Total Score Differences of Hospital Anxiety and Depression Scale – Depression (HADS-D) in Patients with Multidrug-Resistant Tuberculosis (MDR-TB) Based on Gender at H. Adam Malik General Hospital Medan

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Abstract

Tuberculosis (TB) is a contagious and airborne disease. Over the decades, psychiatric morbidity in patients with MDR-TB has become increasingly recognized. Resistant tuberculosis is currently a serious health problem worldwide. This chronic disease takes a long time and causes various side effects, often causing symptoms of depression and anxiety in patients with Multidrug-resistant tuberculosis (MDR-TB) and pulmonary tuberculosis (TB). However, there are still relatively few who focus on psychiatric disorders in patients with MDR-TB. To find out the total score differences of Hospital Anxiety and Depression Scale - Depression (HADS-D) in patients with Multidrug-Resistant Tuberculosis (MDR-TB) based on gender. This study is an Unpaired Two Group Numerical Comparative Analytical study with a cross-sectional approach, namely by describing and analyzing a situation at a certain time using the Hospital Anxiety and Depression Scale - Depression (HADS-D) instrument. The results of the analysis with the Pearson test obtained a p-value <0.001 (p <0.05). There is a difference in the total score of Hospital Anxiety and Depression Scale - Depression (HADS-D) in patients with Multidrug-resistant tuberculosis (MDR-TB) based on gender at the H. Adam Malik General Hospital Medan.

Keywords
HADS-D, MDR-TB, gender

I. Introduction

Depression has become a very important problem in modern society. Resistant tuberculosis is currently a serious health problem worldwide. This chronic disease takes a long time and causes various side effects, often causing symptoms of depression and anxiety in patients with Multidrug-resistant tuberculosis (MDR-TB). Depression is a mental disorder that often occurs which is characterized by a depressed mood, loss of interest in something, reduced energy, feelings of guilt or inferiority, sleep or eating disorders, and poor concentration. In low to middle-income countries, the prevalence of depression is high and tends to increase. A large prospective study from Korea recently found that depression is inherently associated with a higher risk of incidence of tuberculosis. Meanwhile, inflammation in tuberculosis increases the risk of depression.¹²³

In the 2016 Javaid and colleagues’ study in Pakistan to determine the factors that influence the level of depression in Multidrug-resistant tuberculosis (MDR-TB) patients, it was found that women had higher depression symptoms than men.³ A study conducted by
Walker and colleagues in 2018 in India on patients who were undergoing multidrug-resistant tuberculosis (MDR-TB) in the results showed that there were differences in depression score scores using the measurement scale Patient Health Questionnaire- 9 (PHQ-9) between male and female. Based on the literature review, through this study, the researcher wanted to find out whether there was a difference in the total score of Hospital Anxiety and Depression Scale-Depression (HADS-D) in patients with Multidrug-resistant tuberculosis (MDR-TB) based on gender at the H. Adam Malik General Hospital Medan.

II. Research Methods

This study was conducted at the outpatient MDR-TB polyclinic of the H. Adam Malik General Hospital Medan between March 2019 - August 2019. Sampling was carried out by consecutive sampling type non-probability sampling. This study has succeeded in obtaining 32 male subjects with MDR-TB and 32 female subjects with MDR-TB.

III. Results and Discussion

3.1 Results

Characteristics of 64 subjects were divided into 2 groups, namely male 32 subjects with MDR-TB and 32 female subjects with MDR-TB group. The instrument used is the Hospital Anxiety and Depression Scale-Depression (HADS-D) which is in the following table.

Table 1. Distribution of Demographic Characteristics of Research Subjects of Patients with MDR-TB Based on Gender

| Demographic Characteristics          | Patients with MDR-TB | Patients with MDR-TB | p      |
|--------------------------------------|----------------------|----------------------|--------|
|                                      | Male n = 32          | Female n = 32        |        |
| Age (years)                          | 33,41(5,16)          | 31,09(5,78)          | 0,096b |
| (Mean ± s.d.)                         |                      |                      |        |
| Education Level                      |                      |                      |        |
| - Junior High School                 | 7 (21,9%)            | 9 (28,1%)            | 0,584a |
| - Senior High School                 | 19 (59,4%)           | 16 (50,0%)           |        |
| - Diploma/University                 | 6 (18,8%)            | 7 (21,9%)            |        |
| Marital Status                       |                      |                      |        |
| - Married                            | 22 (68,8%)           | 21 (65,6%)           | 1,000a |
| - Unmarried                          | 10 (31,3%)           | 11 (34,4%)           |        |
| Treatment duration (months)          | 5,84(1,74)           | 5,84(1,74)           | 1,000b |
| (Mean ± s.d.)                        |                      |                      |        |
| Occupational status                  |                      |                      |        |
| - Employed                           | 25 (78,1%)           | 16 (50,0%)           | 0,037a |
| - Unemployed                         | 7(21,9%)             | 16 (50,0%)           |        |
| PHQ-9 score                          | 10.31 (3,6)          | 14,84 (5,2)          | 0,001b |
| (Mean ± s.b.)                        |                      |                      |        |

a Chi-Square test
b Unpaired t-test
Table 1. Shows the demographic characteristics of each group. For the mean age in the subject group of patients with the MDR-TB male was 33.41 and the standard deviation was 5.16, while for the mean age in the subject group of patients with MDR-TB for women was 31.09 and the standard deviation was 5.78. For the level of education in the group of patients with the MDR-TB male, the subjects of the Junior High School education level were 7 (21.9%) and the Senior High School education levels were 19 (59.4%) and the Diploma/University education levels were as many as 19. 6 (18.8%). While the educational status of the group of patients with MDR-TB for women for each subject, the education level was 9 (28.1%) and the education level of Senior High School was 16 (50.0%) and the education level of Diploma/University as much as 7 (21.8%). In the marital status group of men with MDR-TB, the married status was 22 patients (68.8%) and 10 patients unmarried (31.3%) and the marital status of the women with MDR-TB married status was 21 patients (65. 6%) and unmarried 11 patients (34.4%). The average length of treatment in the subjects group of patients with MDR-TB for men was 5.84 and the standard deviation was 1.74, while for the mean length of treatment in the subjects group of patients with MDR-TB in women was 5.84 and the standard deviation was 1.74. In the occupational status group of men with MDR-TB, the working status was 25 patients (78.1%) and 7 patients did not work (21.9%) and the occupational status in the group of women with MDR-TB, the working status was 16 patients (50, 0%) and 16 patients do not work (50.0%). For the mean PHQ-9 score in the subject group for the mean PHQ-9 score in the female subject group of patients with MDR-TB was 14.84 and the standard deviation was 5.2.

| Table 2. HADS-D Score of male patients with MDR-TB |
|-----------------------------------------------|
| Annotations | n | Median (minimum-maximum) |
|---------------|-----|--------------------------|
| Total male MDR-TB | 32 | 10.50 (8-21) |
| HADS-D score |     |                          |

Table 2 shows the HADS-D scores for the male group of patients with MDR-TB with the median value of 10.50 and the minimum and maximum scores (8-21).

| Table 3. HADS-D Score of female patients with MDR-TB |
|-----------------------------------------------|
| Annotations | n | Median (minimum-maximum) |
|---------------|-----|--------------------------|
| Total female MDR-TB | 32 | 15.00 (8-21) |
| HADS-D score |     |                          |

Table 3 shows the HADS-D scores for the group of women with MDR-TB with the median value of 15.00 and the minimum and maximum scores (8-21).

| Table 4. Differences in HADS-D Scores of Patients with MDR-TB in Men and Women |
|-----------------------------------------------|
| Differences in HADS-D scores of patients with MDR-TB in men and women |
| n | Median (minimum-maximum) | P |
|-----------------|--------------------------|---|
| Total male MDR-TB | 32 | 10.50 (8-21) | P< 0.001* |
| Total female MDR-TB | 32 | 15.00 (8-21) | |

*Mann-Whitney U Test

Table 4 shows that there are differences in HADS-D scores based on gender in patients with MDR-TB with a value (p <0.001)
3.2 Discussion

This study is an unpaired numerical comparative analytical study of two groups with a cross-sectional approach using an anxiety scale assessment (screening) instrument, namely the Hospital Anxiety and Depression Scale - Depression (HADS-D) where a research subject is a person with MDR-TB who is being treated walk at the MDR-TB Polyclinic H. Adam Malik Central General Hospital Medan. For statistical analysis, IBM SPSS Statistics version 22 was used with unpaired T-test data analysis if the data were normally distributed and the Mann-Whitney U test if the data were not normally distributed after log transformation had been previously failed. For the data normality test, the Sapphiro-Wilk normality test was used because the required sample size was ≤ 50 subjects, namely 32 subjects per group.

Table 1 shows the demographic characteristics of each group. The mean based on the age group of patients with MDR-TB was male 33.41 with a standard deviation of 5.16 and 31.09 with a standard deviation of 5.78 for women with MDR-TB. Besides, there was no significant difference between the ages of the two groups with values \( p = 0.096 \). This is by the study by Mehren and colleagues in 2015 in Pakistan which saw the frequency of depression in MDR-TB patients using the Hamilton Depression Rating Scale (HAM-D) from 213 MDR-TB patients found 141 (66.2%). suffering from depression with an age of \( \geq 30 \) years.\(^4\)

In table 1, it is found that the most educational status is the group of patients with MDR-TB is Senior High School, each in the male group as many as 19 subjects (59.4%) in the female group as many as 21 subjects (65.6%). There was no significant difference in the level of education in the two groups \( (p = 1,000) \). In a study by Oladimeji and colleagues in 2015 in Nigeria which looked at the psychosocial well-being of MDR-TB sufferers who were in the hospital. In this study, out of 98 subjects with MDR-TB, 39 subjects (43.3%) were found in Junior High School education.\(^7\)

In table 1, it is found that the duration of treatment in the group of patients with MDR-TB was male and female with a mean of 5.84 with a standard deviation of 1.74. There was no significant difference in the length of treatment in the two groups \( (p = 1,000) \). This is following a study by Javaid and colleagues in 2017 in Pakistan which looked at depression in MDR-TB sufferers using the Hamilton Depression Rating Scale (HAM-D) measurement tool. In the study, it was often found that the duration of illness \( > 1 \) year was higher than that of \( \geq 1 \) year with OR = 0.122.\(^3\)

In table 1, it is found that in the largest number of marital statuses in each group, 22 men are married to MDR-TB patients (68.8%) and 21 (65.6%) men are married to MDR-TB patients. There was no significant difference in age between the two groups with values \( (p = 0.584) \). This is following the study of Mehren and colleagues in 2015 in Pakistan which looked at the frequency of depression in MDR-TB patients using the Hamilton Depression Rating Scale (HAM-D). In this study, out of 213 MDR-TB patients, 123 (57.7%) often suffered from depression in married patients.\(^4\)

In table 1 it is found that in the most occupational status in each group, the male patients with MDR-TB were 25 (78.1%) and the female group with MDR-TB was 16 (50.0%). There were significant differences between the two groups with values \( (p = 0.037) \). This is following the study of Vega and colleagues in 2004 in Peru which examined psychiatric disorders in the treatment of MDR-TB. This study examined 75 patients with MDR-TB and found 30 subjects (40.0%) who had jobs.\(^8\)

The results of this study are following a study conducted by Javaid and colleagues in 2016 in Pakistan to determine the factors that influence the level of depression in Multidrug-resistant tuberculosis (MDR-TB) patients in which women have higher...
depressive symptoms than men with OR = 0.334 with (p = 0.003). This study found that men had a median value of 10.50 and a minimum-maximum value (8-21) and in women a median value of 15.00 and a minimum-maximum value (8-21) with p-value <0.001. This research equation is the same comparing gender. 

The results of this study are following a study conducted by Walker and colleagues in 2018 in India which found that there were differences in depression score scores using a measurement scale (PHQ-9) between men and women. It was found that the proportion of women with symptoms of depression was higher than that of men. This study following the terms of co-monitors patients with MDR-TB patients.

In this study, there were no subjects who dropped out where the number of samples was sufficient for the study. The results of community studies in adults suggest that women have a higher rate of experiencing nearly all depressive disorders. Women have an approximately two-fold lifetime increase in rates of panic disorder, generalized anxiety disorder, agoraphobia, and simple phobia than men. In a 2015 study by Albert and colleagues, explaining that gender is a significant susceptibility to depressive symptoms, for example, there is evidence to suggest that as a result of biological factors women have a higher biological susceptibility to depression than men. Periods of hormonal changes in women during puberty, postpartum, and perimenopause are associated with an increase in major depressive disorder.

IV. Conclusion

Of the 64 subjects with Multidrug-resistant tuberculosis (MDR-TB) based on sex at the General Hospital of the Adam Malik Haj Center, which were divided into two groups, 32 subjects were male with MDR-TB patients and 32 female subjects with MDR-TB patients. at the outpatient polyclinic installation of the General Hospital of the Adam Malik Hajj Center in Medan in March 2019 - September 2019. Based on the results of the study, there were significant differences in HADS-D scores in the male subjects with MDR-TB and women with MDR-TB with p-value <0.001. The strength of this study is that it is the first study to conduct an initial screening using the Patient Health Questionnaire-9 (PHQ-9) measurement scale and the Hospital Anxiety and Depression Scale - Depression (HADS-D) measurement scale to assess depression scores. The limitation of this study is that this study was only conducted at one study site and was not a multi-center study.

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