

Supplement

Workload of the Inpatient Nurses: What are the Affecting Factors?

Beban Kerja Perawat: Faktor Apakah yang Mempengaruhi?

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ABSTRACT

High nurse workload can impact the quality of hospital services. Nurses are the spearhead of the services, so they must obtain attention and be professionally managed to provide positive contributions to the advancement of the hospital. This study was conducted to describe the factors that influence the high workload of nurses in the Surgical and Internal Inpatient Installation (IRNA BDB) Baptis Batu Hospital. Qualitative and quantitative study methods with an explorative, descriptive approach were used. Determination of the root of the problem was using the fishbone diagram. Factors that influence the high workload of inpatient nurses are the number of nurses that do not meet the workload needs, placement of junior nurses and interns increases more workload for senior nurses, nurses carry out financial administrative tasks, blood sampling for laboratory examinations, and dispensing sterile preparations, as well as nurse call and bathroom facilities that are not supportive. In short, the causes of the high nurse workload are the lack of nurses, varied nurse qualities, non-nursing workloads, and less supportive facilities.

Keywords: Affecting factors, nurse, workload

ABSTRAK

Tingginya beban kerja perawat dapat berdampak terhadap mutu pelayanan rumah sakit. Perawat merupakan ujung tombak pelayanan, sehingga harus mendapat perhatian dan dikelola secara profesional agar memberikan kontribusi yang positif bagi kemajuan rumah sakit. Studi ini dilakukan untuk menjelaskan faktor-faktor yang memengaruhi tingginya beban kerja perawat di Instalasi Rawat Inap Bedah dan Dalam B (IRNA BDB) RS. Baptis Batu. Metode studi kualitatif dan kuantitatif dengan pendekatan deskriptif eksploratif. Penentuan akar masalah menggunakan diagram fishbone. Faktor-faktor yang berpengaruh terhadap tingginya beban kerja perawat ruang rawat inap rumah sakit adalah jumlah perawat kurang memenuhi kebutuhan beban kerja, penempatan perawat junior dan magang meningkatkan beban kerja perawat yang lebih senior, perawat melakukan tugas administrasi keuangan, sampling darah untuk pemeriksaan laboratorium dan dispensing sediaan steril, serta fasilitas nurse call dan kamar mandi pasien yang kurang mendukung. Kesimpulan penyebab tingginya beban kerja perawat adalah kurangnya jumlah perawat, kualitas perawat berbeda-beda, beban tugas non asuhan keperawatan serta fasilitas yang kurang mendukung.

Kata Kunci: Beban kerja, faktor yang memengaruhi, perawat

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INTRODUCTION

Nurses are one of the valuable assets for the services delivery in a hospital. Nurses are heart of hospital. They are needed not only for inpatient care but also for emergency services, service managers, hospital operational managers, quality improvement, patient safety and legal consultants (1). Health care facilities have the aim of providing quality health services and improving patient safety. To achieve this, nurses must improve their competence, knowledge and skills through education and training. The number of nurses and nursing workload has a relationship with the opportunity for nurses to attend education and training. Insufficient number of nurses, high workloads reduce the opportunities for nurses to attend education and training. This affects patient safety and the quality of nursing services and adds to problems related to nurse competence and licensing (2). The number of nurses as needed is an effort to improve nursing care for patients (3).

Baptis Batu Hospital is a type C hospital that is located in Batu, a tourism city in East Java, and owned by the Indonesian Baptist Hospital Foundation. Currently, the hospital has 107 beds. The Hospital Bed Occupancy Rate (BOR) in 2018 was 53% meaning that the hospital had not reached the effectiveness standard and service quality of 70-80%. The total number of Human Resources (HR) was 312 people, the number of health workers was 188 people, and the number of nurses was 90 people. The number of nurses was 29% of all HR and 48% compared to the number of health workers. The highest number of health workers is nurses if compared to other health workers.

The wards available for inpatients at Baptist Batu Hospital are Surgical and Internal Inpatient Installation A (IRNA BDA), Surgical and Internal Inpatient Installation B (IRNA BDB) as well as Mother and Child Inpatient Installation. Surgical and Internal Inpatient Installation B is an inpatient ward that has a capacity of 36 beds for general patients and third-party dependent patients, class II, and class III care. Data for the first semester of 2019 showed an average patient BOR of 63%, an average daily census of 23 patients, and length of stay of 3.705 days. The number of nurses was 13 people consisting of 1 person from Bachelor of Nursing (S1) and 12 people from Diploma of Nursing (D3).

In our preliminary study, observations on nurses who were working at Surgical and Internal Inpatient Installation B showed that the nurses worked exceeding the working normal working time, worked nonstop exceeding 4-hour working time, and had overload workload, so some of the nursing care tasks were carried out by non-nursing staffs. The workload of nurses has exceeded their work capacity. The number of nurses is 13 people. The need for nurses using the Workload Indicator Staff Need (WISN) calculation method showed that the need for nurses in Surgical and Internal Inpatient Installation B was 16 people. The number of nurses is less than 3 people. The basis for calculation in this method is the amount of workload divided by the standard workload, then the result is added with the allowance standard (4).

Besides being calculated using the WISN method, the need for inpatient nurses can be done by using other formulas. According to Ilyas, the need for inpatient nurses

can be calculated based on the patient's BOR. Based on a BOR figure of 63%, if the Gillies formula is used, the needs of nurses in Surgical and Internal Inpatient Installation B are 16 people. This formula assumes that all nurses work professionally and yield optimal productivity. If using the PPNI formula, the nurses needed are as many as 22 people. This formula assumes nurse productivity is calculated to be only 75%. If using the Ilyas formula, 19 nurses are needed (5-7). The results of the calculation of nurses using different methods indicate that the number of nurses is less or it can be stated that the workload of nurses is high.

The results of the Surgical and Internal Inpatient Installation B nurse satisfaction questionnaire in April 2019 on the component of the number of personnel employed showed 15%; thus, it did not yet reach the target of 60%. High workload decreases nurse satisfaction (8). This shows that nurses are less satisfied with the number of nurses than the workload. Referring to this, the Surgical and Internal Inpatient Installation B nurse turnover has approached the high-value limit. Low job satisfaction increases along with employee turnover (9,10).

The problem of a high workload on nurses is a problem that needs to overcome. The problem-solution strategy can be carried out after figuring out the factors that cause the high workload of nurses in Surgical and Internal Inpatient Installation B. The purpose of this study is to explore the factors that influence the high workload of nurses in Surgical and Internal Inpatient Installation B Baptist hospital Batu.

METHOD

This study used qualitative methods with an exploratory, descriptive approach at Surgical and Internal Inpatient Installation B Baptist Batu Hospital from September 13 to October 31, 2019. The study population was nurses, with a sample of 6 implementing nurses who had a two-year or more working period. Primary data collection was done by observing the nurses' working activities. The observation technique used time and motion study. Structured interviews were conducted with the nurses, the ward heads, the inpatient managers, the head of human resources, the head of laboratory installations, the financial staff, the head of pharmaceutical installations, the vice director of services, and the director of the hospital. The interviews were about the aspects related to environmental, material, method, and man. Secondary data were obtained from the data and information center (Pusdatin) and hospital HR department in the form of documents on the number, education, and length of service of nurses, working time, BOR of Surgical and Internal Inpatient Installation B, results of nurse satisfaction questionnaires, and nurse turnover. Secondary data retrieval was used to analyze the workload of nurses. The validity of the data was done by comparing the results of observations with the results of the interview and comparing documents related to the results of the interview (11).

This study uses its own researchers as a research instrument. The analysis method on the root problems that cause high nurse workload was by using Focus Group Discussion (FGD). This method is used to explore the perception of information relating to the cause of the high workload of nurses. The FGD was attended by the head of the ward, the inpatient manager, the head of HR, the vice

director of services, and the director on September 23, 2019 and October 24, 2019.

Analysis of the factors that caused a high nurse workload was done by using a fishbone diagram. The problem was placed on the fish head, then explored the causes of the problem referring to 4 factors namely environmental, material, method and man. Each problem in the main branch of the fishbone is analyzed for all possible causes. The cause of the problem for each factor is written on the fishbone branches. Each cause of the problem is analyzed for its causes. It continues until it can identify the root of the problem of high nursing workload (12,13).

RESULTS

The observation results showed that nurses' work consisted of direct and indirect nursing activities. The direct nurse's jobs are patient transfer and hand over, anamnesis, physical examination and nursing actions. The nurse transfers the patient to the radiology room, operating room, or to another room according to the patient's needs. Patient hand over is carried out between nurses, when the patient is sent to the operating room and moved rooms. Physical examination includes examination of vital signs, other physical examinations, ECG. The nurse performs nursing actions which consist of preparing the bed, bathing the patient, placing and removing the infusion, administering medication, giving intravenous fluids giving oxygen, placing NGT, inserting and removing catheters, providing blood transfusions, treating wounds, caring for bodies, preparing surgery patients provide nebulizer, resuscitation, prepare the patient to go home, meet the needs of the patient's diet, cleanse and deliver instruments to be sterilized.

The direct nurse's jobs are accepting new patients (handover, following up on advice), physical examination (vital signs), installing IV, removing IV, administering drugs, changing IV fluid, administering oxygen, ECG examination, installing NGT, installing catheters, removing catheters, measuring input-output, providing blood transfusions, treating wounds, preparing and delivering to radiological examinations, treating corpses, changing linens, preparing surgical patients, handing over surgical patients, accompanying doctor's visit, providing nebulizers, observing patient, conducting resuscitation, transferring patient between rooms, preparing patient for hospital discharge, bathing the patient, and conducting hand over between shifts.

Indirect nursing job is communication, education and documentation. Nurses communicate with doctors, nutritionists, health analysts, pharmaceutical and related personnel. Nurses provide education to patients and families. Nurse documenting patient progress and actions taken in the medical record, book reports nurses, infection prevention and control report (PPI). Nurses also carry out activities related to patient safety, namely installing and removing signs of the risk of falling. In addition to nursing duties, nurses also carry out the task of inputting the doctor's visits and actions in the billing system, taking sample materials for laboratory tests and mixing injectable drugs. These tasks are non-nursing tasks.

A non-nursing staff was found doing nursing assignments of setting and removing IV, administering medicines, and treating wounds. Observation results of the ward facilities discovered seven patient rooms on the same floor, 36

beds, a nurse station in the middle of the room, bathrooms outside the patient's room, and each bed equipped with a patient bell.

The secondary data showed the number of Surgical and Internal Inpatient Installation B nurses was 13 people, one person with a bachelor degree in Nursing and 12 people were from Diploma 3. Also, there was one intern nurse. The quality of nurses in Surgical and Internal Inpatient Installation was varied. Based on performance appraisal and tenure, nurses were grouped into senior, mid-level, and junior nurses. Senior nurses were five people, mid-level nurses were five people, and junior nurses were three people. Besides, one intern nurse was also present. The data showed that inpatient BOR was 63%, and the census of patients was 26.

The results of the identification of the root causes found that the cause of the high workload on nurses in Surgical and Internal Inpatient Installation B was the shortage of nurses, the varied quality of nurses, non-nursing care tasks performed by nurses, and non-supportive nurse call and patient bathroom facilities. The analysis can be seen in Figure 1.

Varied qualities of the nurses affected the workload of nurses. Nurses who were still junior and did internship burdened the senior nurses. Junior nurses and interns carry out low performance compared to mid-level and senior nurses. Junior nurses were not as skilful as senior and mid-level nurses. Besides being unskilled and inept, apprentice nurses were still unable to be independent. During performing activities, senior nurses were given tasks of guiding and supervising junior nurses and interns.

Researchers conducted interviews with participants to obtain information on the causes of high nurse workloads. At the time of the interview, the financial officer explained the cause of the financial administration assignment to the nurse.

"..... well, because the nurse is the person who did the action and who accompanied the doctor visit, after being input by the nurses, the financial officer will validate the data later"

Interviews were also conducted with the vice director of service regarding the causes of financial administrative tasks performed by nurses.

"..... because there are no administrative officers appointed specifically on the site at the inpatient installation to perform administrative functions because the hospital has assumed that the nurses can still bear the task....."

Nurses took blood samples for laboratory tests. The head of the laboratory installation explained the cause of the task of taking blood specimens to be borne by nurses rather than health analysts.

"..... so far, taking blood sampling in inpatient is nurses who usually do it because this task is attached to nurses, and nurses better understand the anatomy of the human body. Nurses who take blood samples, then the blood are taken by the courier from the laboratory In addition, there are six health analysts, two of whom have not yet participated in phlebotomy training, in addition to the inpatient ward, all blood samples are done by analysts"

An interview with the vice director of service found an explanation of the cause of blood sampling performed by the nurses.

"..... indeed, back then, the first persons who could do the sampling were nurses who could perform phlebotomies. At Baptis Batu Hospital, it seems that they had not yet participated in phlebotomy training, but please recheck about this in the laboratory"

The results of interviews with the vice director of the service obtained an explanation of the causes of sterile dispensing carried out by nurses.

"..... we do have pharmacists but haven't done the clinical pharmacy, but certainly the number of pharmacists is still lacking, from the needs of 8 people, there are only five people"

Interviews about the cause of the task of dispensing the sterile preparation to the nurse were also conducted with the head of the pharmaceutical installation.

"..... so far it has been the duty of nurses, actually according to the regulations it is indeed the duty of pharmacy, but it hasn't been implemented yet here ... now it is still at the stage of the review process on the need for facilities and human resources....."

The results of the interview found that the nurse performed non-nursing tasks. The work of administration of billing systems, taking blood samples of patients, and mixing drugs are jobs outside the duties of nurses. Entering data into the billing system is a financial administration task. Taking blood samples of patients is

Nurses at IRNA BDB perform nursing and non-nursing tasks. Non-nursing task among other tasks related to financial administration, laboratory and pharmacy.

The results of observations on infrastructure and facilities revealed that nurse call at Surgical and Internal Inpatient Installation B was still using a one-way system. The nurse call system was in the form of a patient bell that is provided in each patient's bed. The patient bell was

provided for patients if they need a nurse. Patients who needed a nurse could press the patient's bell, and the patient's bell sounded at the nurse station. The nurse who heard the bell would come to the patient's room based on the patient's bed location information through the nurse call system to see the patient's condition and asked the patient's needs. The sound of the nurse call could not provide precise information about a patient's needs. When the patient's bell rang, the nurse did not know the patient's needs, the patient's needs were known when the nurse met the patient. After knowing the patient's needs, the nurse would go to the nurse station to pick up the equipment and/or medicine according to the patient's needs. This situation increased the workload of nurses because the nurses had to go back and forth to visit patients to meet the needs of patients.

The patient's bathroom in Surgical and Internal Inpatient Installation B is outside the patient's room. Partial care patients cannot be independent to meet the needs of urinating and defecating, so they need help. Patients without a caretaker needed help from a nurse when they needed to urinate or defecate. These circumstances increased the workload of nurses. The results of the interview with the head of Surgical and Internal Inpatient Installation B explained the location of the patient's bathroom.

"..... the patient's bathroom has always been outside the patient's room. There are still no plans to move the bathroom into the patient's room"

Secondary documentation data of the hospital's strategic plan showed that the Hospital did not plan to renovate the bathroom at Surgical and Internal Inpatient Installation B.

Figure 1 indicates high nurse workload at Surgical and Internal Inpatient Installation B Batu Baptist Hospital was influenced by various factors, namely insufficient quantity of nurses, differences in nurse's quality, non-nursing tasks performed by nurses, and patient facilities that are less supportive. The shortage of nurses caused the workload of nurses to increase; this is supported by several research

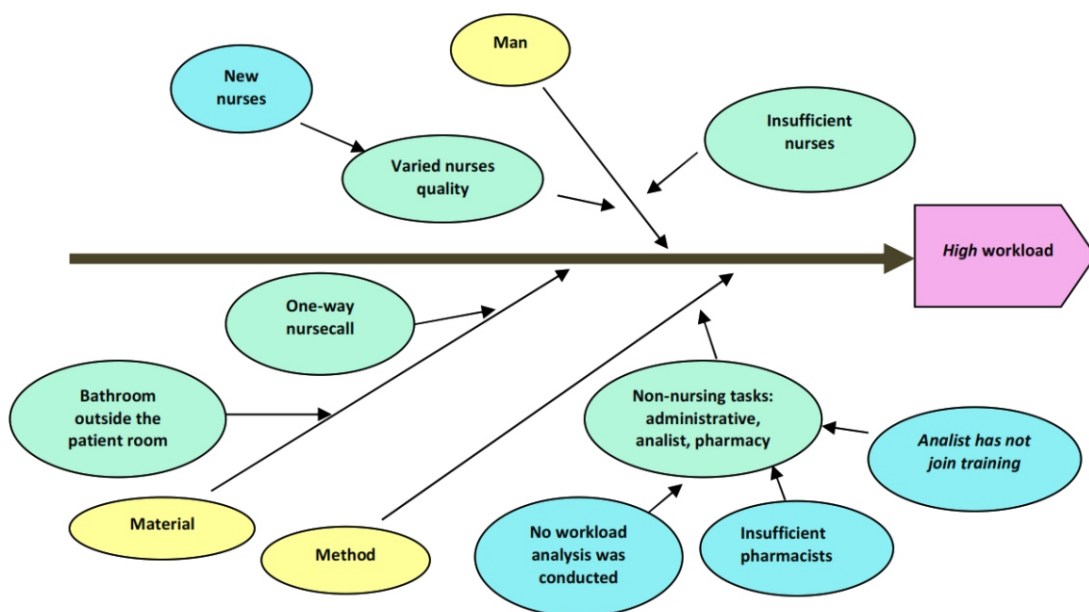


Figure 1. Root cause analysis

findings that high workload is due to the lack of nurses (13-17) The addition of 3 nurses needs to be done to overcome this. The author recommends adding two nurses, if the patient's blood sampling task is given to the health analyst, sterile dispensing is given to the pharmacy, and inputting data in the billing system is given to the financial staff.

DISCUSSION

The workload of nurses is influenced by various factors. Factors that influence the high workload of nurses include human resource management, the availability of infrastructure and policies, regulations and procedures that apply in the hospital.

The difference in nurse's completeness increases the workload. This finding reinforces the research conducted by the Ajitia MGN *et al.*, that states differences in competencies increase employee workload. The quality of the nurse influences a nurse's productivity; the higher the quality, the higher the productivity (18). The ability of nurses can be improved through training, education, and development. Adding new knowledge, improving nurse's performance, and improving system performance can be upgraded through a training process (19). Improving the quality of interns and junior nurses needs to be done through intensive training. Education and training encourage nurses to be independent, skilled, and agile, thus reducing the workload of senior and mid-level nurses.

Nurses, in real practice, perform nursing tasks and non-nursing nursing tasks. The work of administration of billing systems, taking blood samples of patients, and mixing drugs are jobs outside the duties of nurses. Retraningsih's research (20) stated that the nurse workload is getting higher because they perform non-nursing tasks. Nurse workload can be reduced by assigning tasks of entering data in the billing system from nurses to financial administrative personnel. Analysis of the workload of health analysts and phlebotomy training for untrained personnel needs to be done to consider the shift of blood sampling tasks from nurses to health analysts. Assessment of HR needs and facilities needs to be completed to implement clinical pharmacy services. The application of clinical pharmacy will shift the sterile dispensing workload from nurses to pharmacists.

Infrastructure conditions can support nurses' tasks or even increase the workload for nurses. The development of information technology has produced a nurse call system that can effectively provide information about patient problems. A more effective and efficient nurse call system is a system that can be used to communicate in both directions so that patients or their caretakers can convey the problems to the nurse. The system can reduce the workload of nurses. The results of research on nurse call systems that are more effective and efficient are smart nurse call systems. This system can call nurses automatically through the heart rate sensor and the patient's temperature sensor, which are mounted on the patient's body, and the nurse button that can be pressed by the patient or the patient's caretakers (21,22). Replacement of the nurse call system by using a nurse call system that can be used to communicate both ways is one solution to reduce the workload of nurses.

Patient's bathrooms that were located in one area outside the patient's room increase the workload of nurses if the patient is a partial care patient. The farther the patient's room from the bathroom, the higher the burden of the nurses. The condition of facilities and infrastructure that are not supportive can increase nurse workload. This is in accordance with the Decree of the Minister of Health of, which states that the workload can be increasingly heavy due to unfavorable environmental conditions (23). Placement of the patient bathroom into each patient room can reduce the nurse workload.

The factors that influence the high workload of Surgical and Internal Inpatient Installation B nurses are man, method, and material factors. The man factor is that the number of nurses is insufficient and junior nurses and interns are still found. The method factor is that the nurse performs non-care nursing tasks, namely financial administrative tasks, blood sampling for laboratory examinations, and dispensing sterile pharmaceutical preparations. Material factors are the one-way nurse call system facility and the patient's bathroom located outside the patient's room. The authors suggest that the hospital should add three more nurses, provide intensive education and training to interns and junior nurses, transfer non-nursing tasks to financial staff, health analysts, and pharmacy staff, change the nurse call system to a two-way system.

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