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EXAMINING THE VALUE OF MOUNTAINEERING EXPEDITIONS FOR SKILL DEVELOPMENT
AND LEARNING TRANSFER: IMPLICATIONS FOR ASTRONAUT SURVIVAL TRAINING

Abstract

In 2007, Kanas and colleagues emphasised the value of astronauts undergoing survival training in order to foster group cohesion for future space missions. Extreme contexts such as mountain-climbing, polar-overwintering and desert-expeditions were identified as settings in which survival training could occur. Despite survival activities being identified as an important component of astronaut training, there is relatively little empirical evidence attesting to the utility of extreme environments for promoting skill development and fostering group relations. Addressing the aforementioned gap in the extreme environment literature, the present study examines the benefits afforded to individuals engaging in mountaineering expeditions. In the current work, specific focus was placed on indicators of skill development and learning transfer.

We employed a mixed-method retrospective cross-sectional design. In total, 72 participants who had completed a mountaineering expedition lasting a minimum of 7 days responded to an online self-report questionnaire. The questionnaire included items on personal values (Portrait Values Questionnaire, PVQ; Schwartz et al., 2001) and learning transfer (Learning Transfer Scale, LTS; Cooley, 2015). Participants also answered two open-ended interview questions regarding skills learnt on expedition and benefits and challenges associated with applying learnt skills within other contexts.

When reflecting back on their most recent expedition, mountaineers agreed they had applied skills learnt on their expedition within other settings ($M_{LearningTransfer} = 5.51$ out of 7, $SD = .99$). Significant and strong positive associations were found between the personal values of Universalism and learning transfer ($r = .44$, $p < 0.001$), and Benevolence and learning transfer ($r = .47$, $p < 0.001$). An iterative process was used to thematically code qualitative open-ended responses and three key themes emerged. Participants reported the value of the expedition experience for (1) understanding others and developing communication skills, (2) becoming more resilient in the face of stress and (3) feeling confident when dealing with new situations.

The present study provides information on the utility of mountaineering contexts for fostering learning, skill development and interpersonal relations. Climbing and mountaineering activities have been signposted as potential settings for astronaut survival training aimed at developing group cohesion prior to missions in space. Quantitative and qualitative data collected as part of the current work supports the proposition that mountaineering expeditions may be facilitative of positive interpersonal interactions and communication, and promotive of skill learning. Notwithstanding limitations in study design, current findings highlight the value of individuals completing expeditions in extreme environments and may prove

informative for astronaut training.