

# PERCEPTIONS OF TOBACCO PRODUCT-SPECIFIC COVID-19 RISK AND CHANGES IN TOBACCO USE BEHAVIORS AMONG SMOKERS, E-CIGARETTE USERS, AND DUAL USERS

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## INTRODUCTION

- Coronavirus Disease 2019 (COVID-19) is a pandemic level threat, having already caused over 36.5 million confirmed cases and 1.06 million deaths worldwide.<sup>1</sup>
- The effects of COVID-19 on tobacco users remain ill-defined.
- In general, smokers are at an increased risk for respiratory tract infections<sup>2</sup> and recent studies have begun to establish a similar risk profile for e-cigarette users.<sup>3</sup>
- Few studies have assessed tobacco use and COVID-19, and the studies that have been done have found mixed results and are limited by sample size.<sup>4-9</sup>
- The aim of this study is to assess the relationship between tobacco product-specific risk perceptions for COVID-19 and changes in tobacco use since the start of the pandemic.

## METHODS

- Amazon's MTurk was used to recruit respondents with an MTurk account in the US, 18 years and older, who have successfully completed 100 prior "Human Intelligence Tasks (HITs)," held at least a 90% HIT approval rating, and were past 30-day users of cigarettes or e-cigarettes (N=990).
- Respondents were asked about changes in the use of cigarettes and/or e-cigarettes, as well as perceptions of risk for COVID-19 for product users versus non-users.
- The association between tobacco product-specific COVID-19 risk perceptions and changes in tobacco product use since the pandemic began was assessed using linear regressions among a pooled group of exclusive users of cigarettes and e-cigarettes (N=381).
- Linear mixed effects models were used for dual users (N=479) to account for repeated observations of tobacco product-specific COVID-19 risk.

## RESULTS

### Respondent Characteristics

- Most of the sample identified as male (57.17%), were "White or Caucasian" (80.10%), and were 25-34 years old (44.24%), though smokers tended to be older ( $\chi^2=48.19$ ,  $p<0.001$ ).

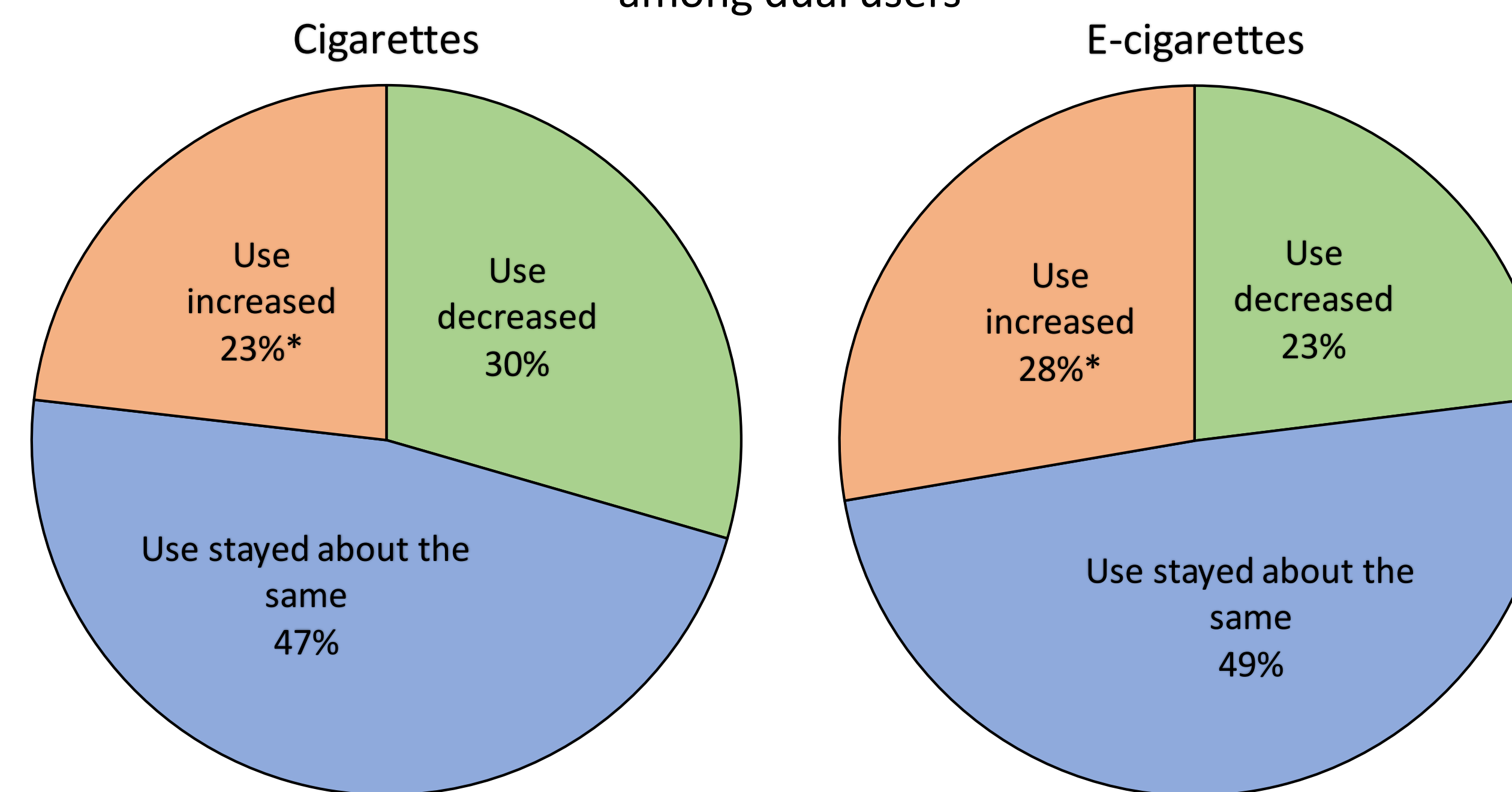
### Unadjusted Associations of Tobacco Use, Changes in Use, and COVID-19 Risk

- There were no significant differences in changes in use, as well as tobacco product-specific COVID-19 risk perceptions, between exclusive and dual users within the respective product groups.

### Adjusted Associations of Tobacco Use, Changes in Use, and COVID-19 Risk

- Higher levels of perceived risk for COVID-19 for users of a given tobacco product were associated with decreases in the use of that product since the pandemic began, after accounting for covariates (exclusive users:  $b=-0.17$ ,  $p<0.01$ ; dual users:  $b=-0.14$ ,  $p<0.001$ ).
- Dual users reported being more likely to increase their e-cigarette use relative to their cigarette use since the pandemic started ( $b=0.09$ ,  $p<0.05$ ; see **Figure 1**).

**Figure 1:** Changes in tobacco use behavior since COVID-19 began among dual users



\* Indicates statistical significance at  $p<0.05$

- Among dual users, those who spent more money in 2019 (pre-pandemic) on tobacco products were more likely to report decreasing their tobacco product use since the pandemic began ( $p<0.05$ ).

## DISCUSSION

- Perceptions of risk for COVID-19 attributed to a specific tobacco product (cigarette or e-cigarette) were a significant predictor of changes in use of that tobacco product since the pandemic began.
- Dual users were more likely to have increased their e-cigarette use than their cigarette use since the COVID-19 pandemic began.
- These findings emphasize the importance of disseminating health-information to tobacco users on COVID-19 risks as tobacco product-specific risk perceptions may be an important determinant of tobacco use changes during a public health crisis.
- Future research should be directed towards probing the reasons why dual users appear more likely to have increased their use of e-cigarettes relative to cigarettes and how public health messaging can better reach tobacco users during outbreaks of infectious respiratory diseases.

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## FUNDING

Funding was provided by grant numbers U54DA036105 from the National Institute on Drug Abuse and U54CA228110 from the National Cancer Institute of the National Institutes of Health and the Center for Tobacco Products of the U.S. Food and Drug Administration, as well as by the University of Rochester CTSA award number TL1 TR002000 from the National Center for Advancing Translational Sciences of the National Institutes of Health. The content is solely the responsibility of the authors and does not necessarily represent the views of the NIH or the FDA. The funding source had no other role than financial support.



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