

## KEPATUHAN PASIEN TB PARU BERDASARKAN TEORI SISTEM INTERAKSI KING

*(Adherence in Pulmonary Tuberculosis Patients  
Based on King's Interacting Systems Theory)*

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### ABSTRAK

**Pendahuluan:** Indonesia merupakan salah satu negara penyumbang kasus TB terbesar di dunia. Salah satu penyebab tingginya kasus TB paru di Indonesia adalah ketidakpatuhan pasien TB paru dalam pengobatan. Berdasarkan hal tersebut, maka perlu dikembangkan suatu model untuk meningkatkan kepatuhan pasien TB paru dalam pengobatannya. Langkah awal yang diperlukan adalah menggali kepatuhan pasien berdasarkan teori Sistem Interaksi King. Penelitian ini bertujuan untuk menggali pengalaman pasien yang menyebabkan mereka tidak mematuhi program pengobatan berdasarkan teori Sistem Interaksi King. **Metodologi:** Penelitian ini merupakan penelitian kualitatif dengan pendekatan deskriptif-eksploratif. Sampel diambil melalui metode *purposive sampling*. Partisipan yang terlibat dalam penelitian sebanyak 8 orang yang telah memenuhi kriteria inklusi penelitian. Partisipan yang terlibat adalah pasien TB paru yang telah menjalani pengobatan selama 5–6 bulan. **Hasil:** Penelitian ini menghasilkan 12 tema tentang kepatuhan pasien TB paru, antara lain: (1) persepsi yang positif atau benar tentang TB paru; (2) kesadaran diri; (3) pertumbuhan dan perkembangan yang optimal; (4) gambaran diri yang positif; (5) lingkungan yang sehat; (6) meminum obat dengan disiplin; (7) coping yang efektif; (8) komunikasi yang terbuka dengan tenaga kesehatan dan keluarga; (9) berperan secara optimal; (10) menyeimbangkan stres selama sakit; (11) mengetahui birokrasi pelayanan kesehatan; (12) mampu mengambil keputusan. **Diskusi:** 12 tema di atas menjelaskan bahwa kepatuhan pasien melibatkan interaksi beberapa sistem, yaitu sistem personal, sistem interpersonal, dan sistem sosial.

**Kata kunci:** kepatuhan, tuberkulosis paru, teori sistem interaksi King

### ABSTRACT

**Introduction:** Indonesia is one of largest contributor countries to pulmonary TB cases in the world. One of the factors that cause it is no adherence in the treatment. It is necessary to develop a model in order to improving compliance in patient. For an initial step, it is necessary to explore patient's adherence that based on King's interacting systems theory. The objective of this study was to explore the patients experience that cause them obedient the treatment based on King's interacting systems theory. **Methods:** This research was a qualitative research with descriptive explorative approach. The samples were selected through *purposive sampling* method. Participants in this study were 8 patients who met the inclusion criteria. In this study, participants were pulmonary TB patients who have undergone treatment for 5–6 months. **Results:** There were 12 themes in patients compliance based on King's interacting systems theory; (1) true perception of pulmonary tuberculosis, (2) self-awareness, (3) optimal growth and development, (4) positive self-image, (5) a healthy environment, (6) discipline to take medication, (7) effective coping, (8) open communication with the patient's health workers and family, (9) to perform its role optimally, (10) balancing stress during illness, (11) knowing the health care bureaucracy and (12) able to take decisions. **Discussions:** The 12 themes describe that adherent patients have interaction systems that were personal systems, interpersonal systems and social systems.

**Keywords:** Compliance, pulmonary tuberculosis, King's interacting systems theory

### INTRODUCTION

Indonesia is the fourth largest contributor to tuberculosis (TB) in the world in 2012, the number of new cases of approximately 400,000–500,000 cases, after India (2.0 million–2.5 million), China (900,000–1100,000) and South Africa (400,000–

600,000) cases. In many studies of pulmonary tuberculosis obtained results indicate that patients are disobediently in treatment. The studies was conducted at polyclinic of Ahmad Muchtar Hospital Bukit Tinggi showed that noncompliance patients in treatment were 31% while the study by Aisha (2003) in health

care center Jatinegara indicated that non-compliance patients in treatment were 26.1%. From the above results it can be concluded that non-compliance in the treatment of patients still high. King's interacting systems model is used to improve the interaction of nurses and patients to improve medication adherence to achieve a good recovery. As a first step needs to be done research to explore the patient's compliance based on King's interacting systems theory.

King's interacting systems is a dynamic system that consists of personal, interpersonal and social systems. Personal systems according to King describe the individual characteristics and the individual is seen as an open system<sup>[4]</sup>. Interpersonal system describes the interaction of two or more like the relationship between patient and nurses. Social systems are the interaction that describes the broader of interpersonal relationship such as the relationship between patient and nurse with the family or community. King saw man as a personal system that consists of the concept of perception, self, growth and development, self-image, learning, time, space and coping. Interpersonal system is formed when two or more individuals in interaction, two (dyad) or three people (triads). To understanding the interpersonal systems, it is required knowledge about communication, interaction, roles, stress, stressors and transactions.

## **MATERIALS AND METHODS**

This study was a qualitative research phenomenology. Phenomenological method focus on fact-finding on a social phenomenon and trying to understand human behavior based on the perspective of the participants<sup>[5]</sup>. Phenomenological method chosen for this study was to explore the experience of patients that compliance in carrying out the treatment of pulmonary tuberculosis.

The samples were selected through purposive sampling method. Participants in this study were 8 patients who met the inclusion criteria. In this study, participants were pulmonary TB patients who have undergone treatment for 5–6 months.

Research has obtained ethical approval from the Ethics Committee of the Faculty of Nursing, University of Indonesia and the Ethics Committee of Haji General Hospital Surabaya.

## **RESULTS**

### **Theme 1: Positive or True Perception of Pulmonary Tuberculosis**

Positive perception themes of pulmonary tuberculosis identified through pulmonary tuberculosis treatment, infection prevention and proper nutrition to support healing. Subtheme pulmonary TB treatment consists of a category of causes of pulmonary tuberculosis, duration of treatment, how to take the medication, side effects of medication and cured if the doctor who said recovered. Subtheme prevention of transmission identified through coughing and sneezing category means and how to dispose of sputum. Subtheme right nutrients to support recovery were identified through food categories that help healing and foods were prohibited.

Subtheme treatment of pulmonary tuberculosis in the category of causes supported by the statement:

"Yes, the disease because germs..." (P2)

"Because germs..." (P3)

"Bacterial cause, should maintain a healthy", (P7)

Category duration of treatment was supported by the statement:

"6 months to 9 months" (P1)

"Yes it is 6 to 9 months" (P5)

"... Treatment should be routinely 6 to 9 months" (P8)

Categories how to take medicine supported by the statement:

"Once directly 3 tablets" (P2)

"3 tablets once a drink" (P4)

Categories of adverse effects of drugs supported by the statement:

"... I forgot to explain, if not one of nausea, vomiting and skin redness, if I do not feel anything" (P1)

"...I do not feel anything, normal body even more preferably" (P6)

*Categories cured if the doctor who declared cured supported by the statement:*

*"... Reminded cured if the doctor says it should not by themselves or others." (P2)*

*"... Recover it must be said the doctor..." (P4)*

*Subtheme prevention of transmission in the category of waste phlegm by coughing and supported by the statement:*

*"... Communication with masks, cough must be closed, the exhaust phlegm not inept" (P1)*

*"...coughing and sneezing should be closed, sputum discharged into drains "(P2)*

*"Yes, if talking with distance 1.5 meters..." (P5)*

*"If coughing and sneezing must close the mouth, sputum discharged into waterways" (P6)*

### **Theme 2: Self-Awareness**

*The theme of self-awareness through the categories identified sure pulmonary TB was curable and routinely treatment despite having to come alone.*

*Category sure to recover supported by the statement:*

*"Yes because I have no desire to heal, because there are ideals which have not been achieved" (P2)*

*"It must be recovered, so the future is easier" (P3)*

*"Yes, I want to recover, where people who do not want to heal anyway, own consciousness" (P7)*

*"... The desire to heal, maybe not like this again in the future" (P8)*

*Categories come alone to the hospital:*

*"Yes by myself" (P3)*

*"The first three months of hell had escorted by father, now I already came alone, the father was ordered to work". (P8)*

### **Theme 3: Optimal Growth and Development**

*Themes optimal growth and development was divided into two sub-themes; sub-theme of hope that a better future and subtheme able to perform tasks in an optimal development.*

*Subtheme hope of a better future was supported by the statement:*

*"... There are ideals which have not been achieved" (P2)*

*"... I still have a long future" (P3)*

*"... Yes, I still want to have children" (P4)*

*Subtheme able to carry out the task of development was supported by the statement:*

*"... beside go to the school I play football" (P3)*

*"... Yes as usual at home taking care of her husband, follow recitation" (P4)*

### **Theme 4: Positive body-Image**

*Theme was capable of receiving a positive body-image changes divided into categories: Not ashamed to wear a mask and not ashamed to lose weight.*

*Encouraged by the statement:*

*"No, I never feel shame, I never give up, I am confident" (P2)*

*"No, it is common, there is tolerance" (P3)*

*"I ever shame, but from it I want to recover..." (P8)*

### **Theme 5: A Healthy Environment**

*Themes healthy environment consist of pulmonary poly with comfortable environment and a healthy home environment.*

*Subtheme pulmonary poly with comfortable environment supported by the statement:*

*"... Quite spacious and comfortable" (P3)*

*"... So good, the space was in the corner near the bathroom, if I want to dispose of sputum stay straight to the bathroom" (P5)*

*Subtheme healthy home environment was supported by the statement:*

*"... I still rent a one room, every morning the sunlight entered into the room anyway, from backyard also entered" (P2)*

*"...the nurse told to make glass tile, finally my husband make the glass tile" (P4)*

*"...The sunlight coming through the window" (P5)*

### **Theme 6: Discipline Taking Medication**

*Themes discipline to take medication consisted of categories of time to take medication 1 hour before meals and use an alarm as a reminder.*

*Categories time taking medicine supported by the statement:*

*“Taking medication should be routine, drinking at 6 pm 1 hour before meals” (P1)*

*“... 6 pm after sunset” (P2)*

*“6 o’clock in the afternoon” (P3)*

*Categories using the alarm as a reminder supported by the statement:*

*“... I use the alarm...” (P2)*

*“The alarm use HP” (P3)*

*“My concept in alarm” (P8)*

### **Theme 7: Effective Coping**

*Effective coping themes for treatment of pulmonary tuberculosis consists of a subtheme accept the conditions experienced and positive thinking.*

*Subtheme accepts the conditions experienced were supported by the statement:*

*“Yes, I pray a lot... what can we do, it is given problem, I must be patient, must be closer to God, sometimes I fell bored to taking medication but the recovery would be, to be sincere, ask to the God to healed quickly and given patience”(P1)*

*“must to be patient and sincere, it should be routine. Given sick from God, have to patient”(P2)*

*Subtheme positive thinking is supported by the statement:*

*“No, I consider this is just life problem” (P3)*

*“...InsyaAllah, I can heal if I routine do the treatment” (P4)*

### **Theme 8: Open Communication Patient with the Health Workers and Family**

*The theme was open communication between patient and health workers and family, it was identified through open communication patients with health workers and sub-themes of open communication with the patient’s family*

*Subtheme open communication between patient and health workers supported by the statement:*

*“...Yes, it is fluent. Nurse often given notice the schedule of treatment, drink the medicine should be routine, a little to eat but often so that add its weight” (P1)*

*“...Everything is good, if there is trouble the nurse aided and described” (P3)*

*“... if I not understand, I can ask” (P6)*

*“... Yes, doctors usually give out”, nurse does certainly give out, if all for our goodness, so we just according to” (P7)*

*Subtheme open communication between patient and family was supported by the statement:*

*“Yes, I must to pray, there is the wisdom of life, during the treatment I should be patient” (P1)*

*“Father and mother are working, they remind for treatment” (P3)*

*“... Yes, it is common, given the sick must be patient and do the treatment” (P4)*

*“My wife said, ”for the future, be careful, keep the condition” (P5)*

*“Every day come to the home back, the home adjacent” (P6)*

### **Theme 9: Running Role Optimally**

*Theme running role during illness was divided into sub-themes perform daily work and activities in the community.*

*Subthemes perform daily work with the category of school, working as usual and do homework that was supported by the statement:*

*“Yes may permit” (P2)*

*“Yes, in school may permit” (P3)*

*“... After the sick, I sell at home and take care of the mosque” (P6)*

*“I be off sick one month but is considered on leave, now I am working again” (P8)*

*Subtheme conducts activities in the community were supported by the statement:*

*“...when my body feels healthy, I attended recitation at the mosque again” (P1)*

*“...Join recitation, participated in neighborhoods gathering” (P4)*

### **Theme 10: Balancing Stress during Illness**

*Theme balancing the stress experienced during the illness was divided into three sub-themes; the stress experienced by the weight loss category, saturated and unsaturated take medicine back and forth to the hospital, cause of stress by long treatment time and handling stress by recreation, discuss with their family and discuss with fellow patients.*

*Subtheme stress experienced was supported by the statement:*

“...Yes, sometimes feel bored go to hospital” (P2)

“...Saturated taking medication but I would recover, so be patient” (P5)

“... The beginning of stress due to weight loss, but it spurred me to get well soon so I'm not skinny anymore” (P8)

Subtheme stressors with a long treatment time category were supported by the statement:

“...because the treatment so long...so long take medicine but I must be patient” (P6)

“...the treatment so long and must go back and forth to hospital” (P8)

Subtheme stress management was supported by the statement:

“... Yes, I considered it be recreational” (P2)

“...Saturated but it must be sincere, I want to recover” (P6),

“... Saturated reasonable anyway, but it's okay, too ordinary for long” (P8)

### **Theme 11: Knowing the Health Care Bureaucracy**

Themes determine the health care bureaucracy consists of subtheme knowing pulmonary polyclinic service organizations, know the authorities in pulmonary polyclinic and aware of their status as a patient in pulmonary polyclinic. Subtheme knows polyclinic service organizations consist of categories: hospital-owned facilities, human resources and hospital admissions in poly groove, it was supported by the statement:

“... He said the doctor is kind, facility anywhere near any place so back and turning fast and not hard” (P2)

“... My son said facility here more complete than in health centers...”. (P6)

“If treated here early days are still confused, but soon can memorized the rules here”

Subtheme knowing authority consisting of pulmonary poly administration of DOT appropriate category of government programs supported by the statement:

“From the beginning has been explained if sick lungs as I entered the government program and will be monitored continuously”. (P2)

“... The beginning the sick is recorded by nurse that it is incoming government programs,

supervised continuously, if not back to the hospital to be sought” (P6)

“... Drugs are expensive but given free so must be willing to seek treatment” (P7)

Subthemes aware of the status of hospitalized patients with category abide by the rules of the hospital were supported by the statement:

“...the treatment follows the schedule, Tuesday and Wednesday” (P1)

“... If treatment every Tuesday-Wednesday”, “if go out of town, the nurse said I should come before the time control on the Tuesday or Wednesday” (P2)

“If suddenly I can't come, the family may come to consult a doctor and take medication, but do not be too often” (P7)

### **Theme 12: Able to Make Decisions**

Themes able to take a decision consist of categories: treatment in pulmonary poly and categories referred to else, it was supported by the statement:

“... It is my intention from the beginning of treatment in hospital” (P3)

“... First I want to move the clinic, but the nurse said if treatment here would move must wait 2 months before the new allowed, finally I feel good here so I do not be moved”. (P4)

## **DISCUSSION**

According to the results there were 12 themes of patient compliance based on King's interacting systems theory. Adherent patients were patients who 1) have a true perception of pulmonary tuberculosis; 2) have self-awareness to heal; 3) have optimal growth and development; 4) have a positive self-image; 5) have a healthy environment; 6) discipline to take medication; 7) have effective coping; 8) have open communication with families and health workers; 9) able to perform the role optimally; 10) able to balance the stress; 11) determine the health care bureaucracy and 12) were able to take a decision.

Perception of pulmonary TB patients is influenced by the level of education and information received during the patient's treatment. The results showed that the majority

*of patients had a high school education so easy to receive information delivered by nurses. Some participants perceive that pulmonary TB disease is caused by bacteria, can be contagious and can be cured if treated daily for 6-9 months. Overall participants said that they seek treatment because they want to recover and sure can recover if treated with routine. It is proved that the participants have the knowledge and self-awareness or confidence to recover. This is consistent with research from Chani (2010) who explains that the lack of knowledge will improve of non-compliance the treatment in patients with pulmonary tuberculosis, increase self-efficacy will increase the motivation of pulmonary TB patients to adhere to treatment.*

*Environmental conditions of the house owned by the participants support the healing process of patients and prevent transmission to others. This is supported by research Fatimah (2008) that there is a relationship incidence of pulmonary tuberculosis with lighting, ventilation, where the window is opened, humidity, temperature and type of wall<sup>[7]</sup>. One of the things that make compliance patient is a participant in this research discipline in taking medication and always uses an alarm as a reminder to take medication. This is consistent with research Lukito (2012) who explains that the required solution as a reminder not to forget because it felt well enough, get busy or lazy. Solutions offered Lukito is android smartphone as a reminder.*

*Some participants said that sometimes feel bored attended the treatment because they have often alternating to hospital but because of a desire to recover, they still undergoing treatment. Coping does is to closer to God, more patient, sincere and steadfast undergoing trials given. With this their attitude may be more accepting of pain conditions and in the end have a high motivation for routine treatments. This is consistent with research Namawejje (2011) who explains that the treatment without stress would be more effective. The provision of health education is done to reduce the level of stress that affects*

*the patient's recovery. Health education should be emphasized because it enhances the effects of the individual in treatment adherence. In line with the research Muttaqqin (2009) who explains that the coping mechanisms used in the pulmonary TB patients underwent 6 months of treatment in the form of a religious approach, confide and discussion.*

*Open communication between the patient and the family or health worker is an important factor in patient compliance. Participants more freely and quietly in asking or being with a nurse so that more discipline and obedient treatment because of the good service of nurses. This is in line with research Nepal, et al (2012) who explains that communication skills training for health care providers can improve patient compliance with treatment.*

*In addition to the above factors whole adherent participants have optimal growth and development and the roles for pain such as school, work or take care of the household. Participants were not ashamed even lost weight and had to wear a mask when communicating with others. Participants also learned about the obedient bureaucracy hospital services so that no difficulty during treatment in pulmonary poly and patients were able to take a decision to carry out the treatment in the hospital with the consideration that the health workers in hospitals expert in his field and a short distance from the residence. This is in line with research Naing et al (2001) that the distances from the facility can cause non-adherent patient treatment.*

## **CONCLUSION AND RECOMMENDATION**

### **Conclusion**

*There were 12 themes in compliance in pulmonary tuberculosis patient based on King's interacting systems theory. It can be described that adherent patients have interaction systems that were personal, interpersonal and social systems.*

### **Recommendation**

*Based on the research findings of compliance based on King's interacting systems theory, the themes can describe how the system interaction in adherent patients. It can be used as initial data to develop a model of intervention for pulmonary TB patients to improving adherence in therapy.*

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