SUBJECTIVE PERCEPTION OF COLD ADAPTATION, EXERTION, AND STRESS DURING A TWO WOMAN LONGITUDINAL TRAVERSE OF ANTARCTICA

G.R. Leon, M. Atlis and G.M. Sandal, Department of Psychology, University of Minnesota, Minneapolis, Minnesota, USA.

Adaptation to extreme cold involves both physiological and psychological processes. The subjective criteria for evaluating the magnitude of thermal sensations likely change with extended exposure to an extreme environment. Judgments of cold and thermal comfort may also interact with perceived level of physical exertion, and stress and coping mechanisms. Two women with prior polar exploration experience, ages 45 (American) and 47 (Norwegian), respectively, are engaging in a 3840 km, approximately 100 day longitudinal ski trek across Antarctica from Queen Maud Land to the Ross Ice Shelf, pulling sleds weighing 114 kg. Baseline measures included body composition, personality characteristics, stress and coping mechanisms, and performance expectations. During the expedition, each team member independently completed a twice weekly rating form assessing outside temperature and wind velocity; subjective perceptions of cold magnitude, body areas relatively coldest and warmest, physical exertion, energy level; and caloric intake. Measures of sleep quantity and quality, mood, appetite, feelings of boredom and monotony, stress and coping, work performance, and confidence about the successful completion of the expedition were also obtained. To ensure rating accuracy, equivalent English and Norwegian versions of the form were developed. The findings are presented in terms of the trajectory and range of perception of cold adaptation over time in relation to objective indices of temperature, wind velocity, caloric intake, and adiposity, and subjective measures of physical exertion and energy level, stress, and work performance. Objective vs. subjective indices of other variables such as caloric intake and appetite, wind velocity and extent of being bothered by the wind are compared.

leonx003@tc.umn.edu