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ORIGINAL ARTICLE

ANALYSIS OF THE NEED FOR PHYSIOTHERAPISTS IN A PRIVATE HOSPITAL IN INDONESIA USING THE WORKLOAD INDICATOR OF STAFFING NEED REFERRING TO THE IMPLEMENTATION OF THE PHYSIOTHERAPY PROCESS AS RISK MITIGATION OF SERVICES

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ABSTRACT

Background: Physiotherapy service standards are used as a basis for risk management in preparing strategies to anticipate unexpected events that appear in the management of the physiotherapy process. This research aims to improve the quality of physiotherapy services through the calculation of the risk of the physiotherapy process and risk mitigation measures using the Workload Indicator Staffing Need (WISN) method from the World Health Organization (WHO). **Methods**: The research uses the stages of risk management as a method of analysis and WISN as a method for risk mitigation. Risk analysis begins with the identification of risks and then measures the risks by calculating the probabilities and impacts of these risks and designing risk management as mitigation. **Results**: Based on the research that has average 50-60/day, which is not proportional to the number of only 4 physiotherapists. In addition, there is a lack of physiotherapy intervention tools. **Conclusion**: In this research it has concluded that to improve the quality of physiotherapy services must be done by making policies to mitigate unexpected events and reducing the probabilities such as: increasing the number of physiotherapists and arranging the separation schedule of examination days for physiotherapy been done, events with the highest risk are found in the stages of examination and measurement, documentation, and physiotherapy intervention where there is an opportunity to reduce the type and duration of long or unsuccessful healing interventions. The trigger for the occurrence of potential risks is the number of patients on measurements from intervention days and increasing the number of physiotherapy intervention tools.

Keywords: Physiotherapy Process, Workload Indicator of Staffing Need, Risk Management

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INTRODUCTION

The role of human resources (HR) in a company or hospital is very important because HR is the main implementer of activities in order to meet the objectives of the company or hospital [1,2,3].

One of the human resources in the hospital is physiotherapists[4,5]. As a profession that carries out physiotherapy service activities, a physiotherapist uses references as the basis for carrying out their duties and functions as stipulated by the Minister of Health in the Regulation of the Minister of Health of the Republic of Indonesia number 65 of 2015 concerning physiotherapy service standards containingthe duties and functions of a physiotherapist as well as physiotherapy personnel service standards in the form of the stages of the process of implementing physiotherapyor physiotherapy action is a normal service of a physiotherapist, which can then be calculated and determined as a guide or measuringtool to determine the need for physiotherapists in hospitals[7].

Fulfillment of physiotherapy human resources in health care facilities is based on workload analysis and/or the ratio of patient/client services per workday, i.e. 1 physiotherapist : 8-10 patients/clients per workday taking into account the need for appropriate qualifications of physiotherapists [6].

Based on physiotherapy service standards, the elements of the physiotherapist's workload in the physiotherapy process should be observed. In the physiotherapy process management, there are several stages of action, such as: Assessment of the Patient, Making of Diagnosis, Intervention Planning, Intervention, Evaluation/Revaluation, Communication and Education as well as Documentation [4,6]. From assessment to evaluation, the physiotherapist must also carry out the report writing stage simultaneously which serves to document the data and becomes the basis and the most important part in fulfilling the final stage called physiotherapy documentation [6]. The physiotherapy documentation process serves as an integrated information tool from the physiotherapist to all health workers involved in the process of handling a patient.

Documentation is also an accurate tool in providing work quality information as well as a legal protection tool for a physiotherapist. With the implementation of the National Health Insurance system by the government to realize the mandate of the 1945 Constitution no. 28 part H, there is an increase in the number of patients in the medical rehabilitation installation unit with a physiotherapist as a service provider[7]. Increase in the number of patients is closely related to an increase in the amount of service time per day in the hospital [9]. To avoid decreasing quality of services with an increase in the number of patients, it is necessary to analyze the need for physiotherapists in connection with the workload and the length of time of the implemented physiotherapy process in one workday[8].

The need for physiotherapists can be analyzed by measuring the physiotherapy workload using the "Workload Indicator of Staffing Need"(WISN) method [7,10]. The WISN method uses a measure or working time as an assessment indicator at each stage of the human resource working process[7].WISN is a tool used to measure the workload of health workers released by WHO[7]. This method is used to set the appropriate standard of the

number of workers needed in each working unit [10]. Meeting the appropriate workforce requirements will improve performance, service quality and service risk mitigation.

A physiotherapist's workload isall activities carried out by the physiotherapist in the course of their assignment in a physiotherapy service unit. The method that can be used as a measurement for health workers is the Workload Indicator of Staffing Need. This tool in its application uses analysis of the length of time in carrying out a work activity of each HR in accordance with their duties and functions [11]. The WISN method helps to determine how many specific types of health workforce are needed according to the workload provided or available at a health facility and measures the workload pressure of a health worker at that health facility [10,11].

The guidelines for using WISN software explain the description of the application, and provide step-by-step instructions to meet or complete a variety of tasks or data requirements. The tasks or data to be analyzed and measured in WISN consist of: facilities, labor facilities, time needed to do the work, workload statistics, activity standards, labor comparisons, and calculation of remuneration costs[10].

The WISN method is a tool stipulated in the Minister of Health Decree Number: 81/ MENKES/ SK/ 2004 concerning Guidelines for Preparation of Health HR Planning at Provincial, Regency/City and Hospital Levels to calculate HR needs at Hospitals.Through the application of the WISN method, it is likely to know the working unit and its HR categories, available working time for each HR category, workload standards, tolerance standards, quantity of main activities and finally, the HR needs in the working unit can be known [12].

Through the above review, this research aims to analyze the risks of the physiotherapy process by analyzing the need for human resources, which in this case are physiotherapist in order to prevent the risks that may occur.

RESEARCH METHODOLOGY

This research is descriptive qualitative, by measuring the probabilities and impacts of time reduction in the physiotherapy process and measuring the need for human resources based on the Workload Indicator of Staffing Need method for risk mitigation.

a. The Risk Management Analysis Technique is carried out by means of; risk identification, risk measurement and risk management.
b. Population and Sampling Technique;

1. The population of the research is the physiotherapists and medical records of patients in 2017 in the period of 3 months from April to June 2017.
2. The sampling technique is all 4 physiotherapists and data of medical records. The research samples are medical recordswith the data of 62 patients per day.

c. Place and Unit of Research.
The place of research is one of the general hospitals of Universitas Kristen Indonesia in the medical rehabilitation installation unit, physiotherapy unit, Jakarta, Indonesia.
d. Data and Sources of Data

1. Data of physiotherapy process (medical records)

2. Data of probabilities of unexpected events (physiotherapy questionnaire)
3. Data of physiotherapy process impacts (review of medical records)

e. Data Collection Technique.

The instrument used was a questionnaire to physiotherapists, interviews and observations of physiotherapy management directly and through medical record documentation. The physiotherapy service process data is taken from the physiotherapy process in the hospital for 3 months from April to June 2017.

1) Observation

This method is done by finding and collecting data directly from the source by direct research on the physiotherapy process in the hospital.

2) Interview

In order to obtain complete information in this study, the authorsconducted a question and answer processwith physiotherapists directly about the physiotherapy service process in the physiotherapy unit.

3) Documentation of physiotherapy process results in the hospital

In this process, various physiotherapy service activities are recorded and documented as evidence of the implementation of the physiotherapy process.

4) Library Study

This is the search for data with the library study method as a guideline for collecting and reviewing existing data.The library study method is done by reading the literature relating to government regulations, especially those of the minister of health concerning the physiotherapy service process standards in hospitals, theories about the workload measuring tools and the need for health workersin the hospital, notes and books relating to the risks of health services to produce maximum quality health services.

RESULTS AND DISCUSSION

The results of analysis and observation of the physiotherapy process in four respondents showed that the management of physiotherapy has about 80% of direct contact with patients where the time is included in the weight category or an indication of danger.

Based on the time calculation in the physiotherapy workload diagram it appears that the average time required is 101.75 minutes by a physiotherapist to carry out physiotherapy services for one patient. The time is quite long with the number of 40-60 patients per day, an indication of the physiotherapy process with the risk of danger. These results are in Table 3.

Observation of Physical Examination Sheets of Physiotherapy and Interview

Reports on the results of examination and measurement are not written in full with the type of examination and value of the measurement results before and after therapy as well as the results of the evaluation. The process of implementing physiotherapy interventions is not carried out in full according to the intervention plan because it is limited by the quota of funding for treatment of patients by the National Health Social Security Board, the waiting time for therapeutic measures and the availability of intervention equipment facilities that are not proportional to the number of patients who need the same tools and also the implementation of interventions that takes a minimum of 15 minutes per tool.

The biggest condition is musculoskeletal cases and in the next sequence is neuromuscular condition, where both conditions require at least 45 minutes of physiotherapy services for long-standing patients with musculoskeletal problems who are only undergoing therapy but still need to undergo a momentary examination, while patients with neuromuscular problems must get complete exercise that takes a minimum of 60 minutes.

In contrast to old patients who come only to continue therapy, patients who have just arrived for the first time will take longer examination if the physiotherapy process is carried out in full according to the physiotherapy service standards.

Analysis of Workload Indicator of Staffing Need

Based on the physiotherapy workload that is in the hospital's medical rehabilitation installation unit, the need for physiotherapists must be calculated in order to achieve optimal performance in the implementation of physiotherapy services. The measuring instrument used to analyze the need for physiotherapists is WISN with a measurement method using components or elements of assessment, such as: the number of physiotherapists available to carry out activities as physiotherapists, the time required for each type of action or physiotherapy work activity, the total time available for each physiotherapist, the amount of time needed to complete the actions carried out by the physiotherapist and the number of patients and patient visits (Table 1 and Table 2).

Indicators	Provision	Remarks
Total physiotherapists	4	
Total time available in 1 year	81,000 minutes	270 days x 5 hours = 1350 x 60 minutes
The time required in each type of action		
Examination, measurement&intervention plan	30 minutes	
Intervention implementation	45 minutes	
Physiotherapy process documentation	15 minutes	
Total time to complete the whole action in 1 patient	90 minutes	Intervention of tools and exercise + therapy manual
Total patients in 1 day	10	10 patients x 90 minutes = 900 minutes/day

Table1. Indicators of physiotherapists' workload assessment for new patients

Indicators	Provision	Remarks
Total physiotherapists	4	
Total time available in 1 year	81.000minutes	270 days x 5 hours = 1350 x 60 minutes
The time required in each type of action		
Examination, measurement&intervention plan	10minutes	
Intervention implementation	45 minutes	
Physiotherapy process documentation	5 minutes	
Total time to complete the whole action in 1 patient	60 minutes	Intervention of 2 tools and exercise + therapy manual
Total patients in 1 day	50	50 patients x 60 minutes = 3000 minutes

Table2. Indicators of physiotherapists' workload assessment for old patients

CONCLUSION FOR CALCULATION OF TOTAL REQUIRED PHYSIOTHERAPISTS						
Working Unit	Main Activities	Average time (Minutes)	Quantity (Minutes)[a]	Workload Standards[b]	Tolerance Standards[c]	Need for HR
Physiotherapy Clinic/ Polyclinic	Tindakan fisioterapi langsung :					
	Accepting patients (anamnesis)	5 (case samples)	10800	16200	0,0044	0,6711
	Providing individual examination: history of disease	5 (case samples)	10800	16200	0,0044	0,6711
	Measuring vital signs	5 (case samples)	10800	16200	0,0044	0,6711
	Static and dynamic inspection	3 (case samples)	10800	27000	0,0044	0,4044
	Measuring ROM	5 (case samples)	5400	16200	0,0044	0,3377
	Measuring MMT	3 (case samples)	5400	27000	0,0044	0,2044
	Measuring pain scale	2 (case samples)	5400	40.500	0,0044	0,1377
	Tonus examination	2 (case samples)	5400	40.500	0,0044	0,1377
	Stability examination	3	2700	27000	0,0044	0,1044
	Balance examination	3	5400	27000	0,0044	0,2044
	Coordination examination	3	5400	27000	0,0044	0,2044
	Speed examination	5	2700	16200	0,0044	0,1711
	Agility examination	3	2700	27000	0,0044	0,1044
	Endurance examination	15	2700	5400	0,0044	0,5044
	Flexibility examination	2	2700	40500	0,0044	0,0711
	Reflex examination	2	5400	40500	0,0044	0,1377
	Report writing of examination results	5 (case samples)	10800	16200	0,0044	0,6711
	Diagnosis of physiotherapy	3 (case samples)	5400	27000	0,0044	0,2044
	Determining the physiotherapy action plan	2 (case samples)	5400	40500	0,0044	0,1377
	Implementation of ultrasound therapy measures	5 (case samples)	10800	16200	0,0044	0,6711
	Implementation of Micro Wave Diathermy therapy measures	15(case samples)	10800	5400	0,0044	2,0044
	Implementation of TENS measures	15	5400	5400	0,0044	1,0044
	Implementation of IR measures	15	5400	5400	0,0044	1,0044

Table 3. Calculation of total required physiotherapists (Continue…)

	Implementation of manual therapy measures	15	2700	5400	0,0044	0,5044
	Implementation of stretching measures	5 (case samples)	2700	16200	0,0044	0,1711
	Implementation of exercise therapy measures:					
	Neuromuscular cases (specific exercise) :					
	a. Balance exercise	10	5400	8100	0,0044	0,6711
	b. Coordination exercise	10	5400	8100	0,0044	0,6711
	c. Walking exercise (stroke)	15	5400	5400	0,0044	1,0044
	d. Functional movement exercise of neck, shoulders, arms	5	5400	16200	0,0044	0,3377
	Musculoskeletal cases (specific exercise):					
	a.Strength exercise	10 (case samples)	5400	8100	0,0044	0,6711
	b. Range of motion exercise	5 (case samples)	5400	16200	0,0044	0,3377
	c. Walking exercise (cases of bone surgery/fracture)	10 (case samples)	5400	8100	0,0044	0,6711
	d. Stability exercise	10 (case samples)	2700	8100	0,0044	0,3377
	Cardiovasculopulmonal cases (specific exercise) :					
	a. Breathing exercise	5	2700	16200	0,0044	0,1711
	b. Endurance exercise (walking/static bicycling)	15	2700	5400	0,0044	0,5044
	c. Speed exercise	5	2700	16200	0,0044	0,1711
	Rest/lunch	20	270	4050	0,0044	0,0711
	Physiotherapy personnel discussion (about patients)	5	270	16200	0,0044	0,0211
	Attending training on physiotherapy for quality development of physiotherapy services	-	0	0	0,0044	0
TOTAL HR						16,752
Remarks: Quantity: a)Total Main Activities carried out x Minutes, b)Workload Standard: available working time/average time per main activity, c)Tolerance Standard: average tolerance time/Available working time, d)Need for HR: (Quantity of main activities xTolerance standard)/Workload standard						

Table 3. Calculation of total required physiotherapists

Based on the WISN method which divides the length of time to do activities by the amount of time available for the physiotherapist and compared to the number of patients and referring to the Minister of Health Regulation No. 65 of 2015 concerning physiotherapy service standards, and based on the analysis of workload and/orservice ratio of patients/clients per working day (1 physiotherapist : 8-10 patients/clients per working day) with the assumption that the available working time is 8 hours per dayand 1 hour of physiotherapy processfor 1 patient [4,6,7]. When seen from the data in the indicator diagram based on the WISN method, then a calculation is made based on the formula, by stating the total number of 40 patients per day in 1 year (average visit), the result shows that the need for physiotherapists per day is16.75 or rounded to be 17 in the medical rehabilitation unit of the Hospital (Table 3).

Based on the results of review of the writing of the intervention time dose on the patient card compared to the theory about the time of use of the physiotherapy intervention device, there is a quite big differencein the implementation of the intervention with the device, ranging

from preparation, testing of equipment, up to the intervention, as well as the provision of motion exercises, and each experienced a reduction in time during the process by an average of 15 to 20 minutes[4,6,13]. This happens to address all patient needs in a relatively short period of time (5 working hours per day).

After looking at the tables and risk interpretation diagrams interpretasiobtained from interviews, questionnaires and review of patient medical records as well as observation of intervention tools, figures are obtained indicating potential risks in the physiotherapy processwith interpretation there is the influence of the number of patients/workload on the physiotherapy process.

Likewise, with the results shown in the conclusion table on the calculation of need for HR, the result is obtained in the form of the amount of physiotherapists needed in the medical rehabilitation unit of the Hospital X, with interpretation there is a need for increased physiotherapists. Likewise, regarding the physiotherapy device facilities specified in the Minister of Health Regulation number 65 of 2015 for Type B Hospitals and workload diagrams, there is a need for increased physiotherapy intervention device facilities [6,8,13].

CONCLUSION

Based on the measurement of risks in the stages of examination and measurement, there is high risk of probabilities in the absence of examination and measurement as well as in the mistake of report writing on the physiotherapy process; whereas in the intervention stage,there is also high risk of probabilities in the reduction of type and time of intervention with the impact of long or unsuccessful healing process.

Based on the workload calculation of the physiotherapy process with the Workload Indicator Staffing Need, the mitigation policy taken is to add 13 physiotherapists so that the number of physiotherapists is 17 and supported by arrangements for inspection days and the addition of intervention tools.

Recommendation: Hospitals are expected to analyze risks and work requirements using theWorkload Indicator Staffing Needboth in the physiotherapy unit and in other units. Analyzing this can reduce the risk of mistakes in patient documentation and adjust the workload of physiotherapists or other health professionals to work optimally.

Ethical Clearance: Ethical aproaval letter received from the Director of General Hospital, Universitas Kristen Indonesia to conduct this study with reference number 295/DR/RSU UKI/05.2017 dated 19/05/2017.

Conflict of Interest: The Author has no conflict of interest to declare.

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