

Use patterns and tobacco use histories among users of diverse vapor products: Cigalikes, tanks, and other vapor products

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TSRC31_Kim.pdf
2018



Background and Objective

- E-cigarette and vapor product use among smokers has increased, and research has identified the profile of users^{1,2}.
- However, vapor products are a diverse class of products (Figure 1)³:
 - Cigalikes** look like cigarettes and are often single-use products.
 - Tanks** are typically refillable products with larger capacity and larger batteries, which deliver more nicotine.
 - Other vapor products** take other forms (e.g., e-hookah).
- Vapor product users may use more than one product type.
- Based on appearance, convenience, nicotine delivery, or other factors, different product types may attract a different profile of users.
- We compared the profiles of users of the different vapor product types, including combinations.

Methods

- The National Tobacco Behavior Monitor (NTBM) is an ongoing cross-sectional survey of US adults sampled from online consumer research panels.
- Data were weighted to match the demographics of the US adult population according to census benchmarks.
- 2015 to 2016 NTBM data yielded 96,160 adults, stratified by tobacco use history: never users, former users, and current users of any tobacco product.
 - 11,601 respondents reported using a vapor product in the past 30 days.
- Respondents were asked about use behaviors across each vapor product type, and could report use of multiple product types.
- Respondents also reported their demographics and tobacco use histories.
- Respondents' vapor product use was classified into non-overlapping categories.
- Logistic regression analysis was applied to analyze differences across user groups.

Results

Demographics by Product Types

- Men were more likely than women to use multiple product types (OR=1.22, 95% CI=1.12-1.33).
- Whites were more likely to use cigalikes, tanks, or cigalikes + tanks (OR=1.39, 1.24-1.54).
- Blacks and Hispanics were more likely to use other vapor products (OR=1.68, 1.40-2.02).
- Young adults (18-24) were more likely to use other vapor products (OR=2.61, 2.16-3.14); this pattern declined with age ($p_{TREND} < 0.0001$).
- The use of multiple product types was most common among those who did not graduate high school (OR=1.35, 1.18-1.53).

Figure 1. Vapor Product Types



Figure 3. Smoking Status Across Vapor Product Categories

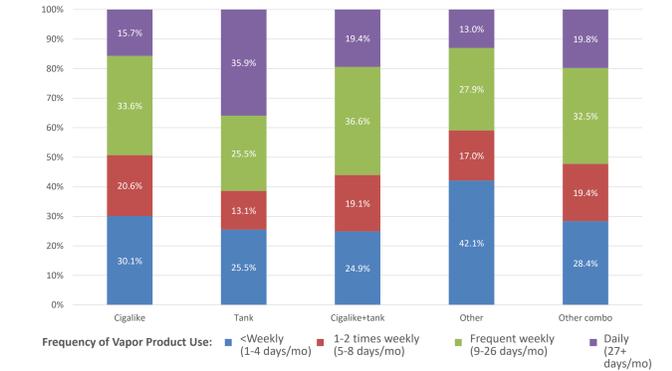
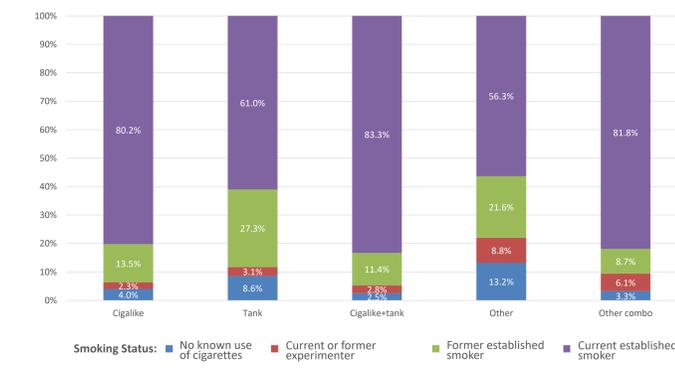
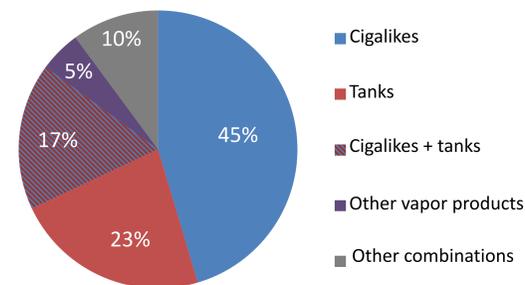
- Across each vapor product type, the majority were current established smokers.
- Tank users (35.9%; see Figure 4) had the highest rate of daily use (OR=2.76, 2.50-3.06) and were most likely to be previously established smokers who had quit (27.3% of tank users; OR=2.54, 2.27-2.83; see Figure 3), especially if they used tanks daily (55.4% were former smokers; OR=2.24, 1.89-2.67).
- Users of multiple vapor products were least likely to be former smokers (10.4%; OR=0.52, 0.45-0.59).

Figure 4. Frequency of Use by Vapor Product Types

- Other vapor product users were most likely to be very infrequent users (42.1% using less than weekly [i.e., <5 days per month]; OR=1.88, 1.57-2.25),
- And least likely to have a history of established tobacco use (78.0% were established current or former smokers; OR=0.30, 0.24-0.37).
 - This is particularly true among very infrequent users where only 69.0% were established current or former smokers (OR=0.31, 0.23-0.42).

Figure 2. Prevalence of Product Types and Combinations

- Overall, 11.2% of the sample reported using a vapor product in the past 30 days.
- Cigalikes were the most popular (%s using each type among vapor product users):
 - Cigalikes – 70.7%
 - Tanks – 46.5%
 - Other vapor products – 14.9%
- The pie chart shows the distribution into non-overlapping groups by product types and combinations.



Summary/Conclusions

- There are substantial differences in demographics, tobacco use status, and usage patterns among users of different vapor product types. For example:
 - Other vapor product use was most associated with very infrequent use by individuals without established tobacco use.
 - Tank products were used most frequently, and were especially likely to be used by established smokers who had now quit smoking.
- Methodologically, these findings suggest that research on vapor products needs to distinguish among product types, and among users of a single type versus multiple types of products.
- Longitudinal studies are needed to assess whether the observed differences by product type may reflect trajectories of migration among products over time.

References

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Disclosure

PinneyAssociates, Inc. provides consulting services on tobacco harm minimization and smoking cessation (including nicotine replacement therapy and vapor products) to Nicovum USA, Inc. R.J. Reynolds Vapor Company, and RAI Services Company, all of which are subsidiaries of Reynolds American Inc. Dr. Shiffman also owns an interest in intellectual property for a novel nicotine medication that has not been commercialized. Dr. Kim is employed by RAI Services Company, a wholly owned subsidiary of Reynolds American Inc., whose operating companies market non-combusted tobacco products. This research was sponsored by RAI Services Company.

TSRC31(18)(72) - Document not peer-reviewed