

Association Between Secondhand Vaping Exposure and Vaping Status Among College Students

Rafael Chavez, BS.,¹ Alice Xayavong, BS.,² Deepali Ernest, MPH.,¹ Giovanni Appolon, MPH.,², Nicholas Lopez, PhD¹, Eyal Oren, PhD²

San Diego State University, San Diego, CA



BACKGROUND

- Vaping among adolescents and young adults in the United States has risen and become frequently used over the past decade. E-cigarettes are currently the most commonly used tobacco products.
- Factors that contributed to the rise of use included tastes and flavors, rechargeability, social experimentation, curiosity, entertainment, and social environments. These factors may increase the risk of vaping among non-users in areas such as households and vehicles.
- The Dyad Vaping Study seeks to determine the differences in secondhand vaping exposure among young adult college students by vaping status.

METHODS

- The Dyad Vaping Study is a 3-month long pilot study. Each month consisted of two consecutive dyad visits (vaper & non-vaper). Participants were given wristbands on the first visit. On the second visit, their wristbands were collected. Participants also completed a survey, provided a urine sample, and a vaping pod (vaper only).
- In the survey, participants were asked if they were exposed to secondhand vaping in the past 7 days and in the past 24 hours where they lived, at a friend's home, at a relative's home, in a car, and in a public area each month.
- Six dyads (n=12) were analyzed using the baseline (month 1), month 2, and month 3 surveys. All three months were included in the analysis.

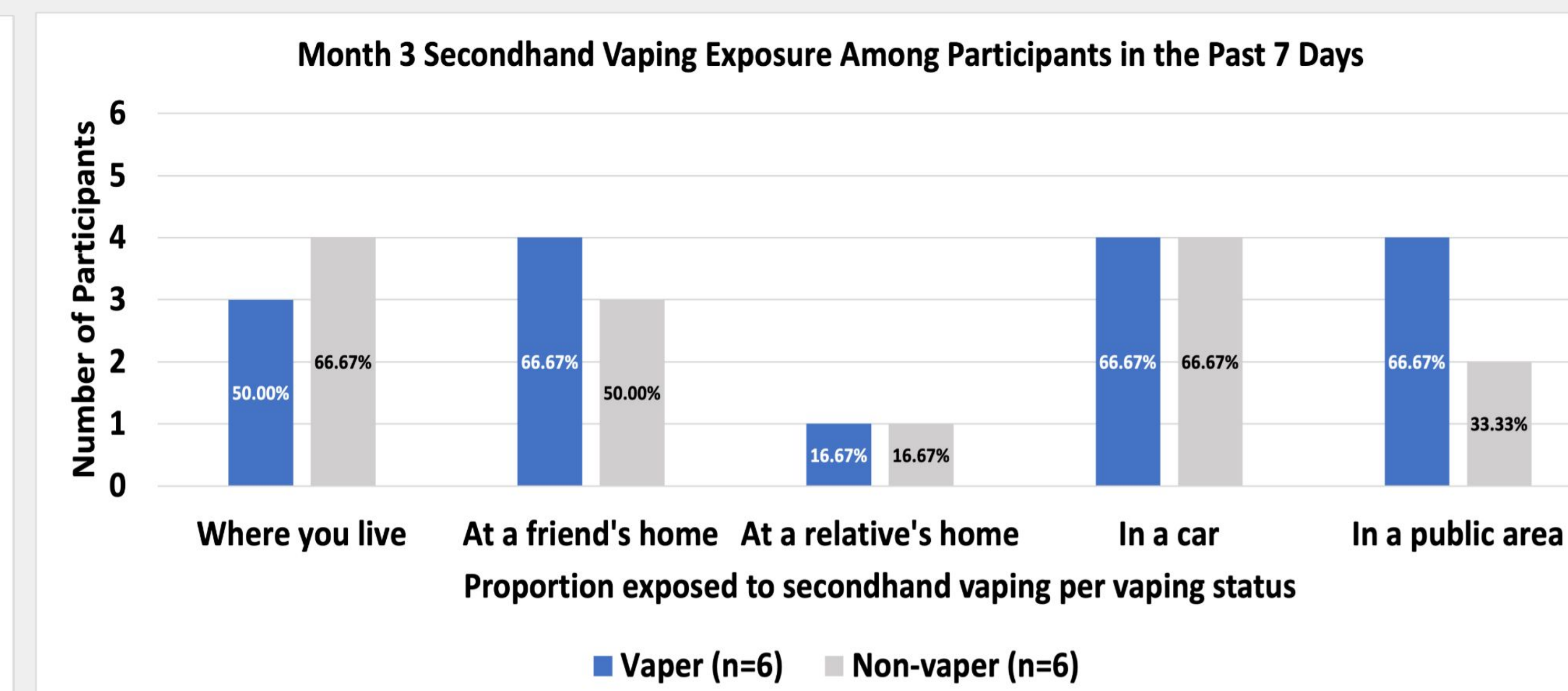
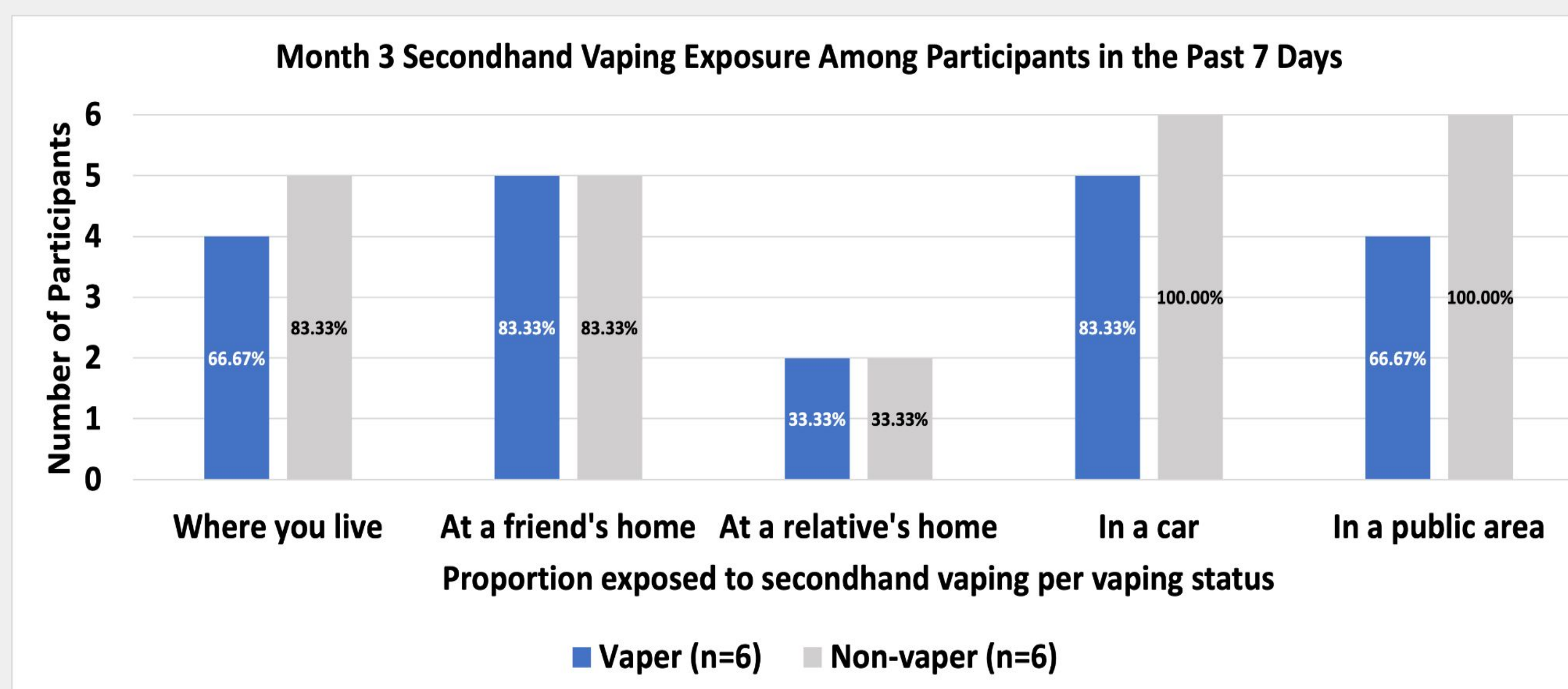
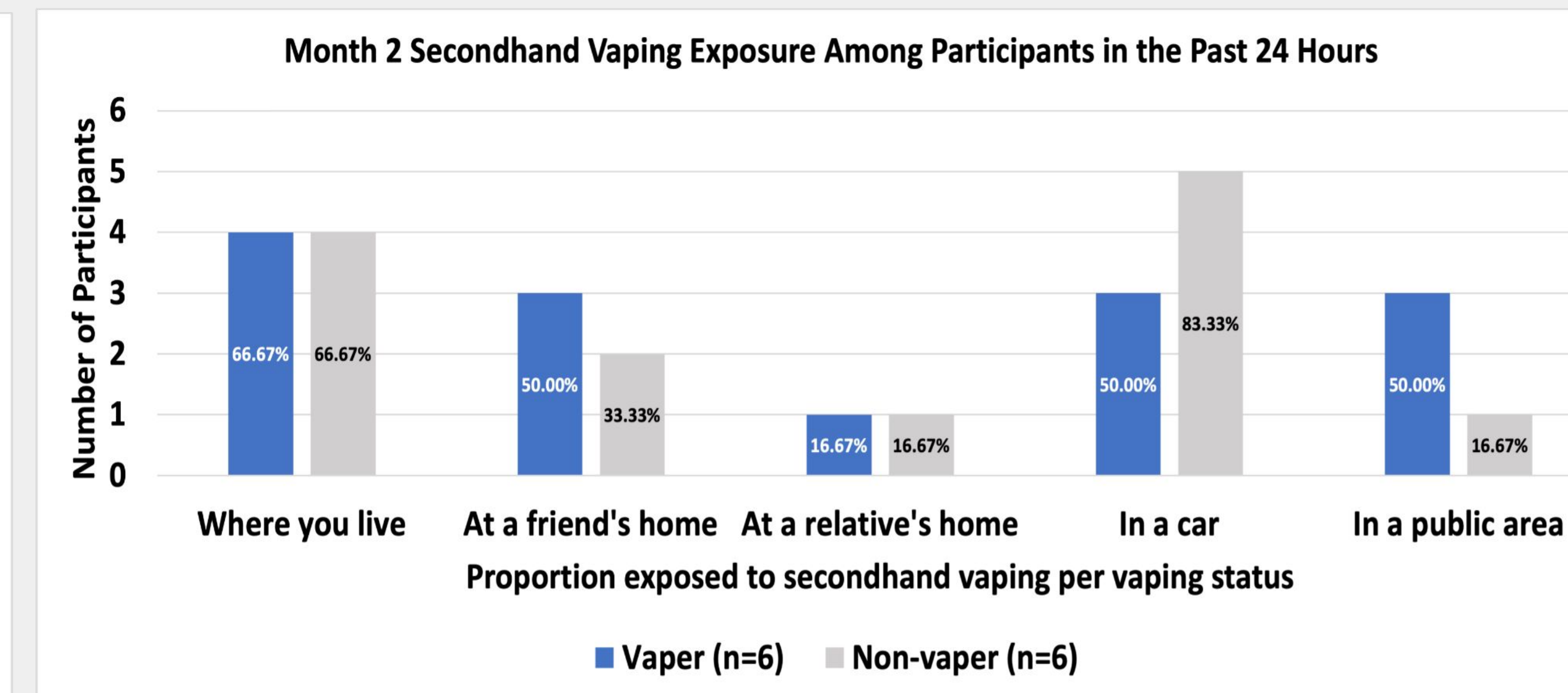
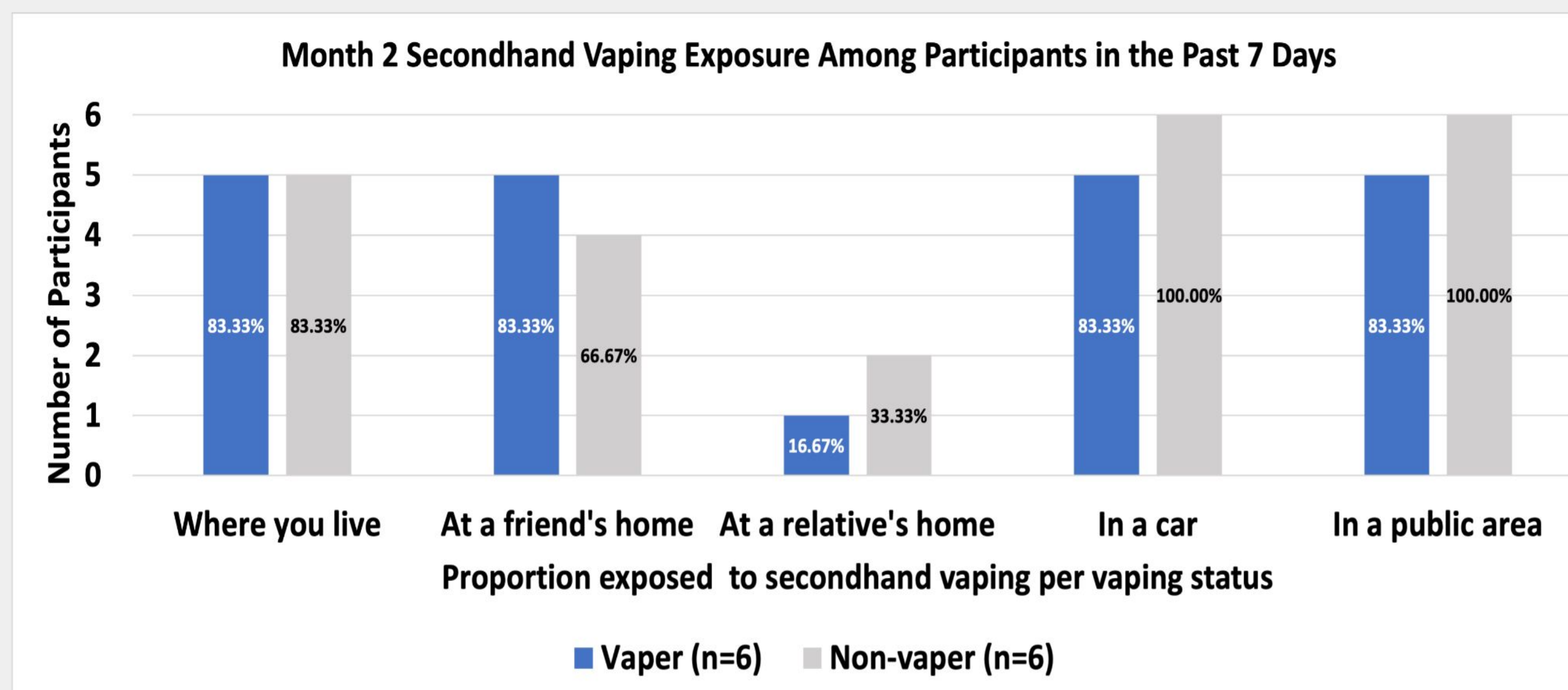
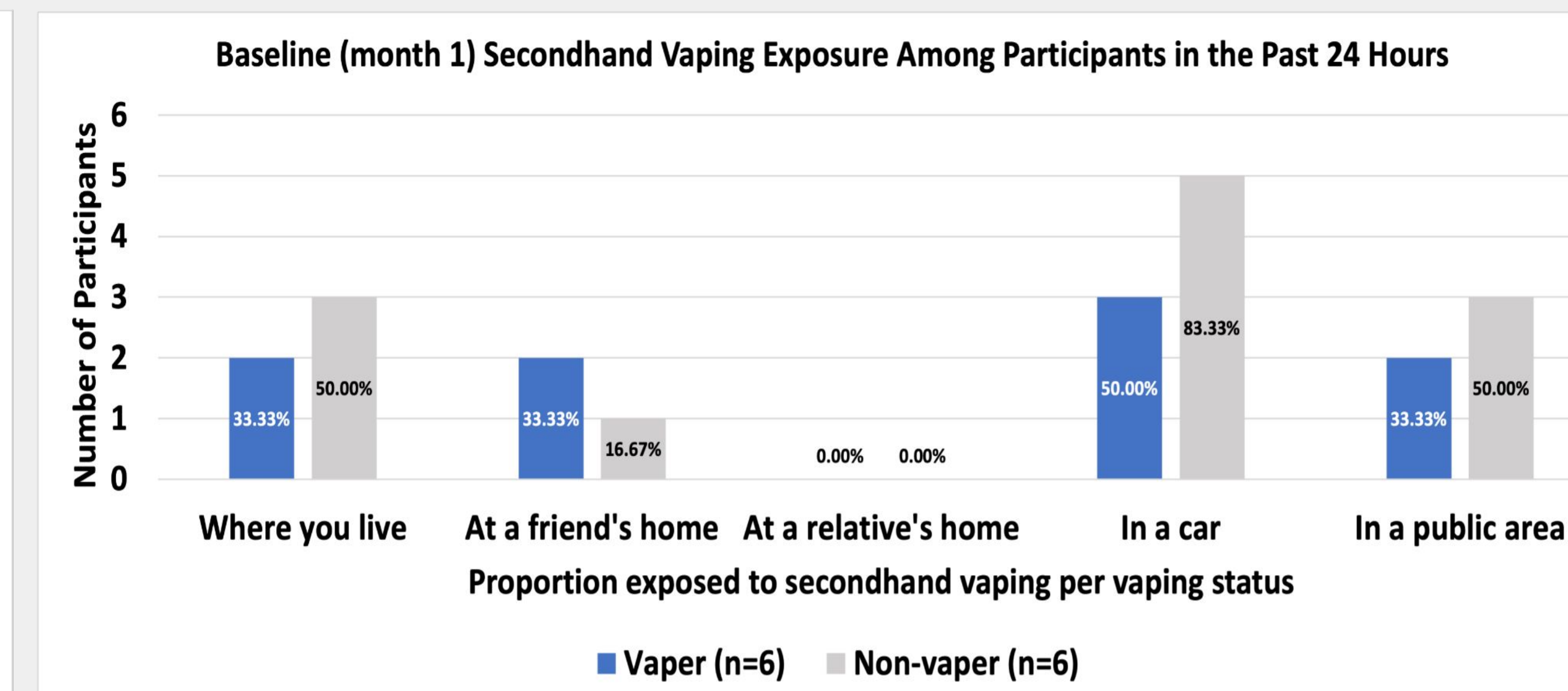
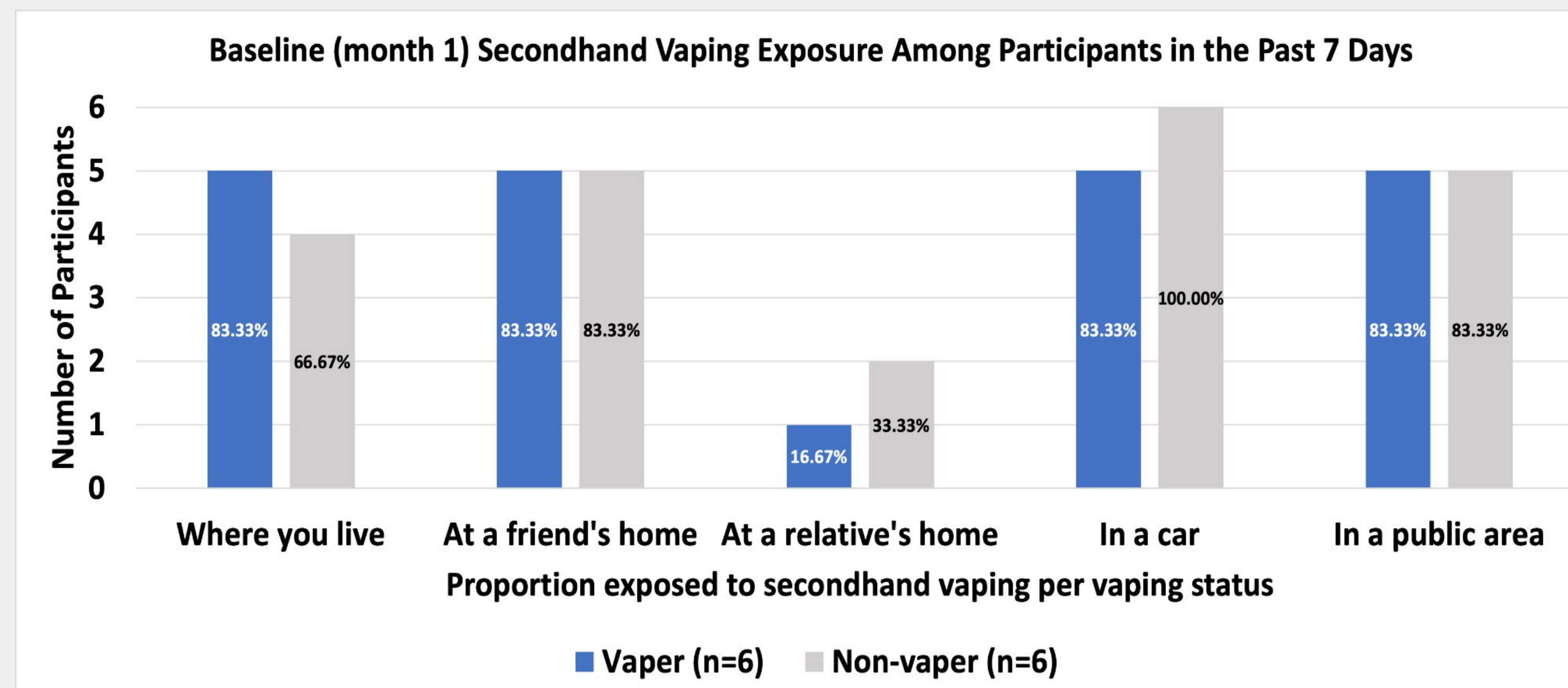
DEMOGRAPHICS

Table 1.1 Baseline demographics by total sample population (n=12) and by vaping status (vapers (n=6)) (non-vapers (n=6))

Characteristic	Total Sample n (%)	Vaping Status	
		Vaper n (%)	Non-vaper n (%)
SDSU Affiliation	12 (100)	6 (100)	6 (100)
Yes	11 (91.67)	6 (100)	5 (83.33)
No	1 (8.33)	0	1 (16.67)
Gender			
Male	6 (50)	3 (50)	3 (50)
Female	6 (50)	3 (50)	3 (50)
Race			
Asian Indian	4 (33.33)	2 (33.33)	2 (33.33)
Chinese	1 (8.33)	0	1 (16.67)
Vietnamese	1 (8.33)	1 (16.67)	0
White/Caucasian	6 (50)	3 (50)	3 (50)
Hispanic Origin			
Yes	2 (16.67)	1 (16.67)	1 (16.67)
No	10 (83.33)	5 (83.33)	5 (83.33)
Sexual Orientation			
Heterosexual	7 (58.33)	3 (50)	4 (66.67)
Bisexual	4 (33.33)	3 (50)	1 (16.67)
Not sure/questioning	1 (8.33)	0	1 (16.67)
Education			
High School Diploma or GED	3 (25)	2 (33.33)	1 (16.67)
Some college or tech school	7 (58.33)	3 (50)	4 (66.67)
College graduate	2 (16.67)	1 (16.67)	1 (16.67)
Age (years)	21.5 +/- 3.55	21.33 +/- 4.03	21.67 +/- 3.39

Column-based percent values (%)
Standard Deviation (SD)

RESULTS



RESULTS (FINDINGS)

Month 1 (baseline)

- In the past 7 days, vapers reported higher exposure at their residence (83.33%). Non-vapers reported higher exposure at a relative's home (33.33%), and in a car (100%).
- In the past 24 hours, vapers reported higher exposure at a friend's home (33.33%). Non-vapers reported higher exposure where they live (50%), in a car (83.33%), and in a public area (50%).

Month 2

- In the past 7 days, vapers reported higher exposure at a friend's home (83.33%). Non-vapers reported higher exposure at a relative's home (33.33%).
- In the past 24 hours, vapers reported higher exposure at a friend's home (50%) and in a public area (50%) compared to non-vapers (33.33%), in a car (100%), and in a public area (100%).

Month 3

- In the past 7 days, vapers did not report higher exposure. Non-vapers reported higher exposure where they live (83.33%), in a car (100%), and in a public area (100%).
- (In the past 24 hours, vapers reported higher exposure at a friend's home (66.67%) and in a public area (66.67%). Non-vapers reported higher exposure where they live (66.67%).

CONCLUSION

- Throughout the three months, vapers reported higher secondhand vapor exposure when at a friend's home compared to non-vapers.
- Vapers and non-vapers had the closest similarities of secondhand vaping exposure in a public area.
- Non-vapers reported higher secondhand vaping exposure where they lived, at a relative's home, in a car, and in a public area altogether.
- Exposure to secondhand vapor in social settings such as a friend's home may be a contributing factor towards engaging in e-cigarette use/vaping.
- Overall, the findings are inconclusive to suggest that exposure to secondhand vaping outside of a friend's home may contribute to a greater likelihood of vaping.
- Given the pilot nature of this work, more research on dyads is needed to fill the gaps of existing literature.

ACKNOWLEDGMENTS

University Grants Program

REFERENCES

- Gupta, P. S., & Kalagher, K. M. (2021). Where There Is (No) Smoke, There Is Still Fire: a Review of Trends, Reasons for Use, Preferences and Harm Perceptions of Adolescent and Young Adult Electronic Cigarette Use. *Current pediatrics reports*, 9(3), 47-51. <https://doi.org/10.1007/s40124-021-00240-1>
- Drehmer, J. E., Nabi-Burza, E., Hipple Walters, B., Ossip, D. J., Levy, D. E., Rigotti, N. A., Klein, J. D., & Winickoff, J. P. (2019). Parental Smoking and E-cigarette Use in Homes and Cars. *Pediatrics*, 143(4), e20183249. <https://doi.org/10.1542/peds.2018-3249>
- Fadus, M. C., Smith, T. T., & Squeglia, L. M. (2019). The rise of e-cigarettes, pod mod devices, and JUUL among youth: Factors influencing use, health implications, and downstream effects. *Drug and alcohol dependence*, 201, 85-93. <https://doi.org/10.1016/j.drugalcdep.2019.04.011>