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## **The Effect of Workload and Work Environment on the Anxiety of Health Workers in Dealing with Tuberculosis Patients**

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## ABSTRACT

The effect of workload and work environment on employee performance is very influential, where providing workload effectively is useful for knowing the extent to which employees can be given the maximum workload. Especially, for health workers, the workload should be appropriately distributed because they not just only this about the services to patient, but they also must pay attention to their own health from various kinds of infectious diseases in the health center. This study aims to determine the effect of workload and work environment on the health of workers' anxiety in dealing with tuberculosis patients at Batua Health Center, Makassar City. This study uses a quantitative research design using a cross-sectional study approach. The population and samples in this study were taken using a total sampling technique, namely health workers at the Batua Health Center, Makassar City, a total of 58 respondents. The research was conducted in November-December 2022. The result shows that workload has a significant effect on the health of workers' anxiety with  $p$ -value = 0.021. The test results also obtained an Exp(B) value of 4.456. Statistical test with Chi-square obtained  $p$ -value = 0.004  $< \alpha$  0.05, so  $H_0$  is rejected, meaning that statistically there is a relationship between the work environment and the health anxiety of workers at Batua Health Center with an OR value of 5.204, meaning that the work environment is less likely 5 times to cause anxiety in the health of workers.

**Keywords:** *Workloads; Work Environment; Health Center*

## 1. Introduction

Health workers based on the Law of the Republic of Indonesia concerning Health No. 36 of 2014 are any person who is dedicated to the health sector and has knowledge and skills through education in the health sector for certain types that require authority in carrying out health efforts. Health workers also have an important role to play in improving the maximum quality of health services to the community so that the community is able to increase awareness, willingness and ability to live healthy so as to be able to realize the highest degree of health as an investment for the development of socially and economically productive human resources (Law -Health Law, 2014).

Every day in carrying out their service, health workers do not only deal with patients, coworkers, nurses and other fellow medical staff who deal with doctors and regulations in the workplace and workload which are sometimes considered not in accordance with their physical, psychological and mental conditions. emotional. Things that affect the workload of medical

personnel are when the patient's condition is unstable, the average number of hours of care needed to provide direct services to patients exceeds the ability of a medical staff, the desire to achieve work and high work demands (Munandar, 2016)

The impact of a workload that is too heavy will make medical personnel dissatisfied with their work, less enthusiastic and trigger a psychological impact on medical personnel. Health workers who have a heavy workload tend to feel the need for counseling and psychotherapy, carried out individually, both online and face to face (Munandar, 2016). In addition to workload, another factor that affects employee performance is the work environment. An uncondusive work environment will make employees fall sick easily, get stressed easily, have difficulty concentrating and decrease work productivity. The effect of workload and work environment on employee performance is very influential (Hasibuan, 2012).

In KwaZulu-Natal Province, South Africa, even doctors, especially young doctors, can also experience burnout, anxiety, and depressive symptoms due to limited resources in the hospital. Younger doctors are more prone to burnout, while older doctors are more likely to experience anxiety and depressive symptoms. Therefore, individual- and organization-focused solutions should be considered wisely to reduce the negative impact of high work environment and workload (Naidoo et al., 2020).

In general, anxiety is the psychological state of a person who is filled with fear and worry about something that is not certain to happen. Anxiety is described as a form of negative word and physiological stimulation. According to the American Psychological Association (APA), anxiety is an emotional state that arises when a person feels distressed, tense and accompanied by physical responses such as heart palpitations, increased blood pressure, and so on (Annisa, 2016).

Diseases can be divided into 2, namely infectious diseases and non-infectious diseases, infection is an invasive process by microorganisms and proliferates in the body that causes pain. In general, the process of disease occurrence involves three interacting factors, namely: disease-causing factors (agents), human factors or hosts (hosts) and environmental factors (Potter, P., & Perry, 2005). The Republic of Indonesia Ministry of Health in 2014 said that tuberculosis is an infectious disease caused by the bacterium mycobacterium tuberculosis which is transmitted through sputum splashes. Tuberculosis bacteria usually attack the lungs, common people usually call them lung spots or hollow lungs.

Indonesia has a record of tuberculosis cases in terms of gender, the highest tuberculosis incidence rates are in several provinces in Indonesia. The first position was occupied by the

province of West Java with a total of 23,774 cases of pulmonary tuberculosis. Followed by the province of North Sumatra occupying the top 4 positions with a total of 7,764 cases of pulmonary tuberculosis (The Ministry of Health, 2020). Based on data from The Ministry of Health for 2020, tuberculosis cases can be influenced by several factors, the physical conditions of residence and environmental conditions. Unhealthy physical quality of residence is the biggest cause that causes the development of mycobacterium tuberculosis. Poor ventilation can block sunlight from entering the room which creates a damp and dark atmosphere.

There are several risk factors for the home environment that contribute to the incidence of pulmonary tuberculosis, namely residential density, type of floor, ventilation, and humidity and an environment that is far from healthy (The Ministry of Health, 2020). One source of transmission of tuberculosis in puskesmas is health workers who have a very large role in preventing tuberculosis because health workers often have direct contact with patients (The Ministry of Health, 2015). According to WHO data as of July 14 2020, the number of positive patients in Indonesia was 76,981 people with an average addition of 1,000 cases per day (WHO, 2020). Total deaths of 3,565 people classified as community transmission. 

Based on data from the official website of the South Sulawesi Provincial government, the number of positive patients in Makassar City is 4,430 people (PPS, 2020). Batua Health Center is a health center located in Makassar City, South Sulawesi. The number of health workers at the Batua Health Center is 58 people. It is also known that 119 patients with tuberculosis were registered at the puskesmas in January-May 2022. Based on the problems above this study aims to analyze the influence of workload and work environment on the anxiety of health workers in dealing with tuberculosis patients at the Batua Health Center, Makassar City. 

## 2. Methods

This study used a quantitative research design using a cross-sectional study approach. The population and sample in this study were taken using a total sampling technique, namely the health workers of the Batua Health Center in Makassar City, totaling 58 respondents. The research was conducted in November-December 2022.

### 2.1 Data Analysis Method

Descriptive Analysis, is to discuss ways of collecting, summarizing, presenting data so that information are easier to understand, the information obtained includes data centering (mean, median, standard deviation). Logistic Regression Analysis, in this study, the logistic regression assumption test that will be carried out are model estimation and model fit testing:

*Maximum Likelihood:* Linear regression analysis uses an ordinary least square (OLS) estimator that minimizes the sum of the squares of the difference between the actual dependent variable value and its prediction. In contrast, the relationship between the dependent and independent variables in logistic regression is non-linear so it requires a different procedure, namely the maximum likelihood estimator with an iteration process that finds the estimated coefficients instead of minimizing the square deviation but maximizing the probability of an event occurring. This using SPSS 26.0.

## 2.2 Operational Definitions

Workload (X1): Workload according to Tarwaka (2014) is any form of work given to human resources to be completed within a certain period of time. The workload indicators in this study are targets that must be achieved, working conditions, and work standards. Workload measurement uses a likert scale with a value interval of 1-4. The assessment category consists of very suitable with a value of 4, suitable with a value of 3, less suitable with a value of 2 and not suitable with a value of 1. The number of questions is 6 numbers. The measurement criteria are based on a likert scale, where each answer has a score. The highest score is 4 and the lowest score is 1. The objective criteria are:

Good : if the respondent's answer score  $\geq 62.5\%$  of the most appropriate answer.  
Less Good : if the schedule score is  $< 62.5\%$  of the most appropriate answer.

Work Environment (X2): Work environment indicators according to Nitisemito (2016) used in this study are work atmosphere, availability of facilities for employees, and relationship with coworkers. Measurement of the work environment uses a likert scale with a value interval of 1-4. The assessment category consists of very suitable with a value of 4, suitable with a value of 3, less suitable with a value of 2 and not suitable with a value of 1. The number of questions is 6 numbers. The measurement criteria are based on the likert scale, where each answer has a score. The highest score is 4 and the lowest score is 1. The objective criteria are:

Good : if the respondent's answer score  $\geq 62.5\%$  of the most appropriate answer.  
Less Good : if the schedule score is  $< 62.5\%$  of the most appropriate answer.

Anxiety (Y): The dependent variable or dependent variable used in the study is health worker anxiety (Y). Anxiety is a response to certain threatening situations and is a normal thing that occurs accompanied by development, change, new experiences and in finding self-identity (Kaplan & Sadock, 2012). Workload measurement uses a likert scale with a value interval of 1-4. The assessment category consists of very suitable with a value of 4, suitable with a value of 3, less suitable with a value of 2 and not suitable with a value of 1. The number of questions



is 14 numbers. The measurement criteria are based on the likert scale, where each answer has a score. The highest score is 4 and the lowest score is 1. The objective criteria are:

Good : if the respondent's answer score  $\geq 62.5\%$  of the most appropriate answer. 

Less Good : if the schedule score is  $< 62.5\%$  of the most appropriate answer.

### 3. Results



**Table 1.** Distribution of Respondents by Gender, Age, Education, Profession, Anxiety, Workload and Work Environment at the Batua Health Center in Makassar City

|                                                                                                   | Research Sample |                |
|---------------------------------------------------------------------------------------------------|-----------------|----------------|
|                                                                                                   | Amount (n)      | Percentage (%) |
| <b>Gender</b>                                                                                     |                 |                |
| Man                                                                                               | 25              | 43.1           |
| Woman                                                                                             | 33              | 56.9           |
| <b>Age</b>                                                                                        |                 |                |
| <20 years                                                                                         | 2               | 3.4            |
| 20-29 years                                                                                       | 20              | 34.5           |
| 30-39 years                                                                                       | 22              | 37.9           |
| 40-49 years                                                                                       | 10              | 17.2           |
| $\geq 50$ years                                                                                   | 4               | 6.9            |
| <b>Education</b>                                                                                  |                 |                |
| D3/equivalent  | 26              | 44.8           |
| Profession                                                                                        | 19              | 32.8           |
| S1                                                                                                | 7               | 12.1           |
| S2                                                                                                | 3               | 5.2            |
| Specialist                                                                                        | 3               | 5.2            |
| <b>Profession</b>                                                                                 |                 |                |
| Midwifery                                                                                         | 14              | 24.1           |
| Nursing                                                                                           | 27              | 46.6           |
| Medical                                                                                           | 4               | 6.9            |
| Non Medical                                                                                       | 13              | 22.4           |
| <b>Worry</b>                                                                                      |                 |                |
| Not good                                                                                          | 20              | 34.5           |
| Good                                                                                              | 38              | 65.5           |
| <b>Workload</b>                                                                                   |                 |                |
| Not good                                                                                          | 25              | 43.1           |
| Good                                                                                              | 33              | 56.9           |
| <b>Work environment</b>                                                                           |                 |                |
| Not good                                                                                          | 19              | 32.8           |
| Good                                                                                              | 39              | 67.2           |

Source: Primary Data

**Table 2.** The Relationship between Workload and Work Environment with Anxiety of Health Workers in Dealing with Tuberculosis Patients at the Batua Health Center in Makassar City

| Variable         | Health Worker Anxiety |      |      |      | Total |     | P-value |
|------------------|-----------------------|------|------|------|-------|-----|---------|
|                  | Not good              |      | Good |      |       |     |         |
|                  | n                     | %    | n    | %    | N     | %   |         |
| Workload         |                       |      |      |      |       |     |         |
| Not good         | 14                    | 56.0 | 11   | 44.0 | 25    | 100 | 0.006   |
| Good             | 6                     | 18,2 | 27   | 81.8 | 33    | 100 |         |
| Work environment |                       |      |      |      |       |     |         |
| Not good         | 12                    | 63,2 | 7    | 36,8 | 19    | 100 | 0.004   |
| Good             | 8                     | 20.5 | 31   | 79.5 | 39    | 100 |         |

Source: Primary Data

**Table 3.** Correlation Matrix

| Correlation Matrix |                  |          |                  |        |
|--------------------|------------------|----------|------------------|--------|
|                    | Constant         | Workload | Work environment |        |
| Step 1             | Constant         | 1,000    | -0.636           | -0.714 |
|                    | Workload         | 0.636    | 1,000            | -0.036 |
|                    | Work environment | -0.714   | -0.036           | 1,000  |

**Table 4.** Evaluation of Logistic Regression Model (Simultaneous Test)

| Omnibus Tests of Model Coefficients |        |            |    |      |
|-------------------------------------|--------|------------|----|------|
|                                     |        | Chi-square | df | Sig. |
| Step 1                              | step   | 15,730     | 2  | .000 |
|                                     | blocks | 15,730     | 2  | .000 |
|                                     | Model  | 15,730     | 2  | .000 |

**Table 5.** Hosmer and Lemeshow test

| Hosmer and Lemeshow Test |            |    |      |
|--------------------------|------------|----|------|
| step                     | Chi-square | df | Sig. |
| 1                        | .019       | 2  | .991 |

## 4. Discussion

### 4.1 Effect of Workload on Anxiety of Health Workers

Workload is an aspect that must be considered by every health service agency, because workload affects officers in increasing productivity and a sense of comfort at work. This is because a balanced workload can maximize or even worsen productivity in terms of quality or

quality of products / real results from the resources deployed. The need for division or transfer of tasks among frontline health workers based on complexity and ability (Manjunath et al., 2022).

Workload is a job both physical and mental burden that must be borne by the workforce itself in accordance with certain type of timeframe. Workload can occur due to various factors, such as the number of tasks that are physical and mental, anxiety, reduced rest time, gender and age. Workload can appear with various types of severity, for example light workload, moderate workload and even heavy workload (Solon et al., 2021). The high workload felt by health workers at Batua Health Center is caused by the high demands of work that must be completed optimally in a quality service manner.

This can be seen from the statements of health workers that as many as 34.5% of health workers feel they are not in accordance with the demands of their work to always provide quality services. Excessive workload and too little workload can affect the performance of health workers. Indicators of the dimensions of work demands are too much workload to complete in a certain time and excessive workload to be completed by health workers who are unable to carry out a task.

This research is in line with Dewi from Wates Hospital (2017) that most nurses have a moderate workload, namely 48 nurses (52.7%). According to Ilyas (2004), a high workload can cause nurse burnout. Nurse burnout occurs when nurses work more than 80% of their working hours. Nurses perform their duties for about 80% of their productive time. Workload can also be affected by the type of work itself. One of the factors that affect workload is mental work assignments such as the level of difficulty of the job, responsibility for work (Hutabarat, 2017).

As explained in the previous chapter that Pulmonary Tuberculosis (Pulmonary TB) is a contagious infectious disease which is a public health problem in the world, this can have an effect and anxiety on the working mentality of health workers by looking at the very easy way of TB transmission (Yori, 2019). The results of the cross table between workload and anxiety for health workers showed that as many as 56.0% of officers who had a bad workload also experienced bad anxiety, while 81.8% of health workers who had a good workload had good anxiety. This shows that the better the workload of health workers, the better the anxiety level of health workers at the Batua Health Center in Makassar City tends to be.

According to Nursalam (2016) workload in the room does not always cause anxiety among nurses, and can cause anxiety if the workload is not proportional to the physical abilities, experience and expertise of nurses, and the time available. Every nurse has a normal

ability to complete the tasks assigned to her, and every nurse has a different way of managing anxiety, depending on the duration, type, and frequency of anxiety she experiences.

According to Fadil et al. (2020) anxiety levels can be influenced by age, gender, family status, patient honesty, availability of personal protective equipment, and knowledge, which greatly affect how a person handles anxiety and how a person copes while undergoing treatment. This is in line with data from research conducted by researchers, that 46.8% of people aged 26-30 years suffer from mild anxiety disorders. Workload is all the factors that determine the person who is working. Another definition of workload is a portion of the capacity of the worker's ability to do his job. Workload affects individual performance in carrying out the work performed. Workload is not only seen from the physical load alone, but workload can also be a mental burden that can affect the anxiety of health workers.

The results of the logistic regression test in this study showed that workload had a significant effect on the anxiety of health workers with a p value = 0.021. From the test results it was also obtained that the Exp(B) value was 4.456, which means that workload has an effect of 4 times on anxiety. The higher the workload of health workers, the less good it will affect anxiety 4 times compared to a good workload. Workers who have excessive workload will reduce productivity and quality of work, and there is a possibility that the execution of work is not timely, unsatisfactory and results in disappointment. Excessive workload and too little workload are stress generators, workload can be differentiated further into excessive or too little workload, namely quantitative arising as a result of too many/little tasks given to the workforce to complete at a certain time and workload Qualitative, that is if people feel unable to perform a task.

The above statement is supported by one study in South Africa which states that hopelessness, helplessness and lack of motivation are the result of a variety of issues including health workers' time constraints and their heavy workload which can reduce focus on the needs and feelings of TB patients (Kallon et al., 2022). Health workers were dissatisfied with organizational policies including limited opportunities for vacation, involvement in non-TB tasks, long working hours, and inflexible work schedules. Efforts to improve motivation and retention of healthcare workers need to address the quality of work life dimension, which focuses on the organization's requirements to achieve employee well-being, as this may contribute to their job satisfaction (Ogbuabor and Okoronkwo, 2019).

Research results at Puskesmas Tikung Lamongan indicate that high workload can create low performance for health workers. Workload is still an obstacle due to limited adequate equipment and competent labor. In 2020 and 2021, the workload of health workers is increasing

due to the increase in the number of patients received by the Puskesmas, while the health workers are decreasing because some are exposed and must be isoman. Therefore, the human resources of the health center must be strengthened to provide better services in the health sector in order to prevent the occurrence of mental disorders, psychological anxiety, anxiety, and fatigue in the night shift. The workload feels heavy if it is not balanced with the appropriate amount of human resources. A high workload can increase burnout and might force the health workers to suffer psychological problems (Purwanti et al., 2022).

Work overload can be caused by uncertain consumer circumstances, patients who demand to be provided with fast service beyond the ability of normal work in general, desire for performance performance and the desire for a lot of work and must document nursing care (Korkmaz et al., 2020). Health workers who work to care for TB patients need to be heard for their complaints regarding anxiety and fear of TB transmission from patients and as managers of hospitals or health centers need to increase their resources, because it is very important to ensure the successful implementation of the new policy and prevent the unintended negative consequences it could have hinder the quality of patient care (Vanleeuw et al., 2020). This indicates that it is necessary to pay attention to workloads that are appropriate or balanced with the ability of health workers to carry out their duties, especially for those who care for TB patients.



#### 4.2 The Effect of the *Work Environment* on the Anxiety of Health Workers

The work environment in an institution, especially the community health center (Puskesmas), is very important for management to pay attention to. Even though the work environment does not carry out the production process within a company, the work environment has a direct influence on the health workers who carry out the production process. The work environment is an atmosphere where health workers carry out their activities every day. A conducive work environment provides a sense of security and allows health workers to work optimally. If the officer likes the work environment in which he works, then the person will feel at home at work, carry out his activities so that work time is used effectively. Conversely, an inadequate work environment will reduce the performance of health workers at the puskesmas (Hidayat, 2017).



Based on the results of interviews using a questionnaire, it was found that as many as 41.4% of health workers stated that they were not good at working room temperature to support work activities. An increase in temperature can result in an increase in work performance, but on the other hand it can also reduce work performance. An increase in temperature to a certain

limit can generate enthusiasm which will stimulate work performance, but after passing a certain threshold this increase in temperature has begun to interfere with body temperature which can result in disruption of the performance of health workers. Hastuti (2018) says that all occupants of the room, in this case employees, really need air quality that meets human health and safety requirements, therefore they must always try and maintain the air quality in the room so that it can remain within a comfortable range for employees to work. One effort that can be done to get a room that has comfortable air is to use an Air Conditioner (AC). The ideal range for air temperature is between 18°C to 28°C (Rustiyanto and Rahayu, 2011).

The work environment is not only limited to the physical environment such as temperature, noise or work space design. One that also influences a good work environment is the relationship between co-workers who are open to each other in communicating at the puskesmas. A comfortable and safe atmosphere greatly affects the performance and satisfaction of employees in an agency. Idham's research (2020) on health workers at the Kertak Hanyar Health Center concluded that the calculated t value for the interpersonal/colleague relationship variable was 5,209, thus the interpersonal/colleague relationship variable partially with a variable error rate probability of 0,006 (smaller than 0.05) which means that interpersonal relationships / co-workers have a significant effect on job satisfaction.

An unfavorable work environment can cause distractions and threats, in a work environment like this it will cause employees to become forgetful, more errors in activities and decreased ability to make plans. Changes in working conditions cause employee reactions to be able to adapt to existing conditions. If workers are unable to adapt to existing working conditions, they will tend to experience work stress (Badri, 2020). The results of the statistical test with Chi-square obtained a p-value = 0.004 <  $\alpha$  0.05, so  $H_0$  was rejected, meaning that statistically there is a relationship between the work environment and the anxiety of health workers at the Batua Health Center with an OR value of 5,204 meaning that the work environment is less likely to cause 5 times anxiety for health workers.

In dealing with TB patients, there are many obstacles that must be passed by health workers, especially regarding their own health. As it is well known that TB is an infectious disease that allows officers to be exposed to the disease. This can be seen from the results of interviews with health workers in dealing with tuberculosis patients at the puskesmas, it was found that 39.7% had difficulty breathing (for example, often gasping for air or unable to breathe even though they had not done any physical activity before).

TB is a contagious disease and it is usually spread through the air by droplet nuclei. Transmission generally occurs indoors, so that nurses sometimes feel anxious and afraid to

contact or treat TB patients. Nurses or healthcare professionals believe that TB disease has a strong emotional impact on the life of a patient since it evokes disability, impotence, and self-discrimination. One of the nurses at a hospital in the Limpopo province of South Africa said that the hospital where they work does not have enough resources for them to do a good job so it affects them emotionally but they also cannot just stand by so they feel it is better to risk their lives to save TB patients. For nurses or other health workers, it is important that they receive specialized support from managers, psychologists and appreciation from staff so that they can provide quality care and maintain good mental health. This study also reports that TB is the most dangerous job for health workers worldwide (Matakanye et al., 2019).

A similar study conducted in Southern Ethiopia also revealed that health workers were anxious about the low awareness of the community and the socioeconomic status of TB patients who might transmit the disease to vulnerable family members such as the elderly, pregnant women, and children. In addition, health workers were frustrated by unsuccessful treatment, layoffs, ignorance of care responsibilities, fatigue, shortage of health workers, and not following treatment guidelines properly affect their own actions in following up and treating TB patients, as the disease spreads easily (Abebe et al., 2022).

Quality research in South Africa indicates that health workers have low levels of trust in the workplace. They strike and demand better pay or wages, safe and comfortable working environment and conditions and recognition for their work. They don't have the equipment to do their job safely, and some colleagues don't trust, or value their contributions (Anstey Watkins et al., 2021). This proves that a conducive work environment is very important for health workers in carrying out their duties, especially for those caring for TB patients.

## 5. Conclusions

From the results of the study it can be concluded that: 1) Based on the results of the chi-square test workload and work environment have a significant relationship with the anxiety of health workers in dealing with TB patients, it can be seen from the respective values below 0.05, 2) Anxiety of health workers in The Batua Health Center in Makassar City in the City can increase if the overall workload felt by employees can be reduced or suppressed. Where this can be seen from the OR value of the overall workload of 4.456 which indicates that the workload is not good enough to provide 4 times the opportunity for unfavorable anxiety, 3) The work environment of health workers at the Batua Health Center in Makasar City in the City has a significant influence on anxiety perceived by health workers.

## **6. Suggestion**

Based on the results of research and discussion, the authors provide the following suggestions: 1) Health workers are advised to be able to manage their work time by dividing work time with friends in order to reduce the work environment caused by workload, and be able to control emotions well, 2) The need to increase the number of health workers at the Batua Health Center in Makassar City because there is an unbalanced comparison of health workers and patients, 3) For future researchers to be able to use one of the data sources for further research and research using the latest theory and using many books in his research.

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## **Consent for publication**

Not applicable.

## **Availability of data and material**

All data generated or analysed during this study are included in this published article and its supplementary information files, available from the corresponding author on reasonable request.

## **Declaration of Conflict of Interest**

All authors declare that there is no potential for conflict of interest in this research and article.

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## **Ethical standards disclosure**

This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involved in this research study participants were approved by the Ethics Committee of Universitas Muslim Indonesia and YW-UMI Hospital. In addition, written informed consent was gained from all subjects.

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## **2. Bukti konfirmasi review dan hasil review pertama 5 Mei 2023**

**Effect of Workload and Work Environment on the Anxiety of Health Workers in Dealing  
with Tuberculosis Patients**

**Efecto de la carga de trabajo y el ambiente de trabajo en la ansiedad de los trabajadores  
de la salud en el trato con pacientes con tuberculosis**

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**ABSTRACT**

The effect of workload and work environment on employee performance is very influential. Providing workload effectively is useful for knowing the extent to which employees can be given the maximum workload. Primarily, for health workers, the workload should be appropriately distributed because they not just only this about **the patient services**, but they also must pay attention to their health from various kinds of infectious diseases in the health center. This study aims to determine the effect of workload and work environment on the

health of workers' anxiety in dealing with tuberculosis patients at Batua Health Center, Makassar City. This study uses a quantitative research design using a cross-sectional study approach. The population and samples in this study were taken using a total sampling technique, namely health workers at the Batua Health Center, Makassar City, with a total of 58 respondents. The research was conducted in November-December 2022. The result shows that workload significantly affects the health of workers' anxiety, with a p-value = 0.021. The test results also obtained an Exp(B) value of 4,456. Statistical test with Chi-square obtained p-value = 0.004 <  $\alpha$  0.05, so  $H_0$  is rejected, meaning that statistically there is a relationship between the work environment and the health anxiety of workers at Batua Health Center with an OR value of 5.204, meaning that the work environment is less likely 5 times to cause anxiety in the health of workers.

**Keywords:** *Influences; Workloads; Work Environment; Health Center*

## RESUMEN

El efecto de la carga de trabajo y el entorno de trabajo en el desempeño de los empleados es muy influyente, donde proporcionar la carga de trabajo de manera efectiva es útil para saber hasta qué punto se puede dar a los empleados la máxima carga de trabajo. En especial, para los trabajadores de la salud, la carga de trabajo debe distribuirse adecuadamente porque no solo se trata de los servicios al paciente, sino que también deben prestar atención a su propia salud de diversos tipos de enfermedades infecciosas en el centro de salud. Este estudio tiene como objetivo determinar el efecto de la carga de trabajo y el entorno laboral en la salud de la ansiedad de los trabajadores al tratar con pacientes con tuberculosis en el Centro de Salud de Batua, en la ciudad de Makassar. Este estudio utiliza un diseño de investigación cuantitativa utilizando un enfoque de estudio transversal. La población y las muestras en este estudio se tomaron utilizando una técnica de muestreo total, a saber, trabajadores de la salud en el Centro de Salud de Batua, ciudad de Makassar, un total de 58 encuestados. La investigación se realizó en noviembre-diciembre de 2022. El resultado muestra que la carga de trabajo tiene un efecto significativo en la salud de la ansiedad de los trabajadores con un valor de  $p = 0,021$ . Los resultados de la prueba también obtuvieron un valor Exp(B) de 4456. La prueba estadística con Chi-cuadrado obtuvo  $p\text{-valor} = 0,004 < \alpha 0,05$ , por lo que se rechaza  $H_0$ , es decir que estadísticamente existe una relación entre el ambiente de trabajo y la ansiedad por la salud de los trabajadores del Centro de Salud de Batua con un valor de OR de 5,204, es decir que el

ambiente de trabajo tiene 5 veces menos probabilidades de causar ansiedad en la salud de los trabajadores.

**Palabras llave:** *Influencias; cargas de trabajo; Ambiente de Trabajo; Centro de salud*

## INTRODUCTION

Health workers based on the Law of the Republic of Indonesia concerning Health No. 36 of 2014, are any person who is dedicated to the health sector and has knowledge and skills through education in the health sector for certain types that require **the authority to carry out** health efforts. Health workers also have an important role to play in improving the maximum quality of health services to the community so that the community **can** increase awareness, willingness, and ability to live **healthily to be** able to realize the highest degree of health as an investment for the development of socially and economically productive human resources (1).

Every day in carrying out their service, health workers do not only deal with patients, coworkers, nurses, and other fellow medical staff who deal with doctors and regulations in the workplace and workload, which are sometimes considered not in accordance with their physical, psychological, and mental conditions. Emotional things that affect the workload of medical personnel are when the patient's condition is unstable, the average number of hours of care needed to provide direct services to patients exceeds the ability **of medical** staff, the desire to achieve work, and high work demands (2)

The impact of a workload that is too heavy will make medical personnel dissatisfied with their work, **and less** enthusiastic and trigger a psychological impact on medical personnel. Health workers who have a heavy workload tend to feel the need for counseling and psychotherapy, carried out individually, both online and **face-to-face** (2). In addition to workload, the work environment is another factor that affects employee performance. An uncondusive work environment will make employees fall sick easily, get stressed easily, have difficulty concentrating and decrease work productivity. The effect of workload and work environment on employee performance is very influential (3).

In KwaZulu-Natal Province, South Africa, even doctors, especially young doctors, can also experience burnout, anxiety, and depressive symptoms due to limited resources in the hospital. Younger doctors are more prone to burnout, while older doctors are more likely to experience anxiety and depressive symptoms. Therefore, individual- and organization-focused solutions

should be considered wisely to reduce the negative impact of a high work environment and workload (4).

In general, anxiety is the psychological state of a person who is filled with fear and worries about something that is not certain to happen. Anxiety is described as a form of a negative word and physiological stimulation. According to the American Psychological Association (APA), anxiety is an emotional state that arises when a person feels distressed, and tense and is accompanied by physical responses such as heart palpitations, increased blood pressure, and so on (5).

Diseases can be divided into 2, namely infectious diseases and non-infectious diseases, infection is an invasive process by microorganisms that proliferates in the body that causes pain. In general, the process of disease occurrence involves three interacting factors, namely: disease-causing factors (agents), human factors or hosts (hosts), and environmental factors (6). The Republic of Indonesia Ministry of Health 2014 said that tuberculosis is an infectious disease caused by the bacterium *Mycobacterium tuberculosis* which is transmitted through sputum splashes. Tuberculosis bacteria usually attack the lungs, common people usually call them lung spots or hollow lungs.

Indonesia has a record of tuberculosis cases in terms of gender, the highest tuberculosis incidence rates are in several provinces in Indonesia. The first position was occupied by the province of West Java with a total of 23,774 cases of pulmonary tuberculosis. The province of North Sumatra occupied the top 4 positions with a total of 7,764 cases of pulmonary tuberculosis (7). Based on data from The Ministry of Health for 2020, tuberculosis cases can be influenced by several factors, including the physical and environmental conditions of residence. Unhealthy physical quality of residence is the biggest cause that causes the development of *Mycobacterium tuberculosis*. Poor ventilation can block sunlight from entering the room, creating a damp and dark atmosphere. Several risk factors for the home environment contribute to the incidence of pulmonary tuberculosis, namely residential density, type of floor, ventilation, humidity, and an environment that is far from healthy (7). One source of transmission of tuberculosis in Public Health Center (Puskesmas) is health workers who have a very large role in preventing tuberculosis because health workers often have direct contact with patients (8). According to WHO data as of July 14, 2020, the number of positive patients in Indonesia was 76,981 people with an average addition of 1,000 cases per day (9). The total deaths of 3,565 people were classified as community transmission.

Based on data from the official website of the South Sulawesi Provincial government, the number of positive patients in Makassar City is 4,430 people (10). Batua Health Center is a health center located in Makassar City, South Sulawesi. The number of health workers at the Batua Health Center is 58 people. It is also known that 119 patients with tuberculosis were registered at the **Puskesmas** in January-May 2022. This is what gave rise to the author's interest in conducting research with the title "The Influence of workload and work environment on the anxiety of health workers in dealing with tuberculosis patients at the Batua Health Center, Makassar City".

## METHOD

This study used a quantitative research design using a cross-sectional study approach. The population and sample in this study were taken using a total sampling technique, namely the health workers of the Batua Health Center in Makassar City, totaling 58 respondents. The research was conducted in November-December 2022.

### Data Analysis Method

Descriptive Analysis is to discuss ways of collecting, summarizing, and presenting data so that information is easier to understand and the information obtained includes data centering (mean, median, standard deviation).

Logistic Regression Analysis, in this study, the logistic regression assumption test that will be carried out is a model estimation and model fit testing:

*Maximum Likelihood:* Linear regression analysis uses an ordinary least square (OLS) estimator that minimizes the sum of the squares of the difference between the actual dependent variable value and its prediction. In contrast, the relationship between the dependent and independent variables in logistic regression is non-linear so it requires a different procedure, namely the maximum likelihood estimator with an iteration process that finds the estimated coefficients instead of minimizing the square deviation but maximizing the probability of an event occurring.

*Logistic Regression Equation Model:* The mathematical model of logistic regression is:

$$\ln\left(\frac{\hat{p}}{1-\hat{p}}\right) = B_0 + B_1X$$



where P is the event of something happening (success) otherwise, (1- P) is the event of something not happening (failure) and  $\beta_i$  is the logistic regression coefficient. The following mathematical formula determines the predicted probability of the dependent variable:

$$\hat{p} = \frac{\exp(B_0 + B_1 X)}{1 + \exp(B_0 + B_1 X)} = \frac{e^{B_0 + B_1 X}}{1 + e^{B_0 + B_1 X}}$$

*Overall Model Test:* The overall model test is carried out with the G test or what is commonly called the **log-likelihood** ratio test (-2Log L), which is the comparison between the **log-likelihood** of the proposed model (-2Log L<sub>Proposed</sub>) and the **log-likelihood** of the base model / null model (2Log L<sub>Null</sub>). The **log-likelihood** proposed model means a model that includes independent variables while the **log-likelihood** null model is a model that only includes constants. The **log-likelihood** ratio test is **Chi-Square** distributed with a free degree of p independent variables included in the model and a certain  $\alpha$ , for example,  $\alpha = 5\%$ . The testing process is as follows:

Hypothesis    H0        :  $\beta_1 = \beta_2 = \dots = \beta_p = 0$   
                      H1        : At least one  $\beta_i \neq 0, i=1,2,\dots,p$

Testing Statistics Log Likelihood Ratio Test or G test which follows the **Chi-Square** distribution with free degree p and  $\alpha = 5\%$ . The decision criterion is to reject H0 if the **Chi-Square p-value** is smaller than  $\alpha = 5\%$ . The testing process is as follows:

Hypothesis    H0: The proposed model fits the data  
                      H1: The proposed model does not fit the data

The test statistic is the Hosmer and Lemeshow test which has a **Chi-Square** distribution with a degree of freedom of 8. The decision criterion is to reject H0 if the p-value of chi-square  $\alpha = 5\%$ . The H-L statistic test is a **Pearson Chi-Square** statistic test that assumes that the number of samples used must be sufficient (large sample) with the expected frequency of each cell more than 5. *Partial Test:* After checking the overall model test, the next step is to see the meaning of the regression coefficient of each independent variable and whether it has a significant effect on the dependent variable. This test uses wald statistics.

## Operational Definitions

**Workload (X1):** Workload is any form of work given to human resources to be completed within a **certain period**. The workload indicators in this study are targets that must be achieved, working conditions, and work standards. Workload measurement uses a **Likert**

scale with a value interval of 1-4. The assessment category consists of very suitable with a value of 4, suitable with a value of 3, less suitable with a value of 2, and not suitable with a value of 1. The number of questions is 6 numbers. The measurement criteria are based on a Likert scale, where each answer has a score. The highest score is 4 and the lowest score is 1. The objective criteria are:

Good: if the respondent's answer score is  $\geq 62.5\%$  of the most appropriate answer.

Less Good: if the scheduled score is  $< 62.5\%$  of the most appropriate answer.

**Work Environment (X2):** Work environment indicators (used in this study are work atmosphere, availability of facilities for employees, and relationship with coworkers. Measurement of the work environment uses a Likert scale with a value interval of 1-4. The assessment category consists of very suitable with a value of 4, suitable with a value of 3, less suitable with a value of 2, and not suitable with a value of 1. The number of questions is 6 numbers. The measurement criteria are based on the Likert scale, where each answer has a score. The highest score is 4 and the lowest score is 1. The objective criteria are:

Good: if the respondent's answer score is  $\geq 62.5\%$  of the most appropriate answer.

Less Good: if the scheduled score is  $< 62.5\%$  of the most appropriate answer.

**Anxiety (Y):** The dependent variable or dependent variable used in the study is health worker anxiety (Y). Anxiety is a response to certain threatening situations and is a normal thing that occurs accompanied by development, change, new experiences, and in finding self-identity. Workload measurement uses a Likert scale with a value interval of 1-4. The assessment category consists of very suitable with a value of 4, suitable with a value of 3, less suitable with a value of 2, and not suitable with a value of 1. The number of questions is 14 numbers. The measurement criteria are based on the Likert scale, where each answer has a score. The highest score is 4 and the lowest score is 1. The objective criteria are:

Good: if the respondent's answer score is  $\geq 62.5\%$  of the most appropriate answer.

Less Good: if the scheduled score is  $< 62.5\%$  of the most appropriate answer.

## RESULTS

**Table 1. Distribution of Respondents by Gender, Age, Education, Profession, Anxiety, Workload, and Work Environment at the Batua Health Center in Makassar City**

| Research Sample |
|-----------------|
|-----------------|

|                         | Amount (n) | Percentage (%) |
|-------------------------|------------|----------------|
| <b>Gender</b>           |            |                |
| Man                     | 25         | 43.1           |
| Woman                   | 33         | 56.9           |
| <b>Age</b>              |            |                |
| <20 years               | 2          | 3.4            |
| 20-29 years             | 20         | 34.5           |
| 30-39 years             | 22         | 37.9           |
| 40-49 years             | 10         | 17.2           |
| ≥50 years               | 4          | 6.9            |
| <b>Education</b>        |            |                |
| D3/equivalent           | 26         | 44.8           |
| Profession              | 19         | 32.8           |
| S1                      | 7          | 12.1           |
| S2                      | 3          | 5.2            |
| Specialist              | 3          | 5.2            |
| <b>Profession</b>       |            |                |
| Midwifery               | 14         | 24.1           |
| Nursing                 | 27         | 46.6           |
| Medical                 | 4          | 6.9            |
| Non Medical             | 13         | 22.4           |
| <b>Worry</b>            |            |                |
| Not good                | 20         | 34.5           |
| Good                    | 38         | 65.5           |
| <b>Workload</b>         |            |                |
| Not good                | 25         | 43.1           |
| Good                    | 33         | 56.9           |
| <b>Work environment</b> |            |                |
| Not good                | 19         | 32.8           |
| Good                    | 39         | 67.2           |

Source: Primary Data

**Table 2. The Relationship between Workload and Work Environment with Anxiety of Health Workers in Dealing with Tuberculosis Patients at the Batua Health Center in Makassar City**

| Variable                | Health Worker Anxiety |      |      |      | Total |     | P-value |
|-------------------------|-----------------------|------|------|------|-------|-----|---------|
|                         | Not good              |      | Good |      |       |     |         |
|                         | n                     | %    | n    | %    | N     | %   |         |
| <b>Workload</b>         |                       |      |      |      |       |     |         |
| Not good                | 14                    | 56.0 | 11   | 44.0 | 25    | 100 | 0.006   |
| Good                    | 6                     | 18,2 | 27   | 81.8 | 33    | 100 |         |
| <b>Work environment</b> |                       |      |      |      |       |     |         |
| Not good                | 12                    | 63,2 | 7    | 36,8 | 19    | 100 | 0.004   |
| Good                    | 8                     | 20.5 | 31   | 79.5 | 33    | 100 |         |

Source: Primary Data

**Table 3. Correlation Matrix**

|        |                  | Correlation Matrix |          |                  |
|--------|------------------|--------------------|----------|------------------|
|        |                  | Constant           | Workload | Work environment |
| Step 1 | Constant         | 1,000              | -.636    | -0.714           |
|        | Workload         | -0.636             | 1,000    | -0.036           |
|        | Work environment | -0.714             | -0.036   | 1,000            |

**Table 4. Evaluation of Logistic Regression Model (Simultaneous Test)**

|        |        | Omnibus Tests of Model Coefficients |    |        |
|--------|--------|-------------------------------------|----|--------|
|        |        | Chi-square                          | df | Sig.   |
| Step 1 | step   | 15,730                              | 2  | 0.0001 |
|        | blocks | 15,730                              | 2  | 0.0001 |
|        | Model  | 15,730                              | 2  | 0.0001 |

**Table 5. Hosmer and Lemeshow test**

| Hosmer and Lemeshow Test |            |    |       |
|--------------------------|------------|----|-------|
| step                     | Chi-Square | df | Sig.  |
| 1                        | 0.019      | 2  | 0.991 |

## DISCUSSION

### *Effect of Workload on Anxiety of Health Workers*

The workload is an aspect that must be considered by every health service agency because workload affects officers in increasing productivity and a sense of comfort at work. This is because a balanced workload can maximize or even worsen productivity in terms of quality or quality of products / real results from the resources deployed. The need for division or transfer of tasks among frontline health workers based on complexity and ability (11).

The workload is a job both a physical and mental burden that must be borne by the workforce itself in accordance with a certain type of timeframe. The workload can occur due to various factors, such as the number of tasks that are physical and mental, anxiety, reduced rest time, gender, and age. The workload can appear with various types of severity, for example, light workload, moderate workload, and even heavy workload (12). The high workload felt by health workers at Batua Health Center is caused by the high demands of work that must be completed optimally in a quality service manner.

This can be seen from the statements of health workers that as many as 34.5% of health workers feel they are not in accordance with the demands of their work to always provide quality services. Excessive workload and too little workload can affect the performance of health workers. Indicators of the dimensions of work demands are too much

workload to complete in a certain time and excessive workload to be completed by health workers who are unable to carry out a task.

This research aligns with Dewi from Wates Hospital that most nurses have a moderate workload, namely 48 nurses (52.7%). A high workload can cause nurse burnout. Nurse burnout occurs when nurses work over 80% of their working hours. Nurses perform their duties for about 80% of their productive time. The workload can also be affected by the type of work itself. One factor that affects workload is mental work assignments, such as the job's difficulty level, and responsibility for work (13).

As explained in the previous chapter Pulmonary Tuberculosis (Pulmonary TB) is a contagious infectious disease that is a public health problem in the world, this can have an effect and anxiety on the working mentality of health workers by looking at the very easy way of TB transmission (14). The results of the cross table between workload and anxiety for health workers showed that as many as 56.0% of officers who had a bad workload also experienced bad anxiety, while 81.8% of health workers who had a good workload had good anxiety. This shows that the better the workload of health workers, the better the anxiety level of health workers at the Batua Health Center in Makassar City tends to be.

According to Nursalam (2016) workload in the room does not always cause anxiety among nurses and can cause anxiety if the workload is not proportional to the physical abilities, experience, and expertise of nurses, and the time available. Every nurse has a normal ability to complete the tasks assigned to her. Every nurse has a different way of managing anxiety, depending on the duration, type, and frequency of anxiety she experiences (15).

Anxiety levels can be influenced by age, gender, family status, patient honesty, availability of personal protective equipment, and knowledge, significantly affecting how a person handles anxiety and copes while undergoing treatment. This is in line with research data that 46.8% of people aged 26-30 years suffer from mild anxiety disorders. The workload is all the factors that determine the person who is working. Another definition of workload is a portion of the capacity of the worker's ability to do his job. Workload affects individual performance in carrying out the work performed. The workload is not only seen from the physical load alone, but the workload can also be a mental burden that can affect the anxiety of health workers.

The results of the logistic regression test in this study showed that workload had a significant effect on the anxiety of health workers with a p-value = 0.021. From the test results,

it was also obtained that the Exp(B) value was 4.456, which means that workload has an effect of 4 times on anxiety. The higher the workload of health workers, the less good it will affect anxiety 4 times compared to a good workload. Workers who have excessive **workloads** will reduce productivity and quality of work, and there is a possibility that the execution of work is not timely, unsatisfactory, and results in disappointment. Excessive workload and too little workload are stress generators, workload can be differentiated further into excessive or too little workload, namely quantitative arising **because of** too many/little tasks given to the workforce to complete at a certain time and workload Qualitative, that is if people feel unable to perform a task.

The above statement is supported by one study in South Africa, which states that hopelessness, helplessness, and lack of motivation are the result of a variety of issues, including health workers' time constraints and their heavy workload which can reduce focus on the needs and feelings of TB patients (16). Health workers were dissatisfied with organizational policies including limited opportunities for vacation, involvement in non-TB tasks, long working hours, and inflexible work schedules. Efforts to improve **the motivation** and retention of healthcare workers need to address the quality of **the work-life** dimension, which focuses on the organization's requirements to achieve employee well-being, as this may contribute to their job satisfaction (17).

Research results at Tikung Lamongan Health Center indicate that **a high** workload can create **a low** performance for health workers. **The workload** is still an obstacle due to limited adequate equipment and competent labor. In 2020 and 2021, the workload of health workers is increasing due to the increase in the number of patients received by the Public Health Center while the health workers are decreasing because some are exposed and must be isoman. Therefore, the human resources of the health center must be strengthened to provide better services in the health **sector to prevent** the occurrence of mental disorders, psychological anxiety, anxiety, and fatigue **on** the night shift. The workload feels heavy if it is not balanced with the appropriate **number** of human resources. A high workload can increase burnout and might **force health** workers to suffer psychological problems (18).

Work overload can be caused by uncertain consumer circumstances, patients who demand to be provided with fast service beyond the ability of normal work in general, **the desire for performance, and** the desire for a lot of work and must document nursing care (19). Health workers who work to care for TB patients need to be heard for their complaints

regarding anxiety and fear of TB transmission from patients and managers of hospitals or health centers need to increase their resources because it is very important to ensure the successful implementation of the new policy and prevent the unintended negative consequences it could have hindered the quality of patient care (20). This indicates that it is necessary to pay attention to workloads that are appropriate or balanced with the ability of health workers to carry out their duties, especially for those who care for TB patients.

### ***The Effect of the Work Environment on the Anxiety of Health Workers***

The work environment in an institution, especially the community health center (Puskesmas), is very important for management to pay attention to. Even though the work environment does not carry out the production process within a company, the work environment directly influences the health workers who carry out the production process. The work environment is an atmosphere where health workers carry out daily activities. A conducive work environment provides a sense of security and allows health workers to work optimally. If the officer likes the work environment in which he works, then the person will feel at home at work, and carry out his activities so that work time is used effectively. Conversely, an inadequate work environment will reduce the performance of health workers at the puskesmas (21).

Based on the results of interviews using a questionnaire, it was found that as many as 41.4% of health workers stated that they were not good at working at room temperature to support work activities. An increase in temperature can increase work performance, but on the other hand, it can also reduce work performance. An increase in temperature to a certain limit can generate enthusiasm which will stimulate work performance, but after passing a certain threshold this increase in temperature has begun to interfere with body temperature which can disrupt health workers' performance. All room occupants, in this case, employees, need air quality that meets human health and safety requirements. Therefore, they must always try to maintain the air quality in the room to remain within a comfortable range for employees to work (15). One effort that can be made to get a room that has comfortable air is to use an Air Conditioner (AC). The ideal range for air temperature is between 18°C to 28°C (22).

The work environment is not limited to the physical environment, such as temperature, noise, or workspace design. One that also influences a good work environment

is the relationship between co-workers who are open to each other in communicating at the puskesmas. A comfortable and safe atmosphere dramatically affects the performance and satisfaction of employees in an agency. Idham's research (2020) on health workers at the Kertak Hanyar Health Center concluded that the calculated P-value for the interpersonal/colleague relationship variable was 5,209, thus the interpersonal/colleague relationship variable partially with a variable error rate probability of 0,0001 (smaller than 0.05) which means that interpersonal relationships/co-workers have a significant effect on job satisfaction (23).

An unfavorable work environment can cause distractions and threats, in a work environment like this will cause employees to become forgetful, more errors in activities, and decreased their ability to make plans. Changes in working conditions cause employee reactions to be able to adapt to existing conditions. If workers are unable to adapt to existing working conditions, they will tend to experience work stress (24). The results of the statistical test with Chi-square obtained a p-value = 0.004 <  $\alpha$  0.05, so  $H_0$  was rejected, meaning that statistically, there is a relationship between the work environment and the anxiety of health workers at the Batua Health Center with an OR value of 5,204 meaning that the work environment is less likely to cause 5 times anxiety for health workers.

In dealing with TB patients, many obstacles must be passed by health workers, especially regarding their health. It is well known that TB is an infectious disease that exposes officers to the disease. This can be seen from the results of interviews with health workers dealing with tuberculosis patients at the Public Health Center, it was found that 39.7% had difficulty breathing (for example, often gasping for air or unable to breathe even though they had not done any physical activity before).

TB is a contagious disease, usually spread through the air by droplet nuclei. Transmission generally occurs indoors, so nurses sometimes feel anxious and afraid to contact or treat TB patients. Nurses or healthcare professionals believe that TB disease has a strong emotional impact on a patient's life since it evokes disability, impotence, and self-discrimination. One of the nurses at a hospital in the Limpopo province of South Africa said that the hospital where they work does not have enough resources for them to do a good job so it affects them emotionally but they also cannot just stand by, so they feel it is better to risk their lives to save TB patients. Nurses or other health workers must receive specialized support from managers, psychologists, and staff appreciation to provide quality care and maintain good



mental health. This study also reports that TB is the most dangerous job for health workers worldwide (25).

A similar study conducted in Southern Ethiopia also revealed that health workers were anxious about the low awareness of the community and the socioeconomic status of TB patients who might transmit the disease to vulnerable family members such as the elderly, pregnant women, and children. In addition, health workers were frustrated by unsuccessful treatment, layoffs, ignorance of care responsibilities, fatigue, shortage of health workers, and not following treatment guidelines properly affecting their actions in following up and treating TB patients, as the disease spreads easily (26).

Quality research in South Africa indicates that health workers have low levels of trust in the workplace. They strike and demand better pay or wages, a safe and comfortable working environment and conditions, and recognition for their work. They don't have the equipment to do their job safely, and some colleagues don't trust, or value their contributions (27). This proves that a conducive work environment is very important for health workers in carrying out their duties, especially for those caring for TB patients.

**COMMENT: REFERENCES HIGHLIGHTED IN YELLOW IN THE TEXT ARE MISSING FROM THE LIST AND SHOULD BE SHOWN WITH THE CORRESPONDING NUMBER ACCORDING TO THE ORDER OF APPARITION IN THE TEXT.**

**ALL STUDIES IN MAIN MANUSCRIPTS ALREADY INCLUDE IN REFERENCES**

## CONCLUSION

From the results of the study, it can be concluded that: 1) Based on the results of the chi-square test, workload and work environment have a significant relationship with the anxiety of health workers in dealing with TB patients, it can be seen from the respective values below 0.05, 2) Anxiety of health workers in The Batua Health Center in Makassar City in the City can increase if the overall workload felt by employees can be reduced or suppressed. Where this can be seen from the OR value of the overall workload of 4.456, which indicates that the workload is not good enough to provide 4 times the opportunity for unfavorable anxiety, 3) The work environment of health workers at the Batua Health Center in Makasar City in the City has a significant influence on anxiety perceived by health workers.

## SUGGESTION

Based on the results of research and discussion, the authors provide the following suggestions: 1) Health workers are advised to be able to manage their work time by dividing work time with friends to reduce the work environment caused by workload and be able to control emotions well, 2) The need to increase the number of health workers at the Batua Health Center in Makassar City because there is an unbalanced comparison of health workers and patients, 3) For future researchers to be able to use one of the data sources for further research and research using the latest theory and using many books in his research.

## Declaration of Conflict of Interest

All authors declare no potential for conflict of interest in this research and article.

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**3. Bukti konfirmasi artikel Accepted  
15 Mei 2023**



Andi Rezki Amelia &lt;andirezki.amelia@umi.ac.id&gt;

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**MANUSCRIPT ACCEPTANCE**

5 messages

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**Anita Stern** <astern88@gmail.com>

Mon, May 15, 2023 at 6:54 PM

To: ENRIQUE SANTIAGO LÓPEZ-LOYO &lt;lopezloyoe@gmail.com&gt;, rezkyauliyusuf@umi.ac.id, arezkiameliaap@umi.ac.id

Distinguished Dr. Andi Rezki Amelia and Rezky Aulia Yusuf:

We are pleased to inform you that your manuscript entitled: **Effect of Workload and Work Environment on the Anxiety of Health Workers in Dealing with Tuberculosis Patients**, has been accepted for publication in volume 131 (Supplement 3) 2023 of the Gaceta Médica de Caracas.

Best Regards,

Dr. Enrique López-Loyo  
Editor-in-ChiefDr. Anita Stern Israel  
Senior Editor

Gaceta Médica de Caracas

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**Rezky Aulia Yusuf** <rezkyauliyusuf@umi.ac.id>

Tue, May 16, 2023 at 10:09 AM

To: Anita Stern &lt;astern88@gmail.com&gt;

Dear Dr. Anita,

Thank you so much.

We are looking forward to some good news about other manuscripts.

Best regards,

Rezky

[Quoted text hidden]

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**Rezky Aulia Yusuf** <rezkyauliyusuf@umi.ac.id>

Sat, May 20, 2023 at 1:20 PM

To: Anita Stern &lt;astern88@gmail.com&gt;

Dear Dra. Anita,

Please let me know when is the supplement 3 will get published?

Is it possible to sent a group of paper to consider it for special issue or supplement?

Thank you very much.

Rezky

[Quoted text hidden]

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**Anita Stern** <astern88@gmail.com>

Sat, May 20, 2023 at 2:19 PM

To: Rezky Aulia Yusuf &lt;rezkyauliyusuf@umi.ac.id&gt;, ENRIQUE SANTIAGO LÓPEZ-LOYO &lt;lopezloyoe@gmail.com&gt;

Distinguish Dr. Resky Aulia Yusuf:

In regard to the Special Supplement 3, in around 2 days I will send you the Galley Proofs (PDF) of the article for the correspondent revision. We are planning to publish this Supplement 3 in around one week. It depends on the author's revision of the Galley Proofs.

In regard to a Special Supplement that you propose. It is possible to accept this proposal only for the end of this year. You should indicate before the subject of the Special Issue in order that the Editorial Committee decides. We have to receive the confirmation of the Editor in Chief.

<https://mail.google.com/mail/u/0/?ik=41faec6c55&view=pt&search=all&permthid=thread-f:1765983671196642454&simpl=msg-f:1765983671196642454&sim...> 1/2

9/12/24, 7:33 AM

UMI Mail - MANUSCRIPT ACCEPTANCE

I am sending in attachment the general conditions of a possible Special Issue.

A general comment in regard to the 7 manuscripts you submitted for consideration. We cannot publish numerous articles from the same author in the same issue. For example, currently we have in consideration 5 manuscripts from the same author or of his group (Muhammad Fadjar Perkasa). We can publish only one or possibly maximum 2 manuscripts in each issue from this author.

Best regards,  
Dra. Anita Stern Israel  
Senior Editor  
[Quoted text hidden]



**CONDITIONS FOR THE POSSIBLE SPECIAL SUPPLEMENT.docx**  
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**Rezky Aulia Yusuf** <rezkyauliayusuf@umi.ac.id>  
To: Anita Stern <astern88@gmail.com>

Sat, May 20, 2023 at 3:18 PM

Dear dra. Anita,

Thank you so much for your information. It is very much appreciated. We look forward for the gelley prof and other positive results for others manuscripts.

Once again thank you very much.

Best regards,  
Rezky  
[Quoted text hidden]

#### **4. Bukti konfirmasi artikel published online**

**22 Mei 2023**



Andi Rezki Amelia &lt;andirezki.amelia@umi.ac.id&gt;

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**INVOICE ISSUE 131(Supplement 3)2023**

1 message

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**Anita Stern** <astern88@gmail.com>

Mon, May 22, 2023 at 8:47 PM

To: Andi Rezki Amelia <andirezki.amelia@umi.ac.id>, Rezky Aulia Yusuf <rezkyauliayusuf94@gmail.com>, Lorena Cudris Torres <lcudris@areandina.edu.co>, Lorena Cudris Torres <cudristorreslorena@gmail.com>, Yra Jiménez <yrajimenez@gmail.com>, Lilia Cruz <fundacionacademiademedicina@gmail.com>

Distinguished Dr. Andi Rezki Amelia, et al:

It is a pleasure to inform again that the manuscript titled: **Effect of Workload and Work Environment on the Anxiety of Health Workers in Dealing with Tuberculosis Patients** was accepted for publication for issue 131(Supplement 3)2023 of the Gaceta Médica de Caracas.

The manuscript is currently in the process of Galley Proofs (PDFs) revision.

Hereby, we are enclosing in attachment the correspondent **Invoice** for the manuscript publication expenses (DONATION OUTSTANDING INVOICE) to be published in volume 131(Supplement 3)2023.

This payment should be received before the publication of the Issue.

Best regards,

Dra. Anita Stern Israel  
Senior Editor

Dra. Lorena Cudris Torres  
Invited Editor

Gaceta Médica de Caracas

**Yraiceles Jiménez**  
Webmaster Portal  
Academia Nacional de Medicina

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