The Impact of Health Staff Competence and Standard of Road Services on Healing of Patients by Compliance with Drinking Medicines

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Abstract

This study aimed to evaluate and examine the impact of the skill of health workers and the standard of outpatient care on the recovery of TB patients, either directly or indirectly, via adherence to the Binanga Health Centre Mamuju Regency. This research used a comprehensive method of a survey performed at the Binanga Public Health Centre, Mamuju Regency. This study's population was pulmonary TB patients who were declared to be healed and had full treatment with a total population of 137. The number of participants in this research was 102 people utilizing the Slovin formula with data collection methods in questionnaires and technical route analysis (path analysis). The findings of this analysis indicate that health workers' expertise has a positive and significant impact on the enforcement of medications in the Binanga Health Centre, Mamuju Regency. The standard of outpatient care has a positive and significant effect on the compliance of medicines in the Binanga Health Centre, Mamuju Regency. The competence of health workers is positive and significant.

Keywords: Competence, health workers, quality of service, outpatient care, patient recovery, pulmonary TB patients

1. Introduction

Health workers are health human resources which on the one hand are the main supporting elements in health services; on the other hand it turns out that the current quality conditions are still lacking. The ability of Health Human Resources (HR) in planning health services as well as behavioural attitudes in anticipating health problems that occur are not in accordance with community expectations. It can be seen that the level of performance of public service personnel in health services is still weak.

Performance is defined as the result of a person's efforts that he achieves with his abilities and actions in certain situations. So performance is the result of the link between effort, ability and task perception. Performance is the work result that can be achieved by a person or group of people in an organization in accordance with their respective authorities and responsibilities. The performance of individuals and groups of employees is a contribution to improving the performance of an organization, because organizational performance is a collection of achievements given by all sections related to business activities. Health workers really need to understand competence in carrying out their duties and authorities. Competence is a specific combination of knowledge, mastery of task skills and work discipline required to carry out a specific activity. There are two aspects that need to be considered in the activities of health workers, namely technical aspects and skills aspects.

Tuberculosis is a disorder that has been present for thousands of years and appears to be a significant global health concern. Based on data gathered by the World Health Organisation (WHO) on the incidence of TB cases, Indonesia ranks third with the world's highest TB cases. India and China are respectively in the first and second slots. If you look at WHO statistics for 2019, Indonesia's total number of TB cases is 845,000. This figure has risen from the original 843,000 individuals. This makes Indonesia one of the countries that account for 60 percent of all TB cases worldwide.

In 2017, Indonesia's pulmonary tuberculosis incidence was as high as 425,089 cases of tuberculosis, with 162/100,000. An improvement compared to all TB cases in 2016 in 351,893 cases is a prevalence of 136/100,000 and 330,729 patients with 129/100,000 in 2015. (Indonesia Minister of Health, 2017). According to the Mamuju District Health Office study on the incidence of pulmonary TB incidents, the pattern has been rising over the last three years, namely 2017, 2018, and 2019. In 2017, the incidence of TB cases was 186/100.000 population, then rose to 188/100.000 population, and by 2019 the prevalence was 224/100.000 population.

The Binanga Community Health Center (Puskesmas) is one of the Puskesmas situated in the district of Mamuju. The job region of the Binanga Health Center also faces a variety of TB-related issues. According to the data and health profile of Mamuju Regency, data on pulmonary TB patients, especially in the Binanga Health Center working area, were collected, namely: Absolute data on pulmonary TB patients in 2018 as many as 110 patients, in 2019 as many as 139 patients and in 2020 (June) as many as 63 patients. Cure rate results for pulmonary TB patients in 2018 were 63 patients with a percentage of 57.2 percent, 70 patients with a portion of 50.4 percent in 2019, and as many as 3 or 4.8 percent in 2020 (June). While 104 patients with a ratio of 94.5 percent were successful in 2018 (Success Rate), and 128 percent were successful in 2019.

The above data and details show that the rate of cure for pulmonary tuberculosis patients in the Binanga Health Centre, Mamuju Regency, is still below the 85 percent nationally needed. Hence, it is still a public health issue, an incredibly contagious and infectious diseases, requiring attention. Both external to the pussy itself and community participation in reducing pulmonary tuberculosis in Indonesia, like the Binanga Health Centre, where the cure rate is projected to be at least the same as the national level or, if necessary, may exceed 100%. Health workers' expertise is one of the variables that affect the effectiveness of TB care in terms of awareness, behaviours, and skills of health workers. Health staff at Puskesmas really ought to consider their integrity in the execution of their roles and authorities.

Effective management of pulmonary TB in patients often needs help and help from those around them. The patient incentive for healing is affected by external conditions such as clinical care, clinicians, pharmacists, nurses, and other health professionals. Public health programs are delivered either through individual care initiatives, including curative and rehabilitative measures and neighborhood health services, including promotional and prevention efforts.

With a high prevalence of TB disease, a still low cure rate was for pulmonary TB patients in the Binanga Health Centre. It is always a health concern. Based on the definition of some of the above variables and strengthened by the findings of the Winanti and Oksi Anjar research (2018), the researchers wanted to know more about the relationship between health workers' expertise and the standard of their job.

2. Literature Review
2.1. Defining competence
According to Wibowo (2012), the concept of competence is the capacity to execute a job or role dependent on expertise and experience and accompanied by work-related attitudes. Competence reflects the career's expertise, abilities, and behaviors in the sense of specific competence characteristics that distinguish the profession. The trait of competence is part of one's nature and part of one's actions in the execution of work (Mangkunegara, 2007).

Competence is the ability or skill possessed by an employee in doing his job which is where competence greatly affects the productivity of an organization because if an employee is competent in carrying out his job, the goals of the organization will be achieved (Tahir & Rinantanti, 2018). One of the things that affects employee competence is to provide encouragement to subordinates which will give employees something that is positive for employee motivation and the next is skills which if the employee's skills are getting better it will make the employee more competent.

According to (Wibowo, 2007: 86) explains that competence shows skills or knowledge that are described by professionalism in a field that has been determined as the most important thing, as superior in that field. The following is one of the competency indicators according to (Palan, 2007: 143), competence has 5 types, namely motives, traits, self-concept, knowledge and abilities: a) A motive is something consistent that can be thought or desired to cause an action. Motive will encourage, direct and define behavior, towards certain actions or goals and not on others, b) Traits are innate traits or characteristics that are physical characteristics and consistent responses to something or information, including stimulation and pressure, c) Self-concept or self-concept is a person's attitude, values, or self-image, d) Knowledge or knowledge is information that a person has in a specific area, and e) Skill is the ability to complete a task or a physical or mental job.

According to (Narimawati, 2007: 75) competency indicators can be classified into 3 (three), namely: a) Intellectual competence. It is the character of attitudes and behaviors or the will and intellectual abilities of an individual (can be in the form of knowledge, skills, professional understanding, conceptual understanding, etc.) which is relatively stable when facing problems in the workplace, which is formed from the synergy between self-conceptual characteristics. Internal motivation, as well as the capacity for contextual knowledge, b) Emotional competence. is the character of attitude and behavior or willingness and ability to control oneself and understand the environment objectively and morally so that the emotional pattern is relatively stable in dealing with problems in the workplace, which is formed from the synergy between self-conceptual characteristics (Rinantanti et al., 2019; Kanto et al., 2020; Umanailo, 2020; Nuraini et al., 2019). Internal motivation, as well as emotional knowledge capacity, and c) Social competence is. the character of attitude and behavior or willingness and the ability to build cooperation knots with others which are relatively stable when facing problems in the workplace which are formed through the synergy between character, self-concept, internal motivation and the capacity of conceptual social knowledge.

2.2. Understanding the efficiency of outpatient care
Performance in health care is the impression of health facilities' superiority on the part of the consumer and is an aggregation of value with many consumers over many service encounters. The service's consistency is the contrast between the services rendered and the services expected by the consumer. In this situation, the service's quality appraisal is decided by the consumers of the service (Tangkilisan, 2007). The outpatient facilities offered by Edna K. Huffman, RRA, in the book Health Knowledge Processing (1994) are services provided to patients that are not handled as inpatients in hospitals or health care establishments.

Efficiency is one of the parameters or performance indicators that theoretically underlies the entire performance of an organization, in this case the hospital. Without monitoring of efficiency, problems can arise from the management side which lead to deviant actions. Likewise, efficiency can be used to allocate resources more precisely so that resources that come from shareholders can be optimally utilized (Hatta, 2008: 46).

Assessment of service efficiency is related to the use of available beds in the hospital, as well as the efficiency of the use of hospital medical support. To assess hospital efficiency, a Barber Johnson chart can be used. As an indicator of the efficiency of using a bed, it monitors the development of bed use efficiency targets and compares the efficiency level of using beds between units (Sudra, 2010: 34). One of the activities routinely carried out in hospital statistics is calculating the level of bed occupancy efficiency (TT). This is done to monitor the activity of using TT in the inpatient care unit and to plan its development (Sudra, 2010).

2.3. Description of conformity with prescription

The degree of the patient is in carrying out what is suggested or recommended by health workers. Adherence to TB care can be observed in terms of dose, taking medications, taking drugs 25 days, and taking medications according to the rules (Sukartini, 2019). Adherence to taking the drug itself is expressed in the patient's accordance with the care provider's guidelines on duration, dosage, and pace of care within the prescribed recovery time. Conversely, "persistence" applies to the action to pursue care for a given amount of time such that it can be described as the total duration of time the patient is on the medication, measured by the time between the first and the last dosage (Agency for Healthcare Research and Quality, 2012).

2.4. Defining care for patients with pulmonary TB

Healing is a state in which the body has healed enough that it will be whole again. The cure of TB disease is a state in which people have demonstrated better health and have one predictor of TB disease cure, including completing full therapy and repeat sputum test (follow-up) after treatment and at least one prior follow-up review (-). (National Recommendations for Tb Avoidance, 2010)

3. Method

This study method utilizes the causal relationship design to evaluate the independent variable or independent variable and the contingent variable or dependent variable and to assess the association between both factors using the analysis methodology used, quantitative research utilizing survey research. The survey was performed at Binanga Puskesmas, Mamuju District, Mamuju Regency. The respondents were 102 TB patients who had been on medication for six months and had been confirmed to have been healed of pulmonary TB disease.

4. Results

4.1. Structural Model I Path Analysis

Model I Path Analysis to determine the influence of X1 and X2 on Y1 and based on the test results Analysis obtained data Structural Model I Path Analysis as tebel Coefficients as follows:

Table 1. Path Analysis Results Model I
"Coeffiscients"

Model		Unstandardized Coefficients		Standardized Coefficients	t	itself.
		B	Std. Error	Beta		
1	(Constant)	4,775	1,740		2,744	. 007
	Competency of Health Workers (X1)	,807	,159	,341	5,089	.000
	Quality Outpatient Services (X2)	,583	,064	,615	9,173	.000

Dependent Variable: Drug Compliance (Y1)
Source: Data Processing Results, 2020

Based on table 1 shows that the significant value of the variable Competency health workers (X1) = 0.000 and variable Quality of outpatient services (X2) = 0.000. With the results of the analysis can be concluded that the analysis of the structural model path I namely variable X1 and variable X2 against Y1 has a positive and significant effect.

Table 2. Analysis of the coefficient of determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	. 903 ᵃ	. 816	. 812	2,09620

a. Predictors: (Constant), Quality of Outpatient Services (X2), Competency of Health Workers (X1)

Source: Data Processing Results, 2020

Based on table 2 results of the Denomination Coefficient Test where R Square is 0.816 this indicates that the contribution of the influence of variable X1 and variable X2 to variable Y1 is 81.6% while the remaining 18.4% is the contribution of other variables.

To determine the value of e1 used formula that is $e1 = \sqrt{(1 - 0.816)} = 0.429$ so that it can be obtained structural model path equation I as follows:
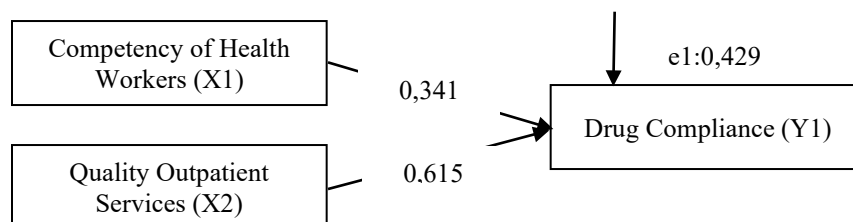

Figure 1. **Structural Model Path Diagram I**

4.2. Structural Model II Path Analysis

Table 3. Path Analysis Results Model I
"Coeffiscients"

Model		Unstandardized Coefficients		Standardized Coefficients	t	itself.
		B	Std. Error	Beta		
1	(Constant)	-1,745	,765		-2,283	,025
	Competency of Health Workers (X1)	,646	,075	,580	8,560	,000
	Quality Outpatient Services (X2)	,086	,037	,192	2,337	,022
	Drug Compliance (Y1)	,098	,043	,208	2,302	,023

Dependent Variable: Pulmonary TB Patient Recovery (Y2)
Source: Data Processing Results, 2020

Based on table 3 shows that the significant value of the competency variable of health workers (X1) = 0.000, the quality variable of outpatient services (X2) = 0.022, and the compliance of drug consumption (Y1) = 0.023 With the results of the analysis can be concluded that the analysis of structural model II path that is variable X1 and variable X2 and variable Y1 against Y2 positive and significant effect.

Table 4. Determination Coefficient Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	. 923 ᵃ	. 852	. 848	,88784

Source: Data Processing Results, 2020

Based on table 4 results of the Summary Model Coefficient Test Based on table 4 obtained data the magnitude of R Square is 0.852 this indicates that the contribution of the influence contribution of variable X1 and variable X2 and variable Y1 to variable Y2 of 85.2% while the remaining 14.8 % is the contribution of other variables.

4.3. Hypothesis
Direct influence hypothesis

H0 : Variable X1 has no positive and significant effect on variable Y1
H1 : Variable X1 has a positive and significant effect on variable Y1
H0 : Variable X2 has no positive and significant effect on variable Y1
H1 : Variable X2 has a positive and significant effect on variable Y1
H0 : Variable X1 has no positive and significant effect on variable Y2
H1 : Variable X1 has a positive and significant effect on variable Y2
H0 : Variable X2 has no positive and significant effect on variable Y2
H1 : Variable X2 has a positive and significant effect on variable Y2
H0 : Variable Y1 has no positive and significant effect on variable Y2
H1 : Variable Y1 has a positive and significant effect on variable Y2

The basis of decision making

Sig > 0.05   H0 rejected
Sig < 0.05   H1 received

Decision:
Sig = 0.000 or < 0.05 so H0 is rejected and H1 is accepted

Conclusion Results:
1) The competency variable of health workers (X1) has a positive and significant effect on the variable of drug compliance (Y1)
2) Outpatient service quality variable (X2) positively and significantly affects drug compliance variable (Y1)
3) Variable competency of health workers (X1) positively and significantly affects the recovery of pulmonary TB patients (Y2).
4) Variable quality of outpatient services (X2) positively and significantly affects the recovery of pulmonary TB patients (Y2).
5) Drug compliance variable (Y1) positively and significantly affects the recovery of pulmonary TB patients (Y2)

4.4. Indirect influence
To test the hypothesis of indirect influence is done with sobel test (sobel test) with the following formula:

$$\text{t count} = \frac{ab}{Sab}.$$

Hypothetical test results of indirect influence through intervening variables are as follows:

Table 5. Indirect Influence Test Results

Hypothesis	Standardized Coefficients	Std. Error
X1 to Y1	0.341	0.159
X1 to Y2	0.580	0.075
Y1 to Y2	0.208	0.043
X1 to Y1 to Y2	0,341 x 0,208 = 0,071	
X2 to Y1	0.615	0.064
X2 to Y2	0.192	0.037
X2 to Y1 to Y2	0,615 x 0,208 = 0,128	

Source: Data Processing Results, 2020

1. Analysis of the influence of health workers competency (X1) on the recovery of pulmonary TB patients (Y2) through drug compliance (Y1) are as follows:

$$\text{t count} = \underline{a \times b} = \underline{0.341 \times 0.208} = 1.94771$$

Sat 0.036416

2. Analysis of the effect of the quality of outpatient services (X2) on the recovery of pulmonary TB patients (Y2) through drug compliance (Y1) are as follows:

$$\text{t count} = \underline{a \times b} = \underline{0.615 \times 0.208} = 4.30217$$
$$\text{Sat } 0.02973381$$

4.5. Indirect Influence Hypothesis

1. H0 : Variable X1 has no positive and significant effect on variable Y2 through Variable Y1
   H1 : Variable X1 has a positive and significant effect on variable Y2 through variable Y1
2. H0 : Variable X1 has no positive and significant effect on variables through Variable Y1
   H1: Variable X1 positively and significantly affects variable Y2 through variable Y1

The basis of decision making

T count < T table   H0 is rejected
T count > T table   H1 d received

Decision:
T count > T table so that H0 is rejected and H1 is accepted

Conclusion Results:

1. Variable competency of health workers (X1) positively and significantly affects the recovery of pulmonary TB patients (Y2) through drug compliance (Y1)
2. Variable quality of outpatient services (X2) positively and significantly affects the recovery of pulmonary TB patients (Y2) through drug compliance (Y1)

5. Discussion

5.1 Impact of health workers' expertise on drug enforcement at the Binanga Health Center, Mamuju City, Mamuju Regency.

Based on the route analysis hypotheses' effects, where health workers' expertise with substantial importance data is collected, H0 is denied, and H1 is approved. In such a way, the competence of health workers has a positive and significant impact on the enforcement of medicines. Binanga Public Health Center, Mamuju City, Mamuju Regency. This research's findings are compatible with Silviana (2017)'s belief that health professionals' quality is a very significant and influential element in delivering health care to the population and a deciding factor in achieving success in health facilities through the expertise, behaviors, and skills of employees. Health to be able to provide care, knowledge, and support for the commitment to medications and patient rehabilitation.

5.2 Impact of the standard of outpatient care on opioid enforcement at the Binanga Health Centre, Mamuju City, Mamuju Regency.

Based on the effects of the route analysis conclusions where the vector level of outpatient services received data of significant significance, H0 is refused, and H1 is approved. In such a manner, the quality of outpatient services has a favorable and significant impact on drug enforcement. Binanga Health Center, Mamuju City, Mamuju Regency.
The findings of this study are compatible with the opinion of Zainaro DKK (2019), which claimed that enhancing the standard of care in health facilities, in particular in terms of compassion for health staff for patients. Empathy on the part of health professionals by expressing strong sympathy, eager to respond to and consider their patients would build a good connection with health workers and patients and their families. This will help them feel more relaxed when accessing clinical care and feel happier with the services delivered. The connection between the quality of service has a direct effect on patients' compliance with medication.

5.3 The effect of health workers' expertise on rehabilitating patients with pulmonary tuberculosis in the Binanga Health Centre, Mamuju City, Mamuju Regency.

Based on the effects of route analysis (path analysis) Model II hypotheses seen in Table 2, where health staff variables' expertise collected data of substantial importance, H0 is dismissed, and H1 is acknowledged. This indicates that the health staff's expertise has a vital and robust influence on pulmonary TB patients' rehabilitation in the Binanga Health Centre, Mamuju City, Mamuju Regency.

This research's findings are compatible with the results of Ibrahim DKK's (2014) study entitled Health Workers' Awareness and Attitudes to Direct Observation of TB Care in the Plateau State of Nigeria. This notes that officials' competence to manage TB patients indicates that 73.4 percent of pulmonary health workers do not understand pulmonary TB regulation, and 71.1 percent do not understand TB control.

5.4 Impact of the standard of care on rehabilitating patients with pulmonary tuberculosis in the Binanga Health Centre, Mamuju City, Mamuju Regency.

Based on the path analysis findings (road analysis) Model II assumptions, as shown in Table 2, where the vector standard of outpatient facilities received an extensive meaning, H0 is denied, and H1 is approved. This indicates that outpatient facilities' bar has a vital and robust influence on pulmonary TB patients' rehabilitation in the Binanga Health Centre, Mamuju District, Mamuju Regency.

This study's findings affirm the results of the research conducted by Fransisca (2016), which indicates a significant association between the standard of care and recovery of TB patients. The stronger the service is given, the higher the cure rate for TB patients.

5.5 Impact of adherence to medicine on pulmonary TB patients' rehabilitation at the Binanga Health Centre, Mamuju City, Mamuju Regency.

Based on the route analysis effects (path analysis), where the opioid enforcement component received substantial importance, H0 is refused, and H1 is approved. This indicates that commitment to medications has a strong and robust impact on pulmonary TB patients' rehabilitation in the Binanga Health Centre, Mamuju City, Mamuju Regency.

This analysis confirms the results of Aris Widianto's research (2017), explaining a connection regarding commitment to the usage of medications and rehabilitation of positive TB patients in Puskesmas Delanggu Klaten. Adherence to taking medications influences the healing rate of healthy anti-tuberculosis patients in Puskesmas Delanggu Klaten. This indicates that if patients with TB take medicines daily, the prescription rate for pulmonary TB patients would also improve.

5.6 Impact of health staff's expertise on rehabilitating patients with pulmonary tuberculosis by complying with treatment in the Binanga Health Centre, Mamuju City, Mamuju Regency.

Depending on the Sobel test study's findings, the results are obtained where t>t table so that H0 is refused and H1 acknowledged. Based on the study's findings, it is seen that the expertise of health workers has a positive and vital impact on the cure of pulmonary tuberculosis by the commitment to the usage of drugs in the Binanga Health Centre, Mamuju District, Mamuju Regency.

This study is in line with previous research, conducted by Oksi Anjar Winanti (2018) that there is a correlation between the standard of health care, awareness and compliance with substance use, and the recovery of tuberculosis patients Jatilawang Community Health Center Work Area.

5.7 Impact of outpatient facilities' standard on pulmonary TB patients' rehabilitation by compliance with prescription in the Binanga Health Centre, Mamuju City, Mamuju Regency.

To evaluate the indirect effect hypothesis using the route analysis data (path analysis), which are outlined in the indirect effect test results. Based on the Sobel test analysis results, the findings obtained are t count>t table so that H0 is denied and H1 is acknowledged. This study's findings suggest that the consistency of outpatient care has a positive and vital impact on the management of pulmonary TB by committing to the usage of drugs in the Binanga Public Health Centre, Mamuju District Mamuju Regency.

This study's results are compatible with the findings of Umro's report, DKK (2017), entitled factors linked to the recovery of positive pulmonary TB patients in the work area of Puskesmas Perumnas Kendari District. It notes that the success of health workers affects the standard of health services for patients. Pulmonary TB can actively or implicitly impact the regularity of care, which will potentially also decide the effects of treatment to infer that clinical facilities are a risk factor for the rehabilitation of pulmonary TB patients.

6. Conclusion

Based on the study findings set out in the previous chapter, it can be hypothesized that the competence of health workers and the quality of outpatient services substantially influence the care rate of patients with pulmonary TB on the competence of health workers and outpatient quality services by adherence to medication. It significantly affects pulmonary TB patients' treatment rate in the Binanga Health Centre, Mamuju City, Mamuju Regency. Thus, to enhance the rehabilitation of pulmonary tuberculosis patients in Binanga Puskesmas, Mamuju District, Mamuju Regency, it is essential to improve health staff's expertise and outpatient care efficiency complying with requirements for the availability of health staff and the availability of standard facilities and amenities.

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