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Institute for Global Tobacco Control

**CUSTOM AND NON-CUSTOM E-CIGARETTE LIQUID USERS' DEVICE/LIQUID CHARACTERISTICS AND HEALTH OUTCOMES: IMPLICATIONS FOR E-CIGARETTE REGULATIONS**

Presenter: Elizabeth Crespi, BA

**Background**

Some e-cigarette (e-cig) users mix/order custom liquids for their devices. We examined differences in demographics, e-cig device/liquid characteristics, and self-reported health outcomes of custom (CLUs) vs non-custom (NCLUs) liquid users.

**Methods**

- Participants were recruited from 125 US cities using social media and Craigslist from May-October 2020.
- 1209 adult (21+) regular e-cig users (5+ days of use/week) completed an online survey and submitted photos of their most used e-cig device/liquid.
- Chi-squared and Mann Whitney U tests were conducted.

**Results**

- 24.3% (n=294) of the sample used custom liquids and 75.7% (n=915) used non-custom liquids.
- CLUs and NCLUs varied on several key socio-demographic, device/liquid, and health-related variables but not in e-cig dependence or shortness of breath.

# Custom and non-custom e-cigarette liquid users vary in age, gender, and devices/liquids used, but not e-cigarette dependence or shortness of breath.

Characteristics of custom vs. non-custom liquid users

|  | Custom liquid users (n=294) | Non-custom liquid users (n=915) |
|--|-----------------------------|---------------------------------|
| <b>Socio-demographics</b>                          |                             |                                 |
| Age 21-29 (%)*                                     | 22.1                        | 38.3                            |
| Female gender (%)*                                 | 45.2                        | 56.1                            |
| Non-White race (%)                                 | 22.5                        | 21.2                            |
| Income <\$60,000 (%)                               | 68.0                        | 73.2                            |
| Smoked at least one day in the past 30 days (%)    | 38.8                        | 42.0                            |
| <b>Device/liquid characteristics</b>               |                             |                                 |
| Adjustable wattage/voltage (%)*                    | 67.6                        | 37.1                            |
| Adjustable airflow (%)*                            | 58.5                        | 33.6                            |
| Customizable adaptive power (%)*                   | 27.9                        | 14.0                            |
| Liquid nicotine concentration (mg/mL)*             | 14.3                        | 30.1                            |
| Free-base nicotine formulation (%)*                | 72.8                        | 39.6                            |
| <b>Self-reported health outcomes</b>               |                             |                                 |
| E-cig dependence (adapted from PROMIS; max 16)     | 8.5                         | 8.9                             |
| Shortness of breath at least several days/week (%) | 10.2                        | 9.7                             |

\*Statistically significant difference between custom and non-custom liquid users at p<0.05

**Discussion**

- Regulations may differentially impact CLUs and NCLUs and therefore different demographic groups (e.g., nicotine concentration limits may lead to more compensatory vaping behavior changes among NCLUs, which are more often female than CLUs).
- Future research is needed to understand other potential health outcomes from custom liquids (e.g., accidental skin/eye exposure).
- These results can inform product regulation, including potential unintended consequences.

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