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EXPLORING THE IMPACT OF JAIN MEDITATION ON ASTRONAUTS' MENTAL WELL-BEING FOR EXTENDED ISOLATION SPACE MISSIONS

Abstract

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This research investigates the effects of Jain meditation on the mental well-being of analog astronauts during an Isolation Analog Astronaut Moon Simulation Mission at HI-SEAS Base, Hawaii which is also known as the home of NASA's five successful long duration Mars Simulation Missions. This study employs a unique methodology that utilizes pre and post-mood map scientific survey techniques for a comprehensive analysis. The meditation technique holds promise for sustaining astronauts' mental well-being during prolonged isolation missions to the Moon, Mars and beyond in the coming years.

The literature survey highlights the potential of yoga techniques, including breathwork, relaxation, and meditation, to mitigate the physiological and psychological challenges of space travel. By integrating meditation into existing countermeasures, researchers seek to address stress-related issues and improve overall well-being among astronauts.

This study involves the crew members identified by code names Alpha, Bravo, Charlie, Delta, and Echo from Belgium, Israel, India and America respectively. The research focuses on the energy levels and pleasantness of the crew before and after meditation sessions. Visualization exercises and meditation practices underpin the study, with a focus on channeling positive energy and slow breathing techniques to enhance resilience and mental fitness.

Upon analyzing the data, the findings indicate a steady rise in energy levels and overall pleasantness of the crew post-meditation, indicating the crew's positive response to the meditation technique. Preferences for the morning session emerge from the crew's feedback, suggesting its effectiveness for boosting energy and mental fitness.

This meditation technique provides flexible scheduling with two daily sessions: a 5-minute morning session for daytime vitality and a 4-minute evening session to promote relaxation and better sleep. Alternatively, a single 17-minute session can also be chosen for a more thorough practice.

In summary, the research findings provide an optimistic view for integrating such meditations into astronaut well-being protocols for extended space exploration. These outcomes are particularly valuable in isolation environments like for the space missions, where astronauts are distant from their social support networks. As humanity's exploration of space advances, integrating these practices becomes imperative for tackling psychosocial and many other challenges for enhancing astronauts' overall well-being, thereby nurturing their holistic health amid the rigorous conditions of space travel.