

Depression and anxiety symptoms among people with rifampicin-resistant tuberculosis receiving in-patient care in the National Pulmonology Reference Institute in Romania

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BACKGROUND

Tuberculosis (TB) remains one of the major public health threats globally . Around 10 million people fall ill with TB each year of which about 3% is estimated to occur in the World Health Organization (WHO) European Region

Romania is one of the 18 high-priority countries for TB control in the WHO European Region. Although the TB incidence rate continues to decline at an annual average rate of 5.5%, the country has the highest incidence rate of TB (68 per 100,000 population) accounting for 23% of all TB patients in the European Union (EU) . The RR/MDR-TB burden is one of the public health challenges in the country. In 2018, the estimated RR/MDR-TB incidence was 3.6 (range 2.9-4.5) per 100,000 population; however, of the expected 710 patients, only 470 were reported, meaning that the detection rate was only 66%

- Separately, depression and TB are recognized as important public health concerns. WHO estimated that globally, the total number of people with depression exceeds 300 million, and approximately the same number of people suffer from anxiety disorders.
- Out of the estimated number of people with depression and anxiety in the world, 12%, and 14% respectively are in WHO European Region. In Romania, the estimated prevalence of depressive and anxiety disorders in the general population was about 5% and 4%, respectively.
- Integrated patient-centered care and prevention services are some of the key interventions in implementing NTP and include social and psychological support for TB patients. Since July 2014, some of the RR/MDR-TB patients have benefitted from psychological counseling and social support in ambulatory care through internationally funded projects provided by NGOs.
- Studies from the WHO European Region, report a prevalence of depression and depressive symptoms among TB patients ranging from 19-to 65%.

- Mental disorders are associated with poor adherence to medication which could lead to irregular treatment, especially in the treatment of illnesses with long duration. Many people with depression are also exposed to TB risk factors including alcohol abuse, poverty, homelessness, and congregate housing, thus they are at higher risk of developing the disease.
- On the other hand, TB patients are at higher risk of developing depression due to several risk factors including drugs used for the treatment of RR/MDR-TB poverty, social exclusion and drug abuse. Thus, TB and depression act synergistically to worsen the overall disease burden.

Materials and Methods

Study design and population

We conducted a cohort study. The study enrolled all consecutive adult (≥ 18 years old) RR/MDR-TB patients receiving in-patient care in the NIP in Romania from May-September 2020. Only patients who were able to speak Romanian and provided written informed consent were included in the study.

Study Instrument

We used the Hospital Anxiety and Depression Scale (HADS) to evaluate presence of depression and anxiety symptoms. The questionnaire has been validated in many countries, languages and settings, and can be used free of charge. The instrument was not validated for the Romanian population.

Hospital Anxiety and Depression Scale

Hospital Anxiety and Depression Scale (HADS)

Instructions: Tick the box beside the reply that is closest to how you have been feeling in the past week. Don't take too long over you replies: your immediate is best.

D	A		D	A	
		I feel tense or 'wound up':			I feel as if I am slowed down:
3		Most of the time	3		Nearly all the time
2		A lot of the time	2		Very often
1		From time to time, occasionally	1		Sometimes
0		Not at all	0		Not at all
		I still enjoy the things I used to enjoy:			I get a sort of frightened feeling like 'butterflies' in the stomach:
0		Definitely as much	0		Not at all
1		Not quite so much	1		Occasionally
2		Only a little	2		Quite Often
3		Hardly at all	3		Very Often
		I get a sort of frightened feeling as if something awful is about to happen:			I have lost interest in my appearance:
3		Very definitely and quite badly	3		Definitely
2		Yes, but not too badly	2		I don't take as much care as I should
1		A little, but it doesn't worry me	1		I may not take quite as much care
0		Not at all	0		I take just as much care as ever
		I can laugh and see the funny side of things:			I feel restless as I have to be on the move:
0		As much as I always could	3		Very much indeed
1		Not quite so much now	2		Quite a lot

2		Definitely not so much now	1		Not very much
3		Not at all	0		Not at all
		Worrying thoughts go through my mind:			I look forward with enjoyment to things:
3		A great deal of the time	0		As much as I ever did
2		A lot of the time	1		Rather less than I used to
1		From time to time, but not too often	2		Definitely less than I used to
0		Only occasionally	3		Hardly at all
		I feel cheerful:			I get sudden feelings of panic:
3		Not at all	3		Very often indeed
2		Not often	2		Quite often
1		Sometimes	1		Not very often
0		Most of the time	0		Not at all
		I can sit at ease and feel relaxed:			I can enjoy a good book or radio or TV program:
0		Definitely	0		Often
1		Usually	1		Sometimes
2		Not Often	2		Not often
3		Not at all	3		Very seldom

Please check you have answered all the questions

Scoring:

Total score: Depression (D) _____ Anxiety (A) _____

0-7 = Normal

8-10 = Borderline abnormal (borderline case)

11-21 = Abnormal (case)

Sources of data

In the study are used two data sources: primary data obtained through the HADS questionnaire and secondary data acquired from the patients' medical records.

Data collection and variables

Each patient was assessed for the presence of depression and anxiety symptoms at admission (baseline) and the second month of in-patient treatment (follow-up) using the HADS questionnaire. The questionnaire was self-administered. For those who were not able to complete the questionnaire on their own, it was administered by a trained and experienced psychologist working at the facility.

Results

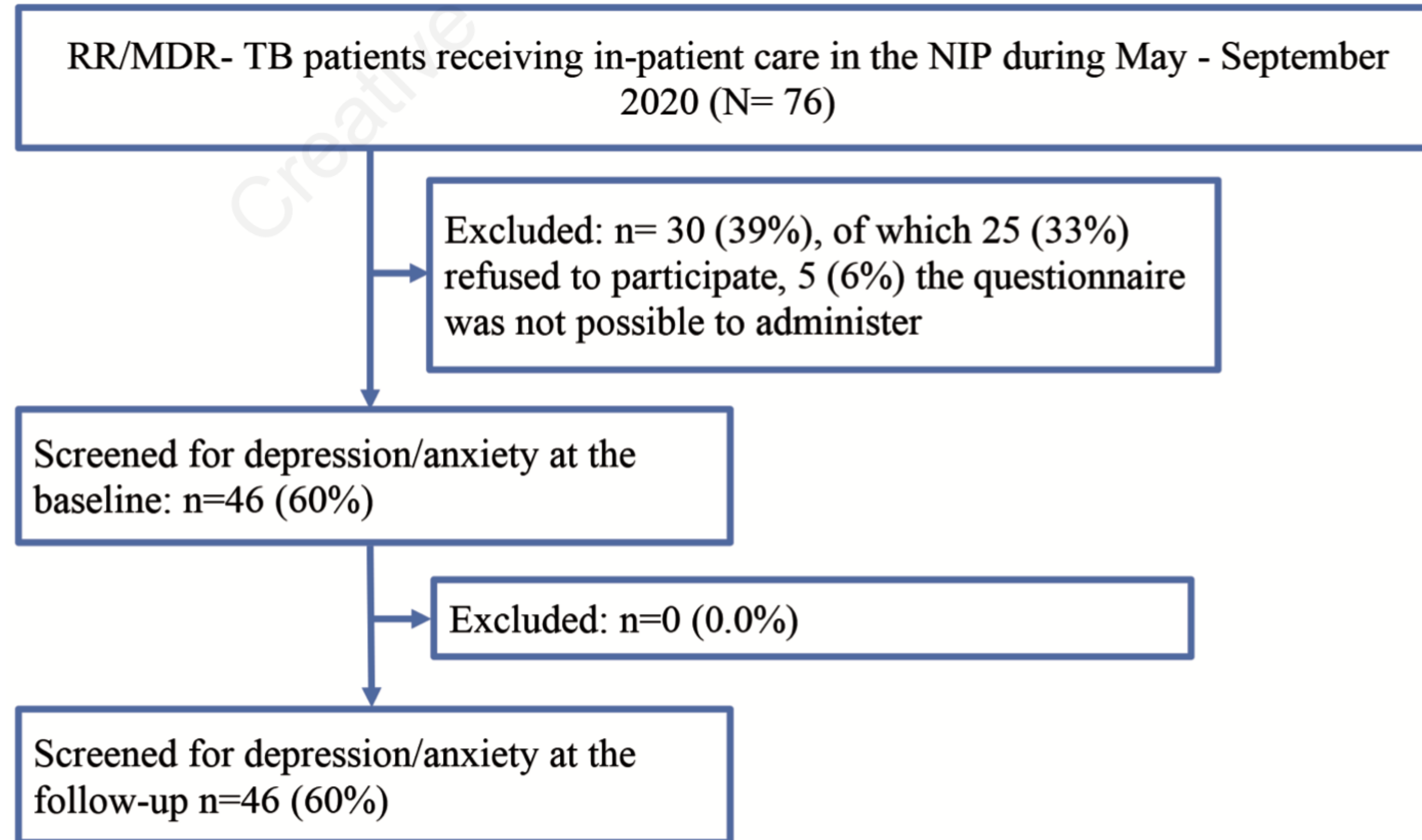


Figure 1. Flow chart of the study participants: MDR-TB patients receiving in-patient care in the National institute of Pneumology “Marius Nasta” (NIP) in Romania (May-September 2020).

The mean age of the study population was 46 (± 13.3) years, the majority of them were male (29/46, 63%) and 61% (28/46) were married or living with a partner. About 65% (30/46) of the study population had an education level above 8th grade, and the majority 54% (25/46) resided in rural areas. The majority of the participants (38/46, 83%) were current smokers and about one-third of them reported high alcohol consumption (35%, 16/46). About half of the participants (24/46, 52%) were previously treated patients. X-ray assessment revealed cavities in about one-third of the patients (18/46, 39%). Diabetes was diagnosed in four (9%) and HIV infection in two (4%) patients. The majority of the participants (36/46, 78%) had one or two key symptoms (cough, fever, hemoptysis) and about 15% (7/46) had all three symptoms. All patients had pulmonary TB.

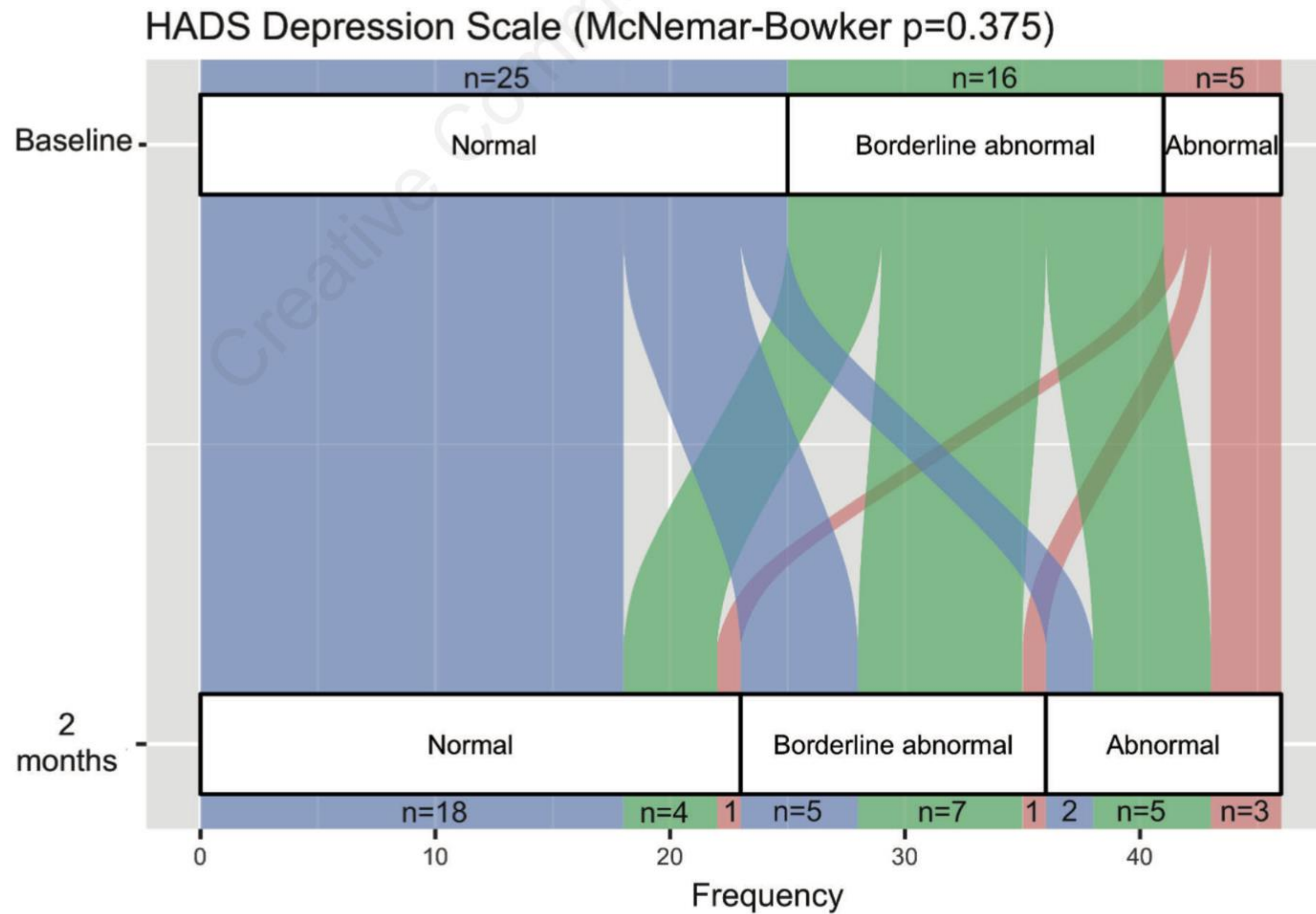


Figure 2. Comparison of depression symptoms at admission (baseline) and the second month of in-patient treatment (follow-up) among rifampicin-resistant/multidrug-resistant tuberculosis receiving in-patient care in the National Institute of Pneumology (May-September 2020).

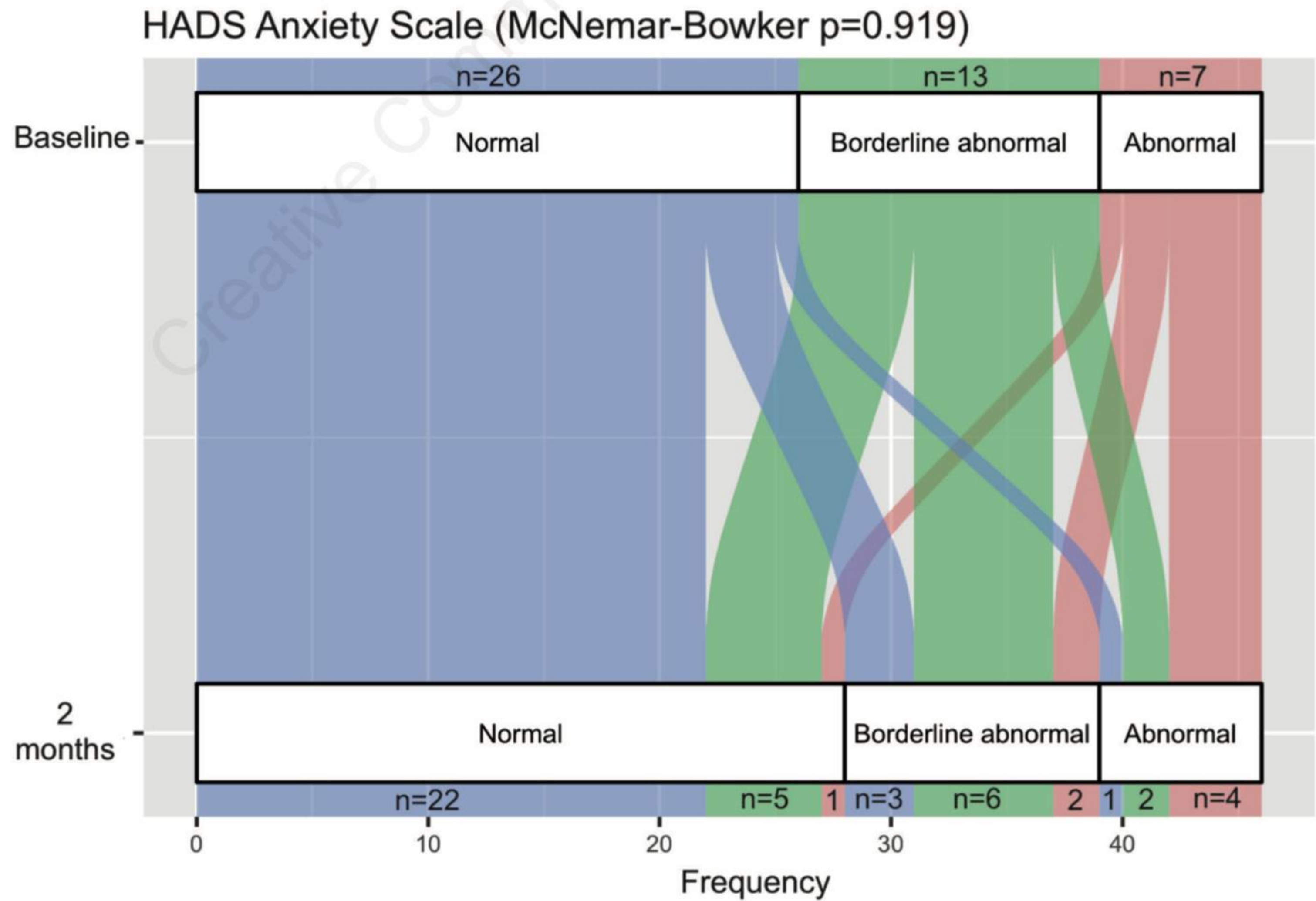


Figure 3. Comparison of anxiety symptoms at admission (baseline) and the second month of in-patient treatment (follow-up) among rifampicin-resistant/multidrug-resistant tuberculosis patients receiving in-patient care in the National Institute of Pneumology (May-September 2020).

The prevalence of depression and anxiety in our cohort at baseline was 46% (21/46) and 43% (20/46) respectively, and at follow-up was 50% (23/46) and 39% (18/46) respectively. At baseline 28% (13/46) and at follow-up 22% (10/46) of the participants had both depression and anxiety.

Discussion

- We describe the prevalence of depression symptoms as high as 46% among RR/MDR TB patients at admission. The prevalence estimate is comparable to other studies. In a meta-analysis of 4,903 patients with TB from seven countries, pooled estimated prevalence of depression was 45% (95% CI 38.04-52.55), with a higher prevalence among MDR-TB at 52.34% (95% CI 38.09-66.22) patients.
- Other observational studies report the prevalence of depression and depressive symptoms ranging from 19-65%. Among them, two studies were conducted in Romania with the reported prevalence of depression at 38.9% and 65%. These studies were conducted in a single site and include-susceptible TB patients only. One of these studies reported no statistical difference between depression at baseline and at 6 weeks of hospital treatment among 63 DS TB patients.
- In contrast, a study conducted in Armenia found that at baseline the prevalence of depression among 395 DS TB patients was 22%, which decreased significantly to 11% at the end of the TB treatment course.

Conclusion

The study revealed a high prevalence of depression and anxiety among RR/MDR-TB patients admitted to The National Institute of Pneumology “Marius Nasta”. This calls for routine assessment of all TB patients for depression and anxiety and linking them to appropriate care. This is likely to improve the overall quality of life for TB patients, complementing the evaluation and potential rehabilitation of post-TB treatment sequelae as recently discussed within the scientific community.

Future research on depression and anxiety with a higher sample size is recommended to estimate independent risk factors for depression and anxiety, as well as factors associated with the change in the depression and anxiety score during the course of longer treatment duration.

- THANK YOU FOR YOUR TIME!