Modeling the Changes in the Prevalence of Chronic PTSD and Comorbid Mental Illnesses in Undergraduate Male and Female Students

Banasova, Martina (School: Ardrey Kell High School)

In the last decade, there was a significant increase in interest in mental health services, particularly in young adult populations, which has resulted in university counseling departments becoming widely overwhelmed. The purpose of this research initiative was to project the cases of Chronic PTSD in undergraduate students to begin to alleviate the stresses faced by counseling departments and to allow them to serve patients more effectively. The projections will provide universities with guidance regarding mental health specialists in need since different therapeutic techniques have varying levels of success for certain mental illnesses. To construct the systems dynamics model, annual statistics from previous studies and reports were compiled into coordinates that were used to form Taylor Polynomials in Desmos Graphing Calculator and Mathematica. The Taylor Polynomials were derived before serving as foundational differential equations in the systems dynamics model. It was concluded that the rate of Chronic PTSD will remain around 15% in female undergraduate students between 2022 and 2032, while the rate in male undergraduate students will steadily increase from 4.0% to 4.3%. The number of male and female students seeking professional intervention will be increasing, and university counseling departments must be prepared to meet the needs of these students in order to see a decrease in comorbid mental illnesses and PTSD-related suicides.

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