

The Positive Effect of Food Choices on Academic Stress among Students at the University of Ruhuna

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Abstract

Academic stress among university students is receiving widespread attention in today's academic environment. Academic stress arises from the myriad demands and challenges inherent in academic life, the management of which is fundamental to students' overall health and well-being. University students face a high sensitivity to academic stress and need proactive strategies to reduce stress. There is growing evidence that certain food choices can positively impact academic stress, but the exact link varies among individuals and depends on the specific foods consumed. This research project developed a prediction model using a machine-learning algorithm to determine the beneficial effects of dietary decisions on academic stress among students at the University of Ruhuna. The main goals are to determine the stress levels of the students, comprehend how they eat when under stress, and pinpoint foods that help reduce stress. The study combines supervised and unsupervised learning techniques using a two-pronged design. A dataset of 597 student participants, and a K-means algorithm are employed in the field of unsupervised learning to intelligently classify students into different stress levels based on their replies. This process revealed complicated patterns of food consumption. Simultaneously, supervised learning, facilitated by the K-Nearest Neighbors (KNN) algorithm, creates correlations between stress levels and personalized food consumption habits. The study concluded that there was a noteworthy pattern among students at University of Ruhuna with high stress levels, who consumed an average of 2.25–2.50 times more sweet foods than spicy and milky foods than their low-stress counterparts, who consumed an average of 1.00–1–25 times sweet foods. It illustrates the connection between a person's food intake and stress levels, as well as how eating well can temporarily reduce stress. These findings have important consequences for nutritional therapies that might be used to improve the ability to manage stress among students at University of Ruhuna.

Keywords: *Academic Stress, Supervised Learning, Unsupervised Learning*