



Effect of Electronic and Conventional Cigarette Use, Antiretroviral Therapy (ART) Adherence, and Steroid Use on Perceived Stress Levels of People Living with HIV (PLHIV) Clients in a Community-Led HIV Clinic in Metro Manila, Philippines



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BACKGROUND AND OBJECTIVES

Studies suggest smoking and vaping electronic cigarettes (EC) and conventional cigarettes (CC) aids in stress reduction among people living with HIV (PLHIV). But research on vaping and smoking practices, medication usage and adherence, and the stress of Filipino PLHIV are limited. Our study aimed to estimate the effect of EC/CC use, antiretroviral therapy (ART) adherence, and steroid use on perceived stress level (PSL) among PLHIV in a community-led HIV clinic.

METHODS

Study Site

- Community-led HIV clinic in Metro Manila, Philippines

Study Population

- 220 People living with HIV (PLHIV) Filipinos seen in the HIV clinic

Study Design

- Cross-sectional study utilizing survey questionnaire and records review

Inclusion Criteria

- PLHIV patients enrolled in 2019, male, and at least 18 years old

Exclusion Criteria

- PLHIV patients who refused to answer the survey questionnaire

Outcome Measurement

- Utilized the Perceived Stress Scale (PSS) to measure the degree to which situations in a PLHIV Filipino's life are appraised as stressful (high vs. low/moderate)

Exposure Assessment

- Determined antiretroviral therapy (ART) adherence index (good vs. bad)
- Ascertained smoking/vaping status (never vs. ever), steroid use (yes vs. no), and covariates using survey questionnaire and records review

Statistical Analysis

- Fitted generalized linear models with Poisson distribution, log link function, and a robust variance (common outcome) to estimate the effect on high PSL of EC/CC use, ART adherence, and steroid use, adjusting for *a priori* covariates
- Reported effect estimates: Adjusted prevalence ratio (aPR) with 95 % confidence interval (95% CI)

MAIN EFFECT

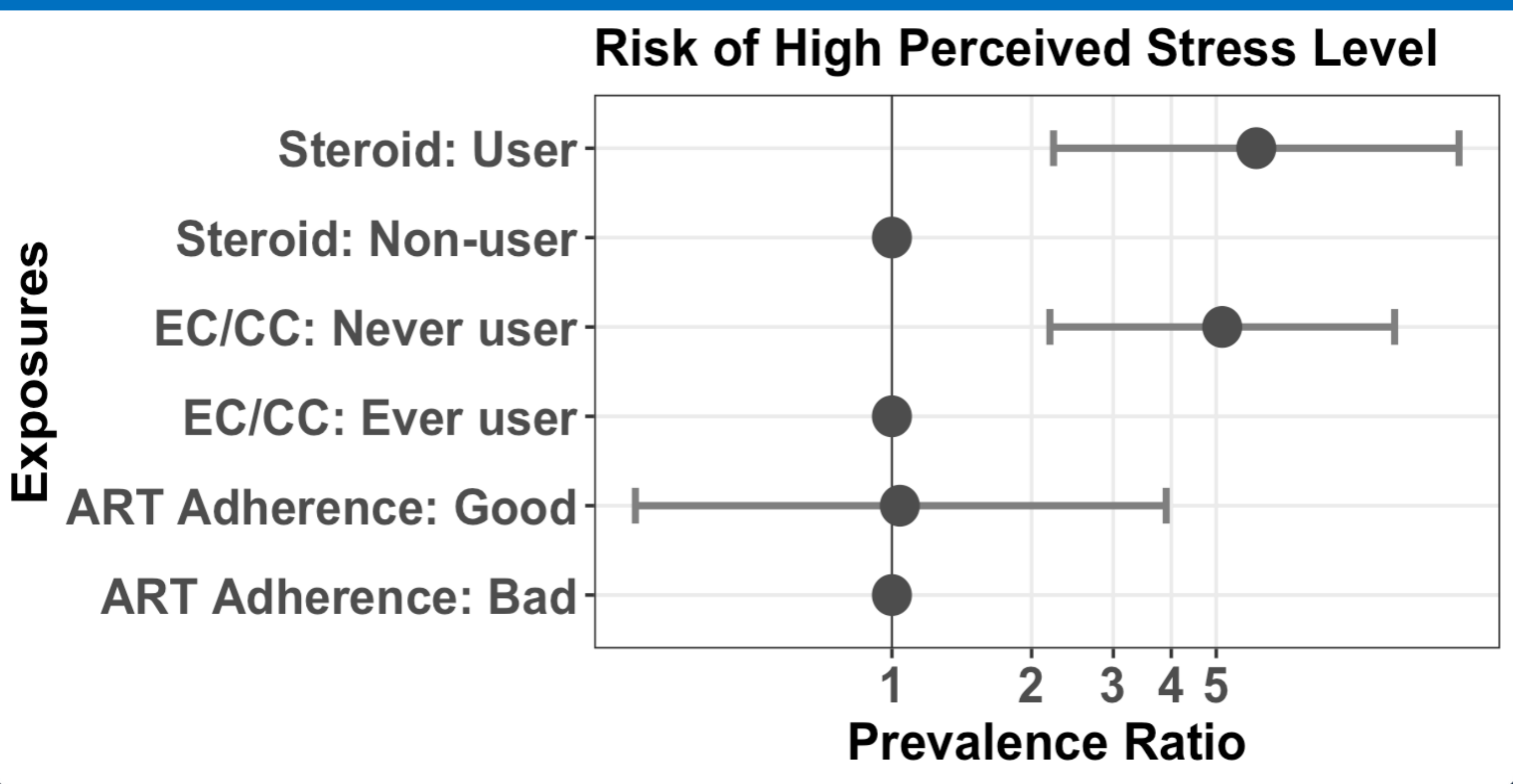


Figure 1. Effect estimates of the associations between antiretroviral therapy (ART) adherence, steroid, electronic cigarettes (EC), and conventional cigarettes (CC) use and high perceived stress level. The model was adjusted for age, relationship status, sexual orientation, medical conditions (hypertensive status, diabetic status, kidney disease, and respiratory disease), income, education, and family history of respiratory disease. A point with an error bar indicates an adjusted Prevalence Ratio with 95% confidence interval.

RESULTS

- Fifty-six percent of patients were never EC/CC users, while 14%, 9%, & 4% had high PSL, poor ART adherence, & steroid users, respectively.
- Never EC/CC user was related to high PSL.
- PLHIV who are never EC/CC users were approximately six times more at risk of high PSL (aPR: 5.15; 95%CI: 2.19 – 12.12) than ever EC/CC users.
- Steroid users were approximately 6 times more likely to have a high PSL (aPR: 6.10; 95% CI: 2.23 – 16.68) than non-steroid users.
- No association between poor ART adherence and high PSL was found (aPR: 1.04; 95%CI: 0.28 – 3.90).

STUDY POPULATION

Table 1. Characteristics of study population (N = 220), People Living with HIV (PLHIV), 2019

Characteristic	Value	Characteristic	Value
Age, years (mean ± SD)	29 ± 5	Monthly income, PhP [n (%)]	
Age category [n (%)]		< = 25,000.00	107 (49)
18 – 24	51 (23)	> 25,000.00	113 (51)
25 and above	169 (77)	Smoking/Vaping status [n (%)]	
Sexual orientation [n (%)]		Never Vaper and Smoker	123 (56)
Others/Prefer not to say	44 (20)	Ever vaper &/or smoker	97 (44)
Bisexual	92 (42)	Education [n (%)]	
Homosexual	84 (38)	Post-graduate	19 (9)
Relationship status [n (%)]		High school to college	201 (91)
In a relationship.	59 (27)	Family hist. of resp. illness [n (%)]	
Single	161 (73)	With history	68 (31)
ART adherence [n (%)]		Without history	152 (69)
Poor adherence	19 (9)	Hist. of resp. illness [n (%)]	
Good adherence	201 (91)	With history	31 (14)
Hypertensive status [n (%)]		Without history	189 (86)
Hypertensive	38 (17)	Diabetes Mellitus (DM) status [n (%)]	
Not hypertensive	182 (83)	With DM	21 (10)
Kidney disease [n (%)]		Without DM	199 (90)
With disease	9 (4)	Steroid Use [n (%)]	
Without disease	211 (96)	User	8 (4)
Perceived Stress Level [n (%)]		Non-user	212 (96)
High	30 (14)		
Low/Moderate	190 (86)		

CONCLUSION

EC/EE Non-use and steroid use may increase PSL among Filipino PLHIV. The triggers of a high PSL among Filipino PLHIV are multifactorial and warrants further research. Making their lives stress-free is the first step to good overall mental well-being. Our study results may help to develop targeted mental health programs to improve the lives of PLHIV.

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