

## **DISSERTATION DEFENSE: ALICE MIRANDA DOS SANTOS**

DATE: DECEMBER 30, 2020

TIME: 2:00 pm

PLACE: *Google Meet*

TITLE: ANALYSIS OF THE FUNCTIONALITY OF PATIENTS SURVIVING THE CRITICAL CONDITION AFTER IMMEDIATE HIGH INTENSIVE CARE UNIT

Key words: Critical Care. Principal component analysis. Functional State.

WORDS: 406

ABSTRACT:

Technological advances and access to information have had a positive impact on reducing the mortality rate of critically ill patients in the intensive care environment. Critical survivors have multiple impairments, associated with long periods of hospitalization, which extend after hospital discharge and characterize the Post-Intensive Care Syndrome (PICS). The changes encompass the physical, mental and cognitive domains and present themselves through signs, symptoms and varying degrees, which makes the diagnosis and the establishment of adequate treatment protocols difficult. Therefore, due to the variability of presentation and the severity of these changes, it is necessary to identify tools that assist in the systematization of the assessment and diagnosis of PICS. The aim of the present study was to evaluate and describe the impact of the hospitalization process in the Intensive Care Unit (ICU) on the physical, mental and cognitive domains, as well as to define the main variables related to the functionality of ICU surviving patients from a principal component analysis (PCA). This is a cross-sectional study, in which ICU survivors, with previous use of invasive ventilation  $\geq 48$  hours, were assessed after discharge through a multidimensional assessment strategy comprising: Spirometry, Ventilometry, Manovacuometry; Manual dynamometry; Medical Research Council (MRC), Barthel Index, Perme Scale, Hospital Anxiety and Depression Scale (HADS), and Mini Post-Mental State Examination (Mini-mental). The binomial test was applied to compare the proportions of the preserved and reduced functions in the sample. The exploratory analysis was carried out through the ACP, adopting 13 variables from the 9 instruments of the multidimensional assessment. A total of 30 patients (15 men) with a mean age

of 52 years were evaluated. A reduced function was observed in: Forced vital capacity (83.3%;  $p < 0.001$ ), maximum inspiratory pressure (60%), Perme scale (90%,  $p < 0.001$ ) and Barthel scale (73%,  $p < 0.001$ ). The PCA evaluation model explains 69.41% of the total variation for detecting functional changes in 3 main components. The main components 1, 2 and 3 accounted, respectively, for 40.4% (variables of functional performance, lung function and respiratory strength), 17.15% (predominance of mental function) and 11.86% (reducing the variables Handgrip and MRC) of the explained variance. The handgrip strength, the slow vital capacity, the Medical Research Council and the Mini-mental were disregarded from the synthesized model. The results of the present study demonstrate that critical survivors have higher percentages of reduced respiratory and functional function. The main tools related to the detection of dysfunction were the Perme scale and the Barthel Index.

#### EXAMINATION BOARD:

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