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TIME-SERIES CHANGE IN INTERPERSONAL RELATIONSHIPS AND MENTAL HEALTH: 15-DAYS CONFINEMENT STUDY IN JAPAN.

Abstract

There are several kinds of stressors in the space environment. They can be divided into physical, psychological, interpersonal, and habitability. Focusing on the longitudinal interpersonal relationships, we carried out a 15-days confinement study in 2017. Eight adult healthy males stayed in the long-term

confinement facility. During their stay, they underwent several kinds of group or personal tasks. We measured the interpersonal relationships between every participant using sociometric test. This test made possible to quantify the group composition and cohesiveness in the confined environment and to make the interpersonal relationships illustrated as sociograms. We evaluated two kinds of interpersonal relationships. One was the task-related interpersonal relationships. This meant who each participant wanted to be with in doing the tasks, and also who did NOT want to be with. In the same way, we measured private interpersonal relationships. This meant who each participant wanted to be with in chatting or having meals, and also who did NOT want to be with. For these two kinds of interpersonal relationships, the index of a sociometric status score (ISSS) was calculated as an integrated index showing the social position of individuals in the group. Sociometric test was carried out at three points under confinement. We also used Sense of Coherence (SOC) as an index of individual stress tolerance. The task-related ISSS showed a higher score than the private ISSS. That tended to decrease slightly with the passage of the days and suggesting that one participant might have been a scapegoat. The participants with high SOC seemed to be in higher social position in the group. These results suggest that interpersonal relationships may be a part of resource influencing stress tolerance. While the task-related cohesiveness tended to remain same, the private cohesiveness tended to increase as the days go by. This process showed the possibility that private interpersonal relationships were formed with time. We showed the possibility that taking measures to form and keep good interpersonal relationships leads to utilize the stress-coping resources. This can be understood well in the context of salutogenesis. It says that SOC, which is a stress-coping characteristic, is a force to mobilize various kinds of stress-resistant resources around us flexible and timely. This was an applicable result for maintaining the mental health of the crew in the manned space exploration with lots of resource limitations. This study was supported by the JSPS Grant in Aid for scientific research (15H05935, 15H05941).