

Request for Information on Psychosocial Predictors of Uptake of Tobacco and Other Products

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E-cigarette initiation among youth: Influence of advertising

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The popularity of electronic cigarettes (e-cigarettes) has increased precipitously among adolescents in recent years. To date, use of e-cigarettes has surpassed use of traditional cigarettes among adolescents with 9%, 16%, and 17% of 8th, 10th, and 12th graders reporting past 30-day use of e-cigarettes (vs. 4%, 7%, 14% reporting use of traditional cigarettes, respectively).¹ Although this may be due, in part, to the unique product features of e-cigarettes, such as flavors, it is also likely due to increased marketing of the product.

A recent study found that there was a 256% increase in e-cigarette television advertisement exposure among adolescents (ages 12 to 17) and a 321% increase among young adults (ages 18 to 24) between 2011 and 2013.² E-cigarette advertisements are not only present in traditional media such as television, radio, and convenience stores but are also aggressively marketed on social media outlets such as Facebook, Twitter, and YouTube.^{3,4}

The present study helps to fill a critical gap in knowledge by examining the impact of e-cigarette advertisement exposure on subsequent e-cigarette initiation (approximately six months later). We examined if exposure to e-cigarette advertisements on (1) television, radio, and magazines, (2) point of sale locations, and (3) on social media is associated with e-cigarette initiation among adolescents without a history of using e-cigarettes or cigarettes. We also examined the relationship between cigarette advertisements and initiation of cigarette use.

Data were drawn from a larger survey examining attitudes about various tobacco products among middle and high school students in Connecticut. We administered school-wide surveys in 2 middle schools and 4 high schools in Fall 2013 (n=4780) and re-surveyed both middle schools and 3 of the high schools in Spring 2014 (n=3481). The present analyses were restricted to a subset of participants from a matched sample across both surveys who did not have a history of using e-cigarettes and cigarettes at wave 1 and who did not have missing data on relevant items at waves 1 and 2.

The sample was 53.9% female and the mean age was 14.06 (SD = 1.90). Exposure to e-cigarette advertisements across traditional media and social media varied considerably at wave 1. A large proportion of adolescents reported recently seeing cigarette and e-cigarette advertisements at convenience stores, with fewer adolescents reporting seeing cigarette and e-cigarette advertisements on Facebook and YouTube.

Notably, among never cigarette/e-cigarette users in wave 1, 3.1% reported using cigarettes at wave 2 and 9.0% reported using an e-cigarettes at wave 2. Exposure to e-cigarette advertising at convenience stores and on Facebook and Pinterest were 1.77, 2.37, and 4.36 times more likely be associated with initiation of e-cigarette use at wave 2.

In addition, those exposed to cigarette advertising on Facebook and Pinterest were 3.14 and 13.83 times more likely to initiate the use of cigarettes at wave 2.

In summary, adolescents exposed to e-cigarette and cigarette advertisements on Facebook and Pinterest are at an increased risk for subsequent initiation. This study suggests that e-cigarette advertising restrictions and/or online counter-marketing strategies may prevent e-cigarette initiation among youth.

¹Johnston, L. D., O'Malley, P. M., Miech, R.A., Bachman, J. G., & Schulenberg, J. E. (2015). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2014*. Ann Arbor, Mich.: Institute for Social Research, the University of Michigan.

²Duke, J.C., Lee, Y.O., Kim, A.E., Watson, K.A., Arnold, K.Y., Nonnemaker, J.M., & Porter, L. (2014). Exposure to electronic cigarette television advertisements among youth and young adults. *Pediatrics*, 134(1), e29-e36.

³Krishnan-Sarin, S., Morean, M.E., Camenga, D.R., Cavallo, D.A., & Kong, G. (2014). E-cigarette use among high school and middle school adolescents in Connecticut. *Nicotine and Tobacco Research*, 1-9.

⁴Grana, R., Benowitz, N., & Glantz, S. A. (2014). E-cigarettes a scientific review. *Circulation*, 129(19), 1972-1986.