The 'best prospect' for ensuring success in demanding roles

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Associate Professor of Psychology Amishi Jha meets with researchers, Anthony P. Zanesco and Ekaterina Denkova, and Director of UM's Mindfulness in Law Program, Scott Rogers. Together, they coauthored a recent study investigating the impact of mindfulness training in elite military service members' cognitive performance. Credit: University of Miami

On any given day, people are bombarded by countless preoccupations and distractions, some we ignore and others that hijack our attention. One's internal focus can be derailed by competing thoughts and worries, as well as external intrusions too—with text messages, e-mail notifications, news feeds, and phone calls constantly diverting our train of thought.

For the average person, losing focus may be problematic, but the consequences of these diversions can be extremely dire for elite military service members deployed to a conflict zone. A mind lacking focus could mean life or death for a soldier, an innocent bystander, or an American citizen caught in danger.

Recently, the U.S. military has explored offering mindfulness training to soldiers as a low-cost tool to optimize soldiers' cognitive performance and well-being. Building on their past work, University of Miami Associate Professor Amishi Jha and Scott Rogers, who are also co-directors of the UMindfulness Initiative, discovered that Special Operations Forces (SOF) who participated in a month-long mindfulness course could improve their attention and working memory. These are both mental capacities necessary to tone down emotional reactivity and boost problem solving skills.

"Because these soldiers are required to do the most difficult and cognitively demanding tasks under extreme conditions, we want them to have the maximum amount of attention and working memory to succeed at those tasks," said Jha, a neuroscientist in the College of Arts and Sciences Department of Psychology. "We found that [after four weeks of mindfulness training] they may well be more capable as they deal with humanitarian, environmental, and security challenges that our country and the world face."

Recently published in the journal *Progress in Brain Research*, the study

was co-authored by UM researchers Anthony P. Zanesco, and assistant research professor Ekaterina Denkova, also from the Department of Psychology, as well as the U.S. Public Health Service Commander, Dr. William MacNulty.

"Drs. Zanesco, Jha and their colleagues have ... demonstrated that mindfulness training may provide the best prospect for success in demanding work," said Lt. Gen. Eric Shoomaker, M.D., 42nd Army Surgeon General and former commanding general of the U.S. Army Medical Command. "As more people are engaged in critical roles and tasks in which attentiveness and working memory play keys to ensuring safety ... mindfulness training is emerging as a powerful tool."

Mindfulness training involves teaching people skills to focus their attention, with keen awareness to their moment-to-moment experience, without emotional reactivity. As this capacity is developed, a person becomes more skilled at remaining steady amid moments that might otherwise trigger an emotional overreaction, and compromise their focus. For example, "when we get cut off by another motorist in traffic, we may get angry and lose concentration on the task at hand—driving safely," Jha said.

"Mindfulness training may help in stressful everyday moments, as well as more extreme life and death moments, by strengthening cognitive capacity that gets readily depleted when the mind is hijacked by anger, fear, worry, and rumination," Jha said.

The study followed 120 of the most elite soldiers in the United States military—Special Operations Forces—for two months to see whether mindfulness training could help improve their attention and working memory. Before the training, researchers evaluated the soldiers' attention using a computer-based task which required them to selectively respond to numbers on the screen while remaining undistracted by internal

mental chatter. To test working memory, they were presented with complex visual information (e.g., faces) to remember for short intervals while bombarded by distracting negative images. Soldiers' performance accuracy and response times were measured on these tasks. The researchers then tracked any performance changes after the mindfulness training.

The mindfulness training sessions were conducted in a classroom setting and met either once or twice a week. In addition to the eight hours of in-class training, all participants were asked to spend 15 minutes a day practicing mindfulness through guided audio recordings. A variant of a mindfulness training program that Jha and Rogers developed together for military cohorts, referred to as Mindfulness-based Attention Training (MBAT), was adapted for SOF personnel and delivered by a skilled mindfulness trainer with extensive familiarity with the SOF context.

Although prior studies in military personnel have offered mindfulness training over four weeks or more, Jha's team was interested in determining if the delivery window could be shortened. They compared cognitive task results between those who received a two-week version of MBAT, another group receiving a four-week version, and those who received no training. The researchers wanted to know if those receiving MBAT benefited more than those who received no training.

"The two-week training was the shortest we have ever offered," Jha said. "And we found that two weeks is too short. The bigger benefits come with the four-week MBAT program, which resulted in significant improvements to both attention and working memory task performance. In addition, we found that just like physical activity, the more time that participants engaged in daily (mindfulness) exercise, the more their working memory benefited."

Jha noted that the results revealed an important insight about cognitive

enhancement that is just beginning to surface in mindfulness research.

"Prior studies have found that mindfulness protects against deterioration in cognitive functions over high stress intervals to help sustain performance and well-being over time," she said. "Yet here, in a population already known for their peak cognitive ability, we found that mindfulness training may be able to enhance cognition, even under high stress circumstances."

Jha added that the latest study suggests that in addition to elite military service members, others, such as firefighters, police officers, athletes, trauma surgeons, nurses, and judges—who are asked to perform at the highest-level excellence over long time periods—could benefit from mindfulness training as a cognitive enhancement tool.

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