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ORIGINAL RESEARCH

Students Experience Self-Esteem Improvement During Mountaineering

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Introduction.—Despite ample evidence in the literature of the correlation between sports participation in general and self-esteem, there is a dearth of information regarding the probable impact of specific sporting activities on self-concept. We, therefore, sought to assess the effect of mountaineering on self-esteem and its correlates in university students.

Methods.—This longitudinal study recruited 54 students (male 26%, female 74%) from different universities in the capital city of Iran, Tehran. The students participated in a mountaineering program in Mt. Damavand in July 2006. The Rosenberg Self-Esteem Scale (RSES), SF-36, and Hospital Anxiety and Depression Scale (HADS) were completed by all the participants before and after this activity. Their demographic data and mountaineering experience were also collected.

Results.—Mean RSES after climbing was significantly higher than before the experience (24.78 $\pm$ 2.4 vs. 23.67 $\pm$ 3.3; $P = .002$). Self-esteem was correlated with bodily pain, and its improvement was correlated with mental health and depression ($P < .05$). Self-esteem and its improvement were not significantly correlated with age, sex, marital status, prior personal and family history of mountaineering, past history of mountain sickness, and reaching the summit ($P > .05$).

Conclusion.—This study showed that participation in a single mountaineering program improved students' sense of self-esteem. We suggest that taking up this activity might have benefits for students with depression.

Key words: self-esteem, mountaineering, sport, Damavand, students

Introduction

For all the various definitions of self-esteem, for instance, ''one's evaluative judgment of the self,''[1] ''one's feelings of self-worth,''[2] ''level of global regard one has for the self,''[3] and how well a person ''prizes, values, approves, or likes'' him or herself,[4] there is no doubt that a positive self-esteem is the desired outcome of academic, sport, and psychotherapeutic settings.[5] High self-esteem is noted for its positive influence on a variety of achievement behaviors[6] and is associated with greater well-being than is low self-esteem.[7,8] An overarching aim of any educational system is the enhancement of students' self-respect,[9] and to that end, efforts should be made in order to widen the scope of activities that can contribute to a better self-concept.

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Sport is widely believed to build self-esteem,[10] and research shows a positive association between general exercise and self-concept.[11] Our review of the existing literature on the subject showed that there is a paucity of data regarding the influence of specific sporting activities on self-respect. The only research that we could find explored the impact of swimming on self-esteem.[10,12] We are inclined to believe that the association between different sports and self-concept should be assessed separately, because the type of sport has been judged a moderator of the effect of exercise on self-esteem.[13] Mountaineering is a sport pursued by many in different age groups, and it was our desire to assess its impact on self-esteem and its correlates, such as depression, anxiety, and quality of life in university students.

Material and methods

This study was approved by the Sports Medicine Research Center of the Tehran University of Medical Sci-

ences. Fifty-four students from different universities in Tehran were enrolled in this longitudinal study and participated in a climbing program on Mt. Damavand in July 2006. Their demographic data (age, sex, and marital status) and mountaineering history (history of mountain sickness and prior personal and family history of mountaineering) were recorded. Mountaineering experience was categorized into (1) amateur: no climbing of mountains with height over 4000 meters during the previous 6 months; (2) semi-expert: 1 to 5 such climbs; and (3) expert: more than 5 such climbs.[14]

MOUNTAINEERING PROGRAM

Lying 50 km to the northeast of Tehran, Mt. Damavand is Iran's highest mountain at a height of 5671 meters and is the highest single-peak mountain in the world after Mt. Kilimanjaro.

The mountaineering program was planned for a 3-day period. On the first day, the students left Tehran for the Polour town on a 2-hour bus journey and spent the night at a Mountaineering Federation camp. The team embarked on climbing the southern aspect of Mt. Damavand at 10:00 AM on the second day and returned to the camp at 6:00 PM on the third day. Climbing the southern aspect of Mt. Damavand does not involve technical mountaineering.

ADMINISTRATION OF QUESTIONNAIRES

The Rosenberg Self-Esteem Scale (RSES), SF-36, Hospital Anxiety and Depression Scale (HADS), and the checklist including demographic data were completed by all the students in the Mountaineering Federation camp on the first night of the trip. On the third night in the camp, the participants were asked to complete the RSES questionnaire again. The participants were divided into 2 groups based on whether or not they had reached the mountain peak.

INSTRUMENTS

The RSES is perhaps the most widely used self-esteem measure in social science research. The questionnaire has 10 items and the scale ranges from 0 to 30 with higher scores representing more positive self-esteem.[15] The RSES has good internal consistency, test–retest reliability, and convergent and discriminate validity.[16]

The SF-36 is a quality of life (QoL) scale with 36 items. It is a self-administered questionnaire consisting of 8 subscales: physical functioning, role limitation due to physical problems, bodily pain, general health, vitality, social functioning, role limitation due to emotional problems, and mental health. It also provides total scores and 2 summary scores of physical health and mental health. All the scores are between 0 and 100 and are calculated on the basis of well-defined guidelines; a higher score signifies a better state of health.[17]

The HADS is a self-assessment instrument for detecting anxiety and depression. Each has 7 items providing a score between 0 and 21, with a higher score indicative of higher anxiety or depression.[18] This questionnaire could assess depression and anxiety concurrently, and its completion takes little time making it suitable for use in wilderness medicine studies. The HADS has been used widely, and it is validated in Iran.[19]

STATISTICAL ANALYSIS

We performed a data analysis using SPSS software (version 13, Chicago, IL). A paired *t* test was used for comparing self-esteem in the participants before and after mountaineering. A Pearson's bivariate correlation test was employed for correlation assessment between self-esteem and its change and age, depression, and QoL and its subscales. A Mann Whitney's nonparametric test was performed in order to compare self-esteem change between the 2 groups of students (ie, those who reached and those who did not reach the top of the mountain). A P value less than .05 was considered significant.

Results

Our 54 participants were comprised of 40 (74%) females and 14 (26%) males. The mean age ± standard deviation (SD) was 23.3 ± 2.6 years (range, 19–32 years). The participants were studying in various fields such as sports sciences, engineering, business, and human sciences.

The mean ± SD and range of the duration of the participants' mountaineering history were 3.65 ± 3.06 and 1–14 years, respectively. Table 1 shows the demographic and mountaineering data of the participants.

The mean ± SD scales of the students' self-esteem before and after climbing were 23.67 ± 3.3 and 24.78 ± 2.4, respectively (Figure 1), which shows a significant increase ($P = .002$). Self-esteem change had no significant correlation with age, sex, marital status, previous self and family history of mountaineering, past history of mountain sickness, and mountaineering experience ($P > .05$).

Self-esteem before mountaineering was significantly correlated with bodily pain score (higher score indicating lower pain)[17] as a subscale of QoL ($r = .42$, $P = .044$). There was also a significant negative correlation between