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# Perceptions of harm and addiction among dual users of cigarettes and e-cigarettes

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## Background

- Harm perceptions are important factors in why individuals may initiate, substitute, and/or continue use of particular tobacco products.
- Previous work has shown that many individuals have misinformed harm perceptions of certain tobacco products (e.g., different or fewer warnings indicative of lower harm) which may increase the likelihood of use.<sup>1</sup>
- Misconceptions of harm and addiction for various tobacco products may be due to marketing and packaging differences (see **Marketing Materials** below), poor education regarding tobacco, or peer/social sources.
- Understanding correlates of differing perceptions of harm and addiction is important for identifying individuals at risk and what factors may be important.
- The purpose of the current study was to examine perceptions of harm and addiction among a sample of cigarette and electronic cigarette (e-cigarette) users and examine whether these perceptions differ by demographics, other substance use, and tobacco use history.

## Method

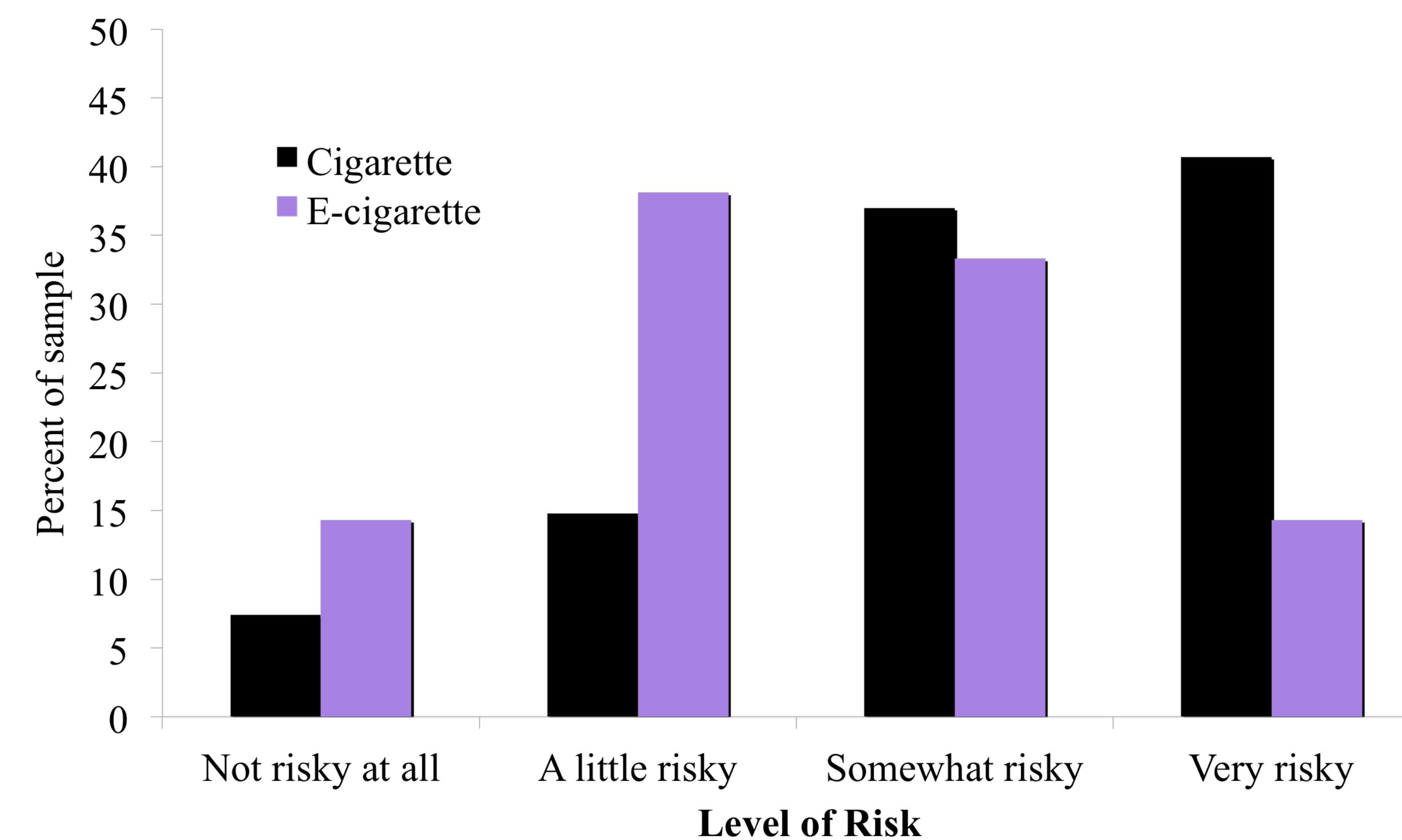
- The current sample consisted of 29 individuals who consented to participate in a clinical laboratory study of dual cigarette and e-cigarette users during 2015-2016.
- Screening data included in the current analyses were demographic items, tobacco use history, other substance use history, and perceptions of harm and addiction.
- Perception items asked about: 1) level of risk to health for cigarettes and e-cigarettes, 2) level of harm compared to regular-strength cigarettes for variety of tobacco products (e.g., menthol cigarettes, little cigars, snus, etc), and 3) likelihood of addiction when using a variety of tobacco products. Responses of “Don’t know” or “Not Sure” for perception items were excluded from analyses.
- Descriptive statistics and paired and independent T-tests were used to describe the sample and explore differences in perceptions of harm and addiction ratings between product types and between groups by demographics (gender, race, education), other substance use (alcohol, marijuana), and tobacco use history (use of other tobacco products).

## Sample Characteristics

Characteristics	Total N=29
Gender	
Male, N (%)	15 (51.7)
Female, N (%)	14 (48.3)
Age in years, M (SD)	38.32 (13.77)
Race/Ethnicity	
White, N (%)	14 (48.3)
Black, N (%)	15 (51.7)
Education	
Up to HS Diploma/GED, N (%)	14 (48.3)
Some College or more, N (%)	14 (48.3)
Tried marijuana at least once, N (%)	18 (62.1)
Past 30-day alcohol use, N (%)	16 (55.2)
Past 30-day other tobacco product use, N (%)	
Cigars, cigarillos, or little cigars	6 (20.7)
Hookah (waterpipe, shisha) or tobacco pipe	2 (6.9)

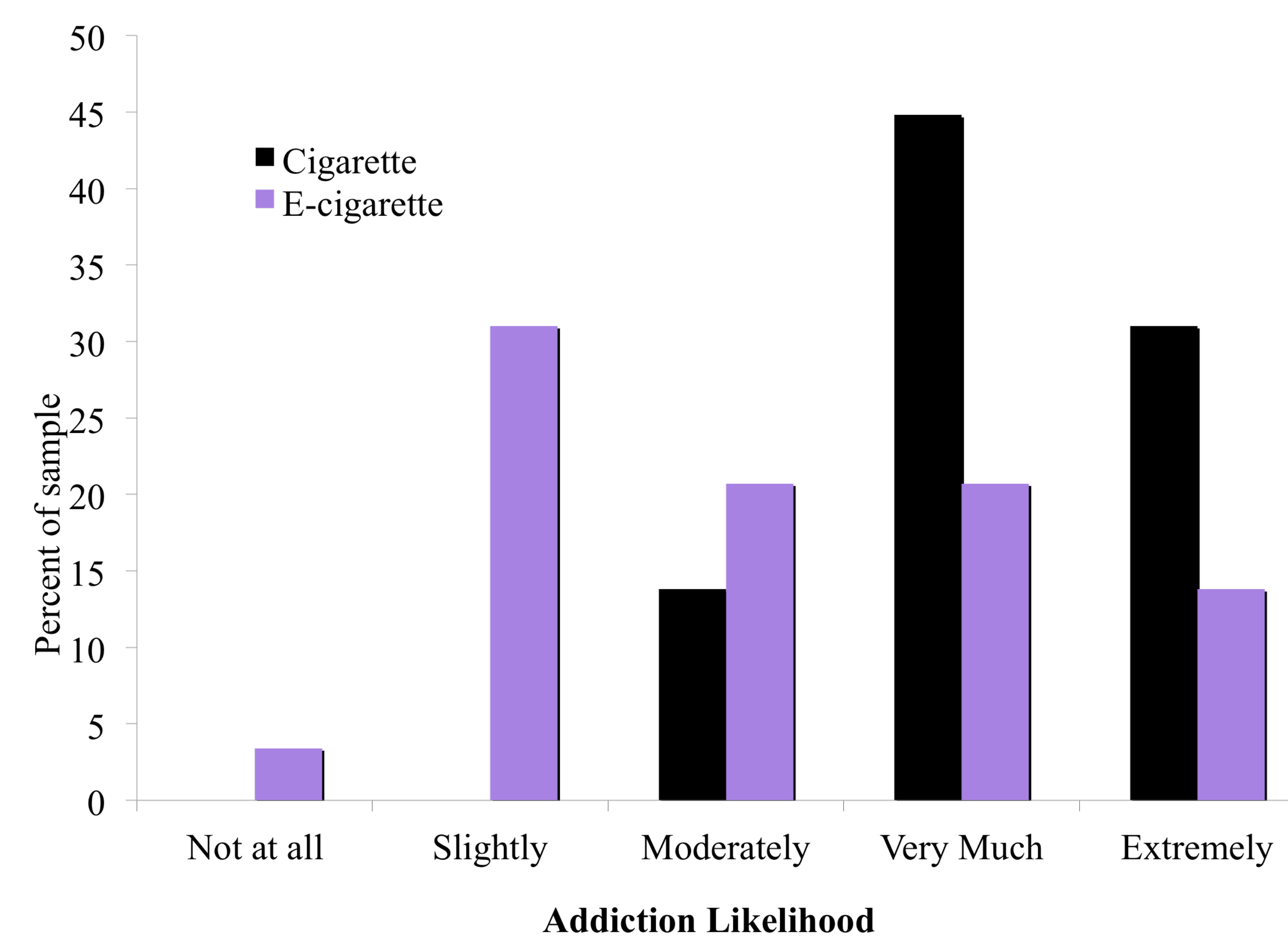
Note. M (SD) = Mean (Standard Deviation); 1 case missing education information, 1 case missing age, and 5 cases missing past 30-day alcohol use.

## Perceptions of Cigarette and E-cigarette Health Risk



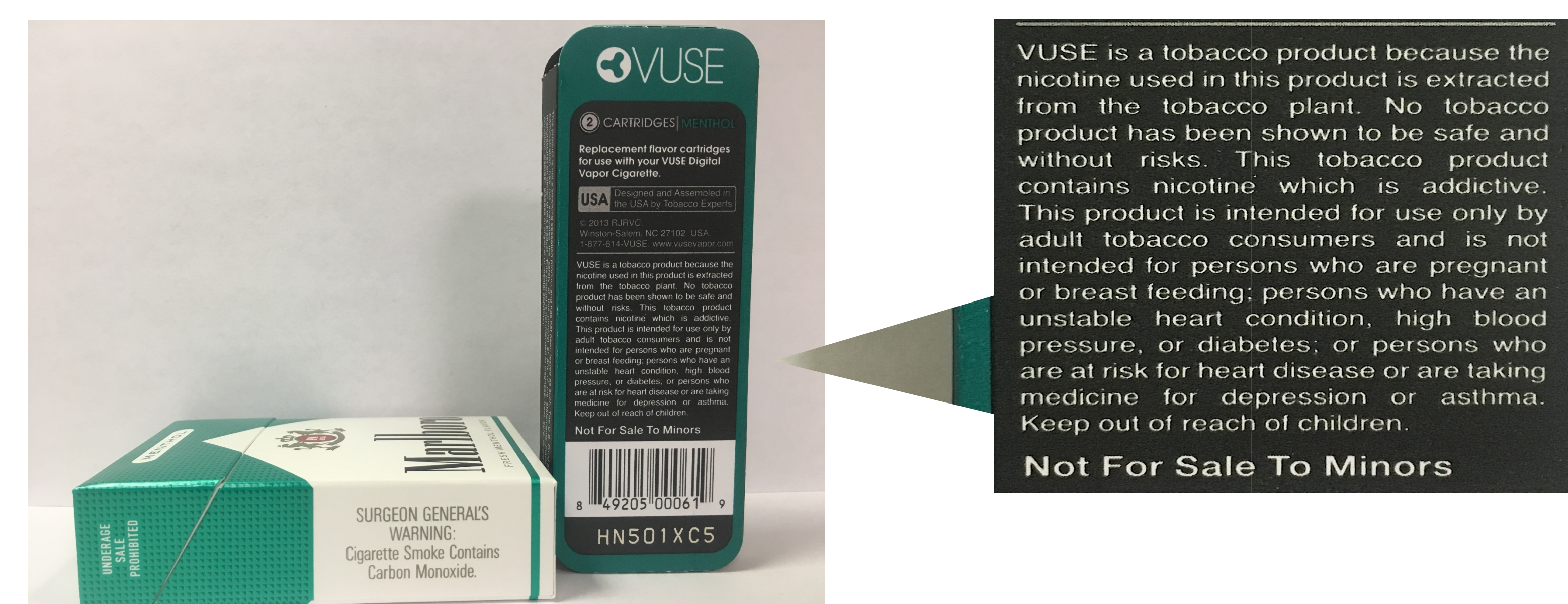
Note: 2 cases missing for cigarette, 8 cases missing for e-cigarette; mean (SD) difference between cigarette, 1.76 (0.89) and e-cigarette, 2.52 (0.93), perception ratings,  $p < 0.05$ .

## Perceptions of Cigarette and E-cigarette Addiction



Note: 1 case missing for cigarette, 1 case missing for e-cigarette; mean (SD) difference between cigarette, 4.21 (0.72), and e-cigarette, 3.17 (1.20), perception ratings,  $p < 0.05$ .

## Cigarette and E-cigarette Marketing Materials



VUSE is a tobacco product because the nicotine used in this product is extracted from the tobacco plant. No tobacco product has been shown to be safe and without risks. This tobacco product contains nicotine which is addictive. This product is intended for use only by adult tobacco consumers and is not intended for persons who are pregnant or breast feeding; persons who have an unstable heart condition, high blood pressure, or diabetes; or persons who are at risk for heart disease or are taking medicine for depression or asthma. Keep out of reach of children.

**Not For Sale To Minors**

## Differences in E-cigarette Perceptions by Characteristics

Characteristics	E-cigarette Harm Relative to Cigarettes M (SD)	E-cigarette Addiction Likelihood M (SD)
Gender		
Male	2.38 (1.19)	3.50 (1.16)
Female	2.62 (1.04)	2.67 (1.07)
Race/Ethnicity		
White	2.50 (1.23)	<b>2.55 (0.69)</b>
Black/Other	2.50 (1.00)	<b>3.53 (1.30)</b>
Education		
Up to HS Diploma/GED	2.67 (1.23)	3.00 (1.04)
Some College or more	2.31 (1.03)	3.31 (1.32)
Tried marijuana at least once		
No	<b>1.89 (0.60)</b>	3.00 (0.87)
Yes	<b>2.82 (1.19)</b>	3.18 (1.33)
Past 30-day alcohol use		
No	2.40 (1.17)	2.70 (0.82)
Yes	2.56 (1.09)	3.38 (1.31)
Past 30-day other tobacco product use		
No	2.30 (1.03)	<b>3.33 (1.20)</b>
Yes	3.17 (1.17)	<b>2.20 (0.45)</b>

Note: Harm scale was from A lot less harmful (1) to A lot more harmful (5) and Addiction scale was from Not at all (1) to Extremely (5); bolded cells indicate perception items that differed significantly between categories for that characteristic,  $p < 0.05$ .

## Discussion

- Among dual users in this sample, perceptions of health risk and addiction were significantly lower for e-cigarettes relative to regular cigarettes.
- Other tobacco product use was associated with perceived lower addiction risks for e-cigarettes and cigarettes (not displayed), and those who had tried marijuana had higher perceptions of harm of e-cigarettes relative to cigarettes.
- Some of these associations may be because lower perceptions of harm/addiction drive greater tobacco use overall or the alternative (experimentation alters perceptions), although some evidence suggests that lower perceptions of harm drive prospectively measured tobacco use.<sup>2</sup>
- Current findings support future investigation of harm and addiction perceptions as well as the influence of marketing exposures particularly among individuals who use more than one tobacco product.

## Acknowledgements and References

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<sup>1</sup>Smith SY, Curbow B, Stillman FA. Harm perception of nicotine products in college freshmen. *Nicotine Tob Res.* 2007;9(9):977-982.

<sup>2</sup>Brose LS, Brown J, Hitchman S, McNeill A. Perceived relative harm of electronic cigarettes over time and impact on subsequent use. A survey with 1-year and 2-year follow-ups. *Drug Alcohol Depend.* 2015;157:106-111.