

# Psychophysiological stress markers and behavioural differences between rural and city primary school students

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## Abstract

Academic performance could be affected by multiple factors, including stress and learning environment location. The aim of this study was to analyze differences in psychophysiological stress markers, behavior and academic performance of rural and city students. A sample of 181 children ( $7.91 \pm 2.29$  years) from elementary schools were evaluated on their grades, subjective academic performance, heart rate variability, state anxiety, nutritional information and physical activity habits. Results presented significant higher values in parasympathetic modulation and physical education grades in rural students than in city students, who showed higher significant values in state anxiety, the ability to complete tasks, physical activity habits and several items relating to their food and drink habits. No significant differences were found in the average grades between the two groups. However, some correlations were found between school performance and stress, physical fitness and nutritional habits. Thus, school location may affect the stress and anxiety status, nutritional habits and physical activities of students, but there were no significant differences in academic performance. In addition, body mass index, quantity of food intake and stress markers may be related to the academic performance attained.

## Palabras clave

Academic performance, heart rate variability, nutrition, physical activity, primary school, stress.