

HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)

Astronauts: Those Who Make It Happen (5)

Author: Dr. Bernadette van Baarsen
VU medisch centrum, The Netherlands

Dr. Alla Vinokhodova
Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation
Prof. Fabio Ferlazzo
Sapienza University of Rome, Italy

PERSON AUTONOMY OF CREW MEMBERS IN EXTREME CONFINEMENT AS SEEN FROM
THE VIEWPOINT OF MISSION GROUND CONTROL: IMPLICATIONS FOR COMMUNICATION
AND DECISION MAKING

Abstract

The LODGEAD study aims to explore the relationship between well-being and person autonomy among crew members who live and work in extreme isolated conditions such as occur during long-term space flights. Analysis of data that were collected among crew members during seven months of isolation (Van Baarsen, 2011) revealed that the isolation did not have a negative effect on crew motivation and feelings of person autonomy in general. The results indicated that both accurate information given during the training and realistic private expectations have a direct positive effect on autonomous feelings of crew members in that decisions can be taken freely and that participation is voluntary. The study was carried out within the scope of the MARS-500 study which includes a Mars mission simulation of 105 (pilot study) and 520 (main study) days and involves an international crew of 6 men who lived and worked in hermetically sealed modules in the IBMP facilities in Moscow. In the present study, the data that were collected among mission ground control regarding their observations of the well-being, motivation, and person autonomy among the crew, will be analysed and compared to the data of the crew. The data evaluate the Mars experiment by the use of questionnaires in terms of, i.e., (a) information received (“My experiences here are in line with what I was told during the selection and instruction procedure”), (b) perceived social pressure (“I don’t feel free to make my own decisions”), and perceived voluntariness (“I feel independent regarding deciding to participate in this experiment”).

It is hypothesized that (1) ratings among ground control regarding crew well-being will be positively related to their ratings of crew voluntariness and freedom of choice, and (2) the higher the ratings of ground control, the higher the ratings among the crew regarding their (a) experiences of voluntariness and freedom of choice, (b) perceived information and expectations consistency, and (c) levels of motivation.

The findings will be discussed regarding communication and decision making among crew and mission control in the context of crew well-being, mission safety, and responsibility. Also, moral expectations and ethical considerations regarding future participation in long duration Human missions such as Mars will be discussed. We will make use of descriptive, longitudinal pattern analyses and correlations. The findings may have relevance for communication and decision making in which both crew and mission control have a role.