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Homophily and contagion as explanations for multiple health-related behaviors similarities among adolescent friends A longitudinal sociocentric network study

Abstract:

Background: University students in the phase of emerging adulthood are especially susceptible to the influence of peers on their health-related behaviors. This study aimed to ascertain whether health-related behaviors homophily among adolescent friends result from contagion processes, after controlling for the selection processes and other confounding.

Methods: A longitudinal study using a sociocentric network design collected three waves of data from 612 first-year undergraduate students in two universities from November 2022 to December 2023. At each wave, social networks were evaluated using the fixed roster method, while standard scales were employed to assess physical exercise, fruit and vegetable consumption, sleep quality, sugar sweetened beverages consumption, smoking and drinking. Stochastic actor-oriented models (SAOM) were used to simulate the co-evolution of networks and behaviors to identify contagion effects.

Results: The study included five whole networks comprising 213 (35.0%) men and 396 (65.0%) women, with a mean age of 18.7 years. This study found that all health-related behaviors were significantly homogenous. Significant positive effects of contagions indicate that participants tend to alter their own behaviors in physical exercise (Estimates =0.304, p=0.025), fruit consumption (Estimates =0.089, p=0.014), smoking (Estimates =3.078, p=0.027), drinking (Estimates =0.368, p=0.045), and sleep quality (Estimates =1.380, p=0.040) to become or remain similar to their friends.

Conclusions: Our findings indicate that the homophily of some health-related behaviors is primarily driven by contagion mechanisms. Network-based intervention strategies may vary depending on different behaviors, targeting contagious behaviors for network-based intervention may potentially have a broader impact, potentially expanding the scope of intervention.

Biography

Rui Luo, a distinguished scholar at Sun Yat-sen University, China, specializes in biomedical research, contributing significantly to the advancement of medical science.