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Critical Care Medicine 2024

Recent Advances in Critical Care Medicine 2024

Editors
Atul Prabhakar Kulkarni
Kushal Rajeev Kalvit

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CHAPTER

Mindfulness-based Interventions in Enhancing the Quality of Life of Critical Care Professionals

Shivakumar S Iyer, Mitchell Levy

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INTRODUCTION

Stress and burnout are responsible for a lot of suffering among healthcare professionals. The prevalence of stress and burnout is very high among intensive care unit (ICU) professionals.[1,2] Several tools exist to measure these phenomena. Well-being among healthcare professionals is an elusive concept that has been described "as how people feel and how they function both on a personal and social level and how they evaluate their lives as a whole".[3]

Several workplace interventions including predominantly individually focused mindfulness-based interventions (MBIs) have been shown to positively affect several attributes of well-being in healthcare professionals.

Mindfulness was first described as "Sati" by the Buddha 2,500 years ago. Sati was a method that could help every human being attain complete understanding and overcome suffering. He described "Sati" as observing the breath (as a naturally occurring body process that is easily observable), the body during various daily activities (not just during meditation), the feelings that arise either from the senses or from the mind in a nonjudgmental and nonreactive fashion, the thoughts or mental states (mind) that arise from moment to moment, and the contemplation of the objects of the mind, which referred to various aspects.[4]

Mindfulness was adapted as a secular treatment method in Western Medicine starting in the 1980s. The most notable of these secular adaptations are mindfulness-based stress reduction (MBSR), founded by Jon Kabat Zinn in 1982, and mindfulness-based cognitive therapy (MBCT), reported by Segal, Williams, and Teasdale in 2002.[5,6] These are together known as mindfulness-based interventions, and there is a large body of data describing the utility of these approaches in a wide variety of diseases, including anxiety, depression, and post-traumatic stress.[7,8]

PREVALENCE OF STRESS AND BURNOUT IN INTENSIVE CARE UNIT PROFESSIONALS

Stress is the mental and physical experience of adapting to a constantly changing environment. Organizational stress encompasses negative

emotional and physical reactions that arise when a worker's abilities, requirements, or resources do not match the job.[9]

Burnout is defined as "An excessive reaction to stress caused by one's environment that may be characterized by feelings of emotional and physical exhaustion, coupled with a sense of frustration and failure".[10] Maslach et al. established the Maslach Burnout Inventory (MBI) in 2001 as a validated tool for measuring burnout syndrome. It consists of a questionnaire that analyzes the three components—(1) emotional exhaustion (EE), (2) depersonalization (D), and (3) personal accomplishment (PA)—using 22 items on a 7-point Likert-type scale (0 is never and 6 is every day). A high score in EE and D and a low level in PA suggest the presence of burnout, which can be divided into multiple degrees because it is an ordinal variable: Low, medium, and high.[11] Several other reliable and validated tools like Copenhagen Burnout Inventory (CBI), Oldenburg Burnout Inventory (OLBI), Burnout Assessment Tool (BAT), Professional Quality of Life (ProQoL) Scale, and Mini-Z Burnout Survey are available to measure burnout.[12]

A recent systematic review and meta-analysis of burnout in intensive care nurses by Santiago Ramírez-Elvira et al. in 2021 estimated the prevalence of high emotional exhaustion at 31% [95% confidence interval (CI), 8–59%], high depersonalization at 18% (95% CI, 8–30%), and poor personal accomplishment at 46% (95% CI, 20–74%).[1] Another systematic review of burnout in ICU physicians by Filippo Sanfilippo et al. suggested a prevalence of 18–49% in ICU physicians.[2] The recent COVID-19 pandemic too led to increased stress amongst ICU professionals and led to them quitting their jobs, making staffing of ICUs very challenging.

FACTORS INFLUENCING WELL-BEING AMONG INTENSIVE CARE UNIT PROFESSIONALS

The factors causing burnout and influencing well-being in ICU nurses and physicians have been well characterized.[1,2] Psychological distress, moral distress, and safety culture seemed to contribute more to burnout in a physician **(Table 1)**. An Indian study by Patil et al. found stress and burnout to be more in females and in those aged <30 years. This may be because of relatively less experience and dual work and familial responsibilities in females.[13]

WORKPLACE INTERVENTIONS TO REDUCE STRESS, BURNOUT, AND PROMOTE WELL-BEING

Several individually focused interventions and a few organizationally focused interventions have been found to improve well-being and mitigate stress and burnout. A variety of tools have been used to study the effects of these interventions and a number of positive outcomes have been reported **(Table 2)**. Unfortunately, these conclusions have been somewhat limited by

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TABLE 1: Factors influencing stress and burnout in healthcare professionals.

Factors	*Doctors*	*Nurses*	*Comments*
Workload	+++	++++	Long working hours, intensity of patient care
Job demands	++++	++++	High mortality rate, critical conditions
Psychological factors/ distress	+++	++++	Depression, anxiety, and lack of interest
Personal factors	+++	++++	Age, marital status, having children
Professional experience	++	++	Seniority and years of practice can reduce stress and burnout
Work environment	++	+++	Relationship with colleagues, institutional support, job satisfaction
Training and support	+++	++++	Access to training programs, support systems for coping with stress within institution
Physical health	++	+++	Exercise, lifestyle habits
Sociodemographic factors	+	+++	Age, marital status, education, economic factors
Safety culture	+++	++	Medical errors may affect physicians more owing to vicarious responsibility
Moral distress	+++	++	Ethical dilemmas may be faced more often in physicians because of decision-making responsibility

Note: + to ++++ indicates increasing affection by the factor on stress and burnout in doctors and nurses.

problems in the research design like absence of a control group, a waitlist type of control group, and a lack of postintervention follow-up surveys.[14]

Mindfulness-based Education Interventions

Mindfulness-based education (MBE) interventions form the bulk of techniques that have been studied to mitigate stress and burnout and promote well-being. The reported positive outcomes include decreased stress and anxiety, decreased burnout, and increased resilience.[15] The MBE interventions that could be performed in the workplace or had a component of self-directed practice were found to be more easily implemented and allowed for longer term follow-up assessments.[16,17]

What Can We Do in Our Intensive Care Units?

Given the clear evidence that workplace interventions help decrease stress and burnout and contribute to the well-being of healthcare professionals,

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TABLE 2: Workplace interventions, survey tools, and reported outcomes.

Intervention	*Reported outcomes*	*Survey tools*	*Comments*
Organization-focused			
Job crafting	Higher levels of work engagement as well as lowered levels of exhaustion and improvements in components of employee well-being	JCS, UWES, OLBI	Organization-focused interventions are more difficult to do but may have better outcomes
Workload	Decreased in emotional exhaustion	MBI, AWS	
Peer support	Improvement in well-being	Pro-QoL-5	
Individual focused			
Mindfulness-based education	Reported positive outcomes included: Improvement in EE, resilience, mindfulness, well-being, quality of life, and work engagement and/or reduction in burnout, perceived stress, anxiety, and depressive symptoms	CD-RISC, PSS, GAD-7, QoL, UWES, FFMQ, DP, UBOS, Pro-QoL-5, BRS, MAAS, SCBCS, MBI, ESI, STAI, SCS, GHQ, DASS-21, RS-14, WHO-5, MBI-HSS, OLBI, GQ-5, SES, K6, NSS, GDS, COPE, NSS, KIMS	Most common intervention
Gratitude journaling	Improvement in depressive symptoms and subjective happiness, self-efficacy, psychological distress, and job performance	MBI-EE, CES-D, SHS, PSS	–
Meditation	Significant reduction in depression, perceived stress, burnout, and anxiety	BDI, PSS, MBI, STAI, SCS, WSS	–
Yoga	Improved self-care, reduced emotional exhaustion, and depersonalization	HPLP 11, FM1, MBI	–

Contd...

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Intervention	*Reported outcomes*	*Survey tools*	*Comments*
Acupuncture	Decrease in state anxiety and trait anxiety	STAI, UWES-9	–
Choir singing	Qualitative findings—improvement in social connectedness, enjoyment at work, and staff engagement	UWS, PSS, PHQ-8	–
Massage chair	Reduced stress and improvement in BP and HR	VAS, BP, HR	–
Professional coaching	Significant reduction in emotional exhaustion	MBI, CD-RISC, QoL	–

(AWS: areas of work life scale; BDI: Beck's Depression Inventory; BP: blood pressure; BRS: Brief Resilience Scale; CD-RISC: Connor Davidson Resilience Scale; CES-D: Chinese version of the Center for Epidemiologic Studies-Depression Scale; CF: compassion fatigue; COPE: Coping with Stress Scale; CPI: Compassion Practice Instrument; CS: compassion satisfaction; CWEQ-II: Conditions of Work Effectiveness Questionnaire; DD: decreasing demands; DP: depersonalization; DASS-21: Depression Anxiety and Stress Scales; EE: emotional exhaustion; ESI: Bar-on Emotional Intelligence; FFMQ: Five Facet Mindfulness Questionnaire; FMI: Freiburg Mindfulness Inventory; GAD-7: generalized anxiety disorder; GHQ: General Health Questionnaire; GQ-5: Gratitude Questionnaire; HPLPII: Health Promoting Lifestyle; HR: heart rate; JCS: Job Crafting Scale; JSE: Jefferson Scale of Empathy; K6: Kessler Psychological Distress Scale; KIMS: Kentucky Inventory of Mindfulness Skills; MAAS: Mindful Attention Awareness Scale; MBI: Maslach Burnout Inventory; MDS-R: Moral distress; NSS: Nurse Stress Scale; OLBI: Oldenburg Burnout Inventory; PES: Psychological Empowerment Scale; ProQoL-5: Professional Quality of Life; QoL: quality of life; RS-14: 14-item Resilience Scale; SCBC: Santa Clara Brief Compassion Scale; STS: Secondary Traumatic Stress scale; PA: personal achievement; PSS: Perceived Stress Scale; PHQ-8: Personal Health Questionnaire Depression Scale; SCS: Self-Compassion Scale; SDS: Symptoms of Distress Scale; SES: Self-Efficacy Scale; SHS: Subjective Happiness Scale; STAI: State-Trait Anxiety Inventory; UBOS: Dutch Version of the MBI; UWES: Utrecht Work Engagement Scale; VAS: Visual Analog Scale; WHO-5: World Health Organization Wellbeing Index; WSS: Work Stress Scale)
Source: Adapted from reference 14.

they must be used by organizations to reduce absenteeism, improve presenteeism, and enhance patient satisfaction. Research indicates that a structured intervention that is organizationally promoted is more likely to have a sustained and long-lasting effect. While MBSR and MBCT or their adaptations are longer structured MBE interventions that can be organizationally implemented, shorter self-directed practices have also been shown to be helpful **(Table 3)**.

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TABLE 3: Self-directed mindfulness practices.

Mindfulness practice	*Description*
Mindful breathing exercises	Taking a few minutes to focus on their breath can help reduce stress and promote a sense of calm and presence in the moment
Body scan meditation	This can help them release physical tension and relax their bodies, improving their overall well-being
Mindful eating	Taking the time to savor each bite and pay attention to the sensations of eating can help reduce stress and promote a sense of mindfulness
Mindful communication	ICU healthcare professionals can benefit from practicing mindful communication with patients, families, and colleagues. This involves actively listening, being present in the moment, and responding with compassion and empathy
Mindful movement	Incorporating mindful movement practices such as yoga or tai chi can help ICU healthcare professionals release physical tension, improve flexibility, and promote a sense of relaxation and well-being
Mindful self-care	This can include setting boundaries, taking breaks, and engaging in activities that bring joy and relaxation

(ICU: intensive care unit)

RESEARCH PRIORITIES

There is a great need for more robust studies incorporating control groups and having a randomized controlled trial (RCT) design with standardized MBE-based interventions and validated survey tools. Outcomes that look beyond reducing occupational stress and look at longer term outcomes in improving well-being among employees and also improve patient/family satisfaction are needed.

CONCLUSION

Mindfulness based interventions unequivocally reduce stress and burnout in healthcare professionals. Organizational focus and support for such interventions may be the key to better professional, patient and family satisfaction.

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