Changes In E-Cigarette Promotion in two Rural South-East Iowa Counties

By

Ken Daley

Professor of Exercise and Sport Science

Maharishi University of Management

and

Raul Calderon Jr.

Visiting Professor of Health and Physical Education

University of Suwon, South Korea

**Abstract**

The introduction and promotion of electronic cigarettes has raised new concerns in the fight against tobacco products. Understanding how these new products are affecting communities around the country is helpful so as to be able to better counter their affects. In a survey of two rural adjacent counties in Iowa it was found that the advertising and sales of electronic cigarettes in convenience stores were moving in very different directions. Jefferson County had higher rates of promotion and sales of tobacco products, whereas, Keokuk County had less promotion and sales of these products. It is recommended that further research be conducted in these counties to identify the factors that may be contributing to the differences in the promotion and sales of electronic cigarettes and other tobacco products.

**Introduction**

Electronic cigarettes[[1]](#footnote-1) and allied nicotine delivery products (also known as electronic nicotine delivery systems or ENDS) have been on the increase in the United States since their introduction in 2006[[2]](#footnote-2). On April 16, 2015 the Centers for Disease Control (CDC) reported that from 2013 to 2014 middle and high school student usage had tripled[[3]](#footnote-3). A 2015 study showed that students who have used e-cigarettes by the time they start 9th grade are more likely than others to start smoking traditional cigarettes and other combustible tobacco products within the next year (Rigotti, 2015)[[4]](#footnote-4). Commercial promotion of electronic cigarettes has taken many forms. In a 2014 study[[5]](#footnote-5) it was found that 90% of tweets related to electronic cigarettes came from commercial accounts. The 2012 Surgeon General’s report, *Preventing Tobacco Use Among Youth and Young Adults,* concluded that the scientific evidence “consistently and coherently points to the intentional marketing of tobacco products to youth as being a cause of young people’s tobacco use.”[[6]](#footnote-6) Bonnie Herzog, managing director, of beverage, tobacco & convenience store research for Wells Fargo Securities LLC has stated, “Vapor retail sales in the U.S. are expected to hit $3.5 billion in 2015 and could eclipse $10 billion by 2018.” She goes on to state “Vapor consumption could surpass combustible cigarettes in 10 years”[[7]](#footnote-7). Understanding trends in promotion and sales of tobacco products is important for communities to monitor so as to be able to develop effective anti-smoking strategies.

The purpose of this survey was to monitor changes in convenience store promotional practices in two rural counties in southeast Iowa.

**Methods**

Two counties in SE Iowa were selected for this study. Jefferson County (population, 17,555) is a rural community with an adult smoking prevalence of 21 % and youth tobacco use prevalence rate of 19.5%. Keokuk County (population, 10,163) is a rural community with an adult smoking prevalence of 24 % and youth tobacco use prevalence rate of 16.4%.

Two surveys were conducted during 2015. The first survey was conducted in January 2015 with a five-month follow-up in June 2015. All convenience stores in both counties were identified and surveyed; Jefferson County= 10 stores, Keokuk County= 9 stores.

One experienced data collector was responsible for all data collection. Using one data collector helped maintain consistent data collection procedures. The data collector visited all convenience stores in both counties to document the extent of promotional materials posted inside and outside the stores. There was one store in each of the counties that did not carry any ENDS and were thus not included in the final analysis. Both of these stores reported a perceived lack of public interest as the reason they did not carry ENDS. Both of these stores were located in rural small communities. Therefore, the total number of convenience stores included in the final analysis was 9 for Jefferson County and 8 for Keokuk County.

Visible ads and product placements where chosen as they were the stores most obvious method of enticing customers to purchase product. Employee estimates were a convenient and accessible gage for estimating sales.

At each location the data collector documented the following:

* Number of tobacco ads that could be read from the exterior of the store
* Number of tobacco brands for sale
* Eye impressions\* of tobacco ads on point of sale counter
* Eye impressions of tobacco ads in store excluding sale counter
* Employee estimates of weekly tobacco sales during their shift

\*An eye impression is defined as an individual sign or if a display case had more than one product holder, then each holder space that held a product would be included as an eye impression.

Additionally, the following product placement information was collected:

* Exterior Tobacco Ads – these included any signs at the gas pumps, exterior walls or on doors and windows that can only be read from the outside of the building
* Average number of Tobacco brands / store – an average of brands found in each store
* Number of Tobacco brands / county - total number of separate brands were recorded
* Counter Tobacco Ads – These were ads / products that are found on the main check-out counter
* Other Tobacco Ads – These are all other ads or product placements found in the store excluding those found on the main counter
* Total Tobacco Ads – a simple sum of all interior and exterior ads and product placements

A two-tailed T-Test was used to test for significant differences between promotional practices and sales between the two counties.

**Results**

Table 1 shows the average amount of advertisements observed in the 1st and 2nd surveys for Jefferson and Keokuk counties. For each variable, a “Difference” score was calculated to measure the change in advertisements between the 1st and 2nd surveys. The largest change scores for Jefferson County was in “Other Ads” and “Total Ads”, 18.2 and 18.5, respectively. This change indicated an overall increase in promotion of tobacco products over a five-month period in 2015. The largest change scores for Keokuk County was also in “Other Ads” and “Total Ads”, -4.2 and -7.9, respectively. This change indicated an overall decrease in promotion of tobacco products during the same period in 2015.

Additionally, a total (composite) average change score across all variables was calculated for each county. Jefferson County had an average increase in this composite advertisement score of 7.5, compared to Keokuk County that had an average decrease of -2.8. This difference in the amount of advertisements in Jefferson vs. Keokuk counties was found to be statistically significant. Thereby indicating that Jefferson County’s overall advertisement of tobacco products increased over the same period of time compared to Keokuk County’s advertisement.



On the day of the visit to the convenience store the data collector asked each convenience store sales person for an estimate of how many ENDS units or re-charge supplies they sold each week. This data was recall and an estimate by the employee. The average individual sale of new units or of re-charge supplies like fluid was estimated to be $6.99 per week per store.

Sixteen different product brands were found in the survey; Jefferson had 13 separate brands and Keokuk had 7 separate brands.

Table 2 shows the amount of tobacco products sold and the amount of income netted from the sale of tobacco products for an average week in Jefferson and Keokuk counties during the 1st and 2nd surveys. For each variable, a “Difference” score was calculated to measure the change in units sold and gross income netted per week between the 1st and 2nd surveys. The largest difference score for Jefferson County was an increase of 33.76. This indicated an increase of gross income between the 1st and 2nd surveys. The largest difference for Keokuk County was a decrease of -2.3 in gross income. This indicated a decrease in gross income between the 1st and 2nd surveys.

Additionally, a total average (composite) change score was calculated for each county. Jefferson County had an average increase in sales/income of 19.3, compared to Keokuk County that had an average decrease of -1.3. Although, Jefferson County had a higher amount of sales/income (19.3 vs. -1.3) the difference between counties was not statistically significant. However, the trend is in the expected direction and consistent with the data from Table 1 showing Jefferson County having a greater amount of advertisements.



**Discussion**

We know that the tobacco industry spends millions of dollars every year on advertising its products to the public. It’s advertising strategies are extremely effective in recruiting new smokers and maintaining current smokers. The introduction of the ENDS product is the latest method of creating nicotine addiction. Due to the novel nature of ENDS products it may be more enticing to smokers, especially adolescents and young adults.

This study found that Jefferson County had an increase in advertisement and sales of ENDS products during a six-month period in 2015. In contrast during the same period of time Keokuk County, (similar and adjacent to Jefferson County) had a decrease in advertisement and sales of ENDS products. That data indicates when retailers increase store ads then sales increase.

Two very different situations are playing out in these two adjacent counties. Jefferson County’s 48.6% increase in total ads is clearly increasing its’ electronic cigarettes promotion. Whereas, Keokuk County’s 20.2% decrease in total ads is clearly decreasing its’ electronic cigarettes promotion. All other indicators show a decrease in Keokuk County and an increase in Jefferson County. The only observation that is contrary is Jefferson County’s decrease in exterior ads. Exterior ads in both counties are a modest portion of the total ads / products.

Unit sales of ENDS in Jefferson County have doubled which is in keeping with its increase in promotion. There is also a modest decrease in sales in Keokuk County that is consistent with a lowering of promotion effort.

**Conclusion**

Tobacco products in general and the new ENDS products, specifically, continue to pose significant challenges to communities throughout the county. Understanding individual community policies, traditions, etc. may help to develop effective anti-smoking, anti-tobacco strategies to help keep adolescents and young people from becoming addicted to these harmful products. Further research into identifying the factors that either put a community at risk or provide a risk protection is recommended.

Increases in promotion of ENDS products appear to increase sales and revenue. However, total income for convenience stores from electronic cigarettes appear to be very modest.

Is the nicotine industry positioning ENDS as a new product category that has it’s own economic structure that currently is in the billions or are electronic cigarettes a gateway product to more traditional tobacco consumption. Or is the nicotine industry hedging its bets?

A follow-up survey would be useful to see if this relationship between promotion and sales is a trend or an anomaly in these two counties.

1. http://www.drugabuse.gov/publications/drugfacts/electronic-cigarettes-e-cigarettes [↑](#footnote-ref-1)
2. http://casaa.org/E-cigarette\_History.html [↑](#footnote-ref-2)
3. <http://www.cdc.gov/media/releases/2015/p0416-e-cigarette-use.html>

   4 http://www.drugabuse.gov/publications/drugfacts/electronic-cigarettes-e-cigarettes [↑](#footnote-ref-3)
4. http://www.drugabuse.gov/publications/drugfacts/electronic-cigarettes-e-cigarettes [↑](#footnote-ref-4)
5. A cross-sectional examination of marketing of electronic cigarettes on Twitter by [Jidong Huang](http://tobaccocontrol.bmj.com/search?author1=Jidong+Huang&sortspec=date&submit=Submit), [Rachel Kornfield](http://tobaccocontrol.bmj.com/search?author1=Rachel+Kornfield&sortspec=date&submit=Submit), [Glen Szczypka](http://tobaccocontrol.bmj.com/search?author1=Glen+Szczypka&sortspec=date&submit=Submit), [Sherry L Emery](http://tobaccocontrol.bmj.com/search?author1=Sherry+L+Emery&sortspec=date&submit=Submit) 19 March, 2014 http://tobaccocontrol.bmj.com/content/23/suppl\_3/iii26.full [↑](#footnote-ref-5)
6. <http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/exec-summary.pdf> Executive Summary, Page 5 [↑](#footnote-ref-6)
7. http://www.cstoredecisions.com/2014/09/09/wells-fargo-weighs-beverage-tobacco-trends/ [↑](#footnote-ref-7)