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PSYCHOLOGY APPLIED TO SPACE ANALOG MISSIONS IN BRAZIL: STUDIES WITH
AROMATHERAPY

Abstract

The application of aromatherapy in space analog missions presents a novel approach to address psychological and physiological challenges faced by astronauts during extended space exploration. The National Aeronautics and Space Administration (NASA) found that 22.8% of male and 85.2% of female astronauts had symptoms of anxiety, while 34.8% of male and 43.2% of female astronauts had symptoms of depression.

Aromatherapy, the therapeutic use of aromatic plant extracts and essential oils, offers a promising avenue for promoting well-being, reducing stress, enhancing mood, and improving overall mental health in isolated and confined environments analogous to space habitats. It is very strategic to develop actions that contribute to the well-being of astronauts. Was identified in the literature the contribution of aromatherapy to deal with anxiety.

This research collaborated with the development of a protocol to experience the aromatherapy during simulation missions on the Habitat Marte analog space station, in Northeast Brazil. The developed protocol presented guidelines for the use of PepperMint, Lavender and Frankincense oils during analog space missions in Brazil.

The protocol of aromatherapy was applied during 4 space analog missions during 2023 and 2024. After experiencing the aromatherapy process, was applied a survey with participants. Was possible to identify the ability of aromatherapy to mitigate symptoms of space-related anxiety, stress, insomnia, and mood disturbances during space analog missions.

The application of aromatherapy in space analog missions represents a promising strategy to enhance the psychological well-being and resilience of astronauts, ultimately contributing to the success of long-duration space exploration endeavors.