

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Behaviour, Performance and Psychosocial Issues in Space (1)

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WORKING HOURS, SLEEP, SALIVARY CORTISOL, FATIGUE AND NEURO-BEHAVIOR DURING
MARS ANALOG MISSION: ILEWG EUROMOONMARS

Abstract

Long duration missions like mission to Mars however, requires humans to adapt to systemic and complex environments beyond the human body's capacity. Very few studies are conducted on effect of long duration work and sleepiness on cognitive performance. So, this study was planned to find out effects of leadership responsibility, sleepiness and long duration working hours on cognitive performance. The 12 members were selected from MDRS crews (Mars Desert Research station, USA. Neurobehavioral test performance, self-ratings of fatigue and sleepiness, and salivary cortisol levels were evaluated during first day, mid and end day of mission. The Leadership group did not show any signs of reduced test performance, even in elevated fatigue and sleepiness. The leadership group had faster reaction times on end of mission as compared to first and after 7 day of mission. Saliva samples were collected by Versi-Sal (Oasis, USA). Salivary cortisol levels were significantly higher in leadership group as compared to normal group. The results suggest that long duration work and sleepiness does not affect the cognitive performance of crew member. Further study is required while taking into account all factors and large sample size to prove this fact. Key words: Sleep, salivary cortisol, working hours, leadership, neuro-behavioral