# What Would You Do If...?:
# Analysis of Young Adult Dual User's Anticipated Responses to Hypothetical E-cigarette Market Restrictions

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# Funding and Disclosures

# Background

- Dual and multiple tobacco product use is prevalent in U.S.

- 37.8% of adult tobacco product users **use two or more products** (Kasza et al., 2017)
  - Most common two-product combination was e-cigarettes and combusted cigarettes (23%)



From Kasza et al., 2017 in NEJM

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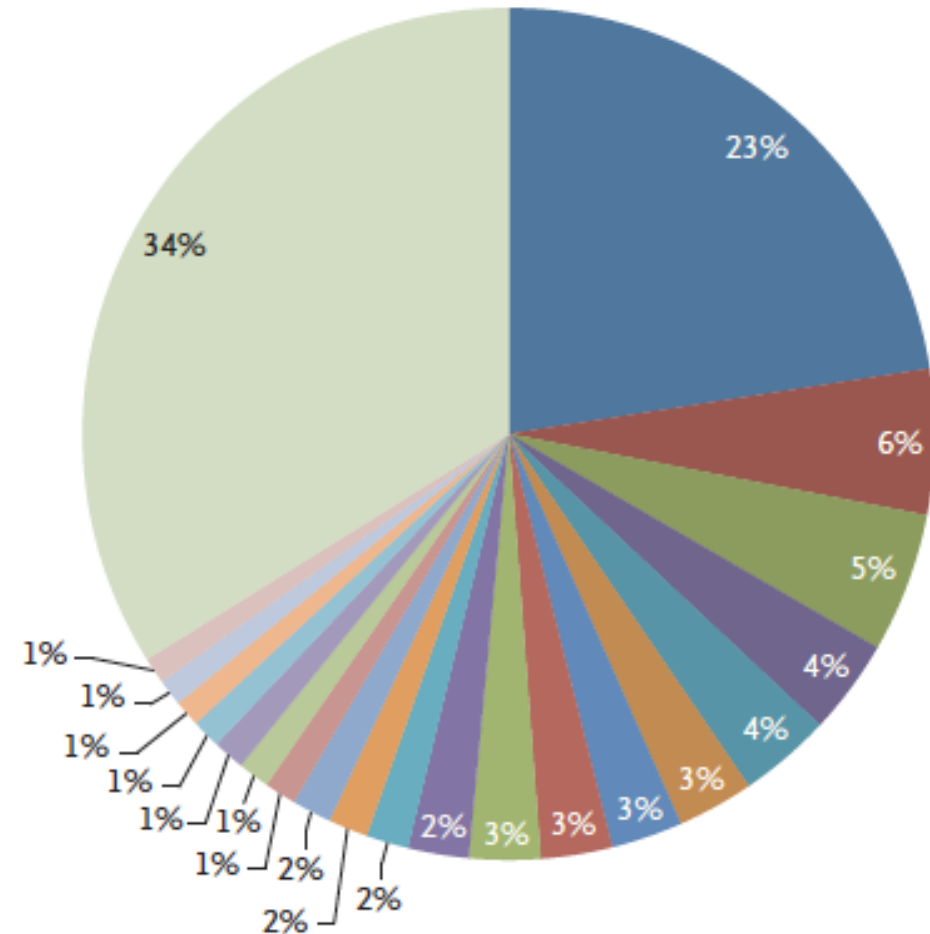


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# Background

- Under FSPTCA (2009) and 2016 deeming rule, FDA has regulatory authority over the manufacture, marketing, and distribution of tobacco products

- Many potential regulations are very likely to be broadly beneficial
  - Standards for batteries and child-resistant packaging

- Some potential regulations may have unintended consequences for certain segments of the population

# Background

- Regulation of one tobacco product will likely have impact on use of other products
  - Hatsukami et al., 2017: Participants using VLNC cigarettes had greater uptake of non-combusted alternative nicotine/tobacco products vs. those using NNC

- Need to consider the potential impact that regulations on e-cigarettes may have on the use of other tobacco products, **particularly combusted cigarette use**

# Aims of the study

1. Assess young adult dual e-cigarette/combusted cigarette users' anticipated responses to hypothetical regulation on e-cigarettes

2. Assess responses to hypothetical regulations, stratified by e-cigarette use characteristics

# Methods

- Amazon Mechanical Turk
- Survey description: "Tell us about your e-cigarette use"
- Screener survey
  - Combusted cigarette use
  - E-cigarette use
- Eligibility
  - 18-29 years old; U.S. residents; English speakers
  - Smoking combusted cigarettes ≥3 months AND ≥ one day in the past week
  - Using e-cigarettes ≥3 months AND ≥ one day in the past week

# Methods

- Data collected June 20-22, 2017

- N=240

- Compensation: $2; ~30 minutes

# Methods – E-cigarette use characteristics

- E-liquid flavor

- E-liquid nicotine content

- Device type

# Methods – Hypothetical regulations

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# Methods – Hypothetical regulations

- Imagine that e-cigarettes available in the U.S. are like they are today BUT …

| They are only available in nicotine-free (0 nicotine) e-liquid | They are only available in tobacco/menthol flavors | They do not allow the user to modify or customize the device (e.g., wattage, air flow) |

# Methods – Analyses

- Descriptive statistics to describe sample characteristics

- McNemar's tests to compare anticipated e-cigarette use versus anticipated combusted cigarette use

- Chi-square tests to assess differences between groups based on e-cigarette use characteristics

# Results – Sociodemographic characteristics

| Characteristic | % |
|---|---|
| Male sex | 49.2 |
| Age – mean (SD) | 24.3 (2.8) |
| White race | 72.5 |
| Non-Hispanic | 90.0 |
| >High school/GED education | 87.5 |
| Not married | 76.3 |

# Results – E-cigarette and cigarette use characteristics

| Characteristic | E-cigarette Mean (SD) | Combusted cigarette Mean (SD) |
|---|---|---|
| Years used | 1.7 (1.9) | 5.8 (3.8) |
| Bouts per day/CPD | 16.9 (29.5) | 5.9 (5.4) |
| Daily use - % | 38.3 | 46.7 |
| Days used per week | 4.8 (2.1) | 5.3 (2.1) |
| E-liquid flavor - % | | |
| Flavored | 58.4 | -- |
| Tobacco/menthol | 41.6 | -- |
| Nicotine concentration - % | | |
| Low (≤6 mg/mL) | 36.2 | -- |
| High (>6 mg/mL) | 63.8 | -- |
| Device type - % | | |
| 1st/2nd Generation | 65.9 | -- |
| 3rd Generation | 34.1 | -- |

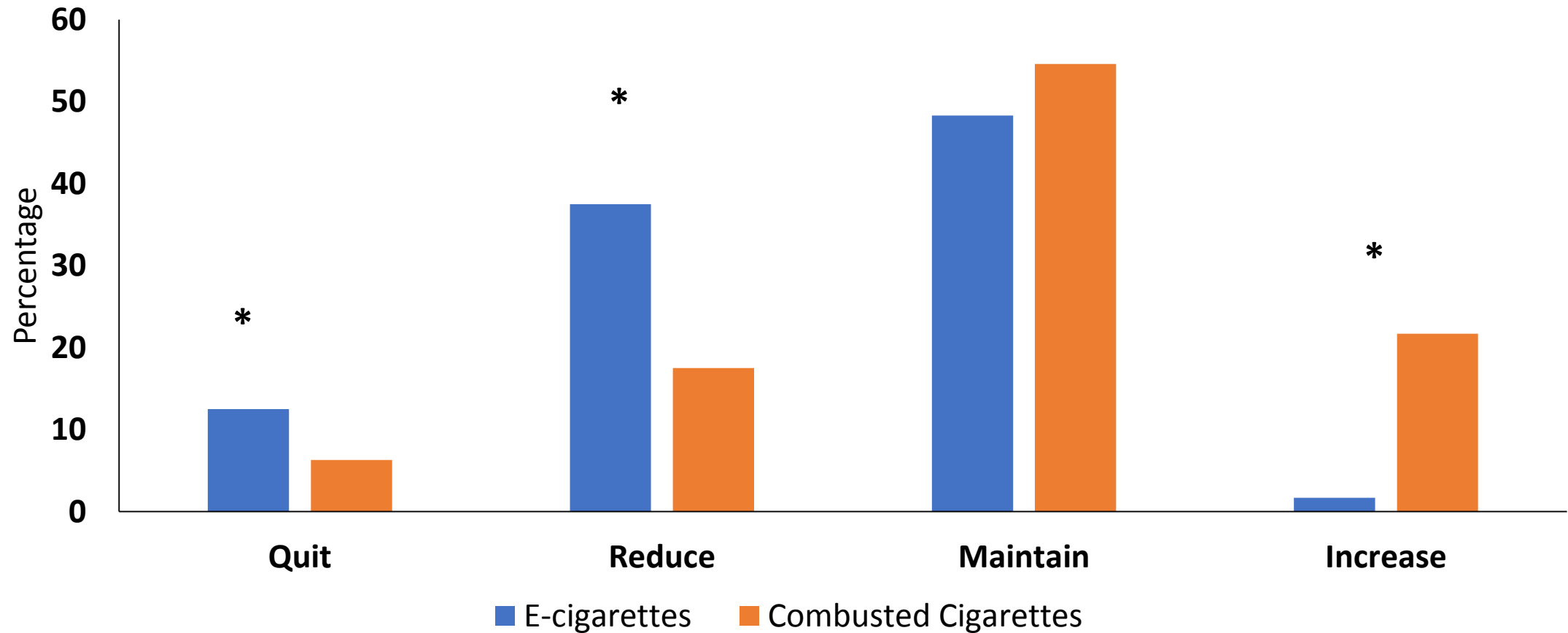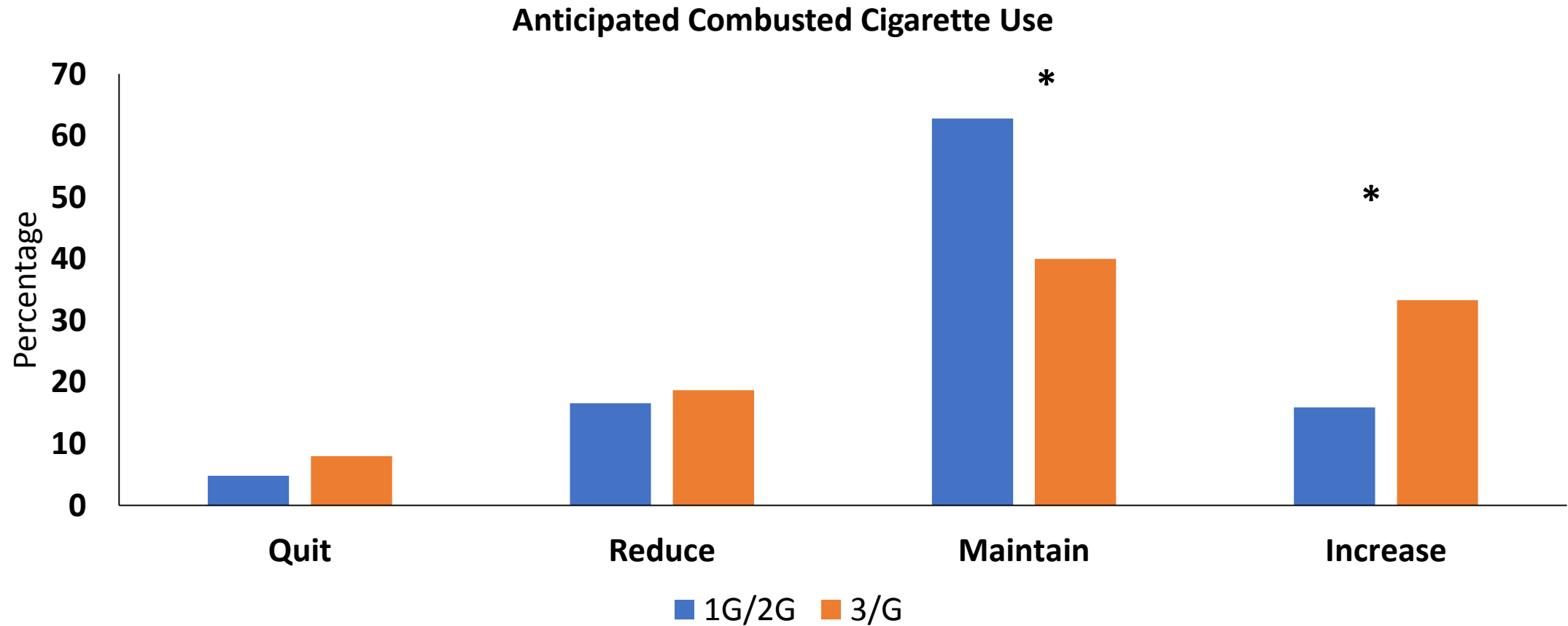# Imagine that e-cigarettes available in the U.S. have no nicotine
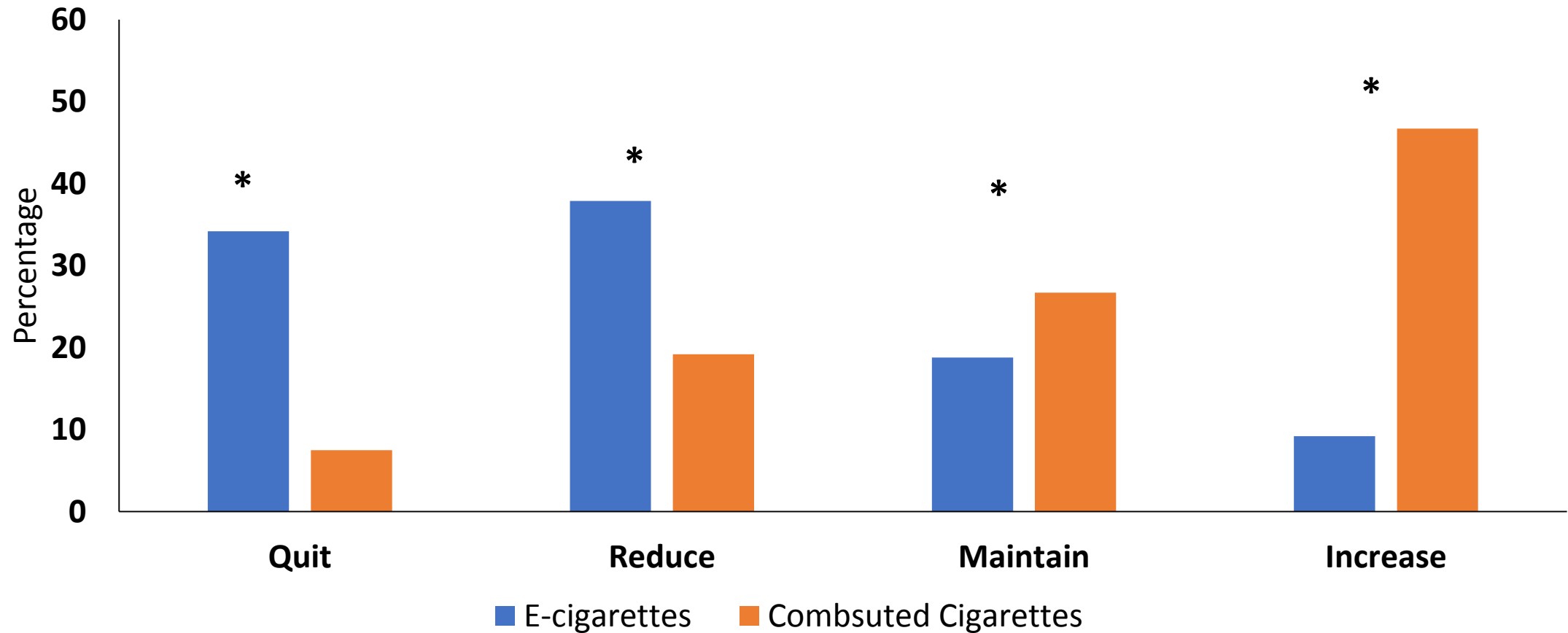
# Imagine that e-cigarettes available in the U.S. only come in tobacco/menthol flavors
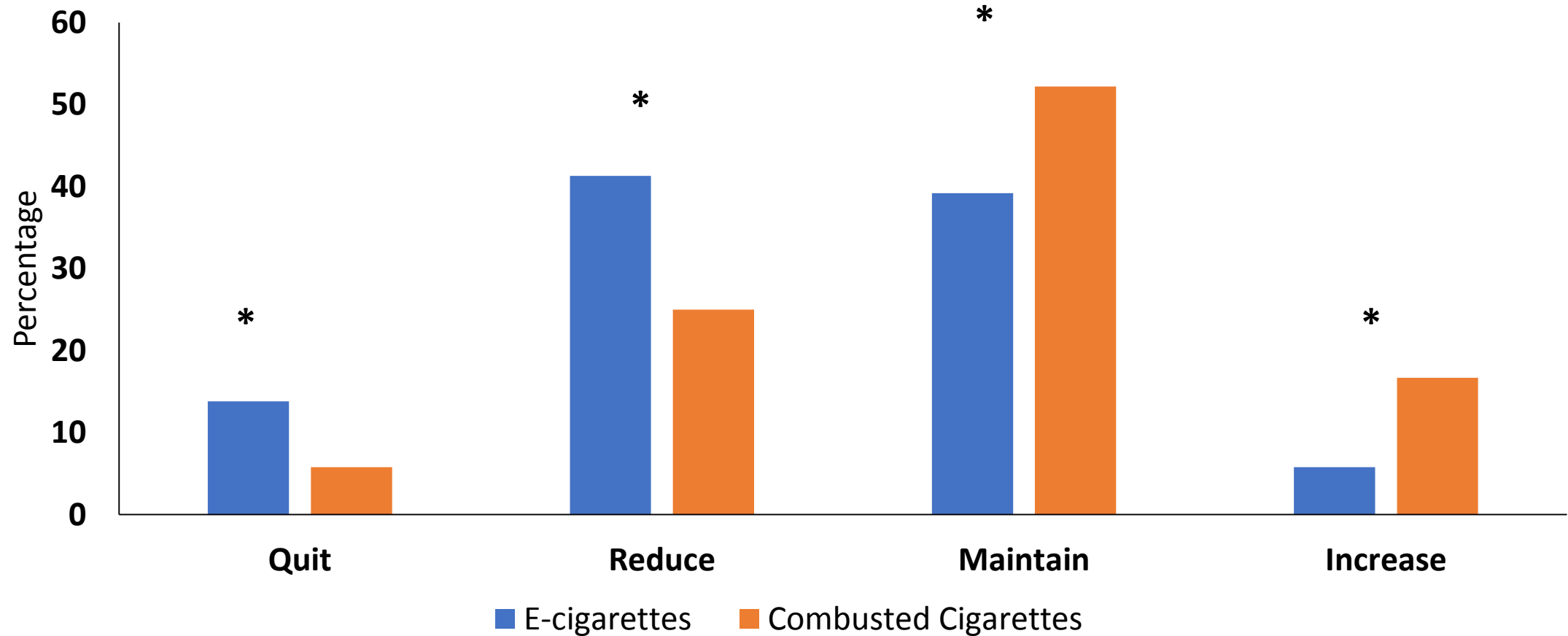
# Imagine that e-cigarettes available in the U.S cannot not be modified/customized

# Moderation analyses – Can't modify/customize devices, stratified by device type

**Anticipated Combusted Cigarette Use**



**1G/2G**   **3/G**

# Conclusions – Summary of findings

- Many regulations are likely to have definitive benefits to public health and safety

- Implications of other regulations may be less clear

- Restricting the availability of flavors and nicotine content in e-liquid, and customizable e-cigarette devices may lead to reductions in e-cigarette use and simultaneous increases in combusted cigarette use among young adult dual users

- Efforts to regulate the e-cigarette market need to be mindful of the impact that such regulations would have on the use of other tobacco products

# Conclusions - Limitations

- Self-report

- Generalizability
    - Restricted age range
    - Amazon Mechanical Turk

- Hypothetical

- Nature of hypothetical regulations was negative in tone (i.e., would result in reductions in product diversity)

- Zero nicotine is not a feasible product standard

# Conclusions – Strengths

- One of the first studies to explore anticipated responses to potential regulations of the e-cigarette market

- Conducted among an at-risk population

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  - Maggie Sweitzer
  - Jason Oliver
  - Joe McClernon

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