

Correlates of e-cigarette use dependence among regular adult e-cigarette users

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Background

E-cigarette use dependence may vary by age of initiation, use frequency and liquid nicotine concentration. Little is known about the correlation between dependence and e-cigarette device type, nicotine formulation and flavor.

Methods

- 1209 adult (21+) regular ECIG users (5+ days of use per week) completed an online survey and uploaded photos of their most used device and liquid
- E-cigarette dependence was measured by PROMIS-E: range 0-4, 4 being most dependent
- Bivariate Spearman correlation, independent t-test, and analysis of variance were used to examine the correlation and test for significance

Results

- Dependence was positively correlated with first use of e-cigarettes before age 21, use of disposable pod/cartridge device, use of device without adjustable wattage/voltage, greater liquid nicotine concentration, nicotine salt-containing liquid, and use of menthol-flavored liquid; and negatively correlated with use of tank device

Using a **disposable pod/cartridge device, device without adjustable settings, nicotine salt-containing liquid, and menthol-flavored liquid** are correlated with **higher e-cigarette use dependence** among regular e-cigarette adult users.

	%/Mean	Mean of E-cig Dependence (SD)	Corr. with E-cig Dependence	P*
Age of first e-cig use (<21 yrs old)	22.9%	2.40 (0.94)	0.12	<0.001
Device type				
Disposable device	9.2%	2.25 (1.10)	0.02	0.48
Disposable pod/cartridge	25.6%	2.38 (0.84)	0.11	<0.001
Refillable pod/cartridge	23.8%	2.24 (0.90)	0.02	0.62
Refillable tank	41.5%	2.08 (0.92)	- 0.12	<0.001
Device WITHOUT adjustable wattage/voltage	50.6%	2.28 (0.92)	0.09	<0.01
Nicotine concentration (mg/mL)	25.71 (21.91)	2.21 (0.92)	0.15	<0.001
Nicotine salt ("Yes")	48.1%	2.31 (0.91)	0.11	<0.001
Primary flavor of e-liquid ("Tobacco menthol or menthol")	13.6%	2.40 (0.86)	0.08	<0.01

*Correlation coefficient and corresponding p-value were obtained using Spearman's correlation; p<0.05 significance bolded.

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Discussion

- Findings from this study suggest that initiating e-cigarette use at an early age, use of disposable pod/cartridge device, device without adjustable settings and menthol-flavored liquid are correlated with higher e-cigarette use dependence among adults
- Knowledge of correlates of e-cigarette use dependence among regular e-cigarette users can inform product regulation

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