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U.S. Adolescents' Perceptions of the Harmfulness and Addictiveness of Using a JUUL E-Cigarette Compared to Smoking Conventional Cigarettes

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Background

In 2017, the proportions of 8th, 10th and 12th graders who believed regular e-cigarette use poses a 'great risk of harm' were 20%, 19% and 16%, respectively (*Monitoring the Future, 2017*).

The U.S. FDA has expressed concern that these data indicate the majority of youth are either unaware of the potential health risks of e-cigarette use, or underestimate their likelihood of experiencing harm from using e-cigarettes.

Harm perceptions provide a strong empirical basis for explaining why adolescents initiate and continue to use tobacco products. Previous research suggests that youth who perceive vaping as posing little to no risk of harm or addiction will be more open to try using, or continuing to use, e-cigarettes.

In 2018, JUUL became the fastest growing and highest selling brand of e-cigarette/vapor products in the United States.

This study assessed adolescents' perceptions of the absolute and relative harmfulness and addictiveness of using a JUUL e-cigarette and smoking regular cigarettes.

Methods

A non-probabilistic sample of U.S. adolescents aged 13-17 years (n = 9,872) was recruited from an internet research panel to complete an online survey between 23 November and 13 December 2018. Individuals were excluded if they had not seen or heard of JUUL e-cigarettes before this study. Parental consent and youth assent were obtained.

Perceived harm of occasional and daily use of a JUUL e-cigarette and combustible cigarettes was assessed by four questions: *How much do you think people harm themselves when they:*

1. *Use a JUUL e-cigarette on some days?*
2. *Use a JUUL e-cigarette every day?*
3. *Smoke cigarettes on some days?*
4. *Smoke cigarettes every day?* ((1) No harm; (2) A little harm; (3) Some harm; (4) A lot of harm).

Perceived length of time till harm is caused by using a JUUL e-cigarette and smoking cigarettes was assessed by the question: *How long do you think someone has to use a JUUL e-cigarette/ smoke cigarettes before it harms their health?* ((1) It will never harm their health; (2) Less than a year; (3) 1 year; (4) 5 years; (5) 10 years; (6) More than 20 years; (7) Don't know).

Perceived likelihood of becoming addicted to JUUL e-cigarettes and combustible cigarettes was assessed by the question: *How likely is someone to become addicted to using a JUUL e-cigarette/ smoking cigarettes?* ((1) Very unlikely; (2) Somewhat unlikely; (3) Neither likely nor unlikely; (4) Somewhat likely; (5) Very likely).

Data were weighted to be nationally representative of the U.S. adolescent population on age, gender and census region.

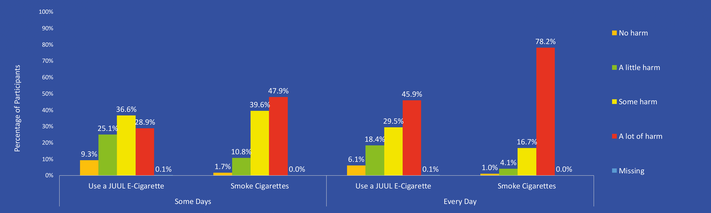

Figure 1. Perceived harm from occasional and daily use of a JUUL e-cigarette and combustible cigarettes.

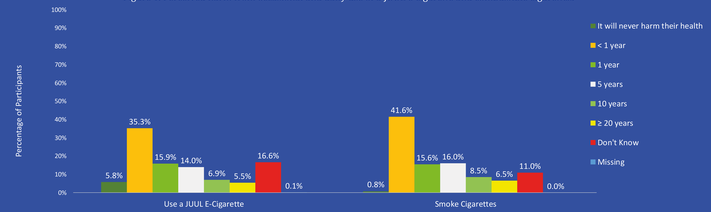

Figure 2. Perceived length of time till harm is caused by using the JUUL e-cigarette and smoking cigarettes.

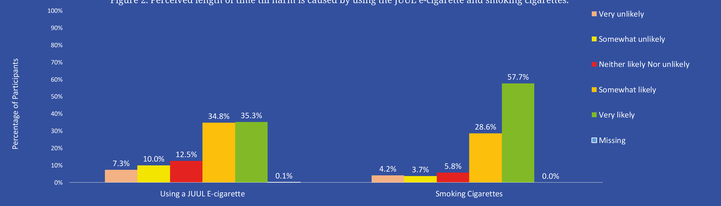

Figure 3. Perceived likelihood of becoming addicted to JUUL e-cigarettes and combustible cigarettes.

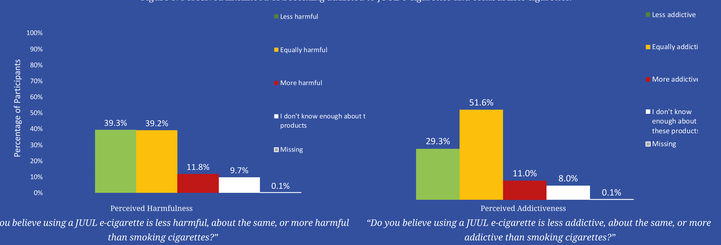

Figure 4. Adolescents' perceived harmfulness and addictiveness of using a JUUL e-cigarette compared to smoking combustible cigarettes.

Results

Daily Use

Around 6 out of 100 U.S. adolescents (6.1%) think using a JUUL e-cigarette every day would be harmless.

Around 46 out of 100 U.S. adolescents (45.9%) think using a JUUL e-cigarette every day would cause 'a lot of harm'.

Occasional Use

Around 9 out of 100 U.S. adolescents (9.3%) think using a JUUL e-cigarette on some days would be harmless.

Around 29 out of 100 U.S. adolescents (28.9%) think using a JUUL e-cigarette on some days would cause 'a lot of harm'.

Duration of use before experiencing harm

Around 11 in 100 U.S. adolescents either believed they would never experience any harm from using a JUUL e-cigarette or that they could use a JUUL e-cigarette for at least 20 years before they would experience any health harms.

Likelihood of addiction

17.3% of U.S. adolescents believed people are somewhat/very unlikely to become addicted to using a JUUL e-cigarette.

Relative harmfulness and addictiveness

39.3% and 29.3% of adolescents believed using a JUUL e-cigarette is less harmful and less addictive than smoking cigarettes, respectively.

Conclusions

The majority of U.S. adolescents believe using a JUUL e-cigarette poses fewer risks to health than smoking regular cigarettes, but also that using a JUUL e-cigarette would put them at some risk for experiencing health problems and addiction.

However, a small but significant proportion of adolescents hold the erroneous belief that using a JUUL e-cigarette would be risk-free.

Several theories of health behavior change and previous research on tobacco harm perceptions would predict this smaller group of adolescents is at higher risk for initiating or continuing to use JUUL e-cigarettes.

Ethics Approval

This study was approved by Advarra Institutional Review Board (Approval no. 00030080, 2 October 2018).

Declaration of Funding

Funding for this study was provided by JUUL Labs Inc. JUUL Labs Inc. had no input to or control over the study design, contents of the survey instrument, sample recruitment, data analysis, interpretation, or reporting of findings. The authors alone are responsible for the contents, production and decision to report this study.