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# BEHAVIORAL STRATEGIES IN PATIENTS WITH MULTIDRUG-RESISTANT PULMONARY TUBERCULOSIS AND LOW TREATMENT ADHERENCE

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## ABSTRACT

**Introduction.** The work highlights a study on the emotional, motivational, cognitive components of the attitude to the disease in patients with multidrug-resistant pulmonary tuberculosis (MDR/PTB). **Materials and methods**: 32 patients with multidrug-resistant pulmonary tuberculosis were under the observation, who received a standard chemotherapy course with reserve of anti-TB drugs. **The object of research** was 72 patients (42 women and 30 men), which were divided into 3 groups: the 1st group (control) - 40 patients without somatic diseases, the 2nd group - 18 newly diagnosed patients with MDR/PTB, the 3rd group - 14 re-treated patients with MDR/PTB. **Results.** According to the observations, patients with drug-resistant pulmonary tuberculosis tended to exhibit emotional reactions of a non-positive nature, resorted to an aggressive communication strategy, while after a step-by-step retest program there was an increase in compliance and adherence to the long-term treatment. **Conclusion.** Basing on the results of the study, the step-by-step program has been developed with the aim to work with MDR/PTB patients who have difficulties in social adaptation.

**Key words:** multidrug-resistant pulmonary tuberculosis, psycho-somatic disorders, a step therapy program, low adherence

**Introduction**

Tuberculosis is one of the widespread common diseases in the world, which is accompanied by certain neuropsychiatric disorders and is considered to be a hard somatic disease. The duration of the treatment for tuberculosis, connected with estrangement from home and family, intoxication phenomena, as well as the patient's deep feelings about his health become the reason for a psychological trauma [2,9,10].

The difficulty in contact with patients in communication, leading to a violation of the adaptive systems of their psychology, is noted. In the list of factors explaining intolerant behavior of patients with pulmonary tuberculosis, an important role is played by the understanding and concept of patients about the causes and significance of the disease, their beliefs, motivation and attitude to the therapy, sometimes associated with the previous negative treatment experience, fears of an unsuccessful results and, of course, stigmatization [ 1.3].

Undoubtedly PTB patients need psychotherapeutic help and psychological support during the treatment process [6.8], which, however, is not presented in the proper amount [4,5,7].

The study reveals the emotional, motivational, cognitive components of the attitude towards the disease in patients with multiple drug-resistant tuberculosis (MDR/PTB). Besides, an identification of hidden protective mechanisms and behavioral strategies, as well as the study of the psychoemotional state in patients with MDR/PTB before the appointment of TB treatment and after 3-4 months against the background of intensive treatment in a hospital, were determined.

**Material and methods.** 32 patients with MDR/PTB who received the standard chemotherapy course with a reserve of anti-TB drugs were under observation at the therapeutic department №2 of the Republican Specialized Scientific and Practical Medical Center of Tuberculosis and Pulmonology of the Republic of Uzbekistan in 2017-2018.

**The subject of the research** was 72 patients (42 women and 30 men) aged 25-55 years, who were divided into 3 groups. The 1$^{st}$ group involved 40 patients without somatic diseases at the period of the study, the 2$^{nd}$ group consisted of 18 patients with newly diagnosed MDR/PTB, and the 3$^{rd}$ group involved 14 patients with MDR/TB who received repeated treatment.

In the process of work, an 8-color Luscher questionnaire and a diagnostic technique for determining type attitude to the disease (DTAD) were used. In addition, the patients were asked to answer an additional question: "How do you imagine tuberculosis?"

The statistical processing of the research results was carried out using MS Excel and computer software for statistical analysis of SPSS data. The following generally accepted methods of parametric statistics were used: one sample (n = 72) Kolmogorov-Smirnov test by the criterion of normality, a nonparametric Mann-Whitney data comparison criterion and the correlation analysis using the Pearson correlation coefficient.

**Results and discussion.** At the first stage of processing the obtained data using the DTAD method, one sample KS-test (n=72) for normality was not revealed. At the second stage, differences between the groups of subjects and their significance (the probability of a statistical error in relation to the general population) were determined. Since the sample population did not comply with the law of normality, a Mann - Whitney nonparametric criterion for comparing data was used for further analysis.

When analyzing the answers to the additional question "How do you imagine the disease tuberculosis?", it was found that 21 (52.5%) patients of the 1st group had an idea on the transmission ways and disease outcomes. In the 2nd and 3rd such respondents concluded 16 (88.9%) and 13 (92.8%), respectively. Low awareness of tuberculosis in patients of the 1st group may be associated with a denial of the disease possibility.

When comparing the 1st and 2nd groups, where the Lusher and DTAD tests were used, in the 2nd group, a greater severity of such strategies as confrontation, denial of the illness, and the search for social support ($p < 0.05$) was determined.

In addition, in the diagnosis of confrontation in communication among patients, a great importance of avoidance was revealed: 10 (55.6%) of initially identified patients tended to avoid solving the problem more often than to reach an agreement with a partner through negotiations and diplomacy (2-11.1%) or give an adequate rebuff to the offender (6-33.3%).

In general, this fact creates a "correct" picture of the response for this group of people who have just faced a serious diagnosis of a poor treatable disease.

When comparing the 1st and 3rd groups, it was found out that in the 3rd group a neurasthenic, egocentric and dysphoric types of response to the disease were most manifested, with relatively low peacefulness; and less manifested strategies for taking responsibility and constructive revaluation than in healthy respondents. In addition, the anxious, hypochondriacal types of the attitude to the disease ($p < 0.05$) were less noted in comparison with the 1st group.

Considering this fact, it is obvious that people with re-treated pulmonary tuberculosis tend to show emotional reactions of a non-positive nature (dysphoria) and apply an aggressive communication strategy. Typically, attending physicians and paramedical personnel classify such patients as "complex", not only because the chronic disease is usually multiresistant to the drug treatment, but also because of their high emotional lability, aggressive outbreaks for an insignificant reason, and a tendency to break the course. Perhaps this is not only compensation for the values lost due to the disease, due to the requirement of increased attention to a personality, but also due to the chronic intoxication of the body.

When comparing patients of the 2nd and 3rd groups, there was no significant difference. So, in the patients of both groups the manifested functioning of the same coping strategies prevailed: confrontation, distance, denial and the search for a social support. The dominant avoidance strategy in communication among patients of the 2nd group also retained its position. The most severe in the patients of the 2nd and 3rd groups are neurasthenic, anxious, ergopathic, egocentric and

dysphoric types of attitude to the disease. There was a predominance of two or even more types at the same time, which indicates the poor formation of a specific attitude to the disease and treatment.

In addition, the patients of the 2nd group differ from the patients of the 3rd group with high scales of alarming type of attitude towards the disease. It should be noted that there is no single particular type, the type of attitude to the disease has a mixed, time-varying and dependent on the specific situation feature.

It is interesting, that at chronization of disease, ergopathy and sensitivity scales are sharply reduced. This is because of involving in such areas as communication and the working with a socially dangerous disease becomes the most vulnerable. The only source of compensation of values is the requirement of increased attention to the personality, which greatly complicates relations with medical personnel.

Thus, a vicious circle is created when different positions of the doctor and patient lead to a misunderstanding of the patient, which in turn entails even more serious medical consequences for the patient, which naturally affect the outcome of the disease (low adherence to the treatment) and his personality.

The dysphoric type of attitude toward the disease has a direct correlation with an aggressive communication strategy ($U = 0.810$ at $p < 0.01$) and the opposite with a strategy for seeking social support ($U = -0.538$ at $p < 0.05$). This means that during periods of gloomy-embittered mood, patients neglect the social environment, are prone to aggressive outbreaks and accusations of others in their own diseased state.

The neurasthenic type of attitude to the disease is inversely related to coping acceptance of responsibility ($U = -0.568$ for $p < 0.05$), has direct correlations with the avoidance strategy ($U = 0.477$ for $p < 0.05$) and the search for social support ($U = 0.609$ for $p < 0.05$). Such relationships indicate that somatically and mentally weakened patients do not accept their role in solving the problem, do not consider themselves capable of self-help, and tend to shift responsibility to someone from their inner circle.

From the obtained correlation links it is obvious that by influencing on strategies close to the patient (distance, denial), and changing them to more adaptive strategies (seeking a social support, accepting responsibility), it is possible to change his attitude to the disease, treatment prospects and prevent misunderstandings, which contributes to achievement of greater efficiency in the struggle for patient's recovery.

**Conclusion.** In the mathematical processing of the obtained data at a significance level $p < 0.05$, it was proved that the patients with re-treated pulmonary tuberculosis use more constructive behavioral strategies than newly diagnosed patients who tend to use non-adaptive reactions.

Based on the results of the study, a step-by-step program was developed for working with patients with MDR PTB experiencing difficulties in social adaptation:

The 1st stage - informing about the prospects of the treatment, methods of preventing the disease. Starting to keep a mood diary;

The 2nd stage - determination of the difficulties that patients faced in establishing of the diagnosis, their relationship to the disease.

The 3rd stage - training in the effective teamwork; empathy skills training; development of the ability to adequately express negative emotions;

The 4th stage - determination of the possibilities of personal development;

The 5th stage - results after correction according to the diary.

Re-testing after 3-4 months of the treatment at the hospital showed that important results were obtained during the period, and the medical staff working with patients with pulmonary tuberculosis, noted positive changes in the behavior of patients, their willingness to be friendly and, most importantly, their willingness to cooperate with disease control, i.e. increased compliance and adherence to long-term treatment of MDR/PTB.

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