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NEW METHODOLOGICAL APPROACH TO THE ANALYSIS OF CREW-MCC COMMUNICATION

Abstract

The study of cosmonauts' communication with the Mission Control Center (MCC) is a routine procedure for remote psychological monitoring of space crews. The method of crew-MCC communication content analysis enables the astronauts' psychological state assessment directly in the course of their real activities without the use of additional equipment and crew time. Analysis of conversations during the flight reveals: a) the cause of the psychophysiological tension in cosmonauts; b) specific features of crew-MCC interaction; c) coping strategies in problem situations, and d) their comparative effectiveness in problem solving and stress reduction. All statements within the conversations are classified in accordance with the concepts of R. Lazarus and S. Folkman. As well as other investigators studying crew-MCC communication (P. Suedfeld, 2014), we classify coping strategies as problem-oriented ones, either aimed at solving the problem, or protecting the subject from the stressor, and also emotion-oriented ones, aimed at making the problem more psychologically tolerable. The first group includes such 'positive' strategies as: a) planful problem solving; b) initiatives, c) obedience/endurance (execution of instructions), and also the ones regarded as 'non-effective': d) avoidance, e) seeking social support and f) confrontation (disagreement, rejection of the MCC decisions). Emotion-oriented strategies also include 'positive' ones: g) self-control, h) accepting responsibility, i) positive reappraisal, as well as 'negative' strategies: j) denial, k) distancing and l) escape from responsibility. The task of the expert analyzing communication is to determine the semantic signs of using the above-described coping strategies. This approach is used in the analysis of messages of three groups of communicants: the crew, the group of MCC operators and the group of "specialists" (i.e., persons responsible for onboard operations). In the course of communication these groups execute, according to B. Lomov (1981), not only the actual exchange of information (informative communication function), but also share their emotions (affective communication function), and demonstrate a certain social role (social regulatory function). Analyzing communication as a manifestation of social regulation, we proceed from the provisions of E. Berne's psychodynamic theory of ego states (states of the self) and transactional theory of communication. We consider that new methodological approaches to crew-MCC communication analysis will allow us to enhance the predictive power of the psychological monitoring of the ISS crews. Practical recommendations formed on the basis of the communication analysis' can contribute to improving the efficiency of crew-MCC information exchange and the quality of psychological support in long-term space flights.