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Quality of life after intensive care with the sickness impact profile

Abstract  Objectives: a) to validate the structure of the Sickness Impact Profile scale (SIP) when applied to intensive care patients after discharge from the hospital; b) to explore the influence of age upon the various components of quality of life.

Design: Prospective study.

Setting: Patients admitted to 36 Dutch ICUs.

Methods: 6247 patients out of 13000 consecutive admissions to the ICUs answered a SIP questionnaire 6 months after discharge from the hospital. The 3655 returned questionnaires were analyzed after aggregating the respondents into 6 age groups: from group 1: 17–29 up to group 4: >70 years of age.

Intervention: Self-administration of SIP one year after discharge, measuring 5 independent categories (IC) and two dimensions: physical (PD) and psychosocial (PSD).

Results: The total SIP-score oscillated between 5.8±8.2 (group 1) and 10.5±9.5 (group 4). Group 3 had also a high score (9.4±11.2). Overall, the quality of life of patients was dominated by dysfunction on the categories composing the physical dimension, with exception of patients with ages between 30 and 50 years, in which dysfunction on the categories composing the psychosocial dimension was dominant. The structure of the SIP in the study was similar to that described to the original instrument.

Conclusions: The study validated the use of the SIP QOL-instrument on patients after intensive care. Age influenced consistently the various components of quality of life.

Key words  Intensive care · Quality of life · Sickness impact profile · Age

Introduction

Next to survival, quality of life (QOL) is an important parameter when assessing the effectiveness of Intensive Care Units (ICUs) [1]. Although many instruments have been devised [2], the measurement of QOL after discharge from the hospital is not yet an usual procedure in the common practice. Besides economic and pragmatic difficulties related with obtaining data from patients both at admission and after discharge, important reasons for not measuring QOL may be the existing lack of consensus over the instruments to be used and over the meaningful interpretation of their results.

Many of the scales available refer exclusively to physical status without considering psychosocial components of well-being. Therefore, it may be rightfully argued that these scales do not really measure QOL. The Sickness Impact Profile scale (SIP) associates the measurement of relevant components of both dimensions [3]. However, although the instrument is gaining increasing interest from researchers, it was only applied to small samples of ICU patients [4, 5].

From January 1990 to June 1992 a Dutch Intensive Care study was performed to assess the organization and cost-effectiveness of ICUs in the Netherlands. The design of the study followed the general system theory: inputs —
Patients and methods

During the first six months of 1990, 13,000 consecutive patients admitted to the Dutch ICUs were enrolled. After discharge from the hospital, 6,424 patients were eligible for participation in the quality of life study, which has been completed by 3,655 patients. Excluded from the study were those patients who were younger than 16 years and those who stayed in the ICU for a period smaller than 24 h. Mortality in the hospital was collected from the hospital records. After discharge, information concerning mortality was collected from the family physician of each patient. After obtaining this information, the quality of life questionnaire (SIP scale) was mailed to the patients and self-administered, after a phone call for obtaining their informed consent. The study was approved by the Ethical Committees of the involved hospitals.

Instruments used in the study

Severity of illness was measured with the acute physiology and chronic health evaluation (Apache II) [7]; daily workload with the therapeutic intervention scoring system (TISS) [8].

The quality of life after discharge was measured with the sickness impact profile (SIP) [3]. The SIP is a multidimensional and cumulative health index, consisting of a list of 136 questions, divided by the sum of all factor weights under analysis (total SIP score). The complete list of questions and the respective weights can be obtained from the authors of the instrument on request [3].

This questionnaire has been translated into Dutch, and validated [9]. Because of the nature of the index, SIP can only be administered to patients over 16 years old.

Analysis of data

For the analysis of the collected data the patients were divided according to their age into six groups: group 1 - 17-29 years (n = 242); group 2 - 30-39 years (n = 192); group 3 - 40-40 years (n = 347); group 4 - 50-59 years (637); group 5 - 60-69 years (n = 1,149) and group 6 - >70 years of age (n = 1088).

The comparison of sample mean values, between continuous variables, were analyzed utilizing the Student's two sample t-test and the analysis of variance (ANOVA) with the Scheffé test for multiple comparisons. The differences between two sample means was considered significant for p values < 0.05. Correlation between variable values was evaluated with the Pearson's correlation test. Correlations were considered for r > 0.4 and p < 0.05.

Explorative factor analysis was utilized to study the score structure of quality of life in the different groups of patients in the study population. It should be remembered that the Factor Analysis is a multivariable analysis exclusively with an explorative value, aiming to analyze the interrelationships among a set of variables [10].

When utilizing the orthogonal rotation, as used in the analysis, the identified factors, or dimensions, will tend to be independent among them. Factor-loadings were accepted when r > 0.4.

The statistical calculations in the study, including randomizations, were performed utilizing the Statistical Package for Social Sciences, SPSS-X, version 3.0, at the University of Groningen.

Results

Quality of life after intensive care was evaluated by 6,247 patients alive one year after discharge of 36 Dutch ICUs, utilizing the Sickness Impact Profile questionnaire. There were 3,655 patients (58.5%) responding to the questionnaire and 2,529 (41.5%) who did not.