Prescription of smoking cessation medications and associated factors among patients in the HIV Outpatient Study, 2007-2021

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BACKGROUND:

- The U.S. Preventive Service Task Force (USPSTF) recommends smoking screening and cessation strategies as a part of routine care.
- People with HIV (PWH) are more likely to smoke, less likely to quit than the general population.
- This study aimed to assess factors associated with prescription of smoking cessation medications among smokers seen in care at outpatient clinics of the HIV Outpatient Study (HOPS).

METHODS:

- We analyzed medical records and risk behavioral survey data from HOPS participants enrolled from January 1, 2007 to December 31, 2021.
- We included persons with evidence of current cigarette use and not receiving smoking cessation medications at HOPS enrollment (baseline).
- Smoking cessation medications included varenicline (Chantix), bupropion (Zyban), and nicotine products.
- We identified smoking-related comorbidities based on laboratory results, clinical diagnoses, and treatments at baseline.
- We assessed associations between prescription of smoking cessation medications, sociodemographic and clinical factors using multivariable Cox proportional hazards analyses.

RESULTS:

- Among 1,058 eligible participants, 77% were men, 46% aged 40 and older, 31% White persons, 48% Black persons, 18% Hispanic/Latino persons.
- At baseline, 15% had smoking-related comorbidities of chronic obstructive pulmonary disease (COPD)/emphysema, cardiovascular disease (CVD), or cancers.
- During a median follow-up time of 2.6 years (interquartile range: 0.9-5.8), 320 (30%) were prescribed smoking cessation medications (Varenicline 91, Bupropion 49, nicotine products 255), and 248 (23%) quit smoking.
- In univariate Cox proportional hazards analyses, baseline factors associated with being prescribed smoking cessation medications during observation included:
  - age, race/ethnicity, HIV risk activity,
  - insurance payor, HOPS clinic type,
  - alcohol use, education, employment,
  - depression, anxiety, cancer, and COPD/emphysema diagnoses.

During a median follow-up time of 2.6 years, only 30% of smokers were prescribed smoking cessation medications and 24% quit smoking, indicating an opportunity to further strengthen primary and/or secondary prevention of smoking-related chronic diseases in persons with HIV.

Table 1: Participant Characteristics by Smoking Cessation Prescription Status during Observation, the HIV Outpatient Study (N=1,058), 2007-2021.

Baseline characteristic*	Overall N (%)	Not prescribed smoking cessation products during observation N (%)	Prescribed smoking cessation products during observation N (%)	P-value†
Overall	1,058 (100.0)	738 (69.8)	320 (30.2)	
Race/ethnicity				0.019
White, non-Hispanic/Latino	331 (31.3)	245 (33.2)	86 (26.9)	
Black, non-Hispanic/Latino	510 (48.2)	339 (45.9)	171 (53.4)	
Hispanic/Latino	188 (17.8)	129 (17.5)	59 (18.4)	
Other/unknown	29 (2.7)	25 (3.4)	4 (1.3)	
HIV transmission risk activity				0.21
Male to male sexual activity	530 (50.1)	382 (51.8)	148 (46.3)	
Heterosexual activity	396 (37.4)	261 (35.4)	135 (42.2)	
Injection drug use	82 (7.8)	58 (7.9)	24 (7.5)	
Other/unknown activity	50 (4.7)	37 (5.0)	13 (4.1)	
Payer				< 0.001
Private	312 (29.5)	245 (33.2)	67 (20.9)	
Public	642 (60.7)	414 (56.1)	228 (71.3)	
No insurance	104 (9.8)	79 (10.7)	25 (7.8)	
Clinic type				< 0.001
Private	402 (38.0)	309 (41.9)	93 (29.1)	
Public	656 (62.0)	429 (58.1)	227 (70.9)	
Alcohol use				0.19
No alcohol use	432 (40.8)	294 (39.8)	138 (43.1)	
<7 alcoholic drinks/week	443 (41.9)	310 (42.0)	133 (41.6)	
7-14 alcoholic drinks/week	98 (9.3)	77 (10.4)	21 (6.6)	
>14 alcoholic drinks/week	85 (9.0)	57 (7.7)	28 (8.8)	
Employment (full or part-time)				0.016
Yes	369 (34.9)	275 (37.3)	94 (29.4)	
No	689 (65.1)	463 (62.7)	226 (70.6)	
Education				0.07
Not entered	241 (22.8)	172 (23.3)	69 (21.6)	
High school or less	469 (44.3)	313 (42.4)	156 (48.8)	
Some college	227 (21.5)	158 (21.4)	69 (21.6)	
College graduate	121 (11.4)	95 (12.9)	26 (8.1)	
Diabetes	52 (4.9)	40 (5.4)	12 (3.8)	0.32
Depression	336 (31.8)	218 (29.5)	118 (36.9)	0.023
Anxiety	197 (18.6)	130 (17.6)	67 (20.9)	0.23
Bipolar disorder	106 (10.0)	69 (9.3)	37 (11.6)	0.32
Psychosis	29 (2.7)	19 (2.6)	10 (3.1)	0.77
Cancer (lung, head, neck, cervical, anal, renal, etc.)	9 (0.9)	4 (0.5)	5 (1.6)	0.14
COPD / Emphysema	53 (5.0)	30 (4.1)	23 (7.2)	0.047
Cardiovascular disease	109 (10.3)	73 (9.9)	36 (11.3)	0.58
Hypertension	284 (26.8)	196 (26.6)	88 (27.5)	0.81

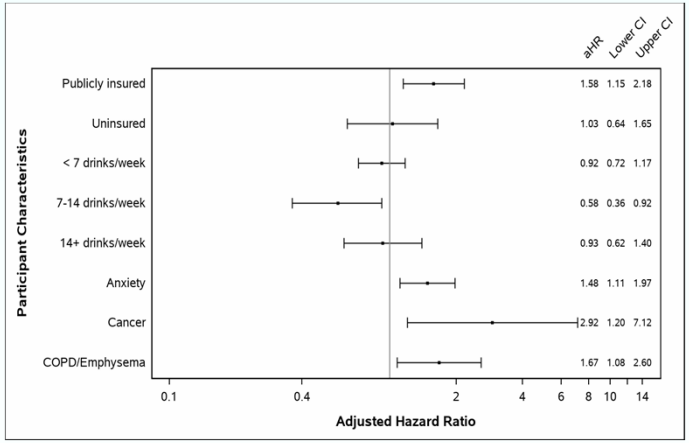
†Yates-corrected chi-square test
Abbreviation: COPD, chronic obstructive pulmonary disease

Disclaimer: Findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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- In multivariable Cox proportional hazards analyses, the following baseline factors were significantly associated with prescription of smoking cessation medications (Figure 1):
  - public insurance (adjusted hazards ratio [aHR] 1.63, confidence interval [CI] 1.19-2.21)
  - diagnoses of anxiety (aHR 1.45, CI 1.10-1.92), cancer (aHR 2.98, CI 1.22-7.27), or COPD/emphysema (aHR 1.69, CI 1.09-2.60)
  - having 7-14 alcoholic drinks/week (aHR 0.58, CI 0.36-0.92) was inversely associated.

Figure 1: Factors Associated with Prescription of Smoking Cessation Medications, the HIV Outpatient Study (N=1,058), 2007-2021.



Abbreviations: aHR, adjusted hazard ratio; CI, confidence interval; COPD, chronic obstructive pulmonary disease.
Referent groups were the following: privately insured, no alcohol use, and no diagnoses of anxiety, cancer, or COPD/emphysema.
Final model adjusted for race/ethnicity and clinic type.

LIMITATIONS:

Data on behavioral interventions (e.g., behavioral support and counseling) were not available for analysis.

CONCLUSIONS:

Low frequencies of prescribed smoking cessation medications and of smoking cessation among HOPS patients indicate an opportunity to further strengthen primary and/or secondary prevention of smoking-related chronic diseases in persons with HIV.

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