

IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM (A1)
Behaviour, Performance and Psychosocial Issues in Space (1)

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HUMAN FACTORS & PSYCHOLOGY STUDY IN EMMIHS MOONBASE CAMPAIGNS

Abstract

Although the consideration of habitability and human factors has been integrated into the design process of human spacecraft, there is still a requirement for improving habitability. Therefore, our space psychology experiment focuses on lunar/Mars space simulation requirements. On the first of March 2023, we start the pilot mission to study cohabitation on the Moon or Mars in the Hawaii - Space Exploration Analog and Simulation (HI-SEAS) for an EMMIHS campaign (EuroMoonMars/IMA/HI-SEAS) with support from IMA International Moonbase Alliance, ILEWG LUNEX EuroMoonMars and EuroSpaceHub Academy.

Across time, analogue most of the long-duration performance effects found so far seem to be associated with general stress effects related to the problem of adaptations to the extreme living and working conditions in a confined and isolated environment which are mediated by individual factors such as personality and culture and habitability factors. Applying the emerging framework of select-in personality characteristics for crew members, finding reinforced the realisation that there was a distinct difference in individuals who were "best fit" for expeditionary needs, tasks focused on, clearly defined milestones, specific team roles, high interpersonal skills, cognitive flexibility, tolerance for ambiguity, but related to the habitat design, it is required: sleep, clothing, exercise, medical support, personal hygiene, food preparation, group interactions, habitat aesthetic, external communication, recreational opportunities, privacy and personal space, waste disposal and management, onboard training, simulation and task preparation, and behavioural issues associated with the microgravity.

Our team comprises seven people, each with a different professional background and different nationality, united by a mission. The experience of adapting to isolation and confinement generally improved an individual's self-efficacy and self-reliance. It generated coping skills that they could use in other areas of life to buffer stress and subsequent illnesses. The ability of the astronauts to regulate their emotions in a short time is awe-inspiring. Astronauts cope with stress better than most people because they live in latent uncertainty; they cope with radiation, storms, space trash, collisions, and what they are dealing with in their experiments.

Crew members will have to balance needs for affiliation and support with autonomy and privacy needs. Individuals with high needs for social support will likely be more susceptible to the adverse effects of social

isolation from friends and family. An adequate extra-terrestrial habitat must actively provide for many needs and demands that would otherwise be supplemented on earth through other sources.