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Analysis Of Factors And Performance Of Puskesmas In Tb Case Finding In Lhokseumawe City

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ABSTRACT

Tuberculosis is still a health problem in Indonesia and the world today. Aceh Province has the highest number of TB cases in Indonesia, and North Aceh district is the highest district in Aceh Province. One effort to reduce the morbidity rate caused by TB is TB case detection (Case Detection Rate/CDR) and the success rate of treatment. The high and low rates of TB case discovery are influenced by the performance of all managers of the TB disease control program (P2TB), which all related parties support. This research describes officers' performance finding tuberculosis cases at the Lhokseumawe City Health Center. This type of research is quantitative with a cross-sectional design. Samples were taken from the total population, namely all officers responsible for TB at community health centers in Lhokseumawe, totaling 15 officers. The results of this research showed that the dominant gender was 86.7% female officers, 80% D3 education level, 100% good knowledge, 86.7% sufficient motivation of officers, 73.3% good leadership of the head of the community health center, 86% good training for TB officers, 7%, case detection was 100% good, work period was more than two years 73.3%, and the achievement of TB case discovery was only one health center that reached the standard. The conclusion from research conducted at the Lhokseumawe City Health Center is that many factors influence officers' performance in case finding.

Keywords: CDR, performance, knowledge, case finding.

INTRODUCTION

Tuberculosis or TB is an infectious disease caused by infection with rod-shaped bacteria known as *Mycobacterium tuberculosis* (M.TB) (Kementerian Kesehatan Republik Indonesia 2020). The *Mycobacterium tuberculosis* germ infects nearly aquarter of the world's population; about 89% of TB is suffered by adults, and 11% is sustained by children. TB is still the leading cause of death after HIV/AIDS and is one of the 20 leading causes of death worldwide (Kementerian Kesehatan Republik Indonesia 2022). The

highest number of TB cases are in Southeast Asia (44%), Africa (25%), and Western Pacific (18%) regions (Perhimpunan Dokter Paru Indonesia 2021). Indonesia has the second-highest number of TB patients after India, followed by China, the Philippines, Pakistan, Nigeria, Bangladesh, and the Democratic Republic of Congo (KNVC Indonesia 2022).

Based on the WHO report, the estimated number of people diagnosed with TB globally in 2021 is 10.6 million cases and has increased by around 600,000 cases from 2020, which is estimated at 10 million TB cases. The number of TB cases in Indonesia is estimated at 969,000, which increased by 17% from 2020, which was 824,000. The incidence of TB cases in Indonesia is 354 per 100,000 population, which means that for every 100,000 people in Indonesia, 354 of them have TB. Of the estimated 969,000 TB cases in Indonesia, only 443,235 (45.7%) cases have been found, while the remaining 525,765 (54.3%) cases have not been foundand reported. The death rate from TB in Indonesia reached 150,000 cases and has increased since 2020, which amounted to 93,000 cases of death from TB (KNVC Indonesia 2022).

Based on the Aceh Health Profile, the highest number of Tuberculosis suspects is in the North Aceh district, with 4292 people, while the lowest is in Sabang City, with 35 people. Regions with the highest Case Notification Rate (CNR) of all TB cases per 100,000 population are Bireuen (729), Pidie (718), and North Aceh (671), and the lowest is Sabang City (9) (Dinas Kesehatan Provinsi Aceh 2021).Based on the national TB control target of TB elimination in 2035 and Indonesia free from TB in 2050,the target achievement of TB control and response continues to be improved (Kementerian Kesehatan Republik Indonesia 2016).

One of the efforts to reduce morbidity caused by TB is the case detection rate (CDR) and treatment success rate (SR), which are the basis used to determine the success of the TB program (Kurniawan et al. 2022).In 2014, the highest Case Detection Rate (CDR) in Aceh was in Lhokseumawe City (96.5%), while Banda Aceh had a CDR of 57.6%. The low CDR and Case Notification Rate (CNR) indicate the lowability to find TB cases and the high incidence of TB (Yanti 2022). High and low TB case finding rates are influenced by the performance of all P2TB (TB Disease Management) program managers supportedby all relevant parties, more specific management, discipline in the application of all established standard operating procedures, as well as the need for coordination between service units in the formof networks and the application of diagnostic solid and therapeutic standards so that TB prevention isachieved (Kementerian Kesehatan Republik Indonesia 2016).

According to the results of Emaliana et al.'s research, one of the factors affecting the achievement of TB program success is educational background, knowledge, and training with officer performance in TB case finding (Emaliana Saomi, Cahyati, and Indarjo 2013). From the above explanation, the researcher feelsinterested in examining the analysis of factors that influence the achievement of officers in the accuracy of treatment of adult tuberculosis patients at the Lhokseumawe City Health Center.

METHODS

Methods: This type of research is quantitative with a cross-sectional design. The dependent variable in this study was the officers' performance in finding tuberculosis cases at the health center. The independent variables were knowledge, motivation, education level, training, tenure, active case finding, and leadership of the head of the health center. Thisstudy used the total population, namely all officers in charge of tuberculosis at the health center, totaling 15 officers from all health centers in Lhokseumawe City.

RESULTS AND DISCUSSION

Gander

Table 1. Characteristics of Puskesmas TB Officers by Gender

Gender	Frequency (n)	Percentage (%)
Male	2	13,3
Female	13	86,7
Total	15	100

Based on the gender characteristics of TB officers at the Lhokseumawe City Health Center, totaling 15 officers, the majority are women, 86.7% of the total population, and 13.3% are men. Gender is a natural condition that distinguishes men and women. Basically, gender does not cause significant differences between men and women in skills, problem-solving abilities, and learning abilities (Kusumawati et al., 2021). There is no difference between male and female officers in performing their duties as pulmonary tuberculosis officers. Both men and women can work at the health center or in the field to find pulmonary tuberculosis cases (Sunarmi and Kurniawaty, 2022).

Table 2. Characteristics of Puskesmas TB Officers by Age

Age	Frequency (n)	Percentage (%)
3	1	6,7
2		
4	2	13,3
0		
4	2	13,3
1		
4	4	26,7
2		
4	1	6,7
3		

4	1	6,7
4		
5	2	13,3
0		
5	1	6,7
1		
5	1	6,7
2		
Total	15	100

Based on the table above, the youngest TB worker was 32 (6.7%), and the oldest was 52 (6.7%). Based on the age characteristics of TB cadres, it can be seen that the age of TB cadres at the Lhokseumawe City Health Center is at the age of 32 at 6.7%, ages 40 and 41 at 13.3%, the most age 42, 26.7%, ages 43 and 44 6.7%, age 50 13.3%, and ages 51 and 52 6.7%. Age is consistently associated with psychological maturity, responsibility, independence, and job mobility. Older adult officershave experience in carrying out their duties. In contrast, although young adult officers do not have experience, they have attended training on the pulmonary TB program. This may allow young adult officers to compete with more experienced older adult officers and be able to carry out their duties and detect new cases of pulmonary TB quickly and promptly. In other words, the detectionof pulmonary TB cases is not due to the officer's age (Sunarmi and Kurniawaty 2022).

Education level

The education level of Puskesmas TB officers is divided into two categories, namely D3 andS1. Then, the data and information related to the description of the level of education of TB officers in the Lhokseumawe region were analyzed. The following are the results of the frequency distribution of Education levels among TB officers at the health center.

Table 3. Overview of Puskesmas TB Officers Based on Last Education

Last education	Frequency (n)	Percentage (%)
D3	12	80
S1/S2	3	20
Total	15	100

Educational background is an indicator that can be used to describe a person's ability to do a job. Educational background determines officers' knowledge and skills in carrying out their duties. Judging from the distribution of education levels, most officers are D3 graduates (80%)and S1 (20%). Based on the Indonesian Law on Health Workers where health workers have a minimum qualification of diploma three (Kemenkes RI 2023). In general, TB workers with higher education

levels aremore likely to absorb and obtain information about health problems than those with lower educationlevels, which impacts the health services available (Kusumawati et al. 2021).

Knowledge

Knowledge in Puskesmas TB officers is divided into three categories: poor, sufficient, and suitable. Then, the data was analyzed, and information related to the description of the level of knowledge of TB officers in the Lhokseumawe City area. The following are the results ofthe frequency distribution of knowledge on TB officers at the puskesmas.

Table 4. Knowledge of Puskesmas TB Officers

Knowledge	Frequency (n)	Percentage (%)
Less than 40%	0	0
40-69 %	0	0
Reasonable 70-100%	15	100
Total	15	100

Based on the characteristics of TB officers' knowledge, it can be seen that the understanding of TB officers at the Lhokseumawe City Health Center is 100% good. Human discovery or achievement produces knowledge. Knowledge results from human experience or understanding of an objectusing the five senses. Sensing is influenced by the intensity of one's thoughts and perceptions of a particular object, thus creating knowledge. The most significant sources of knowledge are thesenses of hearing and sight (Notoatmodjo 2019). The knowledge possessed by pulmonary TB workers plays a vital role in performing their duties well. A complete and in-depth understanding of pulmonaryTB materials is essential so officers can carry out their duties as expected and achieve the established pulmonary TB discovery targets. In theory, knowledge directly influences changesin behavior and attitudes to attain the desired *Case Detection Rate* (CDR). Officers with a strong understanding of pulmonary TB can identify TB cases more accurately, evaluate symptoms appropriately, conduct effective diagnostic testing, and provide appropriate patient care (Sunarmi and Kurniawaty 2022).

Motivation

Motivation in Puskesmas TB officers is divided into three categories: lack of motivation, sufficient motivation, and good motivation. Then, the data and information related to the description of the level of motivation of TB officers in the Lhokseumawe City area were analyzed. The following are the resultsof the frequency distribution of motivation in TB officers at the health center.

Table 5. Frequency Distribution of Motivation of Puskesmas TB Officers

Motivation	Frequency (n)	Percentage (%)
Less than 40%	0	0
40-69 %	13	86,7
Reasonable 70-100%	2	13,3
Total	15	100

Motivation is essential in every aspect of life (Akbar Abbas, 2023). A motivated person will strive to achieve their goals. Individual work motivation has a direct and indirect impact on success at work.Motivated individuals driven by their work will perform much better and be more attentive than those who are not. When a person rises to a position of authority, his drive to work influences the drive of his team or subordinates, which will cause the group to work well (Arthur Ferry and Dkk 2021). Motivation is the drive to realize a desire, such as to receive an award; one must work to do one's jobwell. The motivation of TB officers in Lhokseumawe City is sufficient mainly (86.7%), and good motivation is (13.3%). The better one's motivation at work, the better the TB case finding (Aisyah 2024). Workmotivation determines the achievement of the final results of a program. In other words, motivation is a factor that affects work performance in addition to knowledge, attitude, ability,and experience (Karolina, Gading, and Susanti 2023).

Health Center Leadership

The leadership of the head of the community health center among the TB officers at the Community Health Center is divided into three categories: the head of the community health center needs to be better and sufficient, and the leadership of the community health center is good. Then, the data was analyzed, and information related to the description of the leadership of the head of the community health center for TB officers in the Lhokseumawe City area. The following are the results of the frequency of the leadership distribution of the head of the community health center for the TB officers at the community health center.

Table 6. Health Center Leadership

Leadership	Frequency (n)	Percentage (%)
Less than 40%	0	0
40-69 %	4	26,7
Reasonable 70-100%	11	73,3
Total	15	100

Based on the leadership characteristics of the head of the Lhokseumawe City Health Center, good leadership was obtained (73.3%) and sufficient (26.7%). Leadership is a science that thoroughly studies how to motivate, direct, and supervise others in performing tasks according to predetermined rules and directions (Karolina, Gading, and Susanti, 2023). Leadership is a driver of human resources and other resources. Good leadership by the head of the community health center tends to make officers perform well (Nirwesti, Sriatmi, and Kusumawati, 2021). Performance is the result of work or the quantity and quality achieved by an employee in carryingout his obligations by the responsibilities given (Mathis and Jackson 2020). Lack of attention to officers canresult in low morale, boredom, and delays in completing tasks, which can affect the work performance of the officers concerned (Suwartini et al., 2023).

Officer Training

Training in Puskesmas TB officers was divided into two categories, namely less (training < 2times) and sound (training > 2 times). Then, the data and information related to the training description for TB officers in the Lhokseumawe City area were analyzed. The following are the results ofthe frequency of the training distribution for TB officers at the health center.

Table 7. Frequency Distribution of TB Officer Training at Health Center

Training	Frequency (n)	Percentage (%)
Less	2	13,3
Good	13	86,7
Total	15	100

Training is a process by which formally trained people are trained to do a job according to theirjob, thereby improving the quality of their work (Ulfah, Nasution, and Siregar 2023). The training received by officers at the Lhokseumawe City Health Center was good (86.7%) and sufficient (13.3%). Training is an effort to improve officers' knowledge, attitudes, and skills to improve their abilities and activities. When doing a job, it is crucial to conduct training to correct previous performance deficiencies (Kusumawati et al. 2021). According to the Ministry of Health of Indonesia, officers in charge of Puskesmas receive at least two training in TB control, namely pre-service training and in-service training; in the DOTS strategy, *basic training* and *advanced* training are added (Kemenkes RI 2019).

Active TB case finding.

Active TB case findings in Puskesmas TB officers were divided into two categories: less active TB case findings and promising active TB case findings. Then, the data and information describing active TB case findings in TB officers in the Lhokseumawe City area were analyzed. The following are the results of the frequency distribution of active TB case findings among TBofficers at the

health center.

Table 8. Frequency distribution of active TB case finding

Case Discovery	Frequency (n)	Percentage (%)
Less	0	0
Good	15	100
Total	15	100

Case finding or screening is one of the TB control strategies. TB control can be implemented actively, passively, intensively, and massively (Dirjen Pencegahan dan Pengendalian Penyakit 2020). TB case finding in Lhokseumawe City health centers is 100% good. Passive-intensive centralized TB case detection is implemented at healthfacilities by strengthening the TB service network through Public Private Mix (PPM) and strengthening service coordination. On the other hand, active-massive detection of TB cases involves allpotential community members, including medical cadres, village TB centers, community leaders, andreligious leaders (Novitasari and Rahingrat 2021). *Contact tracing* and investigation is a critical steps in supporting the success of the active discovery strategy by conducting *contact* tracing *and contact investigation*. Contact investigation is a search and investigation focused on individuals who have had contact with TB patients suspected of having TB. Suspected individuals will be directed to health services for follow-up examinations. If tested positive for TB, they will be referred to a health center for appropriate treatment as soon as possible. Contact investigation has two objectives: to increasecase findings and stop the spread of tuberculosis to the community (Kemenkes RI 2019).

Length of service

The length of service TB officers at the Puskesmas is divided into two categories: tenure < 2years and tenure > 2 years. Then, the data and information related to describing the working period of TB officers in the Lhokseumawe City area were analyzed. The following are the results of the frequency distribution of the tenure of TB officers at the health center.

Table 9. Frequency Distribution of Period of Service of TB Officers at Puskesmas

Length of service	Frequency (n)	Percentage (%)
< 2 years	4	26,7
> 2 years	11	73,3
Total	15	100

Length of service is an indicator of labor productivity (Azizah 2021). TB officers' service length in Lhokseumawe City is mostly more than two years (73.3%) and less than two years (26.7%). A person's work performance is also influenced by the length of work because the longer an employee

works, the more productive, experienced, and expert he will be in carrying out and completinghis duties. The minimum length of service for TB workers is one year, and the maximum is 25 years. Theaverage length of service as a TB officer was 8.9 years, with most officers having performed their duties as TB officers for an extended period (Kusumawati et al. 2021).

Puskesmas TB Discovery Achievement

Data received from the Lhokseumawe City Health Office regarding the number of TB cases at the puskesmas in 2023 and population data from BPS Lhokseumawe City obtained the CDR value as follows.

Table 10. Achievement of TB Findings at Health Centers by 2023

schemas	Total Residents	CDR Target /year	Number ofCases	CDR (%)
Blang Mangat	26.992	95	57	60
Muara Dua	52.079	184	74	40
Muara Satu	34.069	121	85	70
Banda Sakti	78.256	277	128	46

Based on the table above, of the 4 Puskesmas, the average achievement of case finding is 54%, and the median is 42%. The lowest achievement is 40%, and the highest is70%. In this study, the criteria for the performance of health centers in achieving discovery are divided into two categories, namely, sound and poor performance, based on the overall achievement value of TB casefinding in Lhokseumawe City. It is said to be good if the puskesmas achievement rate is greater than orequal to the median value, and for poor performance, if the puskesmas achievement rate is less than the median. Meanwhile, the national standard is a minimum of 70% achievement of TB case finding at puskesmas, and for Lhokseumawe, only one puskesmas reaches the standard.

Table 11. Distribution of Officer Performance in TB Case Finding at Lhokseumawe City Health Center

Case Discovery	Frequency (n)	Percentage (%)
Less	2	50
Good	2	50
Total	4	100

CONCLUSION

From the results of the research carried out, it can be concluded that the gender of the officers was predominantly female, 86.7%; the highest education level was D3, 80%; knowledge was 100% good; the motivation of the officers was sufficient, 86.7%, the leadership of the head of the

community health center was good, 73.3%, the training of the TB officers was good. 86.7%, 100% good case detection, 73.3% work period of more than two years, and the achievement of TB case detection in the Lhokseumawe City health center, only one health center reached the standard.

SUGGESTION

To the Lhokseumawe City Health Service, the Head of the Community Health Center and TB officers in Lhokseumawe City to maintain their performance in monitoring TB, and it is hoped that they can strengthen the screening of TB suspects because the case discovery rate has not yet reached the target. It is hoped that future researchers will be able to use the results of this research as a reference regarding the analysis of factors and performance of Community Health Centers in finding TB cases.

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