

Examination of self-efficacy to perform exercise before and after a high altitude hike

Josue Dupoux¹, Liam Sweeney¹, Jeff Katula², Devon A. Dobrosielski¹. Towson University, Towson, MD; Wake Forest University, Winston-Salem, NC.

Travel to high altitude poses many challenges for low land natives, including an increased risk of acute mountain sickness, which may influence self-efficacy for exercise and participation in recreation above 3,000 meters. **PURPOSE:** To compare levels of self-efficacy for exercise in young adults before and after completing a high altitude hike in the Andes mountain range. **METHODS:** Undergraduate students who enrolled in a study abroad to Peru volunteered for the study. Prior to traveling, students completed the Exercise Self-Efficacy Scale at sea level (SEA). The survey was repeated at 3,040 meters, before (PRE) and after (PST) embarking on a two-day, high altitude hike on the Inca trail. The 12-item scale assessed confidence in performing vigorous exercise at high altitude for increasing periods of time. Scores ranged from 0 (Not at all confident) to 100 (Highly confident). **RESULTS:** Fifteen students (age 21 ± 1.6 years; M:7, F:8) completed the hike and all three surveys. There was a statistically significant difference in exercise self-efficacy across each survey, as determined by repeated measures ANOVA ($F(2,28)=5.82$, $p<0.008$). Pairwise comparisons with a Bonferroni correction revealed a lower exercise self-efficacy score at PRE (20.7 ± 14.3 AU) compared to SEA (33.7 ± 20.4 AU)($p=0.006$) and PST (34.4 ± 22.9 AU)($p=0.004$). There was no difference between SEA and PST exercise self-efficacy scores ($p=0.904$). **CONCLUSION:** Ascent to 3,000 meters resulted in a reduced self-efficacy to perform vigorous exercise at high altitude. Self-efficacy returned to sea level values after successfully completing a high altitude hike. These data demonstrate the importance of performance accomplishments in improving self-efficacy, which may result in increased participation in recreational activities at high altitude.