PROPENSITY SCORE METHODOLOGY IN ESTIMATING THE EFFECT OF DRUG USE ON VIOLENT BEHAVIOUR AMONG STUDENTS IN SOUTH WEST NIGERIA.

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Introduction

Alcohol and drugs have been identified as social interactions that may lead to violence. 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 behaviour. We built a model to predict the probability that a student will perpetrate violence.

Methodology

A cross-sectional study involving 2000 adolescents in secondary schools was conducted. The outcome variable was violent behaviour, exposure variable was drug use while other covariates were alcohol use, gender, age, parental marital status, etc. We used Propensity Scores to form a comparison group (students who do not use drug) that is similar to the exposure group (student who use drug).

We estimated the propensity score by logistic regression. The chi square test was used to compare the characteristics of those who used drugs and those who did not. Odds ratios and 95% confidence intervals were also computed.
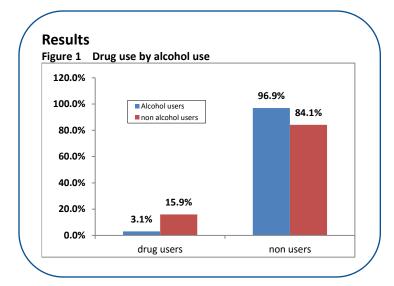
Results

Violent behaviour occurred in 43.6% of adolescents, while drug use was reported by 4.8%.
Students who lived with their fathers only had the highest rate of drug use (9.1%) compared with those who lived with both parents (4.3%).

Results

Table 1: Logistic regression predicting the propensity scores of drug exposure.

	OR	SE	P-Value	95% CI
Sex				
Female	1.42	0.42	0.29	0.74, 2.72
Father's education				
No education				
Primary	0.84	0.58	0.79	0.22, 3.27
Secondary	0.62	0.44	0.50	0.16, 2.48
Post sec/university	0.17	0.14	0.03	0.04, 0.85
Mother's education				
No education				
Primary	2.36	1.59	0.20	0.63, 8.86
Secondary	1.74	1.23	0.43	0.44, 6.95
Post sec/university	4.23	3.29	0.06	0.95, 19.38
Who they live with				
Parents only				
Father only	1.42	0.93	0.59	0.39, 5.15
Mother only	4.10	2.86	0.04	1.05, 16.10
Grandparents	1.88	1.29	0.38	0.49, 7.24
Marital status of parents				
Married	1.22			
Divorced/separated	0.12	0.68	0.72	0.41, 3.61
Orphaned		0.135	0.06	0.01, 1.13
Missed classes	2.30	0.76	0.01	1.20, 4.39
Alcohol use	8.67	3.01	0.00	4.38, 17.13
Parental monitoring				
Never/rarely				
Sometimes	0.53	0.23	0.15	0.23, 1.25
Most of the time	0.69	0.25	0.31	0.34, 1.41

Results

Figure 1   Drug use by alcohol use

Conclusion

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.

This analysis strengthens the evidence of the association between drug use and violent behaviour. 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.