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NOTE PREVIEW ARTICLE

APPLICATION OF THE NURSING ACTIVITIES SCORE IN AN INTENSIVE CARE UNIT OF BURNED PATIENTS

APLICAÇÃO DO NURSING ACTIVITIES SCORE EM UMA UNIDADE DE TERAPIA INTENSIVA DE QUEIMADOS

APLICACIÓN DEL NURSING ACTIVITIES SCORE EN UNA UNIDAD DE CUIDADOS INTENSIVOS PARA QUEMADOS

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ABSTRACT

Objective: to assess the workload of the nursing staff working in the intensive care unit of the Burn Care Center in a teaching hospital in the city of Londrina, Paraná state, Brazil. **Methodology:** a descriptive field study with quantitative approach will be used. A tool will be used to identify the patient with regard to their personal and clinical characteristics with the daily appliance of the Nursing Activities Score (NAS). The NAS is an instrument that is composed by twenty-three variables. Data collection will take place daily through the application of the NAS, and the period of twenty-four hours will be considered starting at seven o'clock in the morning of a day until seven o'clock in the morning of the day after. Statistical analysis will be performed using SPSS (Statistical Package for Social Sciences) version 15.0. Observed will be absolute frequency and percentage, mean and standard deviation as the probability distribution of each variable considering a significance level of 5%. The research project was approved by the Ethics Committee of the Londrina State University (0187.0.268.00-11 CAAE). **Expected results:** to provide analysis of the workload of the nursing staff that develops assistance to patients with burns in intensive care unit of Burn Care Center, and to encourage the application of NAS in other scientific studies to give value to and assess the nursing team's workload. **Descriptors:** workload; nursing; intensive care unit; burn care unit.

RESUMO

Objetivo: avaliar a carga de trabalho da equipe de enfermagem em Unidade de Terapia Intensiva (UTI) de Centro de Tratamento de Queimados (CTQ) de um hospital escola do interior do Paraná a partir do *Nursing Activities Score* (NAS). **Método:** estudo de natureza descritiva, com abordagem quantitativa. Para coletar os dados será utilizado um instrumento para a identificação do paciente quanto às características pessoais e clínicas. A coleta dos dados será realizada diariamente por meio da aplicação do instrumento NAS que é composto por 23 variáveis e considerado como 24 horas o período das sete horas até às sete horas da manhã do dia seguinte. Aplicar-se-ão testes estatísticos paramétricos de média, desvio padrão ou não paramétricos de frequência e posição conforme distribuição de probabilidade de cada variável considerando um nível de significância de 5%. Os dados serão armazenados e analisados utilizando-se o programa Statistical Package of Social Sciences. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa da Universidade Estadual de Londrina (CAAE 0187.0.268.000-11). **Resultados esperados:** propiciar análise sobre a carga de trabalho da equipe de enfermagem que presta assistência em UTI de CTQ e estimular a aplicação do NAS em outros estudos científicos para estimar e avaliar a carga de trabalho da equipe. **Descritores:** carga de trabalho; enfermagem; unidade de terapia intensiva; unidade de queimados.

RESUMEN

Objetivo: evaluar la carga de trabajo del equipo de enfermería en la Unidad de Cuidados Intensivos (UCI) del Centro de Tratamiento de la Unidad de Quemados (CTQ) de un hospital escuela en el interior de Paraná a partir del *Nursing Activities Score* (NAS). **Metodología:** estudio descriptivo, con un enfoque cuantitativo. Para recolectar los datos se utilizará una herramienta para identificar al paciente referente a las características personales y clínicas. La recolección de los datos se llevará a cabo diariamente a través de la aplicación del dispositivo NAS que consta con 23 variables y se considerará por 24 horas el período comprendido entre las 07:00 de la mañana hasta las 07:00 de la mañana del día siguiente. Se aplicarán pruebas estadísticas paramétricas de promedio, desvío de estándar o no paramétrico de frecuencia y posición como la distribución de probabilidad de cada variable teniendo en cuenta un nivel de insignificancia del 5%. Los datos serán almacenados y analizados se utilizando el programa Statiscal Package of Social Sciences. El proyecto de pesquisa fue aprobado por el Comité de Ética en Pesquisa de la Universidad Estatal de Londrina (CAAE 0187.0.268.000-11). **Resultados esperados:** proporcionar un análisis sobre la carga de trabajo del equipo de enfermería que trabaja en la asistencia de la UCI de CTQ y fomentar la aplicación de la NAS en otros estudios científicos para evaluar y estimar la carga de trabajo del equipo. **Descriptores:** carga de trabajo; enfermería; unidad de cuidados intensivos; unidad de quemados.

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INTRODUCTION

Intensive Care Units (ICU) are vital areas designed for the internment of patients in serious condition who require continuous specialised professional attention, specific materials and technology required for diagnosis, monitoring and therapy.¹

Assistance to burned patients requires a third-level and highly-complex structure, with sufficient physical space, able professionals and auxiliary service support in diagnosis and intensive therapy to offer resoluteness to the system and quality in attending, as well as providing safety to professionals.² Due to the high complexity that these patients require, Burn Care Centres (BCC) were created aiming for the intensive care of burn victims of various causes, in different locations, size and depth of the injuries.³

In a study developed by two medium size health institutions of a municipality in Vale do Paraíba Paulista, one public and the other private, results showed that nurses felt overloaded with work in the ICU.⁴

It was observed that an accelerated process of change in all areas has been taking place, and that health organisations have been forced to modernise their ways of managing working processes, which also applies to nursing in ICU.⁵

With ICU considered as a complex unit and which concentrates human and highly-specialised and high-cost technological resources and in which there is the necessity to effectively train professionals to meet the care expected by patients and their families, the development of measuring instruments whose purpose is to verify the working demands of nurses has become necessary, together or parallel to the development of indices of gravity for patients in critical condition.⁶

For the provision of a nursing staff that meets the caring needs of patients, the application of an evaluation tool for patient dependency, regarding the need of direct and indirect nursing care, is imperative, as well as the knowledge about nursing professionals' skills. The provision of a nursing staff that adequately meets the desired standard of attending contributes to the quality of care of patients and family members, and consequently a safer and less tiring work for professionals as well as for the institution.⁷

The demand for more reliable methods in monitoring the quality of intensive care has grown considerably, and the nursing workload evaluation has shown to be indispensable as a

management resource in ICU.⁵⁻⁸

Also worth noting is that evaluating nursing workloads is fundamental, as an oversized team means high costs, and on the other hand, in case of a reduced team a drop in the efficacy/quality of assistance could occur, prolonging internment, generating a higher cost in the treatment of patients and provoking working overloads for professionals.⁹

The pioneering system for measuring workload in the nursing staff at the ICU was the *Therapeutic Intervention Scoring System* (TISS). TISS was envisioned in 1974, and its objective was to measure the gravity of patients and calculate the corresponding nursing workload in the ICU.¹⁰

TISS underwent revisions and updates (TISS-76 and TISS-28), with TISS-28 being used widely and internationally, bringing important subsidies for the dimensioning of staff and the allocation of nursing resources. However, in ICU, various criticisms were made by nurses, as the tool did not consider the collection of actions performed by nurses - not merely those of an assistential nature to the patient, but also those of support to family and administrative.¹⁰

Therefore, with the aim of adjusting the index in a way to more precisely evaluate the nursing workload in ICU, the *Nursing Activities Score* (NAS) was proposed as an instrument to measure and evaluate these loads. The NAS is a result of an expressive change in the TISS - 28.^{11,12}

The NAS was translated and validated in Portuguese and has strong evidence of being an instrument with the capacity to indicate the real needs of the patients, as well as evaluating the necessary work of the nursing staff in adult ICU.^{5-13,14}

The NAS is composed of seven categories: basic activities, ventilator, cardiovascular, renal, neurological, metabolic support and specific interventions. These categories are subdivided into twenty-three items. The basic activities category was divided into eight subcategories, among which five were not considered by the TISS-28: monitoring and controls, hygiene procedures, patient mobilisation and positioning, support and care for family members and patients, and administrative and managerial tasks.¹⁵

With the previous considerations in mind and aware that the care of burn patients, especially those in the Burn Care Centre's ICU who require intense and complex 24-hour care from nursing professionals, the objective of this study is to evaluate the workload of the

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nursing team in the ICU of a BCC at a teaching hospital in the interior of Paraná based on the NAS.

It is believed that the goal of this study will make a scientific contribution to the theme, regarding the workload of the nursing team and enabling the application of the NAS in other similar studies, significantly reflecting in the provision of the ideal number of nursing professionals to attend ICU patients in BCC and in this way reduce the workload of these employees.

METHODOLOGY

The study to be undertaken is a research project for the Masters in Nursing programme of the Londrina State University (LSU). A descriptive study with a quantitative approach was chosen. In order to develop a quantitative study, the researcher must plan and adopt research strategies with the purpose of obtaining precise and interpretable information.¹⁶ As for a descriptive study, the objective is to provide an approximate general vision of a determined fact, consisting in the analysis and description of the characteristics.¹⁷

The study will be undertaken at the ICU of the BCC of the University of Londrina Teaching Hospital (ULTH), located in the north of Paraná State. The BCC has ten ward beds and six beds in the ICU. The average occupancy of the ICU beds is 89%, and the average internment period is 17 days. The nursing team is formed by 10 nurses and 46 nursing technicians. In the distribution of the daily workload a team formed by nurse and nursing technicians assumes a determined number of patients according to the availability of people, gravity of the patients and the scheduling of procedures and balneotherapy.

Included shall be all patients with an age equal to or above 18 years, admitted consecutively to the BCC's ICU from 4 October 2011 to 30 May 2012, who were admitted for at least one day. Readmissions will be excluded from the study.

A tool for the identification of the patients will be used as their personal and clinical characteristics, such as: sex, age, burnt body surface, depth of burn, burn causing agent, origin, date and time of admission to the sector, destination, date and time of release from ICU. The data collection will be taken daily through the application of the NAS tool, which is composed of 23 variables, using as a database the patient charts with complementary information provided by nurses when necessary. Considered will be the

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information concerning the 24 hours of the day prior to 7 o'clock in the morning. As for the first day of internment, the actions taken from the first hour of internment in the BCC's ICU until seven o'clock of the following day will be included, whether 24 hours have been completed or not. Regarding the day of discharge, the data related to the period from seven o'clock until the moment of leaving the sector will be included.

Statistical parametric tests for mean, standard deviation and non-parametric tests of frequency and position conforming to probability distribution of each variable considering a significance level of 5% will be applied.

The data will be stored and analysed using the programme *Statistical Package of Social Sciences* (SPSS® 15.0).

The project in question was approved by the Ethics in Research Committee of the Londrina State University (LSU), under Resolution CEP/Uel: 214/2011 and CAAE: 0187.0.268.000-11.

EXPECTED RESULTS

It is expected that the data of this study will offer subsidies to show the workload of the nursing team who assist in the ICU of the ULTH's BCC, and consequently provide this institution with the means to appropriate the scheduling of workers according to the results that will be obtained, thus enabling the proportioning of quality assistance to patients, guaranteeing the safety of workers and contributing to the cost-benefit relationship.

It is also believed that the development of this research may demonstrate that the NAS tool is capable of more precisely portraying the activities of nursing, making it possible to be used in estimating the workload of nurses in the BCC's ICU.

Finally, it is hoped that the research can promote the application of the NAS in other scientific studies to estimate and evaluate the nursing teams' workloads and in this way contribute effectively in a more rational projection of the staffing levels necessary for meeting the needs of patients and reducing the overloading of employees.

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