Support for E-Cigarette Regulations that Protect Children Scholescents RESULTS FROM A NATIONALLY REPRESENTATIVE SURVEY

ABSTRACT

d: E-cigarette use among adolescents and liquid nicotine poisonings of children are increasing, yet e-cigarette manufacturing, safety, advertising, sales, and use remain largely unregulated. This study examines support for e-cigarette regulations.

Design/Methods: Using a nationally representative survey in 2014, we asked about support for various regulations related to manufacturing, safety, advertising, sale, and use of e-cigarettes; harms of e-cigarettes; and prohibiting use in public places. Chi-square analyses compared responses across smoking status, children in home, age, race, and education.

s: Most adults supported increased e-cigarette regulation. Support was strong for prohibitions on TV/radio advertising (69.9%), TV/movie product placement (70.9%), sales to minors (90.5%), and use on commercial airplanes (69.2%), as well as requiring child-proof packaging (89.9%) and manufacturing and safety standards (91.9%). A weaker majority of adults supported prohibiting fruit and candy flavors (55.4%), menthol flavorings (52.7%), and use of e-cigarettes in indoor public placesw (55.6%). Chi-square analyses revealed that support for regulations on e-cigarettes tended to stronger among females, more educated adults, older adults, nonsmokers, and non e-cigarette users. Region and parental status did not relate to support.

s: Support is nearly universal among U.S. adults for some of the regulations that would provide protections for youth. FDA action to regulate e-cigarettes to protect public health is likely to have strong public support. Given the growth in the use of e-cigarettes, regulatory action is needed at the federal, state, and local levels to provide protection from child poisonings, exposure to aerosol emissions, and marketing/flavoring strategies targeting adolescents. Although the scientific evidence has not yet resolved the issue of whether e-cigarettes help adult smokers to quit cigarettes, there is no public health benefit for children and adolescents using e-cigarettes or being exposed to e-cigarette aerosol.

Electronic cigarettes entered the U.S. market in 2007, and the affordability, availability, and marketing of these products has increased over the recent years. The FDA attempted and failed to regulate these products as drug delivery devices, and thus subject them to the stringent "safe and effective" standard required for drug approvals. The courts ruled that the FDA would have to regulate electronic cigarettes as a tobacco product rather thanas a drug (unless the manufacturers made therapeutic claims). The FDA announced its intention to regulate electronic cigarettes as tobacco products in April of 2011 under its authority provided by the Tobacco Control Act and implemented an electronic cigarette deeming rule in April of 2014. The proposed deeming rule would give FDA the authority to require health warning labels for e-cigarettes and restrict their sale to people 18 years of age and older. This deeming rule, however, does not address the aggressive marketing of this product to youth or the use of flavorings to make the the products more attractive. It also does not include child-safety measures. Poisoning incidents involving e-cigarettes and liquid nicotine jumped by 156 percent from 2013 to 2014. In the absence of regulations, use of e-cigarettes has increased

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Data are from the 2014 Social Climate Survey of Tobacco Control, a cross-sectional dual-frame survey administered to national probability samples of U.S. adults. The design included a Random Digit Dialing (RDD) frame and an internet panel frame developed from a probability sample of U.S. adults, in order to reduce non-coverage issues arising from wireless substitution. Data were weighted to adjust for age, race, sex, and region.

Self-Reported Use of Electronic Cigarettes

Respondents were asked "The next questions are about electronic cigarettes, also known as e-cigarettes, vaping devices, or hookah pens. E-cigarettes look like regular cigarettes, but are

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INTRODUCTION

dramatically in both adults and youth since 2010. Our recent study in Nicotine & Tobacco Research found a substantial increase in past 30 day use from .3% to 7.3%

Electronic cigarettes do not simply emit "harmless water vapor". Although some people and organizations refer to e-cigarettes emissions from these products as vapor, these emissions are primarily a toxic aerosol. E-cigarettes emit propylene glycol. The FDA has approved propylene glycol for use in consumable products, but the inhalation propylene glycol has not been approved. Heating propylene glycol changes its chemical composition. Moreover, many of the toxins and carcinogens in combustible tobacco smoke are also in e-cigarette aerosol, albeit at lower levels in some cases. To summarize, the aerosol contains submicron particles which can irritate the lungs, as well as nicotine, toxins, and carcinogens.

E-cigarette use among adolescents and liquid nicotine poisonings of children are increasing, yet e-cigarette manufacturing, safety, advertising, sales, and use remain largely unregulated. This study examines support for e-cigarette regulations.

METHODS

battery-powered and produce vapor instead of smoke.

Have you ever heard of an e-cigarette before this survey?" Respondents who had heard of electronic cigarettes were asked, "Have you ever used an e-cigarette, even one or two times?" Those who reported yes were asked "How often do you now vape or use e-cigarettes? Every day, some days, or not at all". Respondents who reported using these products every day or some days were considered to be current e-cigarette users.

Self-Reported Smoking

Respondents were asked, "Have you smoked at least 100 cigarettes in your entire life?" Respondents who reported that they had were then asked, "Do you now smoke cigarettes every day, some days, or not at all?" Respondents who reported that they have smoked at least 100 cigarettes and now smoke every day or some days were categorized as current smokers, while those who reported not at all were categorized as former smokers.

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TABLE 1. WEIGHTED SAMPLE CHARACTERISTICS

	2014 Unweighted N=3,030
i tus ters kers okers ers	56.9% 24.8% 4.6% 13.7%
t	12.6% 18.4% 37.6% 31.4%
	74.2% 11.5% 14.3%
	13.7% 38.8% 33.3% 14.2%
	47.6% 52.4%
IS ol ge ree	9.2% 28.5% 29.3% 33.0%
ome	36.1% 63.9%
Jse Use	17.4% 7.3%

FIGURE 1. SUPPORT FOR E-CIGARETTE REGULATIONS



FIGURE 2. SUPPORT FOR E-CIGARETTE USE RESTRICTIONS



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RESULTS

In the RRD frame, 1,511 adults completed the survey (co-operation rate, 867%), and 1,518 adults on the probability-based Internet panel completed the survey (final completion rate, 56%). Weighted sample characteristics are presented in Table 1. Most U.S. adults supported increased e-cigarette regulation. Support was strongest for regulations on marketing, packaging, and safety standards. A weaker majority of adults supported banning flavorings (See Figure 1). A strong majority of adults supported prohibiting e-cigarette use on commercial airplanes, whereas a weaker majority supported prohibiting use in indoor public places (See Figure 2). Chi-square analyses revealed that support for regulations on e-cigarettes tended to stronger among females, more educated adults, older adults, never and former smokers, and non ecigarette users. Region and parental status did not relate to support.

DISCUSSION

Support is nearly universal among U.S. adults for some of the regulations that would provide these protections. FDA action to regulate e-cigarettes to protect public health is likely to have strong public support. Although the majority of adults supported these potential regulations, non-trivial minorities of Americans did not. Support for banning e-cigarette use in indoor public places was substantially higher than opposition, a quarter of adults expressed ambivalence on this issue. Moreover, almost half of adults oppose prohibiting flavors and menthol in e-cigarettes. The medical and public health communities needs to counter industry claims that these products are safe and only produce a harmless water vapor.

The scientific evidence has not yet resolved the issue of whether e-cigarettes help adult smokers to quit cigarettes, but there is no public health benefit for children and adolescents using e-cigarettes or being exposed to e-cigarette aerosol. Given the growth in the use of e-cigarettes, regulatory action is needed at the federal, state, and local levels to provide protection from child poisonings, exposure to aerosol emissions, and marketing/flavoring strategies targeting adolescents.