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Behaviour, Performance and Psychosocial Issues in Space (1)

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PSYCHOLOGICAL SUPPORT UNDER ISOLATION AND CROWDING

Abstract

The isolation and crowding factors characteristic of a short-term space flight to another planet were modeled in the ESKIS experiment. The duration of isolation of the gender-mixed crew (4 men + 2 women, 5 out of 6 had no previous experience in experiments with isolation), spent 14 days in crowding. We assumed that for the first time faced with a complex of isolation factors in a hermetic facility, lack of privacy, the subjects would experience anxiety, sleep disorders, which would cause a need for psychological support (PS). It can be obtained both from the social environment and from the use of PS. The PS system developed at IBMP is aimed at reconstructing the natural sensory influx and at making up for the lack of communication with relatives and friends. In the ESKIS experiment, the use of a promising type of PS based on virtual reality (VR) technologies was tested. To assess the personal characteristics of the subjects, the Keirsey questionnaire, and the questionnaire for assessing the need for different types of PS and communication and the feeling of association with the crew.

For the subjects in isolation, the value of communication positively correlated both with the degree of their association with the crew or, in another words, perception of themselves as part of the group ($\rho = 0.888$, $p < 0.05$) and with the level of support received from communication ($\rho = 0.858$, $p < 0.05$). The indicator "Extraversion" positively correlated with the need for support from communication with the duty crew ($\rho = 0.896$, $p < 0.05$), while "Introversion" had a negative relationship with this parameter ($\rho = -0.896$, $p < 0.05$). "Introversion" positively correlated with the need for PS based on VR programs ($\rho = 0.888$, $p < 0.05$).

The data from questionnaires and interviews indicate a possible relationship between the feeling of association with the crew, the amount of communication in the crew and with the MCC – and the favorable influence of social support among extroverts in conditions of isolation and crowding while introverts prefers VR. The described trends require confirmation in further experiments.

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