,05$ ). Preocupação somática foi o sintoma mais frequente (80,7%), seguido de dificuldade no trabalho (78,5%), irritabilidade (68,5%), fadiga (67,7%), auto-acusação (62,3%) e choro fácil (60%). **Conclusão:** Conclui-se que sintomas depressivos moderados e graves acometeram 43,1% dos casos avaliados, independentemente de ter ou não deficiências físicas (GI 1 e 2). As pessoas que não trabalhavam foram mais acometidas por sintomas depressivos em comparação aos que exerciam alguma atividade profissional.

**Palavras-chave:** Pessoas com Deficiência, Hanseníase, Depressão, Trabalho

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## INTRODUCTION

Depression represents a worldwide public health problem, currently estimated to afflict 350 million people.<sup>1</sup> One global mental health survey concluded that the highest incidence of depression among low and middle-income countries is found in Brazil.<sup>2</sup> Depression is the most frequent emotional response among people who suffer chronic illness<sup>3,4</sup> since this compromises an individual's functionality as well as his adaptation to social life.

With leprosy (also known as Hansen's Disease), depression stands out as the most common psychiatric disturbance among patients.<sup>5,6</sup> It is treated as a chronic infectious-contagious disease that develops slowly, caused by the *Mycobacterium Leprae* bacteria, which damages peripheral nerves causing sensory, motor, and autonomic alterations in the face (eyes and nose), hands, and feet. This disease affects people of all ages, especially those in the economically active age bracket.<sup>7</sup> When not treated or diagnosed too late, leprosy can evolve into physical disabilities leading to a reduction in working capacity and limitation in one's social life.<sup>8</sup> According to the World Health Organization (WHO), people with the greatest risk of becoming disabled are those diagnosed with a grade of impairment (GI) of 1 or 2. Currently there is a high percentage (11.3%) of patients who begin treatment with degree 2, which evidences the late leprosy diagnoses in this country.<sup>1</sup>

Added to the disabilities, to the chronic course of the disease, and to the prolonged treatment, the stigma that goes with leprosy can cause mental suffering since it has a direct effect on social interactions, performance at work, and daily life activities.<sup>7</sup> Sadness, the sensation of impotence, low self-esteem, and social isolation are common feelings among those affected with leprosy.<sup>9</sup> These characteristic reactions, with greater intensity, can represent symptoms of depression. In the literature, among the negative feelings identified with leprosy patients, 85.9% refer to bad humor, desperation, anxiety, and depression.<sup>6</sup> Even when comparing leprosy with other dermatoses, such as tinea versicolor,<sup>10</sup> the literature indicates that depression is the most common psychiatric disorder among patients with this disease.<sup>5,11,12</sup> One study made in India showed that 55% of leprosy patients had depression.<sup>13</sup> In Ethiopia, depression is a frequent comorbidity in patients with neuropathy stemming from leprosy.<sup>14</sup> In

Taiwan, the prevalence of depression among elderly institutionalized patients with the disease was 25%.<sup>15</sup>

## OBJECTIVE

This study sought to verify the frequency of the intensity of the depressive symptoms and its relationship with the degree of disability and the sociodemographic variables.

## METHOD

A cross-sectional study was made with 130 patients of both genders, including only those over 18 who had once had or who now had leprosy, who were evaluated at the Rehabilitation Division of the Lauro de Souza Lima Institute (Instituto Lauro de Souza Lima (ILSL)) in Bauru, state of São Paulo, which is the reference center for treatment of Latin American Leprosy. Excluded from the study were patients who had cognitive impairments that might compromise communication and the understanding between patient and interviewer or who refused to participate in this study.

Data was collected in a single meeting that lasted approximately 60 minutes.

Initially, to characterize the population under study, a questionnaire with structured questions was used that contained the following questions: gender, age bracket, schooling, marital status, current occupation, monthly income, whom they reside with, and clinical aspects (polychemotherapeutic treatment, degree of disability, and operational classification).

The GI was evaluated later, respecting the norms defined by the WHO.<sup>7</sup> This indicator grades the neurological lesions (such as the diminution or loss of protective sensitivity), as well as visible deformities stemming from neural lesions and/or leprosy-induced blindness; the degree is obtained by evaluating tactile sensitivity, visual acuity, and articular mobility, classifying them as 0 (zero), 1 (one), or 2 (two).<sup>7</sup> The degree 0 is attributed when there is no leprosy-induced neural impairment in the eyes, hands, or feet; degree 1 corresponds to diminution or loss of sensitivity in the eyes, hands, or feet; and degree 2 indicates the presence of physical deficiencies such as lagophthalmos and/or ectropian, trichiasis, central corneal opacity, visual acuity less than

0.1 or the inability to count fingers at six meters, trophic and/or traumatic lesions, claws, bone reabsorption, claw hand, and ankle contracture.<sup>7</sup>

Upon presentation of a valid Portuguese version, the Beck Depression Inventory was done next to evaluate depression. The original scale consists of 21 items whose intensity ranges from 0 to 3 and which can be divided into two sub-scales: cognitive (items 1-13) and somatic (items 14-21).<sup>16</sup> For the present article, the original BDI-21 was used to identify the frequency of each one of the depressive symptoms (21 items); the cognitive sub-scale called the BDI-Short Form - BDI-SF (items 1-13) was used to evaluate depressive symptoms in individuals diagnosed with some pathology because the somatic scale could be influenced by the patient's medical condition. This scale is promoted by Beck et al.<sup>17</sup> and has been validated for use in Brazil by Furlanetto.<sup>18</sup> Analyzing this data, patients with light depressive symptoms scored from 0-9. The dominant range, from moderate to serious, was identified in persons who scored 10 and above as the sum of the first 13 items in the BDI, which constitutes the cognitive affective sub-scale. It must be pointed out that the results obtained by the BDI are not by themselves indicative of a diagnosis of depression. It is a monitoring scale and does not take the place of the diagnostic interview by a specialized physician.<sup>18</sup>

The data was analyzed by the EPI-INFO version 7.1.1.0 software. Descriptive statistics were used to do a case-by-case characterization. The chi-squared test (Yates correction) was used to verify the existence of an association between the sociodemographic and clinical variables with depressive symptoms. The significance level considered was 5%.

This study was approved by the Scientific Commission and the Ethics Committee of the Lauro de Souza Lima Institute (C.E.P. Nº 038/2010). All the participants signed a Free and Informed Consent Term. The ethics principles contained in the Helsinki Declaration (2000) were complied with, as well as the specific legislations in the country in which the research was performed.

## RESULTS

The age of the patients ranged from 18 to 78 years, averaging 49.64 (SD 14.04). Considering the distribution frequency, the population

under study (n = 130) consisted predominantly of males (64.6%) ranging in age between 18 and 59 years (73.1%), with less than 8 years of schooling (66.2%), and in a stable domestic relationship (61.6%). The majority resided with family (87.7%), did not work (75.4%), and had a monthly retirement income or sick pay (63.9%). The sociodemographic characterization of the sample is detailed in Table 1.

The frequency of light depressive symptoms in the BDI-SF was 56.9%, of moderate to serious 43.1%, representing a minimal percentage difference when compared with the BDI-21, which showed 60.8% with light depressive symptoms and 39.2% with moderate to serious.

In Table 2, one sees the BDI-SF and the sociodemographic and clinical variables. In the analysis of the results concerning the depressive symptoms (BDI-13) and the GI, there was no significant correlation ( $p = 0.950$ ). Among the studied variables, only in "current occupation" was there a significant association with the BDI-SF ( $p = 0.029$ ).

As shown in Table 3, the frequency of the depressive symptoms was verified in the full scale of the BDI-21. According to the evaluation of each item in the scale, the most frequent symptoms shown by the patients were: somatic preoccupation (80.7%), difficulty at work (78.5%), agitation (68.5%), fatigue (67.7%), self-criticalness (62.3%),

crying (60%), insomnia (56.9%), sadness (53.8%), loss of pleasure (50%), and change in body image (50%).

## DISCUSSION

Regarding clinical and sociodemographic aspects, the majority of patients in this study were male, of low income, and were diagnosed as multibacillary. These findings can be explained by the greater incidence of leprosy being in men with low income and little schooling in the country.<sup>7,19</sup> Although the majority of patients in this study were men, the literature holds that those with the greatest propensity for depression are women in the general population who have little schooling and are in unfavorable socioeconomic conditions.<sup>1</sup> However, in the present study, depressive symptoms from moderate to serious were identified as 72.09% being from men and 65.9% from women, representing a minimal percentage difference.

Identifying the predominance of depressive symptoms in patients with physical illnesses is a difficult task and requires caution from health professionals, since many of the important signs and symptoms of depression can be confused with the characteristics of the disease itself. Among chronic illnesses, studies show that from 20% to 30% of patients with hematological diseases<sup>20</sup> and *diabetes mellitus*<sup>21,22</sup> show significant depressive symptoms. Depression is very common with leprosy,<sup>5,11,12</sup> corroborating the results of this study in which the presence of moderate to serious symptoms of depression was relevant and can signal the possibility of having clinical depression.

In all the depression categories enumerated in the BDI-21, the majority of participants in the present research showed more than 50%. This percentage shows that the patients appear emotionally fragile and are in need of psychiatric and/or psychological monitoring. These results were not corroborated in the literature, for there was no Brazilian study to be found using the BDI on leprosy.

Considering the first 13 symptoms (items 1-13) classified as cognitive/affective, the ones with more than 50% were: Sadness, Self-criticalness, Agitation, Crying, and Loss of pleasure. According to Porto, all these symptoms characterize mood alterations.<sup>23</sup> Regarding the items 14-21, classified as somatic/performance that had percentages above 50% the following symptoms were observed: Somatic preoccupation, Difficulties at work, Tiredness

**Table 1.** Sociodemographic characteristics and clinical aspects of the population under study (n = 130)

Variables	n	%
<b>Gender</b>		
Male	84	64.6
Female	46	35.4
<b>Age Bracket</b>		
18-59 years	95	73.1
≥ 60 years	35	26.9
<b>Schooling</b>		
Less than 8 years	86	66.2
8 years or more	44	33.8
<b>Current Occupation</b>		
Working	32	24.6
Not working	98	75.4
<b>Monthly Income</b>		
No income	15	11.5
Paid work	32	24.6
Retirement/Sick-pay	83	63.9
<b>Marital Status</b>		
Single	50	38.5
Stable relationship	80	61.5
<b>Residing with</b>		
Alone	16	12.3
With family	114	87.7
<b>Operational classification</b>		
Paucibacillary	07	5.5
Multibacillary	121	94.5
<b>Polychemotherapy</b>		
In treatment	33	25.4
Finished treatment	97	74.6
<b>Degree of physical disability</b>		
Degree 0	41	31.5
Degree 1	41	31.5
Degree 2	48	37

**Table 2.** Association between depressive symptoms (BDI-SF) and the sociodemographic and clinical variables

Variables	p value
Gender	0.626
Age	0.303
Schooling	0.865
Current occupation	0.029*
Marital status	0.280
Resides with	0.832
Operational class of leprosy	0.236
Current condition of treatment (PCT)	0.770
Degree of physical disability	0.950

\*  $p < 0.05$  (chi-squared test)**Table 3.** Frequency of depressive symptoms in the studied population according to the Beck Depression Inventory (n = 130)

Item	Symptom	*Yes	
		n	%
Cognitive/Affective	1 Sadness	70	53.8
	2 Hopelessness	58	44.6
	3 Past failure	43	33.1
	4 Loss of pleasure	65	50
	5 Guilty feelings	28	21.5
	6 Punishment feelings	41	31.5
	7 Self-dislike	38	29.2
	8 Self-criticalness	81	62.3
	9 Suicidal thoughts or wishes	20	15.4
	10 Crying	78	60
	11 Agitation	89	68.5
	12 Loss of interest in people √	34	26.2
	13 Indecisiveness	49	37.7
Somatic/Performance	14 Change in body image √	65	50
	15 Difficulty at work √	102	78.5
	16 Changes in sleeping pattern	74	56.9
	17 Tiredness or fatigue	88	67.7
	18 Changes in appetite	38	29.2
	19 Weight loss √	34	26.2
	20 Somatic preoccupation √	105	80.8
	21 Lost interest in sex	73	56.2

\* "Yes" corresponds to the symptoms that were marked as light or moderate-to-serious in the Beck Depression Inventory (BDI)

or fatigue, Changes in sleeping pattern, and Lost interest in sex.

Somatic preoccupation of the patient could be related to various factors such as finding or keeping a job, distortions of body image, low self-esteem, and even fear of physical or psychological problems that may occur as a result of the disease. The high incidence of the self-criticalness symptom that was identified among these patients could be linked with self-rejection. According to Nunes, self-stigma is brought on by the negative character of the

illness.<sup>9</sup> The feelings of guilt may be related to moral or religious values, such as belief that the disease is a punishment from God.<sup>23</sup> The "difficulties at work" item could be linked to fatigue (sensation of lost energy) for not being able to perform the activities the way he or she would like. Such symptoms could be occasioned by the constraints of the disease itself. In his study, Costa<sup>6</sup> identified dissatisfaction in the majority of people related to their working skills owing to the clinical conditions of leprosy.

The significant correlation between depression and current occupation indicated that those who were not working had more depressive symptoms than those who were working. The explanation for this finding could be the fact that the majority of participants were retired or on paid sick leave. Although retirement occurs as an important milestone, it could also bring on a severance of social bonds.<sup>24</sup> In such cases the individual could develop low self-esteem and fall into a slower rhythm of activities and interest in daily life. These aspects could all be minimized by family support, a factor of great importance in facing the disease, reducing the mental suffering, and improving the quality of life.<sup>9,6</sup> In spite of leprosy having a history of social and family exclusion, the results of the present study show that the majority of patients live with their families and find themselves in a stable relationship such as marriage, which could suggest a change in the paradigm and a major awakening regarding the illness without the oppressive stigma it has carried since ancient times.

In this study there was no evidence linking depressive symptoms and the GI. This was probably due to the fact that most of the patients showed no visible deformities represented by the Grade of Impairment of 0 and 1 (63%). On the other hand, those who presented an GI of two, with some type of deformity of the eyes, hands, or feet (37%), although having, mostly, difficulty in carrying out their daily life activities, had no impairment in their autonomy. Therefore, even though this physical condition brings some kind of emotional discomfort, the individual does not necessarily develop symptoms of depression.

One limitation of this study regards the use of questionnaires such as the BDI, which only allow the verification of self-reported depressive symptoms. The use of these questionnaires is no substitute for a diagnosis made by a psychiatrist or psychologist using interviews and established diagnostic criteria.

## CONCLUSION

Moderate to serious depressive symptoms afflict 43.1% of the cases evaluated, regardless of whether there were physical deficiencies. The most frequent symptoms were: somatic preoccupation, difficulty at work, agitation, fatigue, self-criticalness, crying, insomnia, lost interest in sex, sadness, and loss of pleasure.

Those who did not work were more affected by these symptoms than those who

exercised some professional activity. This suggests that working makes an important contribution to professional satisfaction, in personal self-worth, and in the establishment of social ties, which can minimize the intensity of depressive symptoms. This emphasizes the importance of professional rehabilitation for people who have or have had leprosy, and especially for those who exhibit depressive symptoms. The data obtained in this study may contribute greatly to the work of health teams, for it offers support for the identification of depressive symptoms in leprosy and for the development of preventative actions, clinical and psychotherapeutic interventions in depression. The authors recommend new investigations on this theme.

## REFERENCES

1. Brasil. Ministério da Saúde. Indicadores epidemiológicos e operacionais de hanseníase no Brasil 2000-2011. Brasília (DF): Ministério da Saúde; 2012 [citado 2012 Dezembro 10]. Disponível em: [http://portal.saude.gov.br/portal/arquivos/pdf/indi\\_epidemiologicos\\_operacionais\\_hans\\_br2000\\_2011.pdf](http://portal.saude.gov.br/portal/arquivos/pdf/indi_epidemiologicos_operacionais_hans_br2000_2011.pdf).
2. Bromet E, Andrade LH, Hwang I, Sampson NA, Alonso J, de Girolamo G, de Graaf R, et al. Cross-national epidemiology of DSM-IV major depressive episode. *BMC Medicine*. 2011;9:90. DOI: <http://dx.doi.org/10.1186/1741-7015-9-90>
3. Boing AF, Melo GR, Boing AC, Moretti-Pires RO, Peres KG, Peres MA. Associação entre depressão e doenças crônicas: um estudo populacional. *Rev Saúde Pública*. 2012;46(4):617-23. DOI: <http://dx.doi.org/10.1590/S0034-89102012005000044>
4. Cardin F, Ambrosio F, Amodio P, Minazzato L, Bombonato G, Schiff S, et al. Quality of life and depression in a cohort of female patients with chronic disease. *BMC Surg*. 2012;12 (Suppl 1):S10. DOI: <http://dx.doi.org/10.1186/1471-2482-12-S1-S10>
5. Singh GP. Psychosocial aspects of Hansen's disease (leprosy). *Indian Dermatol Online J*. 2012;3(3):166-70. DOI: <http://dx.doi.org/10.4103/2229-5178.101811>
6. Costa MD, Costa RD, Terra FS, Lyon S, Costa AMDD, Antunes CMF. Avaliação da qualidade de vida de pacientes em surto reacional de hanseníase tratados em centro de referência. *An Bras Dermatol*. 2012;87(1):26-35.
7. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Manual de prevenção de incapacidades. 3 ed. Brasília (DF): Ministério da Saúde; 2008.
8. Lana FCF, Amaral EP, Franco MS, Lanza FM. Estimativa do predomínio oculto da hanseníase no Vale do Jequitinhonha - MG. *Rev Min Enferm*. 2004;8(2):295-300.
9. Nunes JM, Oliveira EM, Vieira NFC. Ter hanseníase: percepções de pessoas em tratamento. *Rev Rene Fortaleza*. 2008;9(4):99-106.
10. Erinfolami AR, Adeyemi JD. A case control study of psychiatric morbidities among subjects with leprosy in Lagos, Nigeria. *Int J Psychiatry Med*. 2009;39(1):89-99. DOI: <http://dx.doi.org/10.2190/PM.39.1.g>
11. Tsutsumi A, Izutsu T, Akramul Islam MD, Amed JU, Nakahara S, Takagi F, Wakagi S. Depressive status of leprosy patients in Bangladesh: association with self-perception of stigma. *Lepr Rev*. 2004;75(1):57-66.
12. Sentürk V, Sağduyu A. Psychiatric disorders and disability among leprosy patients; a review. *Turk Psikiyatri Derg*. 2004;15(3):236-43.
13. Verma KK, Gautam S. Effect of rehabilitation on the prevalence of psychiatric morbidity among leprosy patients. *Indian J Psychiatry*. 1994;36(4):183-6.
14. Haroun OM, Hietaharju A, Bizuneh E, Tesfaye F, Brandsma JW, Haanpää M, et al. Investigation of neuropathic pain in treated leprosy patients in Ethiopia: a cross-sectional study. *Pain*. 2012;153(8):1620-4. DOI: <http://dx.doi.org/10.1016/j.pain.2012.04.007>
15. Su TW, Wu LL, Lin CP. The prevalence of dementia and depression in Taiwanese institutionalized leprosy patients, and the effectiveness evaluation of reminiscence therapy-a longitudinal, single-blind, randomized control study. *Int J Geriatr Psychiatry*. 2012;27(2):187-96. DOI: <http://dx.doi.org/10.1002/gps.2707>
16. Cunha JA. Manual da versão em português das Escalas Beck. São Paulo: Casa do Psicólogo; 2001.
17. Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. *Arch Gen Psychiatry*. 1961;4:561-71. DOI: <http://dx.doi.org/10.1001/archpsyc.1961.01710120031004>
18. Furlanetto LM, Mendlowicz MV, Romildo Bueno J. The validity of the Beck Depression Inventory-Short Form as a screening and diagnostic instrument for moderate and severe depression in medical inpatients. *J Affect Disord*. 2005;86(1):87-91. DOI: <http://dx.doi.org/10.1016/j.jad.2004.12.011>
19. Duarte MTC, Ayres J, Simonetti JP. Perfil socioeconômico e demográfico de portadores de hanseníase atendidos em consulta de enfermagem. *Rev Latino-Am Enfermagem*. 2007;15:774-9. DOI: <http://dx.doi.org/10.1590/S0104-11692007000700010>
20. Furlanetto LM, Moral JAGD, Gonçalves AHB, Rodrigues K, Jacomino MEMLP. Diagnosticando depressão em pacientes internados com doenças hematológicas: prevalência e sintomas associados. *J Bras Psiquiatr*. 2006;55(2):96-101. DOI: <http://dx.doi.org/10.1590/S0047-20852006000200001>
21. Fráguas R, Soares SMSR, Brontein MD. Depressão e diabetes mellitus. *Rev Psiq Clín*. 2009;39(3):93-9.
22. Braz JM, Silva MR, Góis CFL, Braz TM, Santos V, Silva LASM. Sintomas depressivos e adesão ao tratamento entre pessoas com diabetes mellitus tipo 2. *Rev Rene*. 2012;13(5):1092-9.
23. Garcia JRL, Macário DPAM, Ruiz RB, Siqueira LMS, Cará MRG. Considerações Psicossociais sobre a pessoa portadora de hanseníase. In: Opromolla DVA, Baccarelli R. Prevenção de incapacidades e reabilitação em hanseníase. Bauru: Instituto Lauro de Souza Lima; 2003.p.25-30.
24. Gordilho A. Depressão, ansiedade outros distúrbios afetivos e suicídio. In: Freitas EV, Py L, Neri AL, Cañado FAX, Gorzoni ML, Rocha SM. Tratado de geriatria e gerontologia. Rio de Janeiro: Guanabara Koogan; 2002.p.204-15.