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A Mathematical Model of the Obesity Epidemic

Ana L. Vivas-Barber

Norfolk State University, alvivasbarber@nsu.edu

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Title: A Mathematical Model of the Obesity Epidemic

Abstract:

Obesity is one of the biggest health concerns in the U.S. and around the world because it has increased in the last fifty years not only in adults but in children and adolescents. The obesity epidemic deteriorates quality human lives as well as increases the medical costs by increasing risk for other diseases such as diabetes, heart disease and colon cancer among others in the United States. The overall goal of this research is to understand the dynamics of the transmission of the obesity disease through modeling the epidemic. It will be assumed that the total population N can be divided into six compartments: S-susceptible, B-Borderline, O-obese, T_1-treatment 1(for obese individuals), T_2-treatment 2 (for borderline individuals), and R-recovery classes. The reproduction number and some stability results will be presented; some numerical simulations for the solution of the dynamical system of ordinary differential equations will be included.