

# Analysis of Human Power Requirements Based on Workload in Pharmaceutical Installations Using the WISN Method at Hospital Bunda Thamrinn Medan

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**Abstract**— HR planning is something that needs to be done correctly and adequately for an institution or hospital. An excess of the workforce will cause the cost burden to be significant and inefficient, while a shortage of workforce will increase the workload of HR and will be able to affect the quality of service. The purpose of this study was to analyze the workforce requirements based on the workload in Pharmacy Installations using the WISN method at Bunda Thamrin Hospital Medan in 2021. This type of research was a quantitative study with a descriptive observational approach with cross-sectional data collection. The population in this study were all employees who served in the Pharmacy Installation of Bunda Thamrin Hospital Medan. The sample in this study were all 31 officers at the Pharmacy Installation of Bunda Thamrin Hospital Medan.

Based on the research results conducted at Bunda Thamrin Hospital Medan in 2021, it can be concluded that the need for the majority of pharmacists is sufficient, the workload of the majority of pharmacists is less. The results of the logistic regression test showed that the need for pharmacy workers according to WISN affected the pharmaceutical workload at the Bunda Thamrin Hospital Medan with a p-value of -0.012. Therefore, hospitals must apply the WISN method in measuring workload and workforce needs to improve workforce performance. This affects the quality of services provided to patients.

**Keywords**— Pharmacist, Workload, WISN.

## I. INTRODUCTION

The hospital is a health service institution that plays a role in the implementation of health development. The success of hospitals in carrying out their functions is influenced by several factors, among which the most dominant is human resources. Human resources are also one of the factors to improve the quality of hospital services. To create reliable human resources, excellent and sustainable human resource management is needed. One of the best ways to manage human resources can be planning the number of human resources, assessing performance, and calculating the workload of HR. (Wirawan, 2018)

HR planning is something that needs to be done correctly and adequately for an institution or hospital. An excess of the workforce will cause the cost burden to be significant and inefficient, while a shortage of workforce will increase the workload of HR and will be able to affect the quality of service. (Wirawan, 2018)

The availability of pharmaceutical human resources and following existing regulations must also adjust to the needs of the hospital. So it is necessary to plan the right human resources according to the requirements. The need for human resources is based on the workload; this is to determine the work capacity so that a balance between energy and workload is obtained.

In 2004 the Ministry of Health of the Republic of Indonesia, through the Decree of the Minister of Health Number: 81/MENKES/SK/2004, issued Guidelines for the Preparation of HR Planning using the Workload Indicator Staff Needs (WISN) method. The WISN method can

determine the number of staff needs based on the number and type of work and can reduce costs (Samsuzzaman, 2013). The WISN method is a human resource management tool developed and revised by WHO and used in several different settings and various countries (Pamela et al., 2013).

WISN is a method of calculating the need for human resources as stated in the Decree of the Minister of Health of the Republic of Indonesia Number: 81/Menkes/Sk/I/2004 concerning Guidelines for the Preparation of Health Human Resource Planning at the Provincial, Regency/City and Hospital Levels.

Pharmacy activities in Indonesia are still little carried out because there are obstacles, including lack of technical knowledge, lack of communication skills, workgroup pressure / work discomfort, lack of motivation and desire to change, lack of confidence, and lack training in appropriate workflows, increased perceptions of responsibility for the lack of staff in Pharmaceutical Installations (Rikomah, 2016)

One of the main factors in causing medical errors, according to the Agency for Health Care and Research and Quality, is human resources (HR) which is a problem including the failure of officers to meet medical service standards, policies, and procedures. Staff or work patterns in an organization can also cause errors when health workers are too busy because inadequate staff are much more likely to make mistakes (Badriah, 2015)

According to Permenkes Number 58 of 2014 concerning Pharmaceutical Service Standards in Hospitals, the policy of managing pharmaceutical preparations, medical devices and medical consumables must be carried out in a multi-disciplinary, coordinated manner and using an effective

process to ensure quality and cost control. IFRS is the only provider of pharmaceutical services, including formulary manufacture, procurement and distribution of pharmaceutical preparations, medical devices and medical consumables.

Pharmaceutical services in hospitals are an inseparable part of the hospital health care system that is oriented to patient care, providing quality and affordable pharmaceutical preparations, medical devices, and medical consumables for all levels of society, including clinical pharmacy services. The inventory system in health institutions is essential in supporting the management of goods and services. The most crucial role in the inventory system is to facilitate operational activities. (Ministry of Health, 2016).

Based on research conducted by Yulaika (2018) explains the need for pharmacists at the Pharmacy Installation of RSIA KM. This hospital has four pharmaceutical technical personnel, one assistant pharmacist and one responsible pharmacist. The number of patients served by pharmacy installations in 2017 was 467 patients every month, including inpatients and outpatients.

This is by the opinion of Murphy (2016), which states that the increase and demand for workloads have a significant impact on the performance of pharmacists and the quality of service/delivery of drugs to patients. A further result of the increased workload is patient safety problems related to medication errors and dispensing (Watson, 2008).

According to the Regulation of the Minister of Health (Permenkes) RI No. 73 (2016) concerning Pharmaceutical Service Standards in Pharmacies, the pharmacy is a place for pharmacists to practice pharmacy. Pharmaceutical services are responsible and directly provided to patients related to pharmaceutical preparations to achieve definite results in improving the quality of life of patients.

Minister of Health Regulation No. 73 of 2016 concerning Pharmaceutical Service Standards in Pharmacies has regulated how services in pharmacies must be run. It is stated that pharmacies must be supported by infrastructure and human resources in carrying out pharmaceutical activities. Pharmacies must be located in locations that are easily recognizable, accessible and accessible to the public. This is so that people can quickly get services that support their health. Pharmaceutical product services must be separated from other products, and this is intended to avoid delivery errors and to demonstrate product integrity and quality.

Workload analysis is an effort to calculate the workload on the work unit by adding up all the workloads and then dividing by the individual work capacity per unit of time. The workload can be seen from direct activities, indirect activities, and other activities such as personal activities and unproductive activities (Ilyas, 2011).

Based on an initial survey conducted by researchers at the Bunda Thamrin Hospital in Medan, it was obtained data that pharmacy officers were often overwhelmed in serving patients when taking drugs. The waiting time for patients to receive medicines was very long due to a large queue. The researcher also saw that pharmacy staff carrying out their work still lacked coordination between employees.

The researcher also asked the pharmacy staff about the workload while working at Bunda Thamrin Hospital in Medan. Pharmacists explained that they are still often overwhelmed in serving patients daily. Some officers also said they needed additional staff to help with their work in the Pharmacy Installation. Sometimes there is not enough time to rest to eat, sometimes because of the amount of work, and there is almost no time to rest for pharmacists.

Based on this phenomenon, the researcher is interested in researching the title "analysis of manpower needs based on workload in Pharmacy Installations using the WISN method at Bunda Thamrin Hospital Medan in 2021".

## II. LITERATURE REVIEW

### 2.1. WISN method.

The WISN method is a human resource management tool used to determine how many health workers of a certain type are needed to cope with a given workload, and to assess the workload pressure of health workers at the facility. (WHO, 2010). WISN can calculate indigenous epidemiology and specific service sets, so the results are precise and useful in policy planning and implementation (Burme et al., 2017)

The WISN method is a human resource management tool used to determine how much of a particular health workforce. Hospitals are the most suitable institutions for the application of the WISN method because they can provide reliable results, this is because there are staff with different types and high complexity (Saikat, 2013). The ratio between the calculated number according to WISN and the actual number, indicates whether the staff is working under pressure and the extent to which professionalism can be upheld in the facility (Anuja & Swati, 2013).

### 2.2. Calculation of HR Needs According to WISN

There are five steps for calculating HR according to WISN, namely determining available time, choosing available work units and HR categories, compiling workload standards, setting allowance standards, and calculating labour requirements per work unit.

1. Setting available working time: Setting available working time aims to get available working time in each HR department who works in the hospital for one year. The data required are as follows: a) Working days according to the applicable provisions in the hospital or regional regulations. b) Annual leave according to the provisions of each HR. c) Education and training by the applicable provisions in hospitals aimed at increasing competence and professionalism, each category of HR have the right to attend training, courses, seminars or workshops. d) National holidays, by the relevant Joint Ministerial Decree concerning national holidays and collective leave. e.) Absence according to the average data for absence from work for one year. f) Working hours are by the applicable regulations in the hospital or regulations. Based on this data, a calculation is then carried out to determine the available working time with the following formula: Available Working Time = {A-(B+C+D+E)} XF Explanation: A: Working days B: Annual leave C: Education and training D: National holidays E: Absence from work F: Working hours

2. Determining work units and categories of HR Establishing work units and categories of HR aims to obtain work units and categories of HR who are responsible for organizing health service activities. The information data needed to determine work units and HR categories are a) A chart of the hospital organization structure with a description of the PKK duties and functions. b) The decision of the director of the hospital regarding the establishment of a structural and functional work unit. c) Employee data based on education who work in each work unit in the hospital. d) PP number 32 of 1996 concerning human health resources. e) laws and regulations relating to the available positions of human health resources. f) Professional standards, service standards and standard operating procedures (SOP) in each hospital work unit.

3. Prepare Workload Standards are the number of workloads for one year for each HR category. Workload standards are based on the time required to complete (average time) and the time available per year for each workforce category. Health services in hospitals are individual, specific and unique according to patient characteristics, type and severity of disease, and no complications. In addition, it must refer to standard operating procedures (SOP). Therefore, hospital health services require human resources with various types of competencies, the number and distribution of each work unit according to the workload. The data and information needed to determine the workload of each category of HR are as follows: a) Category of HR working in each hospital work unit. b) Service standards and professional standards applicable in the hospital. c) The average time required by each HR category to complete various health or non-health services in hospitals. d) Information in the form of service activity data at the hospital work unit. The workload of each category of HR in each hospital work unit is as follows: a) The main activities carried out by each category of HR. b) The average time needed to complete each main activity by each category of HR. The average time is determined based on observations during work and mutual agreement. The standard workload is the quantity of workload for one year per HR category. Workload standards are arranged based on the time required to complete them and the available working time owned by each HR category

4. Setting the standard of allowance The preparation of the allowance standard aims to obtain the allowance factor for each category of HR. The preparation of the leniency factor can be carried out by interviewing and direct observation to obtain the data: a) Activities that are not directly related to services to patients b) Frequency of activities in days, weeks, and months. c) The time required to complete the activity

5. Calculation of HR needs. This calculation aims to obtain the number of human resources according to the workload for one year. Sources of data needed to determine the number of HR needs per work unit include a) The data obtained from the previous step include available working time, workload standards and slack standards for each HR category. b) Quantity of the main activities of each work unit during one year. The quantity of main activities is compiled based on various data on service activities carried out in each hospital work unit for one year.

### 2.3. Pharmacy Installation Definition

Pharmacy installation is part of health services. Based on the Regulation of the Minister of the Republic of Indonesia No. 35 of 2014, pharmaceutical service is a direct and responsible service to patients related to pharmaceutical preparations to achieve definite results to improve patients' quality of life. In pharmaceutical services, facilities and infrastructure are needed for public health services, a pharmacy. Pharmaceutical care is a form of service and a form of direct responsibility to patients related to pharmaceutical preparations that achieve definite results to improve the patient's quality of life (Permenkes RI, 2016).

The purpose of setting pharmaceutical service standards in pharmacies is to improve the quality of services at pharmacies which will then be able to ensure patient safety. In addition, setting standards for pharmaceutical services in pharmacies is also to ensure the implementation of rational drug services and pharmaceutical supplies by considering aspects of quality, benefits, prices, ease of access, and public and environmental safety (Permenkes RI, 2016).

Article 3 of the Minister of Health of the Republic of Indonesia No. 73 of 2016 explained that pharmaceutical service standards in pharmacies include two parts: the management of consumable medical materials, medical devices and pharmaceutical preparations, and clinical pharmacy services. In managing pharmaceutical preparations, medical devices and medical consumables, pharmacies carry out planning, procurement, receipt, storage, destruction, control, and recording and reporting activities. Meanwhile, clinical pharmacy service standards include monitoring drug side effects, monitoring drug therapy, pharmacy services at home, counselling, drug information services, dispensing, and reviewing prescriptions.

Pharmaceutical services in pharmacies indeed cannot be separated from the role of pharmacists as pharmacy managers. Pharmacists in pharmacies must educate patients regarding treatment, answer various patient questions, and give enough time to all patients if there are things they do not understand about treatment. In addition, pharmacists must also re-check the medication received by the patient. This is done to prevent medication errors that can be fatal for the patient. (Ahmed Alomi et al., 2016).

### III. METHOD RESEARCH

This type of research is quantitative with a descriptive observational approach with cross-sectional data collection and using the WISN (Workload Indicators of Staffing Need) method. This research was conducted at the Pharmacy Installation of Bunda Thamrin Hospital Medan. This research was born from the submission of the title, namely February 2020, until the completion of the study.

The population in this study were all employees who served in the Pharmacy Installation of Bunda Thamrin Hospital Medan. The study population was taken in March 2021. The sample in this study were all officers at the Pharmacy Installation of Bunda Thamrin Hospital Medan. The sampling technique in this study was total sampling. That is, the entire population was sampled in the survey. There are 31

officers at the Pharmacy Installation at Bunda Thamrin Hospital in Medan.

Univariate data analysis was conducted to obtain an overview of the frequency distribution of respondents. This analysis is used on each independent variable and dependent variable. The univariate analysis aims to see the description of the frequency distribution of each variable to be studied. Univariate analysis is presented in the form of tables and narratives.

Bivariate analysis was used to analyze the independent variables, namely the need for energy and workload, using the WISN method at Bunda Thamrin Hospital Medan. This bivariate analysis was performed using the chi-square test. Bivariate analysis in this study is presented in the form of tables and narratives.

Multivariate analysis was used to determine which independent variable had the most influence on the dependent variable. Logistic Regression can be used to analyze data sets with more than one nominal/ordinal scale-independent/independent variable against one dichotomous little scale-dependent/dependent variable.

#### IV. ANALYZE AND RESULTS

The results of research conducted on respondents at Bunda Thamrin Hospital Medan, regarding the analysis of energy needs based on workload in the installation using the WISN method, the following results were obtained:

TABLE 1. Frequency Distribution of Respondents' Characteristics at Bunda Thamrin Hospital Medan in 2021.

No	Characteristics	Quantity (n)	Percentage (%)
1	<b>Ages</b>		
	< 25 Years	9	29
	25-30 Years	3	9,7
	30-35 Years	10	32,3
	35-40 Years	9	29
	<b>Total</b>	<b>31</b>	<b>100</b>
2	<b>Genders</b>		
	Man	8	25,8
	Woman	23	74,2
	<b>Total</b>	<b>52</b>	<b>100</b>

Based on the table above, most respondents aged 30-35 years were ten people (32.3%) and the minority of respondents aged 25-30 years was three people (9.7%). For gender, most respondents were female as many as 23 people (74.2%) and male minority, as many as eight people (25.8%).

TABLE 2. Distribution of the Frequency of Pharmacy Staff Needs by WISN at Bunda Thamrin Hospital in 2021

No	Variables	Quantity (n)	Percentage (%)
1	<b>Energy Needs</b>		
	a. Enough	24	77,4
	b. Less	7	22,6
	<b>Total</b>	<b>31</b>	<b>100</b>

The results showed that of the 31 respondents studied, the majority needed for pharmacy staff were 24 people (77.4%), and the minority needed for pharmacy staff were seven people (22.6%). Human resource development is significant in supporting sources of income in health facilities where HR

management is essential for companies with the consequences of high labour costs. Society, the disproportionate number of skilled workers will affect the quality of service.

The results of research conducted by Alam et al. (2018) show that the available working time of paramedic staff at the UIN Alauddin Makassar polyclinic is different for each officer. One factor influencing the difference in available working time is the absence on weekdays of each officer. The research results conducted by Fajri et al. (2020) show that the ideal number of pharmacists at the UIN Alauddin Makassar hospital is four human resources and one nurse.

According to the researcher's assumption, the need for labour plays a vital role in supporting services; in addition to increasing income at the hospital, good service quality will positively impact the community in improving the quality of life.

The results showed that of the 31 respondents studied, the majority of the workloads were 22 people (71%), and the minority were nine people (29%).

Fulfilment of minimal human resources will impact the workload that causes burnout, increasing the desire to resign so that the quality of service at the hospital will decrease. Work environment, leadership and given responsibilities.

Research conducted that nurses on duty average 8-11 people in the morning shift with the number of patients ranging from 33-41 people. The average patient classification is A2, namely urgent case-patients, namely patients in severe conditions but not life-threatening. In the afternoon shift, the average number of nurses on duty is 4-7 people with the number of patients ranging from 13-25 people, the average type of patient is A2, namely urgent case-patients, namely patients who are in an emergency condition but do not threaten their lives and limbs. . On the night shift, the average number of nurses on duty is 3-5 people with the number of patients ranging from 13-20 people. Again, the average type of patient is A2, namely urgent case-patients, namely patients in an emergency condition but not life-threatening and family members. His body.

According to the researcher's assumption, the ideal workload is significant for health workers to support quality services; this aligns with the need for adequate human resources.

#### V. CONCLUSION

Based on the results of research that has been carried out at Bunda Thamrin Hospital Medan in 2021, it can be concluded:

1. The results of the study from the 31 respondents studied obtained that the majority of pharmaceutical staff needs are sufficient as many as 24 people (77.4%), and the minority needs for pharmacists are seven people (22.6%)
2. The study results showed that of the 31 respondents studied, the majority of the workloads were 22 people (71%), and the minority were nine people (29%).
3. The results of the logistic regression test showed that the need for pharmacy workers according to WISN affected the pharmaceutical workload at the Bunda Thamrin Hospital Medan with a p-value of -0.012

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