

Emotional distress in Angolan patients with several types of tuberculosis

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Abstract

Background: There is growing evidence that emotional distress expressed in terms of anxiety and depression is very high among tuberculosis (TB) patients.

Objectives: This study aims to determine levels of anxiety, depression and emotional distress in patients with several types of TB and to determine the association between social-demographic and economical factors, clinical variables and anxiety, depression and emotional distress.

Methods: A cross-sectional study was performed in a sample of 81 TB patients. A social-demographic and economical questionnaire was used, followed by the hospital anxiety and depression scale.

Results: 38.3% and 49.4% of our sample presented significant levels of anxiety and depression. 44.4% of patients had significant levels of emotional distress. Married subjects, a diagnosis of extra-pulmonary TB and multidrug resistant TB were related to higher risk for anxiety. Gender, extra-pulmonary and multidrug resistant TB were associated to depression. Female gender and cases of extra-pulmonary TB presented a 1.5 times risk for emotional distress.

Conclusions: Our study found high rates of anxiety, depression and emotional distress among TB patients. Marital status, gender, type and treatment of TB were related to higher levels of emotional disorder. Mental health services should be an integral part of programs against tuberculosis.

Keywords: Anxiety, Depression, Common Mental Disorders, Mycobacterium tuberculosis, Miliary Tuberculosis, Pulmonary Tuberculosis, Pott's Disease, Huambo.

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Introduction

Tuberculosis (TB) is an ancient disease with elevated rates of incidence and prevalence mostly in low and middle-income countries. In 2013, 60,807 cases of all forms of TB were notified in Angola. Prevalence and incidence are estimated in 423 and 320 respectively, per 100,000 inhabitants¹. At the same year 6900 deaths were TB related and 1600 were result of TB and HIV co-infection¹. Huambo province it is located at the center of Angola. It has a population of over 1.5 million persons.

In 2013, 7,522 TB cases were reported². According to the national coordinator of the program against tuberculosis, this numbers will continue to rise in the next years³.

The recognition that common mental disorders (CMD) need to be placed alongside other pathologies associated with low income and poverty⁴ and that these disorders are a significant source of disability across cultures⁵, is not new. However the association between CMD and TB is recent. It is now clear that anxiety, depression and emotional distress are significant dimensions on the burden and disability of the disease⁶ and that they are intimately related to the severity of symptoms, to the number of reported symptoms, to higher rates of health services use, to low treatment compliance, to a more extensive course of treatment, to a reduced control of the disease and to death^{6,7,8,9}.

According to Peltzer and colleagues¹⁰, few studies have investigated the relation between TB and CMD in middle and low-income countries. Despite the reduced number of studies on the subject, there is growing evidence that emotional distress expressed in terms of

anxiety and depression is very high. In an Ethiopian sample 46.7% of the TB patients with HIV negative status presented with significant levels of distress, this number raises to 63.7% in TB patients with HIV positive status¹¹. A South African study concluded that 87% of the TB patients presented with significant emotional distress¹⁰. A recent study in Pakistan determined that 37.1% of TB patients from an outpatient clinic had anxiety and depression according to the Hospital Anxiety and Depression Scale (HADS)¹². A Brazilian study found a 34% increase in the presence of pulmonary TB among individuals with CMD namely at the level of depressive mood and thoughts⁹.

Therefore further epidemiological studies are needed to determine the severity of emotional distress in TB and to increase the understanding of the relationship between medical and social factors^{9,10}.

The present study aims to determine levels of anxiety, depression and emotional distress in patients with several types of TB from the Sanatorium Hospital of Huambo. We also aim to determine the association between social-demographic and economical factors, clinical variables and anxiety, depression and emotional distress.

Methods

A cross sectional study was performed from December 2013 to April 2014. The sample comprised 81 patients, from both genders, with ages between 15 and 64 years, admitted in the Sanatorium Hospital of Huambo with several types of TB. Patients with an altered state of consciousness and with comprehension difficulties during the initial questionnaire were excluded. Table 1 shows the characteristics of the sample. The majority were male (58%), with ages between 25 to 34 years (34.6%), single (50.6%), with school attendance at the

elementary level (54.3%).

According to socioeconomic status, the majority of the subject had a house (61.7%) and daily access to food (61.7%) but they did not have access to electricity (86.4%) or potable water (54.3%) and most of them did not have a monthly income (50.6%). Those who have a wage, received less than 5000 Kwanzas per month (57.5%). The majority of patients admitted for the first time (79%), were HIV negative (96.3%) and had a diagnosis of pulmonary TB (77.8%) non resistant to conventional TB treatment (74.1%).

A social-demographic and economical questionnaire was used, followed by the Hospital Anxiety and Depression Scale (HADS) in order to determine the levels of depression, anxiety and emotional distress. HADS comprises two factors corresponding to anxiety and depression, which share a common variance with a primary factor - emotional distress^{13,14}. It is defined that optimal balance between sensitivity and specificity is achieved when caseness is defined by a score of 8 or above on both Anxiety and Depression¹⁵. A cut-off 15 for emotional distress is acceptable¹⁶.

Clinical data was collected through the attending physician. Statistical analysis was performed via IBM SPSS Statistics 22. Initially, we obtained the frequencies and percentages for each variable, followed by Pearsnon's Chi-Square and odds ration and risk estimate. The study was approved by the directive board of the Sanatorium Hospital of Huambo, and all participants gave their informed consent.

Results

Table 2 shows the frequencies according to different levels of anxiety. According to that table, 38.3% of our sample presented with significant clinical levels of anxiety, with severity ranging from mild to very high.

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Table 1. Social-demographic, economical and clinical characteristics of the sample

	n	%
Gender		
Male	47	58
Female	34	42
Age (in years)		
15-24	23	28.4
25-34	28	34.6
35-44	13	16
45-54	11	13.6
55-64	6	7.4
Marital Status		
Single	41	50.6
Married	31	38.3
Divorced	3	3.7
Widow	6	7.4
School Level		
None	19	23.5
Elementary school	44	54.3
Preparatory school	15	18.5
High school	3	3.7
Do you have a house?		
Yes	50	61.7
No	31	38.3
Do you have daily access to food?		
Yes	50	61.7
No	31	38.3
Do you have access to electricity?		
Yes	11	13.6
No	70	86.4
Do you have access to potable water?		
Yes	19	23.5
No	44	54.3
Do you have a monthly wage?		
Yes	40	49.4
No	41	50.6
Monthly Income (in Kwanzas)		
<5000	23	57.5
5000- 10.000	6	15
5000- 10.000	9	22.5
5000- 10.000	2	5
Number of admissions		
First	64	79
More than once	17	21
HIV status		
Negative	78	96.3
Positive	3	3.7
TB Diagnosis		
Pulmonary Tuberculosis	63	77.8
Miliary Tuberculosis	12	14.8
Pott's Disease	4	4.9
Ganglionic Tuberculosis	2	2.5
TB treatment		
Regular	60	74.1
Multidrug Restistant	21	25.9

Table 2. Levels of anxiety in the sample according to HADS

	n	%
(0 - 7) None/low	50	61.7
(8-10) Borderline abnormal	14	17.3
(11-21) Abnormal	17	21

In table 3 the frequency and percentage of different levels of depression in the sample are displayed according to the HADS scores. We can infer that 49.4% of

our sample presented with clinical significant levels of depression. Using a cut-off score of 15 for the total of HADS, 44.4% (n=36) presented with significant levels of emotional distress.

Table 3. Levels of depression in the sample according to HADS

	n	%
(0 - 7) None/low	41	50.6
(8-10) Borderline abnormal	20	24.7
(11-21) Abnormal	20	24.7

In table 4 and 5 we can observe the frequencies and percentages of each variable that showed significant differences according to two levels of anxiety and depression (none or low and clinical significant) as well as the odds ratio. Married subjects of our sample revealed a risk for anxiety almost two times (1.1963) higher than

other marital statuses, a diagnosis of extra-pulmonary TB and multidrug resistant TB were also related to higher risk for clinical significant anxiety. Higher levels of depression were related to gender, with a 1.722 times higher risk for females, and to extra-pulmonary and multidrug resistant TB.

Table 4. Association of variables with anxiety levels in TB patients

	(0 - 7) None/low	(8-21) Clinical Significant	χ^2	OR	95% Confidence Interval
Marital Status					
Married (n/%)	12/ 38.7	19/ 61.3		1.963	[1.228-3.14]
Others (n/%)	38/ 76	12/ 24	11.264	0.395	[0.222-0.69]
Diagnosis					
Pulmonary (n/%)	41/65.1	22/34.9		0.133	[0.041-0.425]
Extra-pulmonary (n/%)	6/33.3	12/ 66.7	16.679	1.714	[1.236-2.377]
TB treatment					
Regular (n/%)	43/ 71.7	17/ 28.3		0.496	[0.269-0.915]
Multidrug Resistant (n/%)	6/ 28.5	15/ 71.5	5.121	1.473	[1.012-2.142]

Table 5. Association of variables with depression levels in TB patients

		(0 - 7) None/low	(8-21) Clinical Significant	χ^2	OR	95% Confidence Interval
Gender	Male (n/%)	30/ 63.8	17/ 42.5		0.467	[0.263-0.826]
	Female (n/%)	11/ 26.8	23/ 57.5	7.82	1.722	[1.148-2.582]
Diagnosis	Pulmonary (n/%)	39/74.6	24/22,2		0.133	[0.041-0.425]
	Extra-pulmonary (n/%)	2/25.4	16/ 77.8	16.679	1.714	[1.236-2.377]
TB treatment	Regular (n/%)	35/ 58.3	25/ 41.7		0.496	[0.269-0.915]
	Multidrug Resistant (n/%)	6/ 28.6	15/ 71.4	5.121	1.473	[1.012-2.142]

Table 6 contains the frequencies, percentages and the odds ratio for the variables that showed significant differences according to emotional distress. Female gender and cases of extra-pulmonary TB presented a 1.5 times higher risk for emotional distress.

Table 6. Association of variables with emotional distress levels in TB patients

		(0 - 14) None/low	(15-42) Clinical Significant	χ^2	OR	95% Confidence Interval
Gender	Male (n/%)	31/ 66	16/ 34		0.56	[0.332-0.946]
	Female (n/%)	14/ 41.2	20/ 58.8	4.907	1.55	[1.024-2.346]
Diagnosis	Pulmonary (n/%)	43/68.3	20/31.7		0.171	[0.053-0.551]
	Extra-pulmonary (n/%)	2/11.1	16/ 88.8	12.52	1.527	[1.164-2.005]

Discussion

The present study aimed to determine levels of anxiety, depression and emotional distress in patients with several types of TB and to establish the associations between those psychological domains and social-demographic and economical factors and clinical variables. We found clinical significant levels of anxiety in 38.3% of the sample. Clinical significant depression was found in 49.4% of the patients. Emotional distress was identified in 44.4% of the patients. These results are very similar to those presented in the sparse literature avail-

able. Rubeen and colleagues¹² found the presence of both anxiety and depression in 37.1% of their sample. A Zambian study signals a frequency of 30.8% of anxiety disorder in a sample of TB and TB/HIV positive patients¹⁷, and depression was indentified in 45.5% of the patients in a Nigerian sample¹⁸.The levels of emotional distress found in the literature are close to our findings. It ranges from 32.9% to 81%^{10,12,19}. This broad range of results is due to the use of different psychological instruments and different cut-off points.

Regarding the factors that underlie the emotional status, we found that clinical significant levels of anxiety are related to marital status, in which married patients showed almost two times more chances for presenting with anxiety, and that higher levels of depression were connected to gender, with women presenting 1.7 times more risk for depression. Extra-pulmonary and multi-drug resistant TB were also associated to both anxiety and depression. Emotional distress was associated to female gender and to extra-pulmonary TB. These two variables represent approximately 1.5 times more risk for the presence of significant emotional distress. Surprising was the absence of significant contribution of social-economic variables to the emotional dimensions. The relation between poverty, lower education and emotional functioning has been documented in several studies^{10,19,20}.

However we must emphasize that our sample comprised subjects with low social-economical status. The majority did not have access to potable water or electricity, school attendance was at the elementary level and most of the patients did not have a monthly wage. Therefore the influence of these variables on the emotional status could have been clouded by the narrow variety of social-economical characteristics. The same reasoning can be made concerning the HIV status; our sample only had three patients with a positive HIV status. Meanwhile, the influence of gender¹⁷, marital status^{10,18,19} and severity of the disease²¹ on the emotional sphere is well documented in worldwide researches.

The association between the psychological domains and TB is extremely intricate. Some authors advocate for the direct effects of stress on immune functioning²² while others point to the role of social stigma associated to the disease^{23,24,25}. The finding that gender and marital status as well as the type and treatment of TB influence emotional functioning seems to foster the idea of an interaction between social and biological mechanisms. Although the study of the relation between psychological domains and TB is beginning, the present data highly suggests that healthcare programs must incorporate mental health intervention. Despite the fact that tuberculosis is rarely considered in mental health programs⁹, mental health professionals should be integrated in TB control programs in order to minimize patient's suffering and to reduce the impact of emotional distress on treatment.

Limitations

The present study holds some limitations such as, the reduced number of participants, the non inclusion of patients with abusive alcohol consumption and being a cross-sectional study we could not make a casualty link between variables. Therefore, a longitudinal study with a larger sample should be conducted in the future. Such a study should clarify the casualty relationships between variables, namely the implications of the emotional variables to the course of the disease. Emotional distress and TB are associated with greater individual vulnerability and increased public health costs, these matters should be deepened in a future longitudinal research^{4,9}.

Conclusion

Our study found high rates of anxiety, depression and emotional distress among tuberculosis patients from the Sanatorium Hospital of Huambo. Marital status, gender, type and treatment of TB were related to higher levels of emotional disorder. Mental health services should be an integral part of programs against tuberculosis.

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