

LETTER



# May resilient family members of critically ill patients experience less caregiving burden?

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Dear Editor,

Resilience refers to an individual's ability to withstand stress and recover from traumatic events [1]. It can be a key aspect that explains the ability of some caregivers to “bounce back” and better cope with the challenges of caring for loved ones [2]. Some studies have found an association between resilience and a lower rate of symptoms of anxiety, depression and stress in family members of critically ill patients [3–5]. However, no study has assessed the association between resilience and the caregiving burden in this population. We conducted a cohort study to investigate the association between resilience and the caregiving burden after discharge from the intensive care unit (ICU) among family members of critically ill patients, in addition to the association with symptoms of anxiety and depression.

This is a cohort study that included consecutive family members of patients with persistent critical illness, defined as an ICU stay of longer than 10 days, between April 2018 and October 2019, in the Hospital de Clínicas de Porto Alegre, Brazil. The family member variables included age, gender and relationship with the patient, as well as the application of the Connor-Davidson Resilience Scale, the Duke University Religion Index (DUREL) and the Hospital Anxiety and Depression Scale (HADS). These variables were collected within 72 h from the moment the patient met the criterion for persistent critical illness. For the family members of patients who survived the ICU stay, the Zarit Caregiver Burden Interview was applied from the fifth day after discharge from the ICU. This questionnaire was only applied if the main

caregiver of the patient was the same primary caregiver who answered the other questionnaires previously in the ICU. The primary outcome was the caregiver burden. Secondary outcomes were symptoms of anxiety and depression. Multivariable linear regression models using caregiving burden, anxiety and depression as outcomes and including independent variables previously chosen that could plausibly contribute to the occurrence of outcomes were performed. Final models were built using a stepwise forward process.

One-hundred and thirty-one family members were included; 76 completed the Zarit Caregiver Burden Interview. The general characteristics are described in Supplement Table 1. There were no differences regarding patient severity between resilient and nonresilient family members. Clinically significant levels of burden (Zarit  $\geq 21$ ) were observed in 55 (72.4%) family members. Resilient family members had significantly lower HADS-anxiety ( $9.0 \pm 3.8$  vs.  $11.3 \pm 5.3$ ;  $p = 0.011$ ), HADS-depression ( $6.4 \pm 3.7$  vs.  $9.1 \pm 4.3$ ;  $p < 0.001$ ) and Zarit scores ( $27.5 \pm 13.6$  vs.  $35.7 \pm 13.2$ ;  $p = 0.015$ ) (Supplement Figures 1 and 2). Resilience remained independently associated with these outcomes in the multivariate linear regression models (Table 1). Most nonresilient family members had more than one of these outcomes (Supplement Figure 3).

We found that resilient family members of critically ill patients have a lower caregiving burden and fewer symptoms of anxiety and depression. New studies with family-centered outcomes are needed to evaluate interventions that can improve the caregiver's experience, not only increasing resilience, but also reducing the post-ICU burden.

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#### Electronic supplementary material

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**Table 1 Multivariate analysis of the association between resilience and caregiving burden, and symptoms of anxiety and depression\***

Regression models	B (95% CI)	p-value
HADS-anxiety		
Resilience	− 1.86 (− 3.46 to − 0.25)	0.012
Age of family member	− 0.07 (− 0.12 to − 0.01)	0.024
HADS-depression		
Resilience	− 2.70 (− 4.15 to − 1.25)	< 0.001
Caregiving burden		
Resilience	− 8.27 (− 14.86 to − 1.69)	0.015

\* The independent variables included were age, gender, intrinsic religiosity and resilience of the family member, relationship with the patient and the SAPS III score of the patient

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#### Author contributions

MMB, BIR, HSE, MFL, IW, JSP, FDT, JBP, MOS, JRH, BRS, GFG, VHM, CSE and RGGP have made substantial contributions to the conception and design of the study and to acquisition of data; MMB, RGGP and VHM performed the analysis

and the interpretation of data; all the authors read and approved the final manuscript.

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#### Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on request.

#### Compliance with ethical standards

#### Conflicts of interests

The authors declare that they have no competing interests.

#### Ethics approval and consent to participate

This study protocol was consistent with the ethical principles of the Declaration of Helsinki and was previously approved by the Committee of Research Ethics of Hospital de Clínicas de Porto Alegre. Informed consent was obtained from all the study participants.

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