Propensity score methodology in estimating the effect of drug use on violent behavior among students in Southwest Nigeria

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Background: Randomized controlled trials of drug use and violent behavior are difficult to conduct and are unethical. We used propensity score methodology to test whether there is an association between using drugs and violent behavior. We built a model to predict the probability that a student will perpetrate violence.

Methods: A cross sectional study involving 2000 adolescents in secondary schools was conducted. The outcome variable was violent behavior, exposure variable was drug use while other covariates were alcohol use, gender, age, family type, father's and mother education, person who student lives with, person who brought student up, missed classes without permission and parental marital status. We used Propensity Scores to form a comparison or control group (students who do not use drug) that is similar to the exposure group (student who use drug) in all observed predictors of violence. We estimated the propensity score by logistic regression.

Results: Our findings showed that drug use was more common among students whose parents had no formal education, those who were brought up by their grandparents, those who live with their fathers only, those whose parents were divorced and those who used alcohol and missed classes. Our results further showed a significant association between drug use and violent behavior.

Conclusion: This analysis strengthens the evidence of the association between drug use and violent behavior. It also showed that PSM methodology by compensating for selection bias is a useful tool for estimating the relationship between drug use and violence in cross-sectional studies.

Biography

Oyindamola Bidemi Yusuf hold a BSc in Statistics, MSc in Epidemiology and Medical Statistics and a PhD in Medical Statistics. She teaches courses in Medical Statistics to postgraduate students of the Faculty of Public Health, University of Ibadan, Nigeria. She also provide statistical support to faculty staff on project design and data management. Her research interests include: Mathematical Epidemiology of Infectious Diseases and Analyses of Longitudinal Data. She have been involved in the design and data analysis of research projects, such as Home management of Malaria, Gender Based Violence, Evaluation of stress levels, trauma, depressive symptoms in adolescents and the elderly.

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