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PRELIMINARY RESULTS OF CREW COMMUNICATION CONTENT ANALYSIS IN SIRIUS-17

Abstract

The analysis of communication between the Russian ISS crew and ground services is being held in Content experiment. In the experiment, content analysis of open channel dialogues shows the presence of categories and their dynamics in speech during space missions. The main analyzed speech categories referred to stress coping strategies (Suedfeld et al, 2014). Also, in order to analyze the effectiveness of information exchange and to monitor crew state, we detected crew's statement reflecting such communication functions as informing, affective and social regulation (B. Lomov, 1981). Ground-based simulations in the chambers can be regarded as control to the in-flight studies, allowing to make validity check of the defined parameters. SIRIUS-17 was held in Institute for Biomedical problems in Moscow, Russia. International crew of three men and three women including two Russian astronauts was isolated for 17 days in IBMP chambers to simulate a flight to the Moon. Experiment protocol, as well as on ISS, included obligatory daily planning conferences (DPCs). Crew's speech during DPCs was recorded and analyzed using the same coding instruction as for the Content space experiment. The goal was validation of the defined parameters under simulated space flight conditions (social isolation, confinement, monotony and sensory deprivation) and to detect individual speech patterns of experiment participants. The participants' stress level was assessed by the utilization of coping strategies in their talks with MCC. We considered that the effective coping allows the crew to accomplish adequate data exchange without confrontation while maintaining positive psychological state. On the contrary, non-effective coping correlates with denial of existing problems, controversial seeking of social support together with confrontation and distancing from MCC, as well as with psychological tension. From our point of view, such coping strategies as informing, planful problem solving, endurance/obedience and accepting responsibility provide effective communication with external parties. Consequently, self-control and positive reappraisal help to diminish the existing stress level. Quantity of categories use in these three groups allowed to monitor subjects' state, conflict tension with MCC and individual styles of stress coping. Results allowed to confirm Gushin Shved's (2012) data from "Mars-105" about "distancing" as coping strategy under social isolation and confinement for two from six participants of SIRIUS-17 that was reflected in significant decrease in their communication with MCC. On the contrary, one of the subjects actively communicated with MCC and vividly demonstrated planful problem solving as well seeking for social support as individual coping strategy.