

## **Abstract**

### ***Objectives:***

To establish the health-related quality of life (HRQOL) of survivors of critical illness as a result of trauma six months after discharge from the intensive care unit (ICU) and to determine which HRQOL measurement tool is more suitable to use in this population. To relate demographic characteristics and other outcome measures to HRQOL as reported six months after ICU discharge with the Short Form-36 (SF-36) Medical Outcomes questionnaire and EQ-5D questionnaire respectively.

### ***Methods:***

A retrospective cross-sectional cohort study was conducted to assess HRQOL at six months after ICU discharge for survivors of trauma who were treated with mechanical ventilation. Twenty eight (n=28) subjects were recruited from two ICUs in Johannesburg, South Africa. Health-related QOL was assessed with the SF-36 English UK version and the EQ-5D questionnaires. Demographic (age, gender) and outcome measure [Acute Physiology and Chronic Health Evaluation (APACHE) II, Injury Severity Score (ISS), ICU and hospital length of stay (LOS)] information was related to HRQOL.

### ***Results:***

The HRQOL reported by subjects showed limitations when measured with the EQ-5D and SF-36. EQ-5D data revealed that 50% of subjects reported some problems in mobility, 35% in self-care and 67.9% in usual activities. Furthermore, 60.7% reported some problems in pain/discomfort and 7.1% reported extreme problems in this domain. With regard to the anxiety/depression domain, 46.4% reported some problems whilst 7.1% reported extreme problems. The mean score for the EQ-5D visual analogue scale (VAS) was found to be 68 ( $\pm$  26.1). Statistical significance was found in the relationships between age and EQ-VAS ( $p = 0.05$ ;  $r = -0.4$ ) where a moderate correlation was observed, ICU length of stay (LOS) and the mobility domain ( $p = 0.01$ ), hospital LOS and the mobility domain ( $p = 0.04$ ), hospital LOS and the self-care domain ( $p = 0.04$ ) and

the APACHE II score and the usual activities domain ( $p = 0.05$ ). With respect to the HRQOL as measured with the SF-36 questionnaire, subjects were found to have not achieved optimal HRQOL in any of the domains nor with regard to the summary scores. Lowest scores were found in the role physical (RP) [44.6 ( $\pm$  41.6)] and role emotional (RE) [44.1 ( $\pm$  45.4)] domains. The physical component summary score (PCS) [62.1( $\pm$  27.8)] was slightly higher than the mental component summary score (MCS) [58.7( $\pm$  20.1)]. Statistical significance and a strong correlation was found in the association of age and physical functioning (PF) ( $p = 0.00$ ;  $r = -0.6$ ). The association between age and general health (GH) ( $p = 0.02$ ;  $r = -0.4$ ) yielded a moderate correlation. The same can be said about the association between age and physical component summary score (PCS) ( $p = 0.01$ ;  $r = -0.5$ ). PF was also significantly associated with ICU ( $p = 0.03$ ;  $r = -0.4$ ) and hospital ( $p = 0.03$ ;  $r = -0.4$ ) LOS and a moderate correlation was shown between these variables.

### ***Conclusion:***

At six months after ICU discharge, HRQOL for these subjects was not optimal. Age, ICU and hospital LOS seemed to be associated with limitations in HRQOL related to function while severity of illness had a lesser effect. The EQ-5D questionnaire proved to be simpler and more user-friendly in ascertaining the HRQOL of trauma survivors; however the SF-36 gave more detailed information about HRQOL. Patients who experienced trauma might benefit from a rehabilitation programme after discharge from hospital to address the functional impairments in HRQOL observed with this study.