

Examination of ENDS Use among College Students



Table 1. Demographic characteristics

Characteristic	Total sample (N= 63)	ENDS use	
		Yes (n = 33)	No (n = 30)
Sex			
Male	30 (47.5%)	15 (50%)	15 (50%)
Female	33 (52.5%)	18 (55%)	15 (45%)
Race/ethnicity			
White	59 (93.6%)	31 (93.9%)	28 (93.0%)
Black	3 (4.8%)	2 (6.1%)	1 (3.5%)
Hispanic	1 (1.6%)	0 (0.0%)	1 (3.5%)
Academic class			
Freshman/Sophomore	30 (47.6%)	23 (69.7%)	7 (23.3%)
Junior/Senior	33 (52.4%)	10 (30.3%)	23 (76.7%)
Age Mean (SD)			
Male	20.5 (1.13)	20.4 (1.24)	20.6 (1.06)
Female	20.1 (1.32)	19.5 (1.04)	20.9 (1.25)

Table 2. Characteristics of ENDS users compared to non-users

	Total sample		p
	ENDS user	non-ENDS users	
GAD-7 Anxiety score			.008
<5	19 (56%)	26 (90%)	
5-9	15 (44%)	1 (3%)	
10-14	0 (0%)	2 (7%)	
PHQ-9 Depression score			.007
<6	19 (56%)	26 (90%)	
6-10	12 (35%)	1 (3%)	
11-15	3 (9%)	2 (7%)	
Past 30 days (% yes)			
Cigarette	35%	10%	.021
Marijuana	56%	17%	.002
Alcohol	88%	76%	.20
Cough % yes	24%	3%	.031

Note: Survey questions were optional; not every participant answered every question thus sample size may vary by question.

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PURPOSE

The purpose of this study was to examine differences in nicotine dependence, psychosocial factors, and respiratory health between college students who use Electronic Nicotine Delivery Systems (ENDS) and those who do not.

BACKGROUND

- Use of Electronic Nicotine Delivery Systems (ENDS) has dramatically increased in the emerging adult population (ages 18-25), with reported ever-use from national studies ranging from 12.5% to more than 30%.
- Past 30-day marijuana and alcohol use has been associated with increased odds of ENDS use among young adults.
- Studies examining psychosocial links to ENDS are scarce, but recent findings have found depression higher in ENDS users compared to non-users.
- Similar to respiratory discomforts reported by conventional cigarette users, ENDS user respiratory-related complaints, such as cough, have increased.

METHODS

- This was a comparative study using quota sampling.
- Current use was defined as using an ENDS within in the past 30 days.
- Surveys measures included:
 - ✓ nicotine dependence (Penn State Electronic Cigarette Dependence Index [PSECDI])
 - ✓ smoking behaviors; and respiratory issues (i.e. cough)
 - ✓ anxiety (Generalized Anxiety Disorder 7 [GAD-7])
 - ✓ depression (Patient Health Questionnaire-9 [PHQ-9])
- Data analysis consisted of Mann-Whitney U and Chi Square (alpha < .05) using SAS, version 9.4.

RESULTS

- Sixty-three students, ages 18-24 participated; 34 ENDS and 29 non-ENDS users.
- 100% of participants chose JUUL as the brand of ENDS product used.
- The sample was predominantly white (95%) and included upper and lower classman.
- Gender was equally proportionate due to quota sampling.
- ENDS users were significantly more likely than non-ENDS users to have smoked cigarettes (35% vs 10%; p=.021) and used marijuana (56% vs 17%; p=.002) in the past 30 days.
- Compared to non-users, ENDS users reported significantly higher anxiety (p=.008) and depression scores (p=.007).
- ENDS users were significantly more likely than non-ENDS users to report recently having a cough that would not go away (24% vs 3%; p=.031).
- There were no significant differences in PSECDI dependence or daily/non-daily use between males and females.

ENDS users were more likely to have recently smoked cigarettes and used marijuana, and reported higher depression and anxiety scores compared to non-ENDS users.



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