

The influence of psychological factors on pain levels among Circus Arts students.

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Background/context: Literature suggests that psychosocial factors influence the stress response and, thus, the likelihood of injury occurrence. The daily training load of circus artists is associated with maximum stress. A better understanding of the causes of injuries can have a positive impact on the artists' health and performance. However, there is a lack of studies focusing on the association between stress and coping and pain levels in Circus Arts.

Objective: Examine the association between pain and the independent variables stress and coping resources.

Design: Prospective cohort study.

Methods: First and second year Circus Arts students from Codarts University of the Arts Rotterdam were followed for three months during the academic year 2014-2015. At baseline, participants completed the Athletic Coping Skills Inventory-28. Additionally, participants completed the Subjective Units of Distress and the Self-Estimated Functional Inability because of Pain every two weeks. One-way Spearman correlations between stress, coping and pain were calculated. Regression analyses were conducted on stress and pain.

Results: A total of 33 participants (54.5% male; 51.5% freshmen, mean age=22.39±2.50 years) indicate that pain ($M=4.2\pm 9.00$) was significantly associated with stress ($M=34.14\pm 15.58$; $r=.56$, $p<.000$). Stress could predict 28.2% of the variance in pain ($F(1,31)=12.16$, $p<.001$). Furthermore, pain was significantly related to the total coping score ($M=38.88\pm 8.75$; $r=-.34$, $p<.05$). Specifically, the scores of concentration ($r=-.29$, $p<.05$) and freedom from worry ($r=-.34$, $p<.05$) were significantly correlated.

Conclusions: High stress levels are associated with high pain levels, while high coping resources are correlated with low pain levels. To prevent injuries it can be useful to lower stress levels of the students by teaching them stress management skills. In addition, lectures about coping and other mental skills can be taught to raise the coping resources of students.

KEY WORDS: INJURY, PAIN, PSYCHOLOGICAL FACTORS, STRESS, COPING, CIRCUS ARTS.