

# PATH ANALYSIS OF TUBERCULOSIS CLIENTS ADAPTATION DURING TREATMENT IN JEMBER REGENCY, EAST JAVA, INDONESIA

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**Abstract-**Tuberculosis clients are experiencing various problems in terms of adaptation models such as physical problems, psychological problems, social problems and problems of dependence. This study is a correlational study. The method used is a cross-sectional. Respondents in this study were taken was 83 clients at the Lung Hospital in Jember. This research measurement is using a questionnaire. This study uses path analysis technique. Analysis of the data on the effect of the stimulus to coping with  $t$ -statistic = 2.370. Analysis the effect of the stimulus to adaptation with  $t$ -statistic = 2.115. Analysis the effect of the coping mechanisms to adaptation with  $t$ -statistic = 2.348. Stimulus contributes significantly to the coping mechanisms, stimulus significantly contributes to the adaptation, and coping mechanisms significantly contribute to the adaptation of Tuberculosis clients during treatment at the Lung Hospital in Jember. Education and socialization about tuberculosis and peer group of tuberculosis clients in community are significantly needed to increased tuberculosis client adaptation. Suggestions for further research, collecting data by using prospective observation is better than retrospective observation.

**Index Terms-**stimulus, adaptation, coping, tuberculosis

## I. INTRODUCTION

Diagnosis of chronic diseases such as Tuberculosis is one of the causes of excessive pressure and fear when the client realizes that his life and his activities may be limited by the condition of the disease. The physical changes that occur result in the loss of income associated with employment restrictions, or the reliance on help from family. Tuberculosis clients will experience considerable problems so that in addition to the necessary medical treatment and social support is good [1].

Tuberculosis clients will experience a variety of problems in terms of adaptation models such as physical problems, psychological problems, social problems and problems of dependence [2]. Tuberculosis clients will experience physical problems such as dyspnea, nausea, vomiting, allergies, lethargy, and others. Psychological problem that arises is despair, stress, denial, anger, anxiety, and irritability. Perceived social problem is the feeling of inferiority, not useful in society, feeling isolated or rejected. Dependency problems disclosed are feeling in need of help from others [3].

Tuberculosis cases are currently experiencing an increase in cases worldwide level. World Health Organization (WHO) reported that in 2015 Tuberculosis cases were 10.4 million new cases worldwide. The case consists of 5.9 million (56%) were male, 3.5 million (34%) of the women, and 1.0 million (10%)

children. Six countries having highest number of Tuberculosis cases are India, Indonesia, China, Nigeria, Pakistan, and South Africa. WHO reported in the Global Tuberculosis Report, Indonesia has a high burden of Tuberculosis which is seen from a mortality rate of 40 per 100,000 population and new cases amounted to 395 per 100,000 population [4].

The spread of Tuberculosis cases in Indonesia spread in various provinces. Java Island, especially East Java, contributes to the number of deaths and new cases in Tuberculosis figures in Indonesia. East Java has a new case of 101.82 per 100,000 population and a mortality rate of 1.83 per 100,000 population. Jember Regency is a city in East Java which contributed the second highest Tuberculosis case after Surabaya City. Jember regency in 2014 has new cases of 2,070 clients and total cases of 3,139 clients [5]

Preliminary study, interviews showed 9 lung tuberculosis clients (90%) reported multiple complaints or physical disorders due to the disease. Physical disorders most often complained of lung tuberculosis clients are coughing. Other complaints include shortness of breath, chest pain, nausea, and sleep disorders. In addition to the physical impact, 6 clients (60%) also suffered mental and emotional disturbances, such as feeling gloomy, sad, fearful or anxious due to illness, fear of not getting cured, fear shunned by those around him that eventually also impacted in daily activities. A total of 7 clients (70%) also suffered from disruption to their social life so that clients who prefer to stay aloof at home and reduce interaction with others around it because of shame the disease. The reasons the client relates to the reduction of social activity are due to embarrassment to his illness and feelings of weakness / fatigue.

Nurses have an important role in providing nursing care to Tuberculosis clients. Given nursing actions is to increase the adaptation response in healthy and sick situation. Such actions are manipulating the focal stimulus, stimulus contextual and residual stimuli. Manipulation is expected to make individual adaptations in the zone. Nurses must anticipate that the client runs the risk of ineffectiveness in response to something by increasing cognator mechanism and regulatory mechanism on the individual client. This makes the role of nurses to support the creative efforts clients to use appropriate coping mechanisms [6][7].

## II. METHODS

This type of research used in this study was correlational. The method used was cross-sectional. The research subject is not measured on the same day or time, but the exogenous and

endogenous variables were measured at the same time. This method is expected to explain the results of the effect of an exogenous with endogenous variables. This study has several variables, stimulus, coping, and adaptation to the client. Respondents in this study were taken was 83 clients intensive phase of treatment at the Lung Hospital in Jember. This research measurement using a questionnaire. This study uses path analysis technique.

|               |    |       |
|---------------|----|-------|
| 1) Male       | 49 | 49.0  |
| 2) Female     | 34 | 34.0  |
| Total         | 83 | 100.0 |
| b. Age        |    |       |
| 1) 21-25      | 4  | 4.8   |
| 2) 26-30      | 6  | 7.2   |
| 3) 31-35      | 29 | 34.9  |
| 4) 36-40      | 38 | 45.8  |
| 5) 41-45      | 6  | 7.2   |
| Total         | 83 | 100.0 |
| c. Education  |    |       |
| 1) Elementary | 43 | 51.8  |
| 2) Junior     | 28 | 33.7  |
| 3) High       | 10 | 12.0  |
| 4) College    | 2  | 2.4   |
| Total         | 83 | 100.0 |

### III. RESULTS

Table 1. Distribution of Gender, age and education level Clients During treatment at the Lung Hospital Tuberculosis Jember (n: 83)

| Variable | Frequency | (%) |
|----------|-----------|-----|
|----------|-----------|-----|

a. Gender

Based on Table 1.shows that out of 83 clients who were respondents in this study had respondents with male sex with 49 clients (49%) and female as much as 34 clients (34%). Age of the respondents in this study are located mainly in the age range 31-40 years to 31-35 years of age distribution of as many as 29 clients (34.9%) and 36-40 years of age were 38 clients (45.8%). The education level of respondents most elementary level of education as many as 43 clients (51.8%).

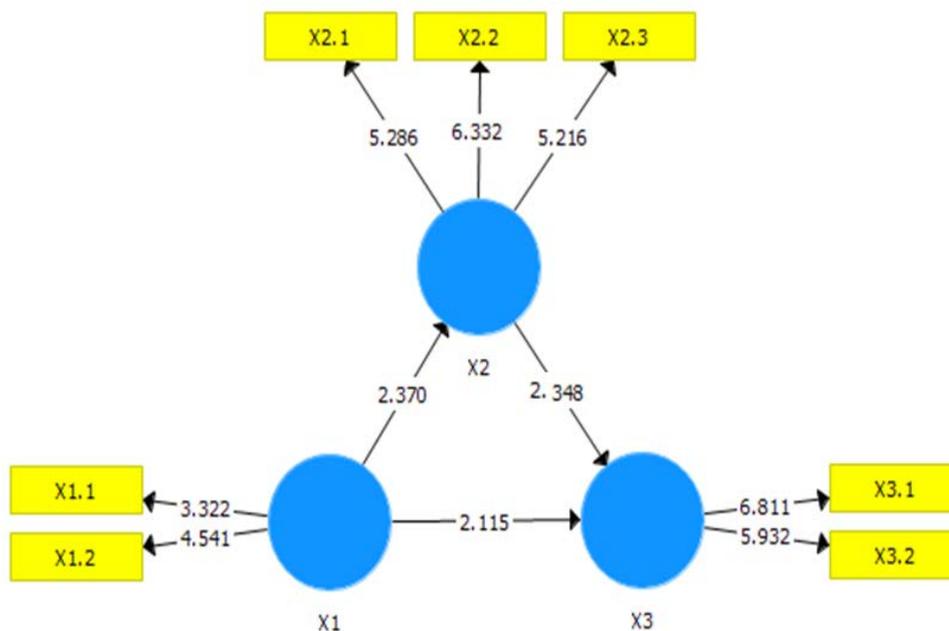


Figure 1. Adaptation Model Clients During Treatment at Lung Hospital in Jember

Note :  
X1 : Stimulus  
X1.1 : Perceptions of clients  
X1.2 : Client experience  
X2 : Coping mechanism  
X2.1 : Cognitive Focus

X2.2 : Emotional Focus  
X2.3 : Problem Focus  
X3 : Adaptation  
X3.1 : Role function  
X3.2 : Self Image

Table 2. Outer loading of Adaptation Model (n: 83)

|      | Original sample estimate | Mean of subsamples | Standard deviation | T-Statistic |
|------|--------------------------|--------------------|--------------------|-------------|
| x1   |                          |                    |                    |             |
| x1.1 | 0.716                    | 0.685              | 0.216              | 3.322       |
| x1.2 | 0.806                    | 0.773              | 0.178              | 4.541       |
| x2   |                          |                    |                    |             |
| x2.1 | 0.825                    | 0.799              | 0.156              | 5.286       |

|      |       |       |       |       |
|------|-------|-------|-------|-------|
| x2.2 | 0.904 | 0.864 | 0.143 | 6.332 |
| x2.3 | 0.747 | 0.734 | 0.143 | 5.216 |
| x3   |       |       |       |       |
| x3.1 | 0.926 | 0.902 | 0.136 | 6.811 |
| x3.2 | 0.871 | 0.846 | 0.147 | 5.932 |

Based on table 2 it can be seen that all indicators are valid because it has the original sample estimate value (> loading factor) > 0.7 and it can be seen that each indicator in each latent variable has a positive and significant effect on each latent variable. This

can be shown by the value of t-statistics greater than t-table that is equal to 1.96.

Table 3. Average variance extracted (AVE) of Adaptation Model (n: 83)

| Average variance extracted (AVE) |       |
|----------------------------------|-------|
| x1                               | 0.581 |
| x2                               | 0.685 |
| x3                               | 0.808 |

Based on table 3 it can be seen that the Average Variance Extracted (AVE) root value is greater than 0.5. This means testing discriminant validity with AVE root indicates that all variables are said to be good / valid.

Table 4. Composite Reliability of Adaptation Model (n: 83)

| Composite Reliability |       |
|-----------------------|-------|
| x1                    | 0.735 |
| x2                    | 0.867 |
| x3                    | 0.894 |

Based on table 4 it can be seen that the value of the composite reliability of each variable has a value > 0.7. It can be concluded that all variables have good reliability and show that all constructs in the model are estimated to meet the criteria of discriminant validity

Table 5. Inner Model of Adaptation Model (n: 83)

|          | original sample estimate | mean of subsamples | Standard deviation | T-Statistic |
|----------|--------------------------|--------------------|--------------------|-------------|
| x1 -> x2 | 0.226                    | 0.286              | 0.112              | 2.370       |
| x1 -> x3 | 0.238                    | 0.256              | 0.113              | 2.115       |
| x2 -> x3 | 0.297                    | 0.289              | 0.121              | 2.348       |

Based on table 5 it can be seen that analysis of the data on the effect of the stimulus to coping with t-statistic = 2.370, analysis the effect of the stimulus to adaptation with t-statistic = 2.115, analysis the effect of the coping mechanisms to adaptation with t-statistic = 2.348. Stimulus contribute significantly to the coping mechanisms, stimulus significantly contribute to the adaptation, coping mechanisms significantly contribute to the adaptation of Tuberculosis clients during treatment at the Lung Hospital in Jember.

#### IV. DISCUSSION

The client's treatment experience is affected by the distance of health care with the client's home. Most of the respondents who seek treatment at Lung Hospital are clients located far from Lung Hospital. Clients mostly come from outside Patrang Village which is the location of Lung Hospital and there are located outside of Jember regency. There is no significant influence between home distance to non-adherence treatment in pulmonary tuberculosis patients [8]. The results showed that the distance of the house to reach the health facility is not a determinant factor of non-compliance of patients in the treatment. Therefore, although the distance away from Lung Hospital client still do the treatment and does not affect the perception to not seek treatment at Lung Hospital.

Perceptions of health workers on Tuberculosis clients affecting coping of clients. Perceptions of good health personnel in terms of treatment and care will increase the motivation of medication and adherence in treatment [9]. The medical service is the most influential factor on the compliance of client treatment [10]. This is in contrast to the results found in the field that there are still many clients who have experience of good health workers but coping in problem solving is still bad. This poor coping is influenced by some things like most clients who are still low-educated. Effective / high coping is caused by the influence of a high level of education [11].

Perceptions of health, perceptions of treatment, and perceptions of health workers in men largely have a positive perception. There are differences between men and women in terms of infectious disease, disease progression, incidence and death from Tuberculosis [12]. In terms of disease progression have differences between men and women ie women have more severe disease at the time of coming to treatment. Women are more often late in coming to health services than men. This may be related to shame and shame more felt in women than in men, so that the contextual stimulus to the physiological integrity and integrity of self-concepts does not show a significant effect as the client is mostly male-compliant males in treatment who make adaptations Physical and self-concept. The facts of male Tuberculosis male clients have better treatment motivation compared to female Tuberculosis patients [13]. It can be shown from the analysis in his research that male Tuberculosis clients have greater motivation for treatment compared to female clients. Therefore, the absence of significant relationships due to the majority of clients who become respondents of this research is male and the client's self concept remains good although there is a stimulus that causes obstacles in running the treatment.

Work for a while during illness. This does not affect the client in performing Tuberculosis treatment in Lung Hospital. Test analysis showed

no significant relationship between the work with medication adherence [14]. Therefore, the perception in the treatment performed by the client does not affect the role function of the client who must work for his family and remain obedient in undergoing treatment performed at Lung Hospital. The client's experience in receiving Tuberculosis treatment will influence the adaptation of client role function. The experience of health workers affected this analysis. There is relation of attitude and motivation of officer in giving service to client with achievement of Tuberculosis treatment success [13]. Therefore, the support of health personnel to the client to be obedient in the treatment is very important, so that when the client does not feel saturation and laziness to seek clients will be easier to recover and work again to perform the role function.

Coping from male clients is better than women so the motivation in getting higher healing men. Clients assume that with healing can be activity and run daily activities again. Role function in the client Tuberculosis in the form of client alignment with the environment and live everyday life in accordance with its role (eg: as head of the family and work as a farmer, as a housewife and work selling food in the school cafeteria). Role functions other than as actors in society, role functions are closely related to the role of income generators in the family. There is a significant influence between family income on non-compliance treatment in patients with pulmonary Tuberculosis [8]. Very low family income can determine non-compliance of patients with treatment. The role function in the family must keep running to increase the family's income and keep the client obedient in the treatment.

## V. CONCLUSION

- 1) Stimulus contribute significantly to the coping mechanisms of Tuberculosis clients during treatment at the Lung Hospital in Jember;
- 2) Stimulus contribute significantly to the adaptation of Tuberculosis clients during treatment at the Lung Hospital in Jember;
- 3) Coping mechanisms do not significantly contribute to the adaptation of Tuberculosis clients during treatment at the Lung Hospital in Jember.

## VI. RECOMMENDATION

- 1) The results can be used as a foundation for health workers who deal with Tuberculosis clients will experience a variety of issues such as adaptation to physical problems, psychological problems, social problems and problems of dependence. Adaptation can be enhanced as Tuberculosis clients consider factors that affect each patient adaptation.

Good adaptation will improve the recovery of patients;

- 2) Nurses provide health education on Tuberculosis treatment to prevent change adaptation that led to drop out of treatment;
- 3) The establishment of a peer group treatment group at each location of patients in the community, this requires good cooperation between the clinic nurses and community nurses.

## VII. REFERENCE

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