

Correlation between Nutritional Status and Length of Stay and Hospital Costs in Critical Care and IPD Patients of Somdech Phra Debaratana Medical Center (SDMC), Faculty of Medicine, Ramathibodi Hospital

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Abstract : Background: Prevalence of malnutrition in hospitalized patient is higher than general population. As a result of the unawareness of consequence and the more concerning in the other aspects of care, many patients with high risk of malnutrition are unrecognized. Even if malnutrition has been identified as affecting in many patient outcomes, the impact may differ in each population and group of patients. Objectives: The aims of this study were to examine the association between the nutritional status and the length of stay and hospital costs in hospitalized patients, to investigate the factors related these outcomes and to determine the frequency of malnutrition in hospitals. Method: This retrospective cohort study enrolled all patients aged 15 years old or older and admitted in SDMC, Ramathibodi Hospital between 1st January 2016 and 30th September 2016. The nutritional status assessment by Nutrition Alert Form (NAF) was performed by well-trained nurses in all patients at admission. Baseline characteristics were recorded. Length of stay and hospital costs were collected during their hospitalization. Univariate analysis, nonparametric rank test, Kruskal-Wallis test were used to compare means in the case of nonnormally and noncontinuously distributed data. Chi-square used to analyze categorical variables, the nutritional status and the length of stay and hospital costs and identify possible confounding factors (data were analyzed using SPSS version 18.0). Result: Of the 2,906 patients, 3.9% were severe malnutrition (NAF-C score > 10) and 11.4% were moderate malnutrition (NAF-B score 6 - 10). Both length of stay and hospital costs were found significantly higher in more severe malnutrition group ($p < 0.001$), NAF = A: 3.21 days, 95% CI 3.06-3.35 and 111,544.25 THB, 95% CI 106,994.41 - 116,094.1; NAF = B: 7.54 days, 95% CI 6.32 - 8.76 and 162,302.4 THB, 95% CI 129,557.88 - 195,046.92; NAF =C: 14.77 days, 95% CI 11.34 - 18.2 and 323,572.11 THB, 95% CI 226,958.1 - 420,096.13 (1 THB = 0.03019 USD). Age of each nutritional status group had also significant increase from NAF A to NAF C ($p < 0.001$): 55.07, 67.03 and 73.88 years old, respectively. Conclusion: The prevalence of malnutrition in Ramathibodi hospital is voluminous. Severe malnutrition screening by NAF is significantly correlated with worse clinical outcome, especially higher length of stay and hospital costs. Elderly is also a significant factor which correlates with malnutrition. The results of this study could change the awareness of health personnel and the practice protocol. Moreover, the further study concerning nutritional support in high-risk group of malnutrition is ongoing to confirm this hypothesis.

Keywords : malnutrition, NAF, length of stay, hospital costs

Conference Title : ICCCN 2017 : International Conference on Critical Care Nursing

Conference Location : Kyoto, Japan

Conference Dates : November 16-17, 2017