Accurately Measuring Stress Using Latest Breathing Technology and Its Relationship with Academic Performance

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Abstract : The main sources of stress among college students are: changes in sleeping and eating habits, undertaking new responsibilities, and financial difficulties as the most common sources of stress, exams, meeting new people, career decisions, fear of failure, and pressure from parents, transition to university especially if it requires leaving home, working with people that they do not know, trouble with parents, and relationship with the opposite sex. The students use a variety of stress coping strategies, including talking to family and friends, leisure activities and exercising. The Yerkes–Dodson law indicates while a moderate amount of stress may be beneficial for performance, too high stress will result in weak performance. In other words, if students are too stressed, they are likely to have low academic performance. In a preliminary study conducted in 2017 with engineering students enrolled in three high failure rate classes, the majority of the students stated that they have high levels of stress mainly for academic, financial, or family-related reasons. As the second stage of the study, the main purpose of this research is to investigate the students' level of stress, sources of stress, their relationship with student demographic background, students' coping strategies, and academic performance. A device is being developed to gather data from students breathing patterns and measure their stress levels. In addition, all participants are asked to fill out a survey. The survey under development has the following categories: exam stressor, study-related stressors, financial pressures, transition to university, family-related stress, student response to stress, and stress management. After the data collection, Structural Equation Modeling (SEM) analysis will be conducted in order to identify the relationship among students' level of stress, coping strategies, and academic performance.

Keywords : college student stress, coping strategies, academic performance, measuring stress
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