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Analysis of Nurse Personnel Requirements Based on Working Load in Installation of Emergency Units, Wamena Regional General Hospital, Jayawijaya District, Papua

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ABSTRACT

The Wamena Regional General Hospital (RSUD) has never conducted an analysis of the need for nurses in terms of workload. Therefore, a systematic planning method for nurses is needed. This study aims to analyze the number of nurses needed based on the workload in the Emergency Room Installation of RSUD Wamena, Jayawijaya Regency. This research is a qualitative and quantitative research. The method used in this study is the Staff Need Workload Indicator (WISN Method). The population in this study were 24 nurses who worked at the Wamena Regional General Hospital in the Emergency Room installation. The informants in this study consisted of the head of the Emergency Room, the head of the service division, the head of the nursing section. The sampling technique in this research is purposive sampling. The results showed that the workload of nurses in the Emergency Room Installation at RSUD Wamena was relatively light. The availability of nurses is not in accordance with the workload that is borne by each nurse in the Emergency Room Installation of RSUD Wamena. Based on the Workload Indicator Staff Need (WISN) method, the number of nurses in the emergency unit installation is 20 nurses. Suggestions for the hospital to plan the need for nurses that refer to workload analysis for the implementation of good nursing care in order to get a rational number of nurses.

Keywords: workload, Emergency Unit, Nurse, WISN

INTRODUCTION

It is interesting to observe the threats to the free market in the health sector that we are facing and will face in the global era. The opening of the free market results in high competition in the health sector (Aziza, 2020). The competition between public, private and foreign hospitals will be even harder to seize an increasingly free market. In addition, the community demands that hospitals should be able to provide

services with the concept of one step quality services. This means that all health care needs and services related to patient needs must be served by the hospital in an easy, fast, accurate, quality manner at affordable costs(Ilyas, 2013).

One important effort to overcome this problem is the ability of hospital leaders to plan HR needs appropriately in accordance with the functions and service workloads of each unit, division and hospital installation(Indar et al., 2020). Hospital HR planning knowledge and skills are competencies that every leader at every level of hospital management must possess. This is because more than 75% of the hospital budget allocation is used for personnel expenditures, so human resource management must become the center of management's attention so that existing human resources can be effective(Hariyati, 2014). In addition, one indicator of the success of an effective and efficient hospital is the availability of sufficient, high-quality, professional human resources in accordance with the functions and duties of each personnel(Bupala, 2015; Oliy et al., 2019; Mualiminetal., 2020).

Basically, all formulas or methods that have been developed to calculate hospital personnel requirements are rooted in the workload of personnel(Lestari, 2014). Workload can be measured by the volume or quantity of products or services produced by a medicalpersonnel. The amount of workload for each personnel also determines the level of quality of the services provided. That is, we must determine the optimal load that high quality personnel can handle(Datuan, 2018).

The Wamena Regional General Hospital is a type C owned by the Jayawijaya Regency Government which functions from April 14, 1963, located in Wamena, is a referral hospital from several districts in the central mountains and is registered as an Accredited hospital with the title Main. Based on preliminary data, the number of patient visits has increased in the last three years as evidenced by the increase in the number of outpatient visits, visits to emergency departments and inpatient installations. Outpatient visits in 2017 totaled 33,691 patients, in 2018 there were 44,471 patients and in 2019 totaled 50,023 patients. Meanwhile, the number of inpatient visits in the last three years has also increased with the BOR (Bed Occupation Rate) in 2017 of 63.71% with the highest BOR first in the Internal Medicine room 73.34% and the second in the surgical treatment room 56.35. %. In 2018 it was 76.4% with the highest BOR first in the internal medicine room at 97.81% and the second in the surgical treatment room 80.34%, and in 2019 it was 78.77% with the first highest BOR in the internal medicine room 94, 62% and the second in the surgical treatment room 75.61% with the total number of 198 beds.

The Wamena Regional General Hospital is a referral hospital in the Lapago area in the central mountains so that the increase in BOR, outpatient visits and emergency visits is due to the presence of specialist doctors so that patients do not need to be referred again for treatment at hospitals that have specialist doctors. With the presence of specialist doctors, it resulted in many patients being treated with a

more severe degree of severity so that the patient's level of dependence on nurses was higher, the handling procedures were more specific and required more intensive supervision. This is why the nurses at the Wamena Regional General Hospital feel that their workload is getting heavier so that additional personnel are needed. The recruitment of nurses is determined by the Jayawijaya Regency Government. The hospital only proposes the number of personnel. RSUD Wamena currently does not have a standard standard in nursing staff planning. Therefore a nurse planning method is needed that is suitable for the needs of the hospital and can be used as a basis for recruiting the nurses needed by the hospital by the Jayawijaya Regency Government.

METHODS

The research conducted is qualitative and quantitative research. The method used in this study is the Staff Need Workload Indicator (WISN Method). The population in this study were 24 nurses who worked at the Wamena Regional General Hospital in the Emergency Room installation. The informants in this study consisted of the head of the Emergency Room Unit, the head of the service division, the head of the nursing section. The sampling technique in this research is purposive sampling. This study uses primary data and secondary data. Primary data obtained from interviews and observations for qualitative data. Secondary data were obtained in writing through a review of important documents related to the analysis of the workload of nurses. There are two analysis models used, namely interactive model data analysis and descriptive data analysis

RESULTS

Calculation of HR requirements based on WISN (Work Load Indicator Staff Need)

To calculate the number of nurses needed at the Wamena Hospital Emergency Unit Installation based on the WISN method, 5 steps are needed, namely:

Uptime analysis available

Available working time is a unit of time used by nurses to work in carrying out their main activities for a year. Determining available working time aims to obtain available working time for each category of HR working in the hospital within one year.

Table 1. Analysis of Available Working Time of Implementing Nurses in the Emergency Unit Installation

Code	Factor	Nursing Category	HR	Description
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A	Working days	312	Day/ year
B	Annual leave	12	Day/ year
C	Education and training	2.5	Day/ year
D	National holiday	19	Day/ year
E	Average absence from work	12	Day/ year
F	Working time	8	Hour/Day
	Working days available	266.5	Working Day/year
	Available working time	2.132	Hour/year
		127.920	Minute/year

Source: Primary Data, 2020.

Based on the table above, it can be seen that the working time available for the nurses at the Wamena Hospital Emergency Unit is 127,920 minutes / year.

Based on the results of interviews related to working time as follows;

"For the Emergency Unit there are 3 shifts, namely morning shift, afternoon shift and night shift, each shift consists of 3, 4 or 5 nurses and 2 days off" (Head of the room with the initials Ns.M.J).

"Our room consists of 3 shifts which are divided into each shift, namely 3 people morning shift, 4 afternoon shift and 5 people night shift, while we usually take 2 days off a week" (Senior nurse with initials J, A.md.Kep) .

"Leave for each nurse in one year is entitled to 12 working days annual leave" (Head of the room with the initials Ns.M.J).

"So far, we rarely attend trainings (senior nurses with the initials J, A.md.Kep).

"We never get a day off on National holidays or public holidays, or leave together because the Emergency Unit is divided into 3 shifts, especially if there is time off with the outpatient installation on holidays or not providing services. "(Senior nurse with the initials J, A.md.Kep).

"Usually, there are nurses who are suddenly sick and usually notified by telephone or whatshap or permission for sudden affairs, there are even nurses who have absolutely no notification. And usually on the day it is his turn to get a day off, the person concerned will still enter to cover his absence (negligent)"(Head of the room initials Ns.M.J).

"For our room there are those who do not enter without reason / no notification, usually 3 days" "(Senior nurse with initials J, A.md.Kep).

"The morning shift starts at 08.00 WIB until 14.00 WIB, the afternoon shift starts at 14.00 Wit until 21.00 WIB, while the night shift starts at 21.00 WIB until 08.00 WIB until the end of the operand" (Head of the room with the initials Ns.M.J).

Standard Workload Analysis

Workload standard is the volume / quantity of workload for 1 year per HR category. The workload standard for a main activity is arranged based on the time needed to complete it (average time) and the time available per year that is owned by each category of labor.

Table 2. Calculation of Workload Standards in the Emergency Unit Installation

Direct nursing	Average Time	SBK
Patient TTV	3.8	33663
Accept new patients	3.3	38376
Caring for wounds	21.7	5904
Nebulezer	17	7525
Suction	4	31980
Install the catheter	10.5	12222
Install NGT	6	21320
Sonde	2	63960
IV and IM injection	2.1	61897
ECG	22	5815
Send the patient X-rays	21.7	5904
Install the monitor	19	6733
Put in Pam's infusion	2.9	43609
Post often Pam	2.9	43609
Fluid blance	8.4	15229
Take a basic sample	20.3	6291
Transf the patient to the ward	26.7	4797
Install oxygen	2	63960
Changing intravenous fluids	1.6	79950
Handle DOA patients	1.9	66166
Install the pempers	1.9	66166
Removing the patient's infusion	2.1	59963
Remove the patient catheter	2.1	59963
Remove the patient's NGT	2.1	61897
Removing the monitor	6.5	19580
Remove the filter pam	4.3	29520
Removing Pam's drip	8.9	14319
Preparing the pre op patient	35	3655
Give the patient drinking medication	3.4	37624
Installing vemplon	2.7	46800
Release oxygen	2.4	53300
Helping patients defecating and bladder	3.3	38376
Take care of patient administration / registration	22	5815
Make a watch report	60	2132
Make Askep	60	2132
Follow the weigh and accept	45	2843

Source: Primary Data, 2020

Establish Allowance Standards

Allowance standards are activity standards for activities where annual statistics are not recorded regularly (Fiestas Navarreteetal., 2019). Based on in-depth interviews with informants at the Emergency Unit Installation, the allowance standards are meetings (room meetings and coordination meetings) and training.

Table 3. Calculation of the Nurse's Allowance Time in the Emergency Room Installation

NO	Leeway Factor	Average Time	Total	Leeway Standard
Leniency standards (related to indirect productive activities)				
1	Attend room meetings	1 hour/month	12 hours/year	0.006
2	Attending the Coordination meeting	2 hours		0.011
3	Take training	4 hours		0.023
Total Leeway Factor				0.039

Source: Primary Data, 2020

Based on the results of the interview related to the standard of leniency as follows;

"For room meetings are always conducted once a month and coordination meetings are conducted every six months(Head of the room with the initials Ns.M.J).

"If our room meeting is always conducted once a month, while the coordination meeting is always conducted every three months and followed by the head of the room only" (Senior nurse with initials J, A.md.Kep).

Calculation of Human Resources Needs of Work Units

$$\text{Human Resources Needs} = \frac{\text{Quantity of Basic Activities}}{\text{Workload Standards}} + \text{Allowance Standards}$$

With a basic quantity of 210,288 a year, the following calculation of nurse needs in the Installation of Emergency Unit wamena hospital.

Table 4.Calculation of The Needs of Nurses in the Installation of Emergency Units

Direct nursing	SBK	KS
Patient TTV	33663	0.32
Accept new patients	38376	0.28
Caring for wounds	5904	1.1
Nebulezer	7525	1.08
Suction	31980	0.19
Install the catheter	12222	0.29
Install NGT	21320	0.26

Sonde	63960	0.11
IV and IM injection	61897	0.19
ECG	5815	1.11
Send the patient X-rays	5904	1.1
Install the monitor	6733	0.73
Put in Pam's infusion	43609	0.15
Post often Pam	43609	0.18
Fluid blance	15229	0.35
Take a basic sample	6291	1.53
Transfer the patient to the ward	4797	1.34
Install oxygen	63960	0.11
Changing intravenous fluids	79950	0.16
Handle DOA patients	66166	0.11
Install the pempers	66166	0.11
Removing the patient's infusion	59963	0.17
Remove the patient catheter	59963	0.12
Remove the patient's NGT	61897	0.11
Removing the monitor	19580	0.28
Remove the filter pam	29520	0.2
Removing Pam's drip	14319	0.37
Preparing the pre op patient	3655	0.89
Give the patient drinking medication	37624	0.29
Installing vemplon	46800	0.17
Release oxygen	53300	0.09
Helping patients defecating and bladder	38376	0.16
Take care of patient administration / registration	5482	1.75
Make a watch report	3337	1.44
Make Askep	1599	2.97
Follow the weigh and accept amount	4264	1.14
		20.92

Desc :SBK : Standard Workload

KS :Resource Requirements

From table 4. above, based on the calculation of the need for personnel using WISN, the total need for nurses in the Emergency Unit Installation is 20.92 or 21 nurses.

DISCUSSION

The supply of nurses, both in number and in type, in the Wamena Hospital Emergency Unit Installation according to the Head of Service, Head of the Emergency Unit Installation, seen from the comparison of beds and the availability of personnel, is not in accordance with the workload borne by each officer. Thus, the nurse as needed.

This study uses the Time and Motion Study Technique as a method to measure the workload of nurses. This technique is carried out on all activities carried out by nurses during working hours(A. Indar, Muh. Alwy Arifin, 2020).Nurse activities consist of direct, indirect activities in the Emergency Room at Wamena Hospital which are the workloads of nurses.

Based on the workload of nurses, the need for nurses is calculated using the **Workload Indicator Staff Need (WISN)** calculation method.

The workload of nurses is obtained through observation for 24 hours which is divided into 3 shifts, namely the morning shift, afternoon shift and night shift using the Time and Motion Study technique which is observed for all nursing activities(Harni, 2016). Observation of nurses' activities for 5 days in the Emergency Unit of Wamena Hospital resulted in the total amount of time spent per shift. Thus this study found that the workload in the emergency room. Wamena Hospital is classified as heavy on the morning shift compared to the afternoon shift and night shift. The results showed that overall the percentage of productive nurse activities was greater than that of non-productive nurses, namely 78%. Calculating the number of nurses needed in the Emergency Unit Installation at Wamena Hospital in using the formula the researcher has to go through 5 steps, namely, the working time available at the Wamena Hospital Emergency Unit Installation in one year is 267 days or 2,132 hours or 127,920 minutes. This means that more available time should be used by nurses to carry out their main activities. The next step in determining the amount of human resource needs is to determine the work unit and category of HR, based on the analysis of the quantity of available personnel(Marwansyah, 2014), (Darmawansyah, 2018), The work unit of the Emergency Unit Installation at Wamena Hospital with the category of HR, namely Implementing Nurses in the Emergency Room, there is a gap between the number of nurses and the number of available beds.

Furthermore, compiling the Workload Standards, it takes the average time for direct nursing activities owned by Wamena Regional Hospital, then calculated by the number of available work time divided by the average activity time, then the results of the Workload Standards for each type of activity in the designated room(Budiono, 2015). After obtaining the nurse workload standard, the next calculation is to determine the allowance standard where the allowance time is the time needed to carry out other activities that are not directly related and very useful for HR. This allowance standard consists of room meetings, coordination meetings, or training in accordance with existing or always implemented situations(Harni, 2016), (Aulia, 2017).

Calculating the number of human resource needs, the excess of nurses in the Emergency Unit Installation is due to the low productivity of nurses, namely 78%, much lower than the optimum productivity according to Ilyas, which is 80%. This low productivity is also caused by the absence of a job description for nurses, so that nurses work only to carry out routine work, which is an abundant job for doctors.

CONCLUSION

The workload of nurses at the Wamena Hospital Emergency Unit is relatively light. The availability of nurses is not in accordance with the workload that is borne by each nurse in the Emergency Room Installation of RSUD Wamena. Based on the Workload Indicator Staff Need (WISN) method, the number of nurses in the emergency unit installation is 20 nurses. In order to provide optimal service, the nursing section of the Wamena Regional Hospital needs to make a description of the duties of the nurse in order to achieve optimal productivity of nurses so that nursing services can be carried out better.

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