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Posttraumatic stress disorder symptoms among family decision makers and the potential relevance of study attrition

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Family decision makers (FDMs) of critically ill patients can be exposed to intense psychological stress, which can contribute to the development of posttraumatic stress disorder (PTSD) symptoms and other forms of psychiatric morbidity ¹. As featured in this issue of *Critical Care Medicine*, Petrinc and colleagues conducted a prospective cohort study evaluating the association between coping strategies used by FDMs of intensive care unit (ICU) patients and later development of PTSD symptoms ². Given frequent distress in family members of the critically ill ³, it is important to evaluate potential risk factors, to inform prevention/early intervention efforts. The current study by Petrinc and colleagues informs us about an important potential risk factor for PTSD, use of an avoidant coping strategy.

Petrinc and colleagues evaluated 112 FDMs of ICU patients who lacked medical decision-making capacity and were either on mechanical ventilation or had an expected ICU stay of at least 5 days. FDMs were at least 18 years of age, identified as the primary person responsible for making decisions, and English-speaking. FDMs reported their coping strategies 3 to 5 days after their relatives' ICU admission and again 30 days after their relatives' hospital discharge or death, and they reported their PTSD symptom severity 60 days after their relatives' discharge or death.

Of the 112 FDMs enrolled in the study, 77 completed all assessments, and 44% of these FDMs' relatives died either in-hospital or within 30 days of discharge. Patient death by 30-day follow-up was significantly associated with worse FDM PTSD symptoms at 60-day follow-up. In addition, 30-day follow-up avoidant coping (and, to a lesser extent, problem-focused coping) were associated with worse FDM PTSD symptoms at 60-day follow-up.

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Interestingly, avoidant coping was identified as an important mediator of the association between patient death at time 1 and FDM IES-R score 60 days after hospitalization.

This was a well-conducted prospective study that suggests a temporal association between avoidant coping and later PTSD symptoms in FDMs of critically ill patients. The findings support that of prior work suggesting an association between adaptive coping strategies and fewer PTSD symptoms in caregivers of critically ill patients.⁴ The authors employed the Brief-COPE, which has been validated in caregivers of medically ill patients⁵, as well as the Impact of Event Scale-Revised, which has been validated in a post-critical illness/intensive care population, albeit not FDMs⁶.

Despite these strengths, the high attrition rate in this study (approximately 33%) highlights an ongoing challenge in PTSD research. In a systematic review of 13 studies involving PTSD in other populations, including combat veterans and victims of sexual assault, the median attrition rate was 14%⁷. Among clinical trials evaluating interventions to treat PTSD, attrition rates were approximately 25%^{8,9}. Loss to follow-up is a threat to the internal validity of a study only if there are differences between individuals who are lost to follow-up and those who complete the study, and if those differences are associated with the outcome¹⁰. Since avoidance is a hallmark of PTSD, individuals with greater PTSD symptoms may be more likely to drop out of a study that involves recalling the traumatic experience, thus introducing selection bias^{7,10}. For example, in a prospective cohort study of PTSD symptoms in ICU survivors, patients with greater acute stress symptoms at baseline were more likely to be lost to follow-up¹¹.

While existing literature suggests no increased lifetime prevalence of PTSD among individuals participating in research studies and an overall favorably-perceived risk-benefit profile of participation, those who participate do report at least transient increases in distress^{12,13}. Therefore, additional efforts at cohort retention may be warranted to reduce attrition and potential selection bias. Existing literature indeed suggests that attrition can be substantially reduced with exhaustive cohort retention efforts. In a systematic review of cohort retention strategies, retention rates were higher for those studies that used more strategies¹⁴. In a study of persons with substance use disorders and high traumatic stress levels, less than 5% were lost to follow-up over two years; the investigators employed a rigorous approach to emphasize cohort retention and monitor staff compliance¹⁰. Similarly, in studies of ICU survivors followed 5 years, 86% of participants completed the studies; the protocols focused on respect for patients, highly trained staff with flexible working hours, and extensive tracking methods¹⁵. This literature demonstrates that high rates of cohort retention are feasible in both trauma and post-ICU populations, with adherence to retention protocols.

In summary, despite attrition, Petrinc and colleagues have provided evidence that avoidant coping is associated with worse PTSD symptoms in FDMs of critically ill patients. In order to improve both internal and external validity of our PTSD studies, our field will benefit from the application of more rigorous cohort retention strategies that have proven successful in other populations.

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