When the nursing workload measurement among comatose patients becomes a reality...

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PURPOSE

Our neurologic unit of 30 beds is one of reference's centers for detection and differentiation of the comatose patients. So, our reference's center accommodate more and more comatose patients from different European countries.

The purpose of this work is to be able to quantify the nursing workload with comatose patients and to demonstrate that this one is heavier and harder than the workload with other neurological patients.

METHODS

B-NMDS

Since 2008, the Belgian Nursing Minimum Dataset (B-NMDS) quantify 91 nursing activities, structured in 23 classes and 6 domains.

Using the Nursing Interventions Classification (NIC) as an international nursing intervention ‘language’, moreover B-NMDS represents more accurately the workload of nursing care by taking into account most of the aspects in comparison with the previous version of NMDS (23 nursing interventions). However B-NMDS is still a selection of the 433 NIC interventions and thus, unable to cover all NIC activities.

Weighting nursing activities

In 2005-2007, the main goal of an explorative study financed by the Belgian Health Care Knowledge Centre (KCE) was to investigate how this revised B-NMDS could be used and integrated in the hospital financing system.

The time weighting of these 91 nursing activities of this federal tool was carried out within the framework of this study. All B-NMDS interventions and their score modalities were rated separately, independently of any patient. To facilitate interpretation the time rating per intervention is recoded to a relative weight expressed in relative points. A denominator of five minutes was chosen. Thus, we can calculate the nursing workload (in points) based on the carried out nursing activities.

RESULTS

From March 2008 to June 2010, B-NMDS was recorded during 150 days among all patients hospitalized in our neurology department, generating a total of 5,630 patient days (1,056 patients). Only days characterized by the presence of a comatose patient were taken into account. So, a total of 5,289 patient days (1,001 patients) were selected for the analysis (557%, 43%) with a middle age of 56 +/- 17 years old.

In this data set, a binary grouping variable was used: “comatose patient or not”. In these conditions, days were divided into 5,034 patient days for neurological (not comatose) patients (group A, grouping variable = 0) and 255 patient days for comatose patients (group B, grouping variable = 1).

The nursing workload was quantified by adding each nursing activities during identical recording day for one patient. Nursing workload per patient day was measured in points for the two groups: for the group A: \( m_A = 97.5 \) and \( m_B = 91 \) for the group A and heavier in the group B with \( m_B = 147.5 \) and \( m_B = 149 \).

Using the Mann-Whitney U Test and with a \( p \)-value \( < 0.05 \), we can reject the null hypothesis (H0: MedianA = MedianB). At the level of significance, there is enough evidence to conclude that there is a difference in the nursing workload of the two groups.

If we examine the workload at the level of the 23 classes (A to Z), we can observe that 17 classes of activities are significantly concerned with this higher workload (see table opposite)

CONCLUSIONS

As demonstrated by the results (difference in the nursing workload of the two groups), nurses feeling is quantified: the workload of comatose patient is higher than the other neurologic patients.

This is particularly the case of the following nursing activities classes: Health system and information management, Nutrition support, Risk management, Elimination management, Drugs management.

Moreover, the problem of the language and the assumption of foreign families responsibility should be added. So, next steps are:

- To publish these results in order to get a higher nursing staff taking care of comatose patients
- To reorganize the coma’s team.

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