

A Study to Determine Nurse Staff –Patient Ratio and the Work Load in the Icu’s Of A Tertiary Care Hospital

Suviksha Shetty *¹, Vidya Bhagat², Vijaya Parameshwari,³ Sahana salian⁴

Lecturer 1, Professor 2, Professor and Head of the department 3, Student 4

A.J .Institute of Hospital Management Mangalore, Rajiv Gandhi University for Health Science

Abstract

Nursing protects, promotes and optimizes health and capacity, prevents illness and injury, promotes healing, diagnoses and treats human responses to alleviate suffering, and advocates for the care of individuals, families, groups, communities and the communities. One of the most often studied aspects among the quality patient care are nursing workload, nurse patient ratio, nurse’s availability in the intensive care unit, which directly has an impact on the efficacy of quality patient care. The purpose of this study is to assess the Nurse Patient Ratio as per the statutory requirements. To advocate the availability of Nursing Staff in the ICU’s. To study the workload of all the staff nurses in the ICU’s & calculating nursing staff requirements’ Descriptive research is used. It is carried out in SICU, MICU, CCU and ITU. The number of patients in the observational study was 206 and the number of nurses was 24. Data collection is carried on needed legal requirements. Data were tabulated and percentile score were calculated. Results demonstrated the need for refining of stature patient-nurse ratio, nursing workload and nursing availability in ICU. The study was useful in drawing out the limitations which would pave a way for improved planning.

Keywords: surgical intensive care unit; intensive care unit; coronary disease department; thoracic intensive unit; patient; nurse; Workload

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I. Introduction

The nurse-patient ratio can be defined as "how many patients a nurse cares for at the same time". [1] Regarding the nursing staff, to ensure sufficient assistance to meet the needs of patients, the minimum number of professionals is required. Pre-conference staffing requirements are calculated using a systematic process, which is the basis for planning and evaluation, and uses quantitative and qualitative measures to determine the staff and nurses needed to provide safe patient care. The nursing workload assessment is useful for predicting time spent caring for the patient, nursing knowledge, and combining necessary nursing skills. Increased workload is one of the main problems in the fields of health and treatment, especially in the intensive care unit. It is also one of the most important sources of stress for nurses working in the intensive care unit. Excessive workload can have undesirable consequences for nurses, other intensive care unit staff, and patients. In the ICU, patient care is designated through medical and emergency interventions and support. Therefore, for an effective nursing role, you need to assess their workload.

The assessment of the nursing workload, especially in the ICU, is an important and key factor in the following aspects: reasonable allocation of nursing staff in these departments, reasonable planning to reduce the work pressure of nurses, identifying problems related to high workload and reduced nursing treatment costs and improves the quality and effectiveness of patient care. In hospitals, this is a divergent topic because you must also meet the regulatory requirements of the responsible body and the workload of the nursing staff team. When it comes to specialized wards, such as intensive care units, research on this topic is particularly important, because the imbalance in the nurse-to-patient ratio can lead to higher costs and reduced patient safety. More seriously ill patients require a higher nursing workload, and enough nurses can reduce the risk of death, burnout, and job dissatisfaction. The hospital pursues different goals at the same time: providing patients with quality services, quality care, excellent operations, and staff retention. This requires a good balance between the needs of the patient and the caregiver. One way to ensure a proper fit between the needs of the patient and caregivers is to use workload management methods. [2] The high nursing workload has several consequences. The heavy nursing workload will seriously affect the safety of patients. Therefore, the nurse-patient relationship can be used to compare the results of the unit and its patients related to the nursing staff. [3]

The Intensive Care Unit (ICU) is a complex technical environment associated with high levels of emotional distress and workload. The assessment of the nursing workload, especially in the ICU, is an important and key factor in the following aspects: reasonable allocation of nursing staff in these departments, reasonable

planning to reduce the work pressure of nurses, identifying problems related to high workload and reducing nursing and treatment costs and increasing the quality and effectiveness of patient care.

To study the Nurse Patient Ratio as per the statutory requirements. To study the Nurse Patient Ratio as per the statutory requirements. To assess the availability of Nursing Staff in the ICU's. To study the workload of all the Staff Nurses in the ICU's & calculating Nursing Staff requirements.

II. Methodology

Descriptive research is used. It is carried out in SICU, MICU, CCU and ITU. The number of patients in the observational study was 206 and the number of nurses was 24. Data for the first objective are collected from legal requirements. Based on researcher observations, researcher collected data on the second objective and conducted interviews with the SICU, MICU, CCU, and ITU nursing staff. Finally, when looking at the data of the third objective it is observed, they used their daily activities for nurses in SICU, MICU, CCU and ITU or the workload of the staff to the patients, which also included the age and sex of the patient. The graph shows the workload of nurses.

III. Results

Current research is carried out in different gender and age categories in the ICU. The results show that the number of patients admitted to the ICU is higher. The majority are male patients (60.56%), with an approximate age of (60.70) years (30.23%). The workload of the staff nurses is also considered based on the daily activities of the staff. Based on patient monitoring, medication, mobilization and positioning, family members, and patient support and care (including procedures), there are 100% ICU nurses to support patients on the ventilator .

1) To study the nurse-patient ratio as per the statutory requirements

The 4 ICUs were included for this study. They are Surgical Intensive Care Unit (SICU), Medical Intensive Care Unit (MICU), Coronary Care Unit (CCU) and Intensive Thoracic Unit (ITU).The nurse-patient ratio as per the statutory requirements are:

Table 1:Nurse-Patient ratio of Surgical Intensive Care Unit(SICU)

Level of care	Nurse- patient ratio
Level I	1:1
Level II	1:2
Isolation	1:1

Level I- Ventilator Patients, Level II-Non-Ventilator Patients

Table 2: Nurse-Patient ratio of Medical Intensive Care Unit (MICU)

Level of care	Nurse- patient ratio
Level I	1:1
Level II	1:2
Isolation	1:1

Level I- Ventilator Patients, Level II-Non-Ventilator Patients

Table 3: Nurse-Patient ratio of Coronary Care Unit (CCU)

Level of care	Nurse- patient ratio
Level I	1:1
Level II	1:2
Isolation	1:1

Level I- Ventilator Patients, Level II-Non-Ventilator Patients

Table 4: Nurse-Patient ratio of Intensive Thoracic Unit (ITU)

Level of care	Nurse- patient ratio
Level I	1:1
Level II	1:2
Isolation	1:1

Level I- Ventilator Patients, Level II-Non-Ventilator Patients

2) To assess the availability of Nursing Staff in the ICU's

As per the observation, the assessment of availability of nursing staff in the ICUs was:

Table 1: Availability of nurse-patient ratio in Surgical Intensive Care Unit (SICU)

Level of care	Nurse- patient ratio
Level I	1:2
Level II	1:4
Isolation	1:1

Level I- Ventilator Patients, Level II-Non-Ventilator Patients

Table 2: Availability of nurse-patient ratio in Medical Intensive Care Unit (MICU)

Level of care	Nurse- patient ratio
Level I	1:2
Level II	1:3
Isolation	1:1

Level I- Ventilator Patients, Level II-Non-Ventilator Patients

Table 3: Availability of nurse-patient ratio in Coronary Care Unit (CCU)

Level of care	Nurse- patient ratio
Level I	1:2
Level II	1:3
Isolation	1:1

Level I- Ventilator Patients, Level II-Non-Ventilator Patients

Table 4: Availability of nurse-patient ratio in Intensive Thoracic Unit (ITU)

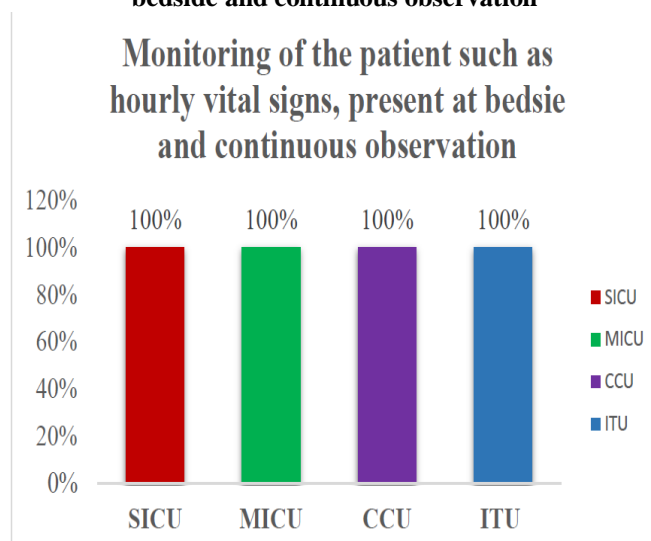
Level of care	Nurse- patient ratio
Level I	1:1
Level II	1:2
Isolation	1:1

Level I- Ventilator Patients, Level II-Non-Ventilator Patients

3) To study the workload of all the Staff Nurses in the ICU's & calculating Nursing Staff requirements.

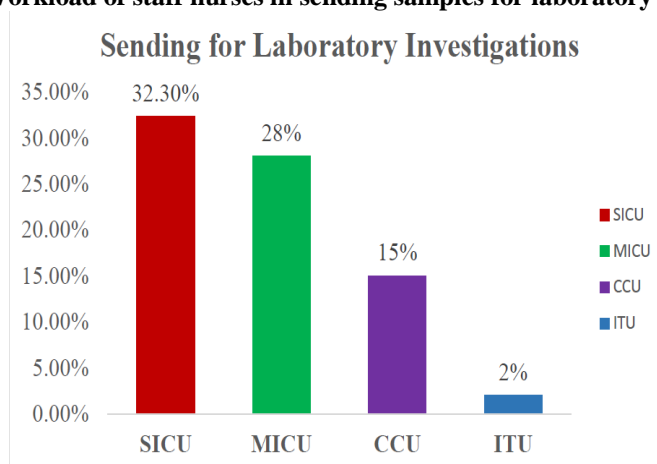
Graphic representations

Figure 1: Workload of staff nurses in monitoring of the patient such as hourly vital signs, present at bedside and continuous observation



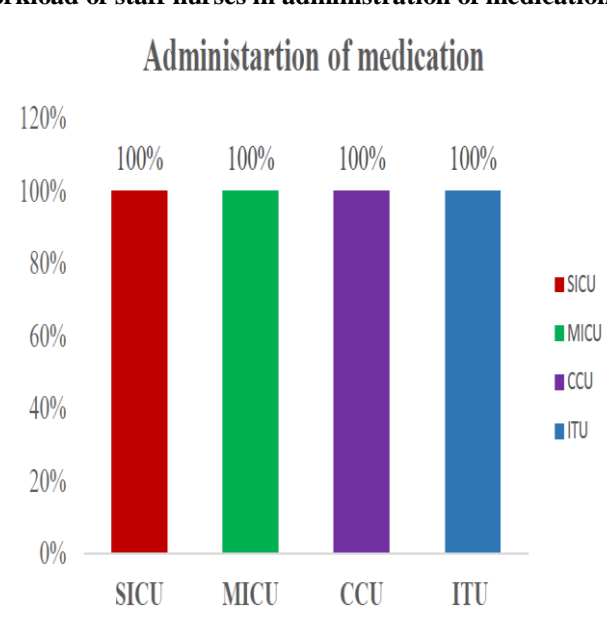
When a patient is admitted to an ICU, he or she requires the most precise and consistent treatment possible in order to improve the patient's outcome. Even if the ratio is higher, the staff nurses must check vitals and provide continuous supervision. As a result, it is the responsibility and workload of the nurses in the ICUs to care for the patients. The graph above depicts the workload in the SICU, MICU, CCU, and ICU at 100%.

Figure 2: Workload of staff nurses in sending samples for laboratory Investigations



The laboratory investigation is a part of the medical aspect of patient care. The staff nurse's job is to review the case sheet and submit the samples to the lab for further analysis. In order to submit the sample for investigation, the above graph reflects 32.30 percent of the workload in SICU, 28 percent of the workload in MICU, 15 percent of the workload in CCU, and 2% of the nurses workload in ITU

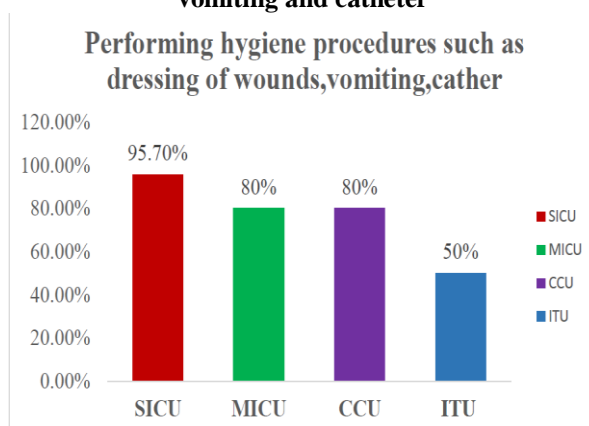
Figure 3: Workload of staff nurses in administration of medication to the patients



education, right client, right dose etc.)

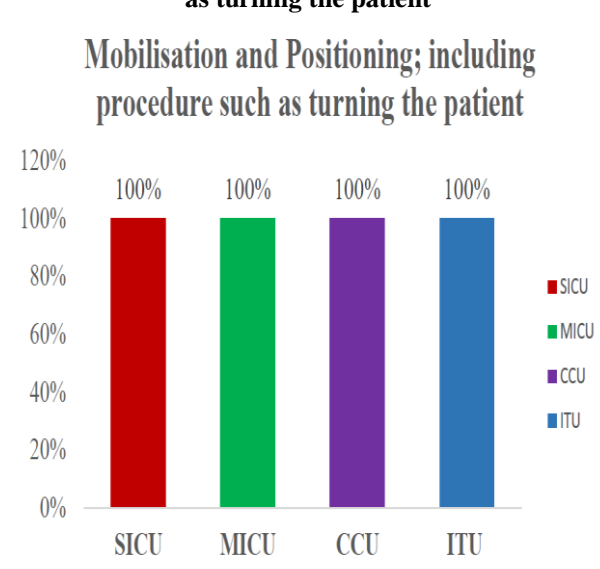
Within their scope of practise, nurses are responsible for prescribing drugs. As a result, it was determined that all ICUs have a 100 percent workload when administering drugs because nurses must cross-check with case sheets and follow the seven rights of medication administration (right m

Figure 4: Workload of staff nurses in performing hygiene procedures such as dressing of wounds, vomiting and catheter



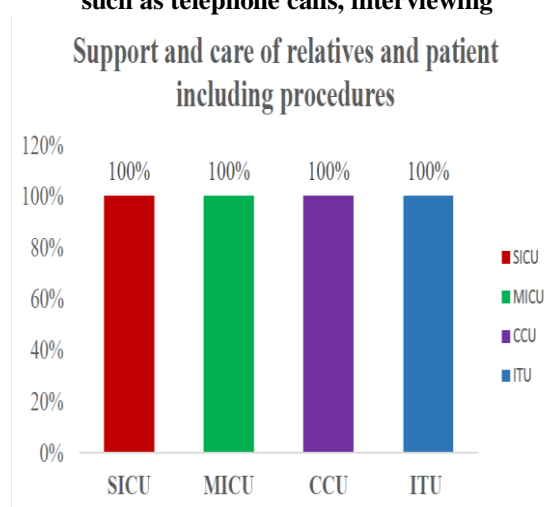
Keeping a patient's hygiene is an essential part of nursing care. The workload of performing hygiene procedures is reflected in the graph above, with 95 percent of the nurses' workload in SICU, 80 percent in MICU, 80 percent in CCU, and 50 percent in ITU.

Figure 5: Workload of staff nurses in mobilization and positioning of patients including procedure such as turning the patient



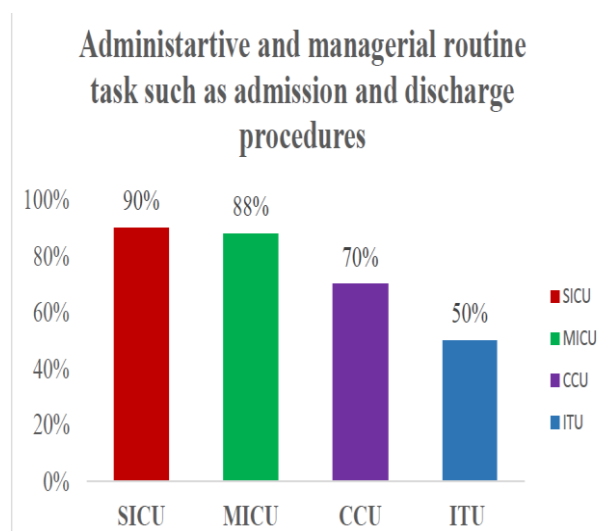
Mobilization and positioning are critical in preventing patients from developing bed sores. As a result, despite their busy schedules, the nurses in ICUs face a significant workload in mobilising the patient. As a result, it has been shown that 100 percent of the workload in all ICUs is related to mobilisation and positioning; for example, turning the patient, forcing them to sit in a wheelchair, and so on.

Figure 6: Workload of staff nurses during Support and care of relatives and patient including procedures such as telephone calls, interviewing



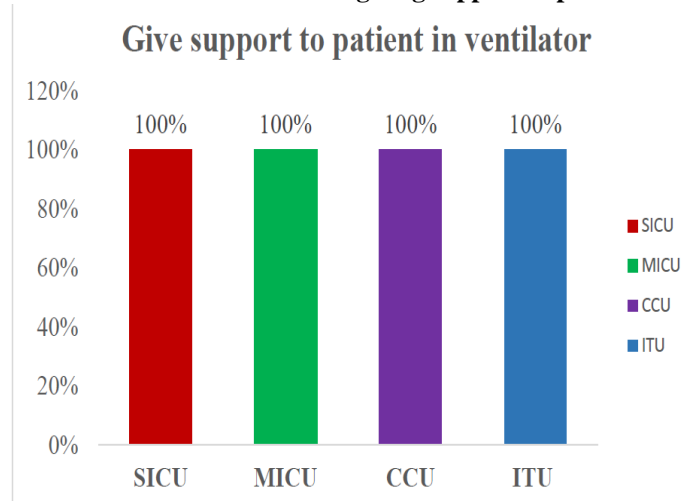
Giving help to the patient party keeps the patient party at ease by keeping them aware of their patient's condition on a daily basis, which would be informed by the nurses in ICUs, and in between nurses must even manage phone calls despite their busy schedule. The graph above depicts 100 percent of a nurse's workload, which includes operations such as supporting and caring for families and patients.

Figure 7: Workload of staff nurses in administrative and managerial routine tasks such as admission and discharge procedures



A considerable amount of nursing time is spent during the admission and discharge period. It entails preparing the patient for admission, performing the admission process, transferring the patient, and discharging the patient. As a result, nurses must adhere to the hospital's strict admission and discharge protocols. According to the graph above, 90% of the workload was found in the SICU and 50% of the workload was found in the ICU.

Figure 8: Workload of staff nurses in giving support to patient in ventilator



The main and demanding workload for nurses in ICUs is providing care to patients on ventilators, since ventilator patients need constant supervision and a 1:1 nurse-to-patient ratio is not available. As a result, the above graph depicted a 100 percent workload in both of the respective ICUs.

IV. Discussion

According to the findings of the current report, the nurse-patient ratio in the SICU, MICU, and CCU is not preserved in accordance with legislative requirements. The bulk of the male patients were admitted to ICUs and were between the ages of 60 and 70. The Surgical Intensive Care Unit had the highest workload of all the ICUs (SICU).

As a result of the increased number of surgery cases admitted to SICU, the dressing of the patient's condition must be monitored on a regular basis. SICU nurses are under a greater amount of stress. The vast majority of the patients were located in the SICU. ITU was visited by a smaller number of patients. In ITU, the nurse-to-patient ratio was preserved in accordance with legislative requirements. In all ICUs, there was a 100 percent workload on patient supervision, including vitals checks, prescription administration, mobilisation and positioning, and help and care of patient family, including providing details to the patient party, receiving calls, interviewing, and providing support to the patient on the ventilator. During laboratory investigations, the workload for staff nurses would be reduced. According to my observations, the morning job pressure would be higher because they must indent the medications to the pharmacy. When interviewed, the staff nurses expressed satisfaction with the ratio assigned to them, stating that they are all qualified and experienced. And when other staff nurses are on leave do the staff nurses have problems. The nurse-to-patient ratio tends to rise from 1:2 to 1:3 and even 1:4 at that time.

V. Conclusion

Nurses are extremely important in the healthcare industry. One of the most important aspects of patient care is the nursing workload. It assists us in calculating the nursing staff requirements in specific ICUs based on the nursing workload. To understand the workload, all changes must be observed, and it is also important to include the staff nurses and address their needs in the process. If an adequate nurse-to-patient ratio is allocated, this would not only increase the quality of patient care but also improve patient satisfaction.

The nurse-to-patient ratio and the workload of staff nurses in various ICUs were also revealed in this report. While the nurse-to-patient ratio is not as required, it is adequate for the workload, and when staff nurses were interviewed, they expressed satisfaction with their ratio.

CONFLICT OF INTEREST

There is no conflict of interest

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