

## Factors influencing the ice nurses workload

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**Abstract:** *Background:* Shortage in the critical care field was a trigger for lots of studies & researches to find out an appropriate tool that can measure the nurses workload in an ICU working environment, in order to find ways to overcome this worsening situation. Workload is defined as one of the most important factors influencing the health care service especially intensive care department that required more care and attention to the rapid emergency interventions. *Objectives:* This study aimed to identify the factors influencing workload of nurses working in adult ICUs on one of the teaching hospital in KSA.

*Materials and methods:* A cross-sectional and analytic descriptive study was conducted in Jeddah. All nurses (n = 110) works in ICUs of the hospital where selected and studied using convenient sampling method. *Results:* the results were divided into three major categories, including structure, process, and activity. The activity factor as difficulty moving over weight patient was identified as the top factor by (95.8%), it followed by on shortages of secretaries and support service staff (88.8%). The results of this study have shown that there is a strong relationship between the factors that mentioned earlier and the workload. Activity factors have the major impact on nurses' workload followed by organization and process respectively. *Conclusion:* The nursing workload was found to have a relation with the care given that provided by the nurses. However, further studies need to take place to discover more factors that contributes of ICU nursing workload.

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### I. Background to the Study

Workload is defined as one of the most important factors influencing the health care service especially intensive care department that required more care and attention to the rapid emergency interventions (Hoonakker, et;al 2011). Nurses roles has been exchange and extended so far to take account of a number of tasks previously performed by doctors (Coomber, cited from, Lamada & Zayed, 2014)

In 2010, Saudi Arabia is countenance with a chronic shortage of nurses the situation is getting worse due to the continued quit of Nursing (Lamada & Zayed, 2014). This shortage in this critical field was a trigger for lots of studies & researches to find out a proper tool that can measure the workload of an ICU working environment in order to find ways to overcome this problem.

Currently the ICUs in one of the teaching hospital in KSA which having 2 units, medical & surgical having total number of 28 to 30 bedded with BOR 95 to 100% bedded with 110 nurses, Nurses are working on a ratio 1 to or 1 to 2. The nurses are working on 12 hours shift duty from 7 a.m. to 7 p.m. and vice versa. The studied hospital gone through frequent accreditation to maintain quality of care Which means adding some new policies and procedures, also committed to the reception of many students and trainees which requires training and supervision. The nurses are also involved and participated in several continuous education projects for the hospital improvement. Data from 2015 showed there were some indicators identified such as pressure ulcer, accidental catheter removal, UTI, blood stream infection; these could be related to increase nurses' workload. There are so many factors that affecting the workload in intensive care units therefore this study is to explore and identify these factors influencing workload of nurses working in adult ICUs of the teaching hospital

### II. Objectives of the Study

General Aim: is to study the factors influencing workload of nurses working in adult ICUs of the teaching hospital

#### Specific objectives:

- To explore the factors influencing by the organization
- To investigate the factors influenced by the nurse's activities
- To discover the factor that influenced by process

### **III. Methodology**

This study utilized a cross-sectional descriptive and analytic descriptive method to answer the research questions and objectives. The study was conducted among ICU nurses in a teaching hospital which has total number of 26 ICU bed divided to medical and surgical ICU. All nurses in MICU and SICU, clinical instructor and head nurses were invited to participate to response to questionnaires which adopted from Bahadori 2014 that consist of two sections; demographical characteristic of the nurses and 25 items on the nursing overload which divided to process, structure and activity questions.

### **IV. Results**

Nurses working in adults ICU unit in King Abdulaziz University hospital filled a total of 71 questionnaires. The majority of the participants were working in medical ICU unit (MICU) (63.4%).

#### **Factors affecting nurses' workload:**

The disruption of nurse's opinion about factors influencing the workload in adult ICU is illustrated in Table 1.

#### **I. Organization factors:**

The top organization factors that nurse's agreed on its effect on their workload are shortages of secretaries, support service staff - clerk/porter/cleaner (88.8%), followed by Large number and variety of tasks assigned to the nurses (84.5%). Lack of stability and consistency in the hospital organization was the third factor that nurses agreed that it is affecting their workload (73.2%) while the fourth factor was that nurses are performing non-nursing related task (71.8%). Finally, 60.6% of the participants agreed that time needed to access to the tools and materials is a factor increasing their workload.

On the other hand, poor personal work/ poor individual time management and improper design of the hospital and its units were the bottom factors that nurses mentioned they would affect the workload (7% and 15.5% respectively).

#### **II. Process factors:**

Number one process factor that nurses agreed that it increases their workload is unanticipated and unscheduled admissions and discharge (54.9%). Additionally, 33.8% of the participants agreed that mismatch between the capacity of unit and the number of patients is also increasing their workload. Lack of teamwork in nursing processes/care and spending too much time in the meetings/committees of different nursing units were in the last process factors that affecting nurse's workload.

#### **III. Activity factors:**

High percentage of participants agreed that over weight in some patients causing difficulty in moving them is the main activity factor that affects their workload (95.8%) while nurses required to help the students and newly employed staff was in second place of activity factors that affecting their workload (77.5%).

In summary the main factors (organization, process, and activity) that affected nurse's workload in their opinion are difficulty in moving overweight patients (95.8%), followed by shortages of secretaries and support service staff (88.8%), large number with variety of tasks assigned to the nurses (84.5%), nurses obligation to help the students and newly employed staff (77.5%), and nurses are performing non nursing related task (71.8%). Moreover, limited space of patient's rooms in the units was the least factor that participants agreed on to be a factor that affecting the workload (26.8%) (Figure1). On the other hand, more than half of the participants disagreed that lack of teamwork in nursing processes/care is affecting their workload. Lack of clear responsibilities and authorities and limited space of patients rooms in the units were on the second place of factors that nurses disagreed on their effect on the workload.

### **V. Association between nurses working unit and factors that affecting their workload**

The association between nurses working unit and factors that affecting their workload was mostly not significant (Table 2). The factors that showed significant differences between the MICU and SICU are the following:

#### **I. Organization factors:**

A significantly higher proportion of surgical ICU unit nurses (SICU) approved that improper design of the hospital and its units, the time needed to access to the tools and materials, and the limited space of patients rooms in the units are the main organization factors that affecting the workload (P-value: 0.003, 0.01, 0.027 respectively).

## **II. Process activity:**

More SICU nurses (50%) than MICU nurses (24%) significantly agreed that mismatching between the capacity of unit and the number of patients (P-value: 0.05).

## **III. Activity factors:**

A significant higher percentage of SICU nurses (92%) than MICU nurses (69%) agreed that their obligation to help the students and newly employed staff (P=value: 0.048) are process and activity factors that increase the workload. On the other hand, both groups agreed that over weight in some patients causing difficulty in moving them without any significant difference (P-value: 0.7).

## **VI. Discussion**

This study conducted in teaching hospital among critical care nurses at medical intensive care unit and surgical intensive care unit .the aim of this study is to identify the organizational, process and activity factors that contribute in nursing workload to increase the quality of care and improve patient safety. It found that critical care nurses usually face situations where require them to make important decisions related to patients' lives taking into consideration these decisions have to meet patients and their family's expectations.

In the review of literature found that the changes in the health care environment has an effect in the workload, patient safety and quality of work. Traditional workload measure does not guarantee the enough capture for the workload. also the researches focus on the task related nurses rather than understanding of the dimension of workload. on the other hand, the human factor principles mental and perceptual has been examined to ability of nurses to meet the workload demand and ability of human to focus on multiple assignments simultaneously aware of these assignments. This review emphasizes the importance of nursing workload researches to include a personal perception of nurses as part of any measure workload(Neill, 2011).

Biskop, E., &Boström, E, they found that significant relation between increase in the number of patient assigned to the nurses and increase the prevalence of central line associated to blood stream infection ,patient fall and absenteeism which lead to decrease the quality of care and patient safety(Biskop&Boström, 2014) .The present study identify the workload between nurses using questionnaires (contain of 26 factors) adopted from Bahadori 2014 that strongly correlated to workload as evidence of previous studies. These factors categorize to organizational, process and activity, the nurses agree with the most of these factors. Nurses agree on the majority of these factors with a variation degree of agreement as follows, (95.8%) of nurses have difficulty in moving overweight patients therefore is consider is the most factor that affecting the nursing workload followed by (88.8%) of nurses agree with the factor of shortages of secretaries and support service staff . Large number with variety of tasks assigned to the nurses (84.5%) take place as the third factor while was the first factor affect the nursing workload (Bahadori, 2014). Next factor nurses obligation to help the students and newly employed staff (77.5%). Nurses are performing non nursing related task have got (71.8%). Furthermore, limited space of patient's rooms in the units was the least factor that participants agreed on to be a factor that affecting the workload (26.8%). On the other hand, more than half of the participants disagree that lack of teamwork in nursing processes/care is affecting their workload. Lack of clear responsibilities and authorities and limited space of patients rooms in the units were on the second place of factors that nurses disagree on their effect on the workload (Bahadori, 2014).

## **VII. Conclusion & recommendation**

The nursing workload has strong relation with the care output that provided by the nurses. Therefore, this study aim to identify essential factors that affecting nursing workload. Organizational, process and activity factors have been found as the most factors affecting the nursing workload. The study resulted there is a relation between organizational, process and activity factors and workload. The activity factor difficulty moving over weight patient was identified as the top factor and followed by shortages of secretaries and support service staff. Finally,the results of this study have shown that there is a strong relationship between the factors that mentioned earlier and the workload. Activity factors have the major impact on nurses' workload followed by organization and process respectively. We believe that further studies need to take place to find out more factors that contribute of nursing workload such as Human factors.

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