Reducing the Stress on Clinicians Working in the ICU

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It is important to reduce the stress of clinicians working in the intensive care unit (ICU). For instance, an estimated 39% of ICU nurses exhibit symptoms of posttraumatic stress disorder, the prevalence of clinical depression among nurses is twice the national average, and many report symptoms consistent with burnout.1,2 This problem is not limited to nurses; physicians, medical trainees, and others who work in the ICU environment experience similar levels of psychological distress.2

These problems adversely affect the well-being of individual clinicians, and also are associated with poorer ICU workplace environments as reported by ICU nurses and physicians,3 decreased quality-of-care delivery,3,4 lower patient satisfaction,5 and higher rates of staff turnover.6 The problem has become so concerning that in 2017 the National Academy of Medicine launched a 2-year action collaborative intended to promote clinician resilience and well-being.7 Although several interventions exist to mitigate psychological distress among physicians,8 there are no empirically validated interventions to lessen these symptoms among ICU nurses.

In this issue of JAMA, El Khamali and colleagues9 report the results of a randomized clinical trial among 198 ICU nurses from 8 adult ICUs in France testing the effect of a multicomponent educational intervention compared with a control group. Participants randomized to the intervention group were assigned to groups of 6 nurses and received 5 days of simulation-based education covering technical, interprofessional, and clinical reasoning skills.

The trial was stopped early for benefit based on the results of a preplanned interim analysis. The primary outcome was job strain at 6-month follow-up operationalized as high psychological distress and low decision latitude assessed using the Job Content Questionnaire; secondary outcomes included other dimensions of job strain, absenteeism, and staff turnover at 6 and 12 months.

The authors found that the presence of job strain was 13% in the intervention group vs 67% in the control group at 6-month follow-up, and the presence of isostain (high levels of job strain in combination with low levels of social support) was 7% in the intervention group vs 55% in the control group. Moreover, absenteeism and turnover at 6 months were significantly lower in the intervention group.

The authors rigorously developed and tested an intervention to mitigate ICU nurses’ workplace distress and burnout. The trial results are important because they are the first to show that the problems of job strain, absenteeism, and turnover are not an immutable consequence of being an ICU nurse.

The trial has several strengths. First, the investigators selected as the primary outcome measure a well-validated instrument with established benchmarks for the general nursing population. Second, the secondary outcomes included objective measures such as absenteeism and job turnover, which showed similarly beneficial effects compared with the nurse-reported primary outcome. Third, the study had excellent retention and there were relatively few missing data.

The study also has several limitations. First, the trial was conducted in a single country and it is not clear whether these effects will generalize to other countries in which education and training for ICU nurses may differ.10 Second, the report included no discussion of fidelity monitoring or maintenance regarding delivery of the intervention, which is an important element in reporting the results of biobehavioral interventions.11,12 Third, because the study was not blinded and used individual-level randomization, nurses in the control group were aware that they were excluded from the special training and attention their peers in the intervention group received, which may have worsened their sense of job strain and burnout. Fourth, there is a lack of clarity about the theorized and actual mechanism by which the intervention exerted its effect.

Although this last issue is common to many complex biobehavioral interventions, it is problematic in this case because the full intervention is multifaceted and may be challenging to duplicate or scale-up, especially in hospitals that lack simulation facilities. Therefore, identifying the underlying mechanism of benefit for this intervention will be crucial to future efforts to disseminate it.

There are several potential mechanisms by which the intervention may have exerted a positive effect on participants, each of which has different implications for how to scale the intervention. It is possible that the nurses’ experience of participating in an intensive, highly interactive program led to strong social bonds among the nurses in the intervention group, and this may have increased their perceived social support, which is positively linked to increased work engagement and lower rates of burnout.13 If this mechanism accounts for the effects of the intervention, it is possible that the same effects could be achieved with much simpler interventions that promote social cohesion among coworkers.

Another possibility is that the beneficial effect of the intervention arose from the acquisition and reinforcement of clinical judgment skills in a study population with a large proportion of relatively junior nurses. More than 40% of participants in both groups had less than 2 years’ experience working as a nurse. If this was the mechanism, it is possible that the intervention would be less effective when deployed in a more experienced nursing workforce.
Moreover, it is also possible that those in the intervention group may have benefited simply from the experience of feeling valued by the significant attention and concern being given to their professional development. This explanation would be consistent with the literature suggesting that the perception of support from the nurse’s institution is associated with lower rates of burnout among ICU nurses. This relationship between perceived support and burnout is observed across work settings including education, law enforcement, and customer service.

The results of this trial point to several important next steps. The findings need be replicated in other countries with different critical care training practices and certification options for ICU nurses and among more experienced nurses. In addition, a more granular evaluation of the putative mechanism of action is needed. Future trials should use an active comparator group that controls for the potential effects of social bonding and the perception of receiving special benefits.

If the results of the study by El Khamali et al are confirmed in subsequent trials, it is possible that some hospital administrators may balk at the cost of this type of intervention, which was approximately €2000 ($2353) per nurse. This would be a mistake.

First, one estimate suggests that the average cost to replace an ICU nurse in the United States ranges from $36,657 to $88,000. Under the most conservative economic assumptions of the cost of replacing an ICU nurse, and assuming, based on the study findings that the number needed to treat with the intervention to prevent 1 nurse from leaving the job is 12, the estimated cost of about $24,000 would most likely deliver a net savings.

Second, job strain and burnout have been shown to adversely affect multiple aspects of care quality. The investment in an intervention that produces a sustained reduction in these negative conditions could yield a net savings through higher-quality care and a decrease in complications. To ignore these multiple benefits and deem the intervention too expensive would be shortsighted.

This study by El Khamali and colleagues is a foundational contribution to reducing work-related stress and loss of productivity among ICU nurses. The results suggest that it is time to dispel the perception that high levels of job strain and burnout are inevitable outcomes associated with being an ICU nurse. Instead, it is important to press forward with the work of validating and disseminating interventions to safeguard nurses’ psychological health for their own good and the good of patients.