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ADAPTATION TO PARABOLIC FLIGHTS: IMPLICATIONS OF PERSONALITY

Abstract

Personality in extreme environments is quoted as a variable which would be a significant parameter to consider in the processes of adaptation (e.g.[1]). Studies performed in different extreme conditions have suggested that some characteristics of personality, such as conscientiousness, agreeableness, extraversion or neuroticism are linked to performance and would play a role in the degree of adaptation [2,3]. Thus in the present study (using the "ETAP-0g" psychophysiological database), we examined whether adaptation to parabolic flights, characterized by ongoing changes between 1.8, 1 and 0G which might induce stressful conditions, would be related to intrinsic predisposition (personality traits).

Fifty right-handed voluntaries men who participated in a series of studies related to psychomotor performances during a parabolic flight (without medication) and its control condition were separated into two groups. Subjects who have manifested any symptom of motion sickness susceptibility (nausea, vomiting, pallor and/or cold sweating) during the flight constitute the Sickness group (n=33), the others constitute the None Sickness group (n=17). Traits of personality were assessed before the experiment by the NEO-PI-R, a self-report questionnaire measuring five domains of personality, each of which being sub-divided into six facet scales. Logistic regression was used to evaluate the relationships between the 30 facets and motion sickness susceptibility.

Four significant associations were founded between personality facets and motion sickness susceptibility during parabolic flights: Anxiety N1 (chi-square=6.45, p=0.01, OR=1.26, 95%CI:1.05–1.50) , Impulsiveness N5 (chi-square=7.59, p=0.01, OR=0.60, 95%CI:0.42–0.86), Excitement seeking E5 (chi-square=4.35, p=0.04, OR=1.32, 95%CI:1.02–1.72) and Deliberation C6 (chi-square=7.10, p=0.01, OR=0.70, 95% CI:0.54–0.91).

These results suggest that some personality traits may influence adaptation to stressful conditions of parabolic flights. In agreement with studies linking anxiety to extreme conditions [4,5], low susceptibility to anxiety could facilitate adaptation to parabolic flights. Moreover, Fischer and Smith [6] have suggested that deliberative sensation seekers would have a higher rate of success in risk taking activities with a non-negative outcome than those who did not plan ahead for safety measures. In agreement with this study, our results suggest that subjects with high scores on Excitement Seeking and low score on Deliberation could have more difficulties in parabolic flights adaptation (e.g., by misapplication of advices).

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