

A Modeling Framework for Minimizing Spread of Mathematics Anxiety in College Students

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Mathematical models have been frequently used to examine dynamics infectious diseases and have the potential to enhance decision making process for control and prevention of infections. In this study, we assume that math anxiety can be contagious among college students. Under this assumption we developed a mathematical model that expands upon the Susceptible-Infectious-Recovered (SIR) disease model, by incorporating ordinary differential equations. This Mathematical model has been built to gain a comprehensive understanding of the dynamics of math anxiety transmission among college students. By utilizing the findings from the stability analysis and the basic reproduction number, it is possible to develop intervention policies that may successfully minimize student anxiety. To this end, one of the crucial factors is to identify the underlying mechanisms that relate to period anxiety. Moreover, it is possible to identify and implement strategies during the semester to reduce the occurrence of Drop/Fail/Withdrawal rates.