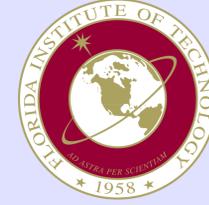




Health Risk Perceptions and Secondhand Exposure Behaviors Related to Vaping Among Student Veterans



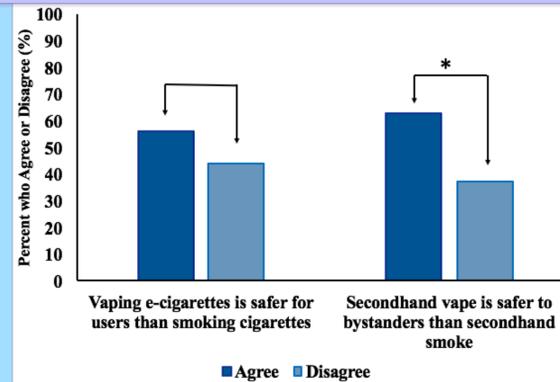
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Introduction

- Student military veterans are at high risk for electronic nicotine delivery systems (ENDS) use (e.g. electronic cigarettes/vapes) given they possess many of the risk factors associated with vaping (young age, male gender, tobacco use, divorced/separated, mental health problems, etc.).¹⁻¹⁷
- Veterans are also at higher risk of exposing others (e.g. children) to secondhand vape.^{1,18-20}
- This is problematic given veterans and children of veterans are already more vulnerable to the negative health outcomes associated with ENDS use²¹⁻³⁶ and secondhand ENDS exposure³⁷⁻³⁹, respectively.
- Despite this, little is known about student veterans' rates of ENDS use, perceptions of health risk associated with ENDS use, and what factors (including unique military stressors) impact the implementation of vaping restrictions/bans in their homes/vehicles.
- This information will be useful for developing interventions that target vaping among student veterans, a high risk population, and that promote bans on home/vehicle vaping.

Results: Health Risk Perceptions and Reasons for Using ENDS



- A greater proportion of student veterans agreed (55.9%) than disagreed (44.1%) that vaping e-cigarettes is safer for the user than smoking regular cigarettes, $\chi^2(1, n = 256) = 3.52, p = .06$, and this difference approached significance.
- A greater proportion of student veterans agreed (62.9%) than disagreed (37.1%) that secondhand vapor from e-cigarettes is safer for adults and children around the user than second-hand smoke from regular cigarettes, $\chi^2(1, n = 256) = 13.65, p < .001$.

Table 1. Frequencies for Reasons for Using ENDS

Reason for Vaping	Total Sample (N = 256) n (%)
Try to quit using other tobacco products	76 (29.7%)
Can be used where tobacco products can't	63 (24.6%)
Less harmful than other tobacco products	63 (24.6%)
Friend or family member used them	51 (19.9%)
Available in flavors	49 (19.1%)
Cost less than other tobacco products	39 (15.2%)
Easier to get than other tobacco products	9 (3.5%)
Famous people use them	1 (0.4%)

Methods

- The final sample consisted of 256 student military veterans ($M_{age} = 31.52$ years) who were current smokers and/or current vapers, including 187 men ($M_{age} = 31.73$ years), 66 women ($M_{age} = 30.52$ years), and one individual who identified as gender fluid.
- Participants were recruited through contacting over 1,500 campus chapters of Student Veterans of America and were asked to complete an online survey.
- The survey included:
 - 4 items inquiring about the vaping and smoking rules implemented in participants' homes and vehicles, which categorized participants as implementing complete bans or no/partial bans in their homes/vehicles, respectively, and which were adapted from the co-investigator's previous smoking research⁴⁰
 - 8 items that inquired about participants' perceptions of harm from ENDS use and secondhand exposure, which were rated on a 4-point scale from "Strongly Disagree" to "Strongly Agree," resulting in a total perception score ranging from 0-24 (with higher scores indicating greater perceptions of risk)
 - 12 items inquiring about negative experiences endured during the military and reintegrating into society, respectively, resulting in a total military stress score and a total transition stress score ranging from 0-12 (with higher scores indicating greater stress)

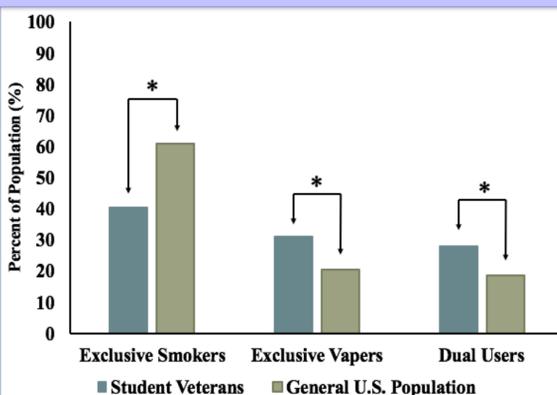
Results: Rates of ENDS Bans/Restrictions

Table 2. Frequency of Smoking Bans and Vaping Bans

Variable	Total Sample (N = 256) n (%)
Vaping ban (home)	
Complete ban	78 (30.4%)
Partial/No ban	178 (69.6%)
Vaping ban (vehicle)	
Complete ban	71 (28.4%)
Partial/No ban	179 (71.6%)
Smoking ban (home)	
Complete ban	214 (84.3%)
Partial/No ban	40 (15.7%)
Smoking ban (vehicle)	
Complete ban	131 (53.0%)
Partial/no ban	116 (47.0%)

- Rates of complete vaping bans in the homes of student veterans were significantly lower than rates of complete smoking bans in the homes of the general U.S. population, $\chi^2(1, N = 256) = 32.91, p < .001$,⁴² but were comparable to rates of vaping bans in the homes of the U.S. population, $\chi^2(1, N = 256) = 0.49, p = .485$.⁴³
- Student veterans were more likely to implement a complete ban from smoking in the home (95.9%) than a complete ban from vaping in the home (4.1%), $\chi^2(1, n = 146) = 122.99, p < .001$, and were also more likely to implement a complete ban from smoking in the vehicle (75.7%) than a complete ban from vaping in the vehicle (24.3%), $\chi^2(1, n = 111) = 29.27, p < .001$.
- Student veterans were more likely to implement a complete ban from smoking in the home (89.9%) than a complete ban from smoking in the vehicle (10.1%), $\chi^2(1, n = 99) = 63.04, p < .001$; however, student veterans were no more likely to implement a complete ban from vaping in the home (60.0%) than in the vehicle (40.0%), $\chi^2(1, n = 35) = 1.40, p = .237$.

Results: Rates of Ends Use



- Student veterans were less likely to be exclusive smokers (41.0%) than those in the general population (60.9%), $\chi^2(1, n = 256) = 42.51, p < .001$.
- Student veterans were more likely to be exclusive vapers (30.9%) than those in the general population (20.6%), $\chi^2(1, n = 256) = 16.47, p < .001$, and were more likely to be dual users (28.1%) than those in the general population (18.5%), $\chi^2(1, n = 256) = 15.73, p < .001$ ⁴¹

Results: Predictors of ENDS Bans/Restrictions

Table 3. Regression Results for Home Vaping Bans

Predictors	b (SE)	Odds Ratio	95% CI
Constant	-3.77 (.67)***	.023	
Ever Vaping Status			
Never Vaper	1.81 (.53)**	6.08	(2.15, 17.17)
Ever Vaper	1.53 (.38)***	4.63	(2.19, 9.75)
Risk Perceptions	.14 (.04)***	1.16	(1.07, 1.25)
Number of Children (1+ children = 0, No children = 1)	1.29 (.35)***	3.63	(1.85, 7.13)
Number of Friends who Vape (1+ friends = 0, 0 friends = 1)	-.56 (.37)	.57	(.28, 1.18)

- The final model with all four predictors was statistically significant, $\chi^2(5) = 81.56, p < .01$, with R^2 of .28 (Cox & Snell) and .39 (Nagelkerke).
- Those who never vaped and ever vaped (versus currently vaped), had greater risk perceptions associated with ENDS, and had at least one child living in the home, were significantly more likely to implement a complete ENDS ban in the household.

Table 4. Regression Results for Car Vaping Bans

Predictors	b (SE)	Odds Ratio	95% CI
Constant	-5.42 (.80)***	.004	
Ever Vaping Status			
Never Vaper	1.58 (.53)**	4.84	(1.72, 13.63)
Ever Vaper	1.04 (.40)**	2.83	(1.30, 6.14)
Risk Perceptions	.18 (.04)**	1.20	(1.10, 1.31)
Number of Children (1+ children = 0, No children = 1)	1.18 (.35)**	3.26	(1.65, 6.45)
Region (Urban = 0, Rural = 1)	1.25 (.41)	3.46	(1.56, 7.74)

- The final model with all four predictors was statistically significant, $\chi^2(5) = 74.68, p < .001$, with R^2 of .26 (Cox & Snell) and .38 (Nagelkerke).
- Those who never vaped and ever vaped (versus currently vaped), had greater risk perceptions, had at least one child living in the home, and lived in an urban region, were significantly more likely to implement a complete ENDS ban in the vehicle.

Conclusions

- Despite student military veterans and their children's greater susceptibility to the negative health effects related to vaping, student veterans are more likely to use ENDS and to concurrently use ENDS and smoke than those in the general population.
- Students veterans perceive using ENDS as less harmful to themselves and to others around them than smoking cigarettes, and low perceptions of risk are related to a decreased likelihood of implementing complete vaping bans in homes and vehicles.
- Many of the same risk factors that influence the likelihood of implementing vaping/smoking bans in the general population also influence the behaviors of student veterans (e.g., being a current ENDS user, having children living in the home, etc.), while military factors do not appear to have a large effect.
- Psychoeducation about the health risks associated with ENDS and ENDS exposure may reduce ENDS use and increase the implementation of complete bans in homes and vehicles, protecting the health of veterans' and their families.