

Welcome to today's webinar:

E-Cigarettes: Evidence to Guide Action

Dr. Robert Schwartz, Dr. Bo Zhang

Start time: 10:30 A.M. – 11:30 A.M.

For **audio**, call **(647)723-3984** (if you are located within the GTA)
or call **+1(866)365-4406** (toll-free)

When prompted, enter the access code: **7281777#**

If you are having technical difficulties, please call 1-800-363-7822



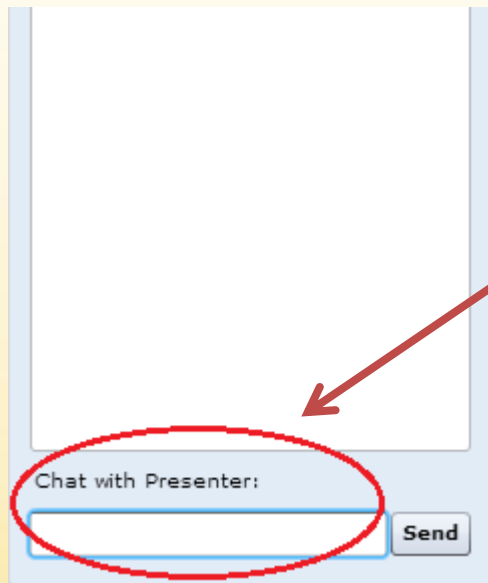
THE ONTARIO
TOBACCO
RESEARCH
UNIT

UNITÉ
DE RECHERCHE
SUR LE TABAC
DE L'ONTARIO

Generating knowledge for public health

Brought to you by the Program Training & Consultation Centre in collaboration with the Ontario Tobacco Research Unit.

How to submit comments or questions during the webinar:



Enter your comments/questions in this chat box (bottom left corner of your screen). They will be posted and shared with everyone in the webinar.



If you experience technical difficulties using the chat box during the webinar, please email your questions to debbie.kwan@cancercare.on.ca



POLL: Who's there?

How many people are attending today's webinar with you?

* Please count yourself plus anyone else in the room who is sharing your login credentials.

- **1**
- **2**
- **3**
- **4**
- **5 or more** (Please enter into the chat box the number of people attending this webinar with you)

Today's Speakers

Rob Schwartz



Dr. Rob Schwartz is the Executive Director of the Ontario Tobacco Research Unit and Associate Professor at the Dalla Lana School of Public Health, University of Toronto, with interests in research, evaluation and knowledge exchange.

Robert.Schwartz@utoronto.ca

Bo Zhang



Dr. Bo Zhang is a Senior Research Officer with OTRU. Bo received her Master's degree in Public Health from Adelaide University, Australia and PhD in Epidemiology from Dalla Lana School of Public Health, University of Toronto. Her research interests include the epidemiology of tobacco and electronic cigarette use, and the impact of tobacco policy on health.

Bo.Zhang@camh.ca



THE ONTARIO
TOBACCO
RESEARCH
UNIT

UNITÉ
DE RECHERCHE
SUR LE TABAC
DE L'ONTARIO

Generating knowledge for public health

E-Cigarettes: Evidence to Guide Action

Robert Schwartz, PhD

Bo Zhang, PhD

Ontario Tobacco Research Unit (OTRU)

Dalla Lana School of Public Health

University of Toronto

OTRU Webinar

October 27, 2015



What are e-cigarettes?

Battery-powered devices that are used to heat and vaporize a solution containing propylene glycol, flavourings, and sometimes nicotine

**RECIG: RESEARCH ON
E-CIGARETTES
AN HSRF FUNDED STUDY**

RECIG INVESTIGATOR TEAM

- Robert Schwartz (PI)
Ontario Tobacco Research Unit, University of Toronto
- Laurie Zawertailo (PI)
Centre for Addiction and Mental Health
- Thomas Eissenberg
Virginia Commonwealth University
- Roberta Ferrence
Ontario Tobacco Research Unit, University of Toronto
- Shawn O'Connor
Ontario Tobacco Research Unit, University of Toronto
- Peter Selby
Centre for Addiction and Mental Health
- Melodie Tilson
Non-Smokers' Rights Association

RECIG RESEARCH TEAM

- Emily Di Sante, Research Officer
- Bo Zhang, Research Officer
- Diane Van Abbe, Information Coordinator
- Jaklyn Andrews, Research Officer
- Muhannad Malas, Research Officer
- Aliya Noormohamed, Research Coordinator
- Jan vanderTempel, Research Officer
- Alexa Minichiello, Research Officer

RECIG KNOWLEDGE EXCHANGE ADVISORY COMMITTEE

Irmajean Bajnok, RNAO

Claire Harvey, TPH

Jennifer McFarlane, TCAN

Michael Perley, OCAT

Rowena Pinto, CCS

Michael Stanbrook, UHN

Andrea Stevens Lavigne, OLA

Melodie Tilson, SHAF

Research Questions

1. Determine the prevalence of e-cigarette use, especially among youth
2. Determine the health effects of e-cigarette use
3. Determine the effectiveness of e-cigarettes as a cessation aid
4. Determine the relationship between e-cigarette use and uptake of tobacco smoking

What you will learn

- Gain an understanding of the current state of the literature related to the use of e-cigarettes and their effectiveness as a cessation aid
- Gain an understanding of the perceptions and use of e-cigarettes
- Learn about current trends in how e-cigarettes are discussed on social media

RECIG Studies

- Comprehensive, realist-informed knowledge synthesis
- Analysis of data from existing surveys
- Longitudinal panel of adult smokers and recent smokers (19 years and over)
- Surveys and in-depth interviews with youth and young adults (15-29 years of age)

RECIG Studies (cont'd)

- Social media analysis of e-cigarette message exposure, reach and content
- Randomized clinical trial comparing smoking cessation effectiveness of e-cigarettes and nicotine replacement therapy products
- Biomarker study of e-cigarette users to measure concentrations of nicotine and other chemicals



**International, multidisciplinary
Expert Panel**

+

**Seminar / Webinar
January 13th, 2016**

Outline

- A systematic review of the literature related to their effectiveness as a cessation aid
- A review of e-cigarette use in Ontario
- Findings from a panel of adult smokers and a survey of youth and young adults on their use and perception of e-cigarettes
- A social media analysis of e-cigarette message exposure, reach and content

EFFECTIVENESS AS A CESSATION AID KNOWLEDGE SYNTHESIS

POLLING QUESTION 1

Do you know of smokers who have tried e-cigarettes to quit smoking?

Identification

Records identified through database
and grey literature searches
(N = 1910)

Duplicates removed
(N = 1044)

Eligibility
Screening

Records screened for eligibility
(N = 866)

Records excluded
(N = 600)

Data
Extraction

Articles extracted
(N = 266)

Quality
Assessment

Items categorized according to data
quality ($N_{\text{weak}} = 91$)
($N_{\text{moderate}} = 117$)
($N_{\text{strong}} = 58$)

Synthesis &
reporting

Studies included in qualitative synthesis
($N_{\text{qual}} = 266$)

Articles on e-cigarettes and smoking
cessation
(N = 48)

GRADE

Grading of Recommendations Assessment, Development and Evaluation (GRADE) to assess the overall quality of evidence



ARE E-CIGARETTES EFFECTIVE CESSATION AIDS?



Conclusively:
The evidence to date is inconclusive!

POLLING QUESTION 2

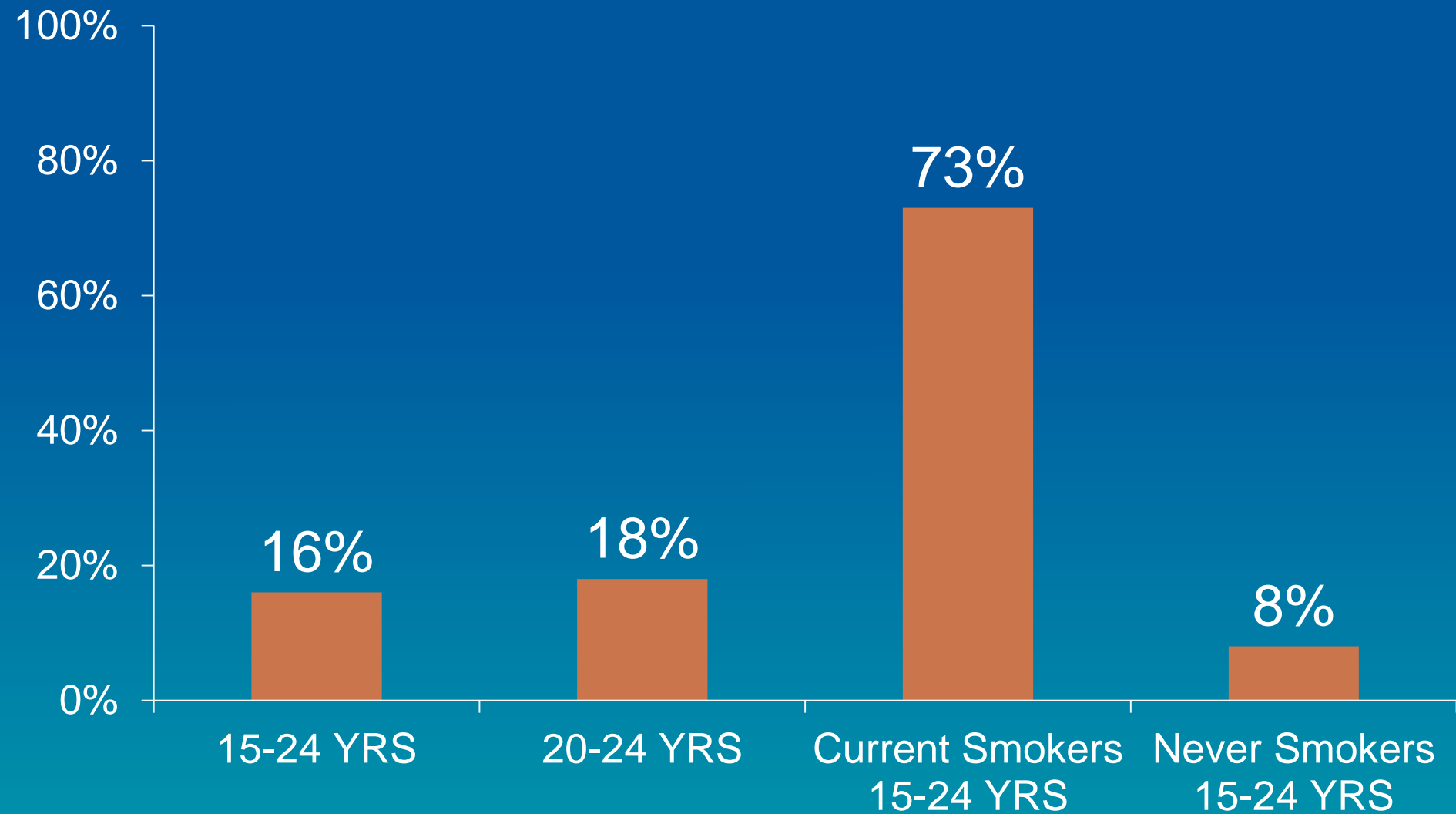
Do you know of smokers who have used e-cigarettes to successfully quit smoking for good?

GRADE RESULTS

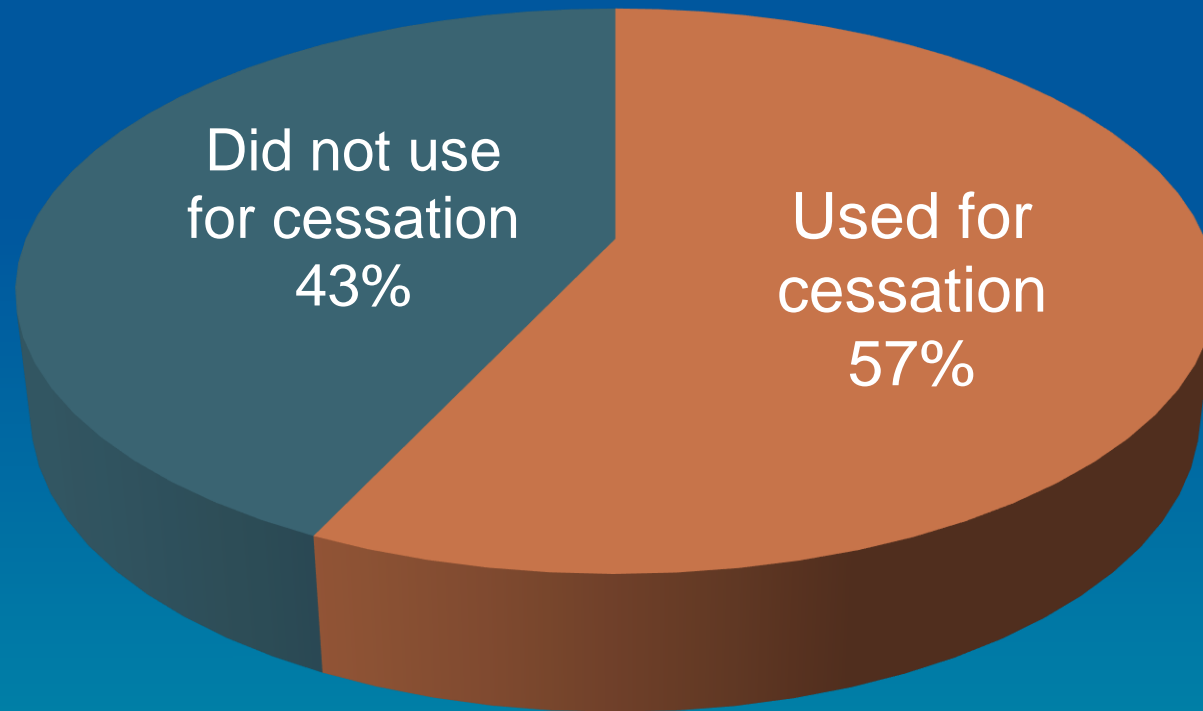
- The state of the evidence about the effectiveness of e-cigarettes as a smoking cessation aid is currently assessed as very low to low, due primarily to methodological weaknesses of current studies
- Evidence of a positive association between e-cigarette use and smoking reduction is slightly better but also weak as indicated by a GRADE assessment of low to moderate

E-CIGARETTE USE IN ONTARIO

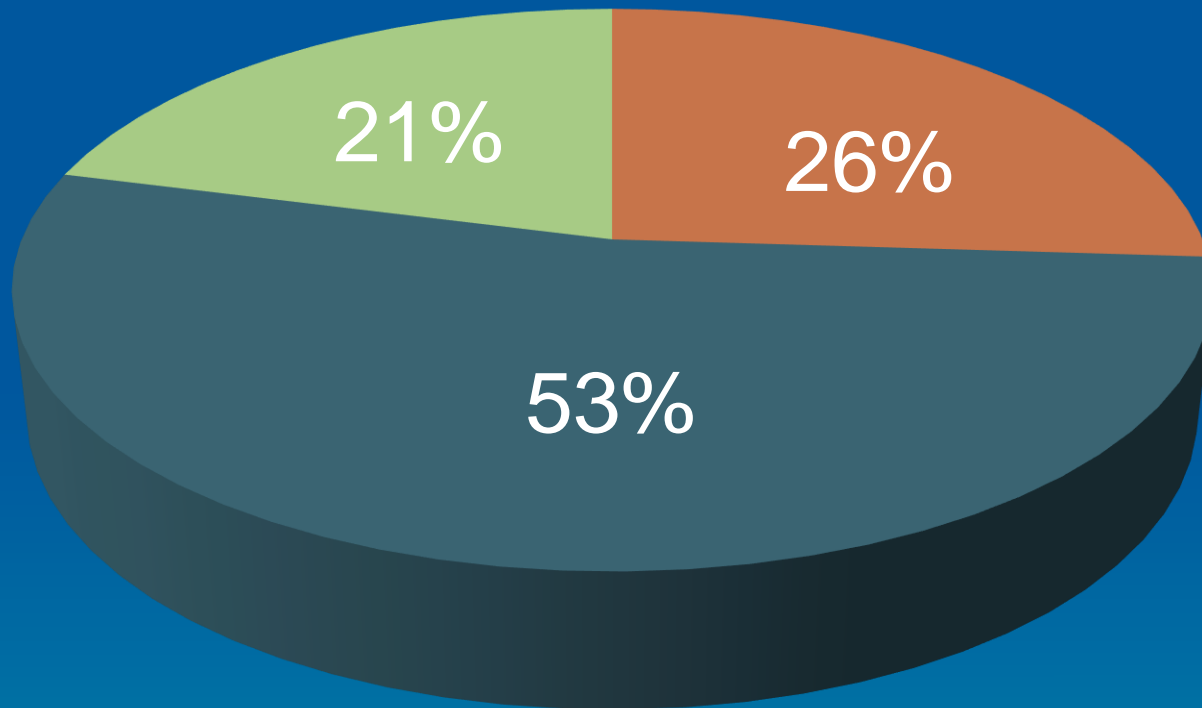
Ever Tried E-Cigarette, CTADS, Ontario, 2013



% Smokers who tried vaping in order to quit smoking, CTADS, Ontario, 2013



Use of Nicotine E-Cigarettes

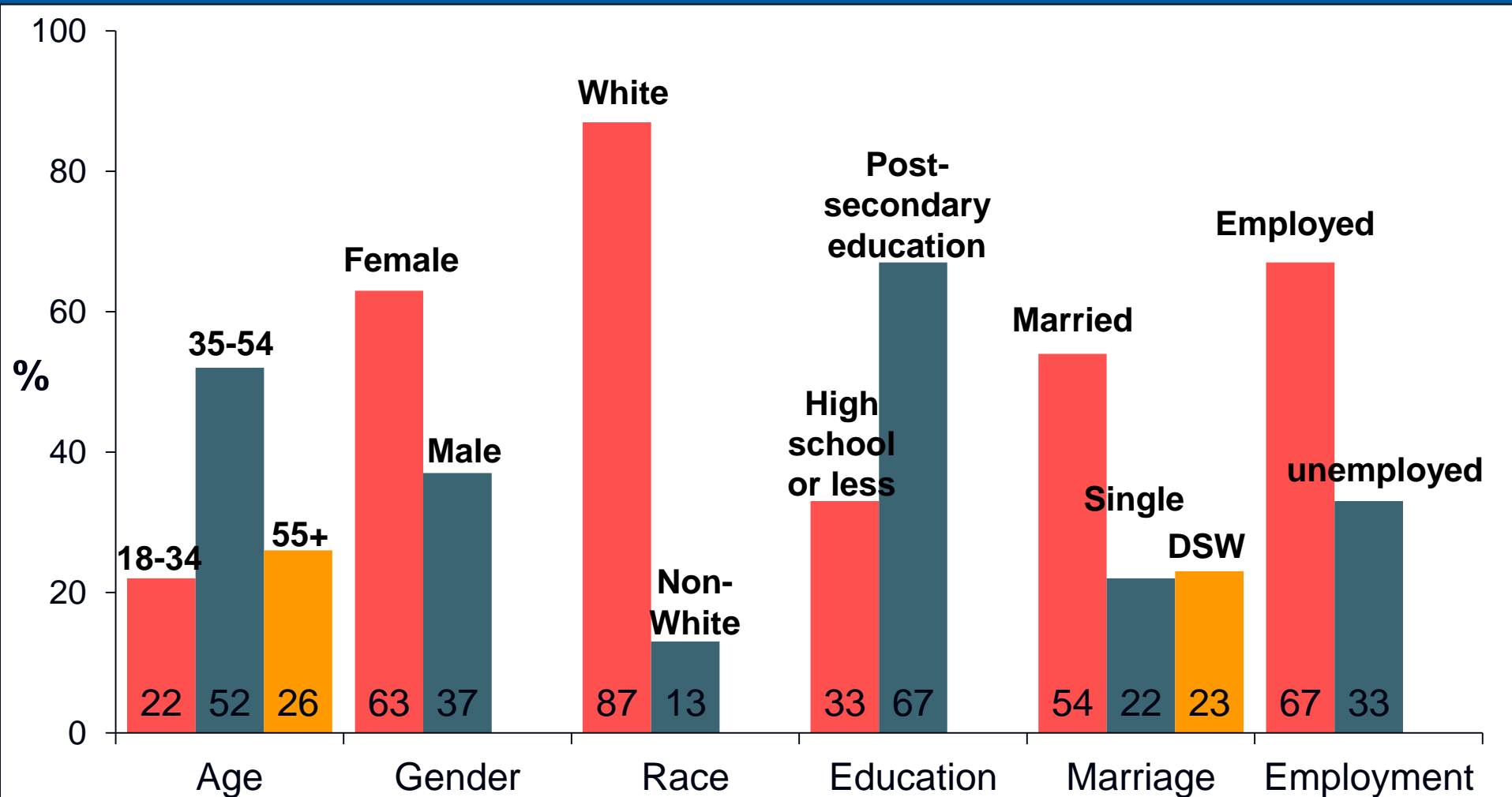


- Use Nicotine E-cigs
- Did not use Nicotine E-cigs
- Did not know

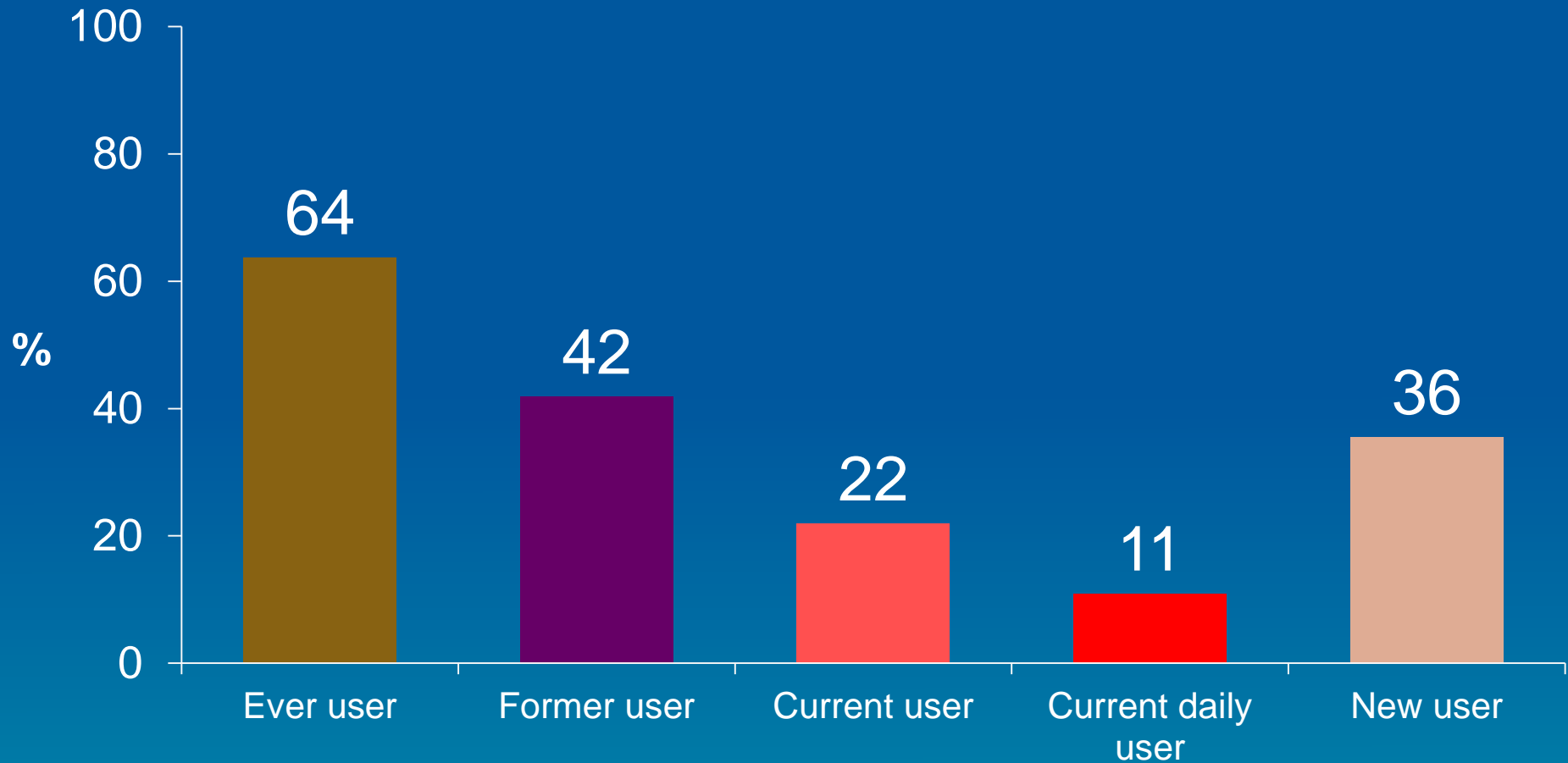
FINDINGS FROM A PANEL OF ADULT SMOKERS

Sample of the Adult Panel

1937 Ontario adults who smoked at least 1 tobacco cigarette in their lifetime

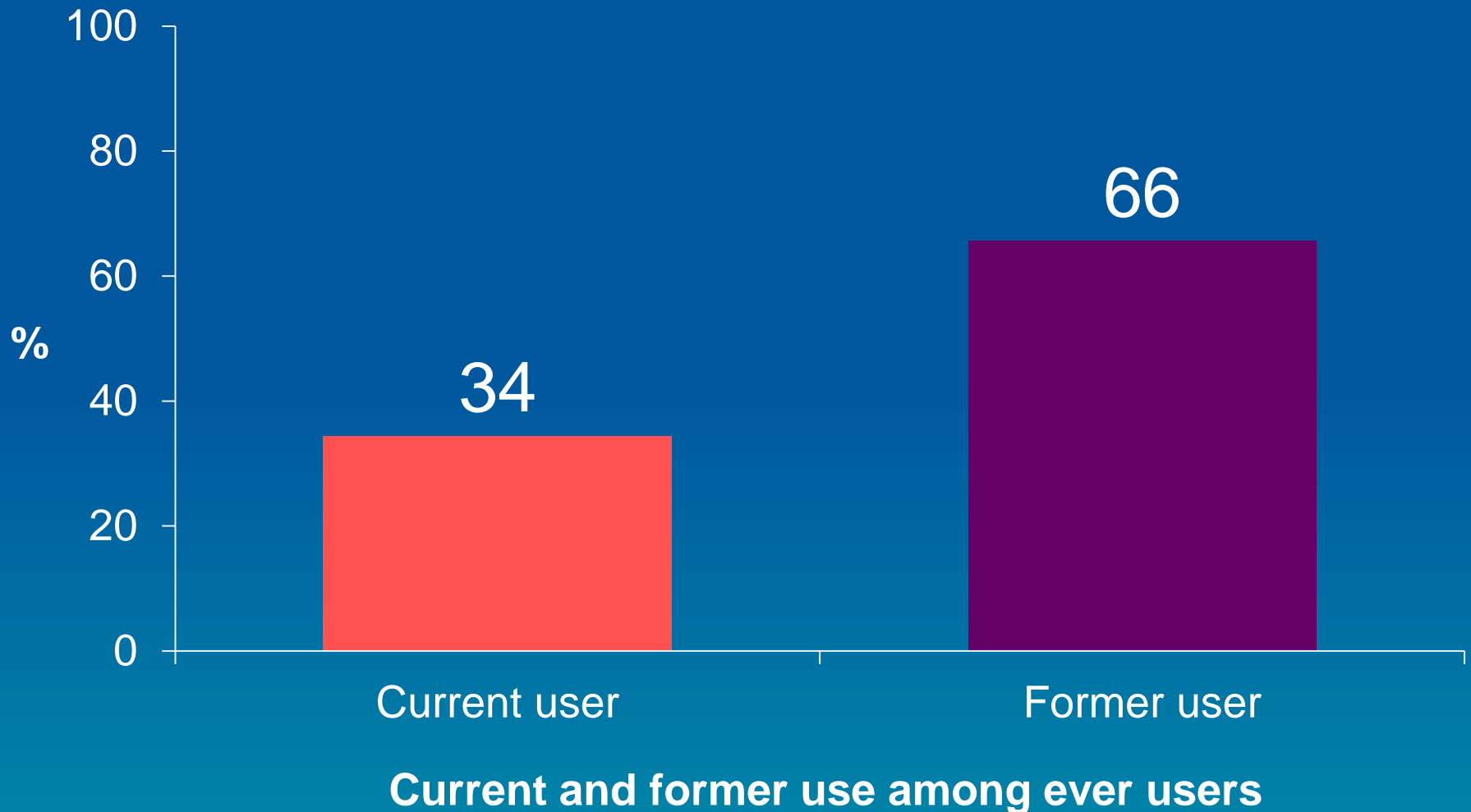


Adults: Prevalence of E-Cigarette Use



- **Ever users:** those who ever used at least one puff of an e-cigarette in their lifetime
- **Former users:** ever users who did not use an e-cigarette in the last 30 days
- **Current users:** ever users who used an e-cigarette in the last 30 days
- **Current daily users:** current users who used e-cigarettes daily in the last 30 days
- **New users:** those who used their first e-cigarette in the last 12 months

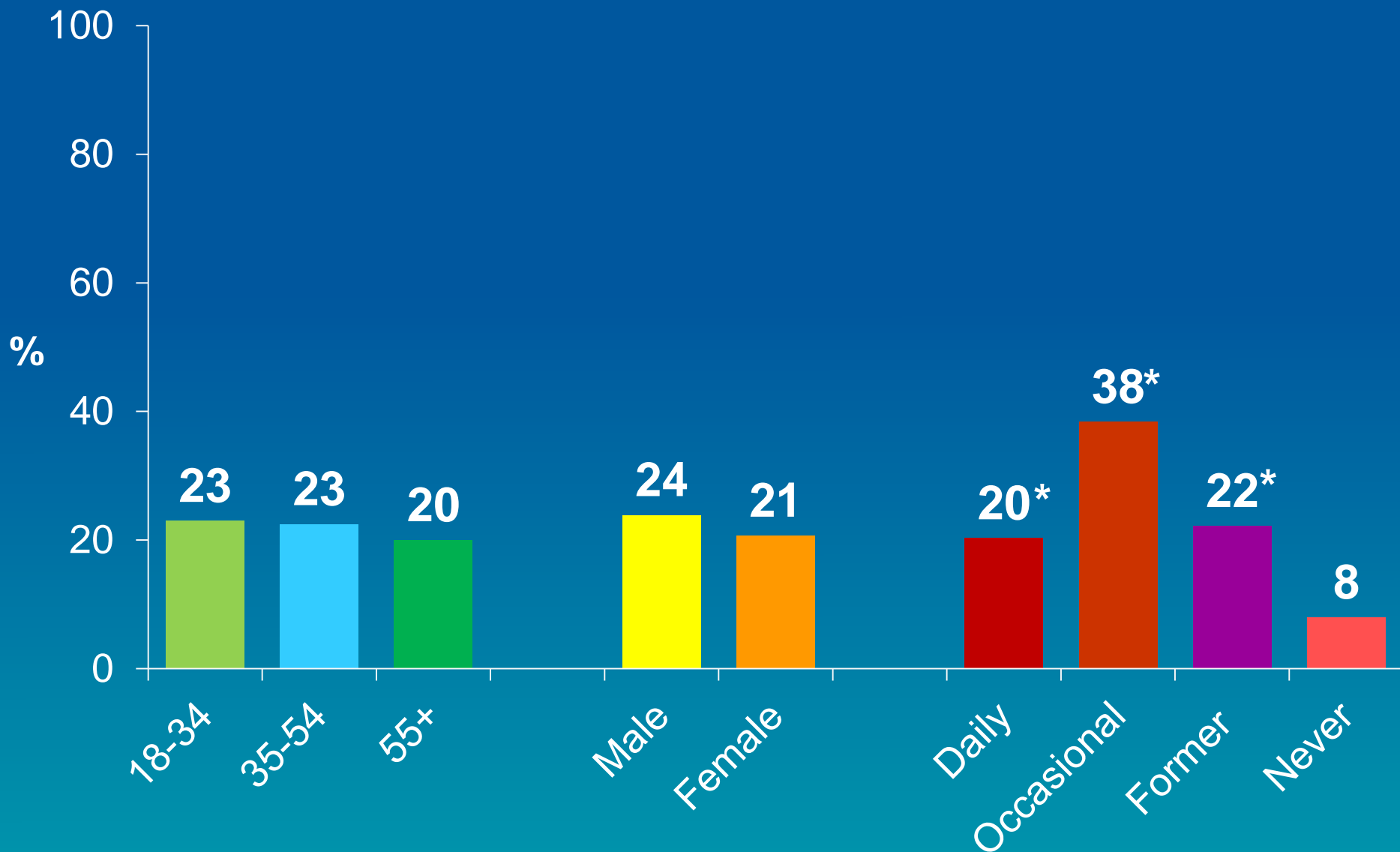
Adults: Current and Former Use






- The majority of e-cigarette users quit using e-cigarettes

Adults:

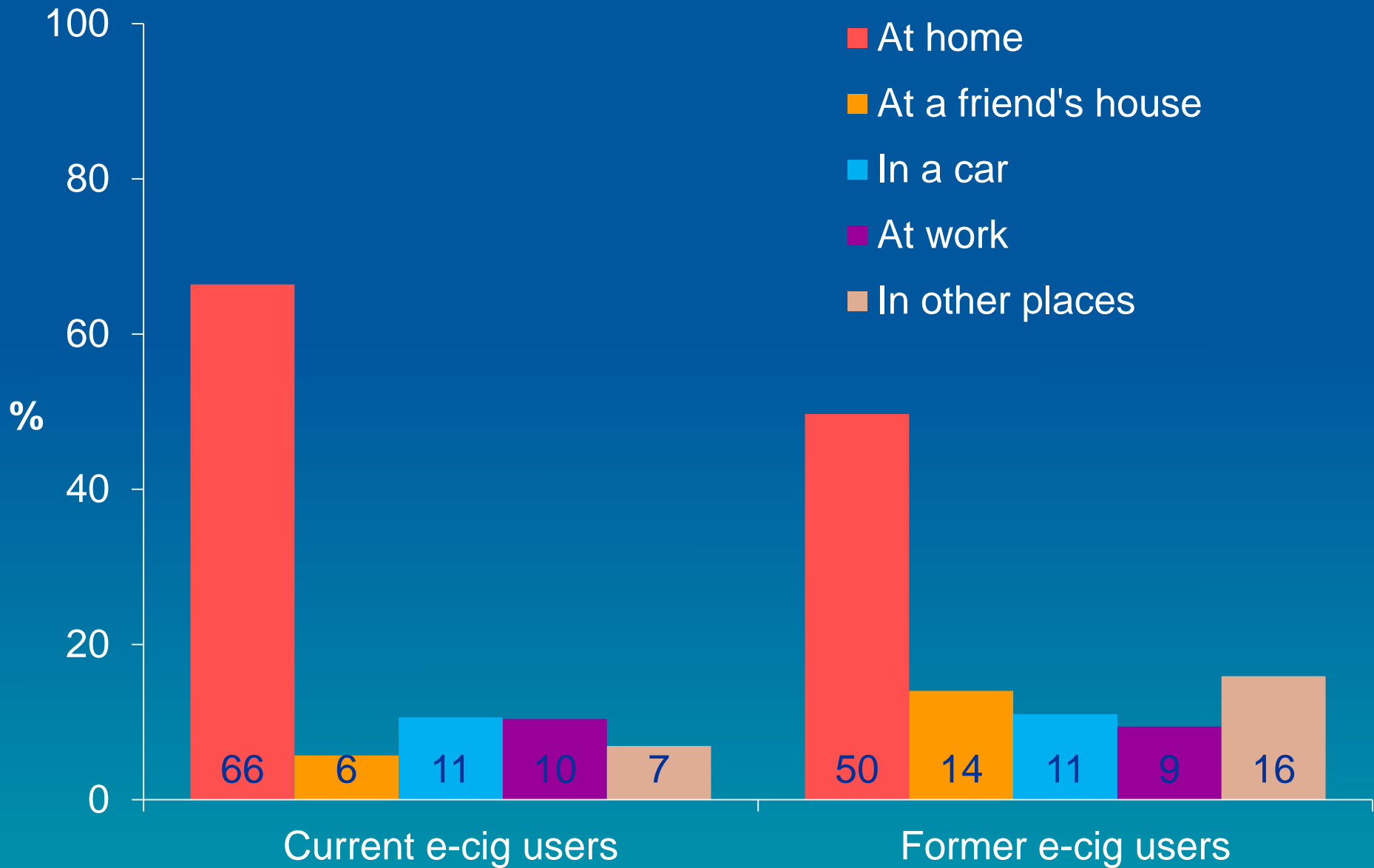
Prevalence of Current Use of E-Cigarettes



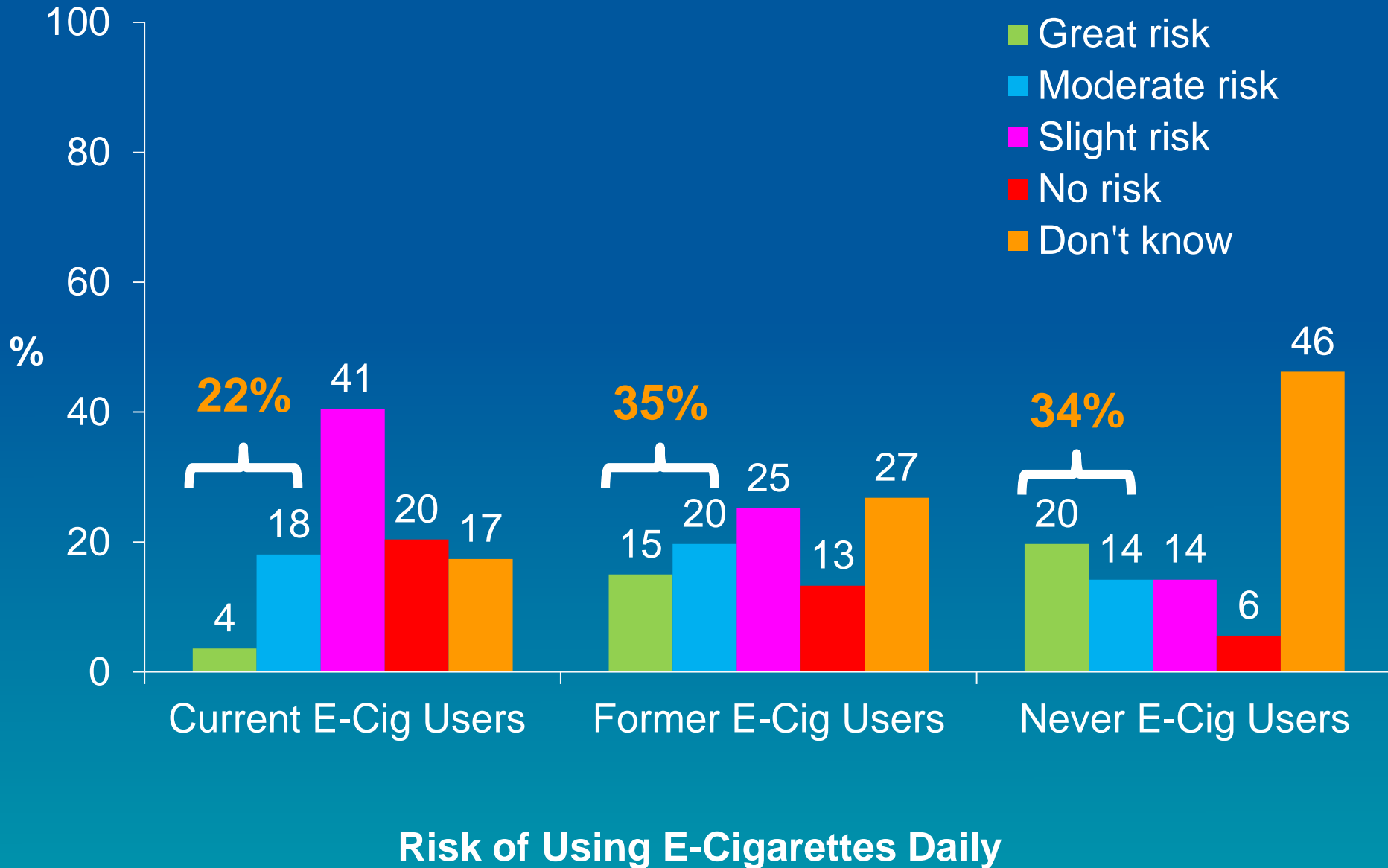
Adults: Who were established e-cigarette users?

Factor	Prevalence	Adj OR	P value
Smoking: Daily	8%	Referent	
Occasional	27%	5.15	<0.001
Former	30%	3.44	<0.001
Never	21%	5.87	0.47
No. lifetime vape sessions: ≤100	6%	Referent	
>100	58%	5.78	<0.001
No. puffs per day: <50	8%	Referent	
≥50	47	2.50	0.012
Type: Disposable	3%	Referent	
Refillable with cartridges	5%	0.70	0.40
Refillable with e-liquid	36%	3.50	0.002
Size: 	4%	Referent	
	23%	1.70	0.10
	75%	7.78	<0.001
Nicotine: No	7%	Referent	
Yes	28%	2.58	0.008

Adults: Places of Using the Last E-Cigarette



Adults: Perception of E-Cigarettes



Adults: In Relation to Quitting Tobacco

Outcome	Sig. Factor	Prevalence	Adj OR†
Quitting≥1 month	Age: 55+	18.3%	Referent
	18-34	35.2%	2.61***
	Lifetime vape sessions: Never use	19.2%	Referent
	≤100	18.5%	0.93
	>100	42.5%	3.57***
Quitting>6 months	Employment: Yes	6.0%	Referent
	No	4.3%	0.45*
	Lifetime vape sessions: Never use	3.5%	Referent
	≤100	4.8%	1.31
	>100	11.4%	4.75***
Quit attempt	Ever NRT: No	65.6%	Referent
	Yes	83.2%	1.79*
	Ever bupropion or varenicline: No	76.0%	Referent
	Yes	84.1%	1.71**

* p<0.05; ** p<0.01; *** p<0.001

† Model included sociodemographic and e-cig use factors, and quitting aids.

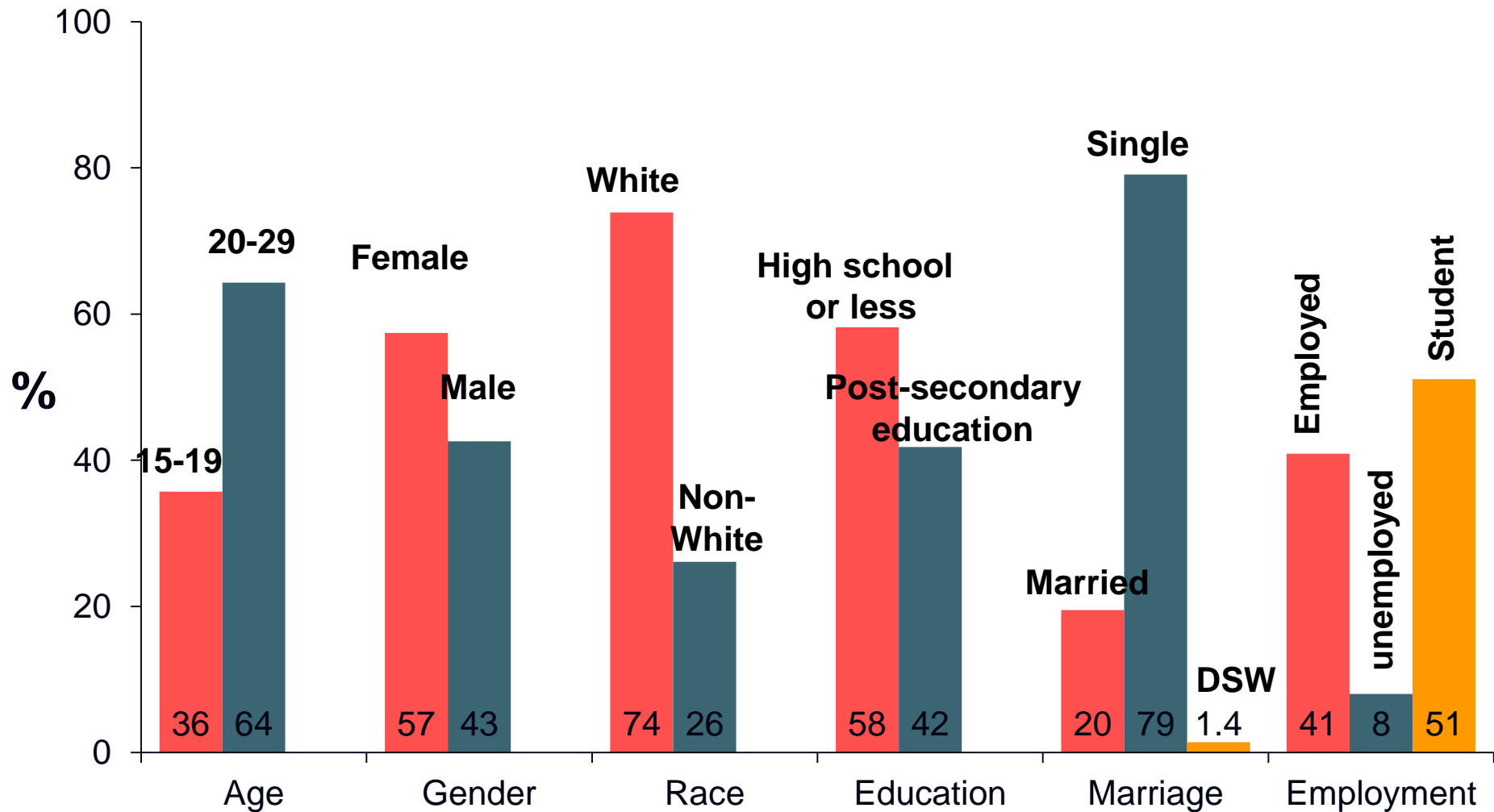
FINDINGS FROM A SURVEY OF YOUTH AND YOUNG ADULTS

POLLING QUESTION 3

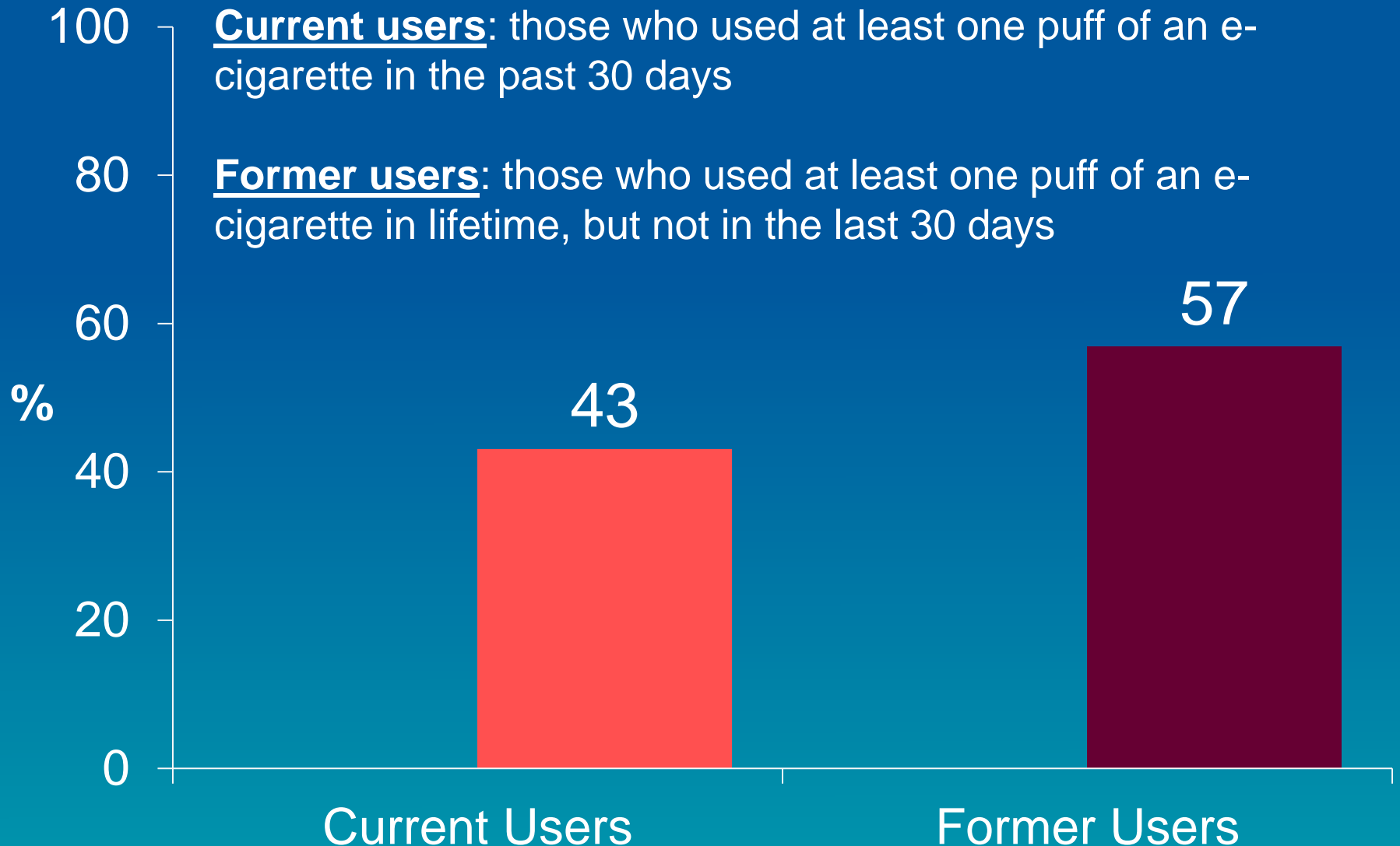
Do you know of non-smokers who have tried vaping e-cigarettes?

Sample of the Youth and Young Adult Survey

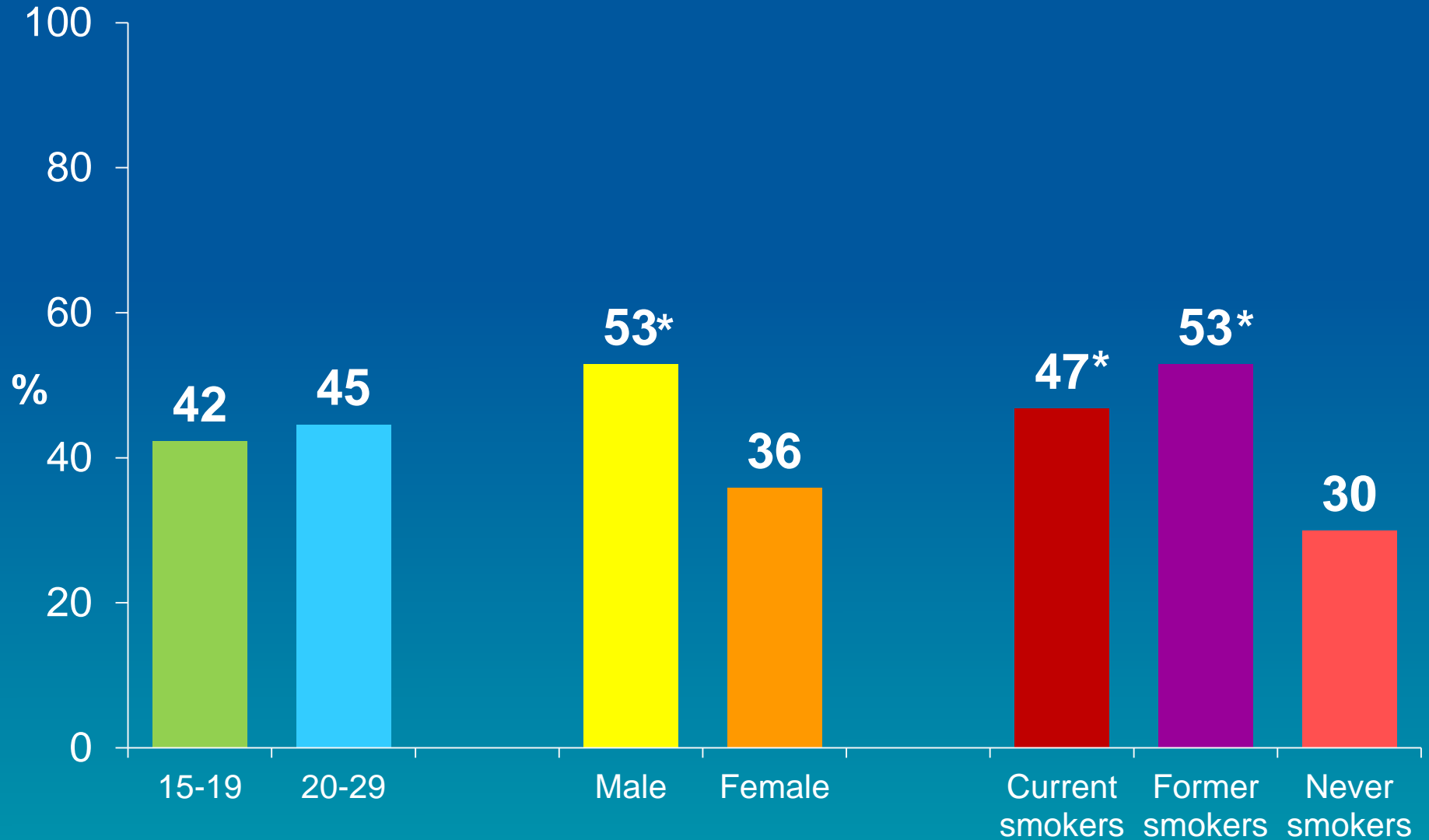
364 Ontario youth (aged 15-19) and young adults (aged 20-29) who used at least one puff of an e-cigarette






Youth and Young Adults: Use of E-Cigarettes



Youth and Young Adults: Prevalence of Current Use of E-Cigarettes

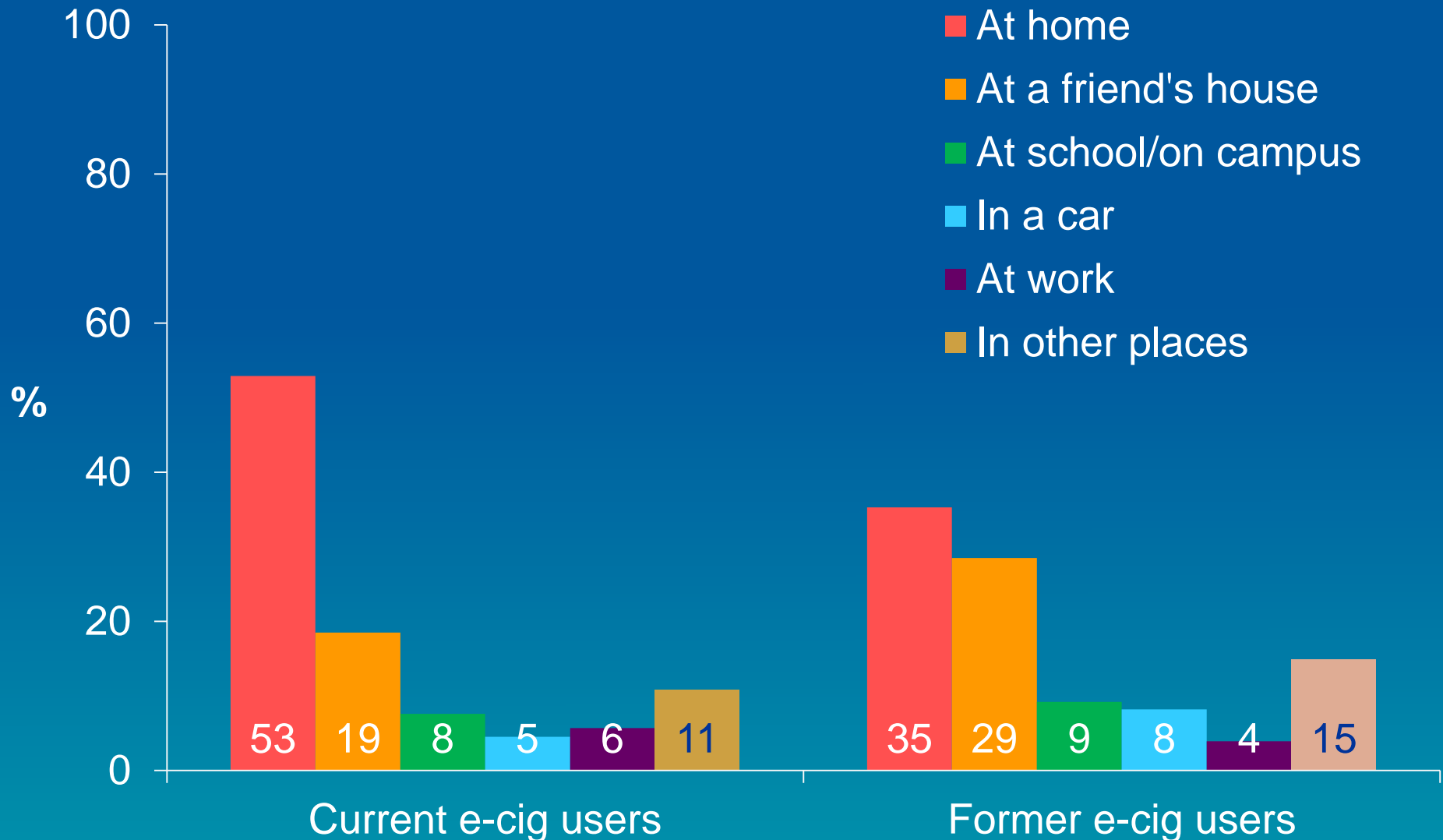


Youth and Young Adults: Who were established e-cigarette users?

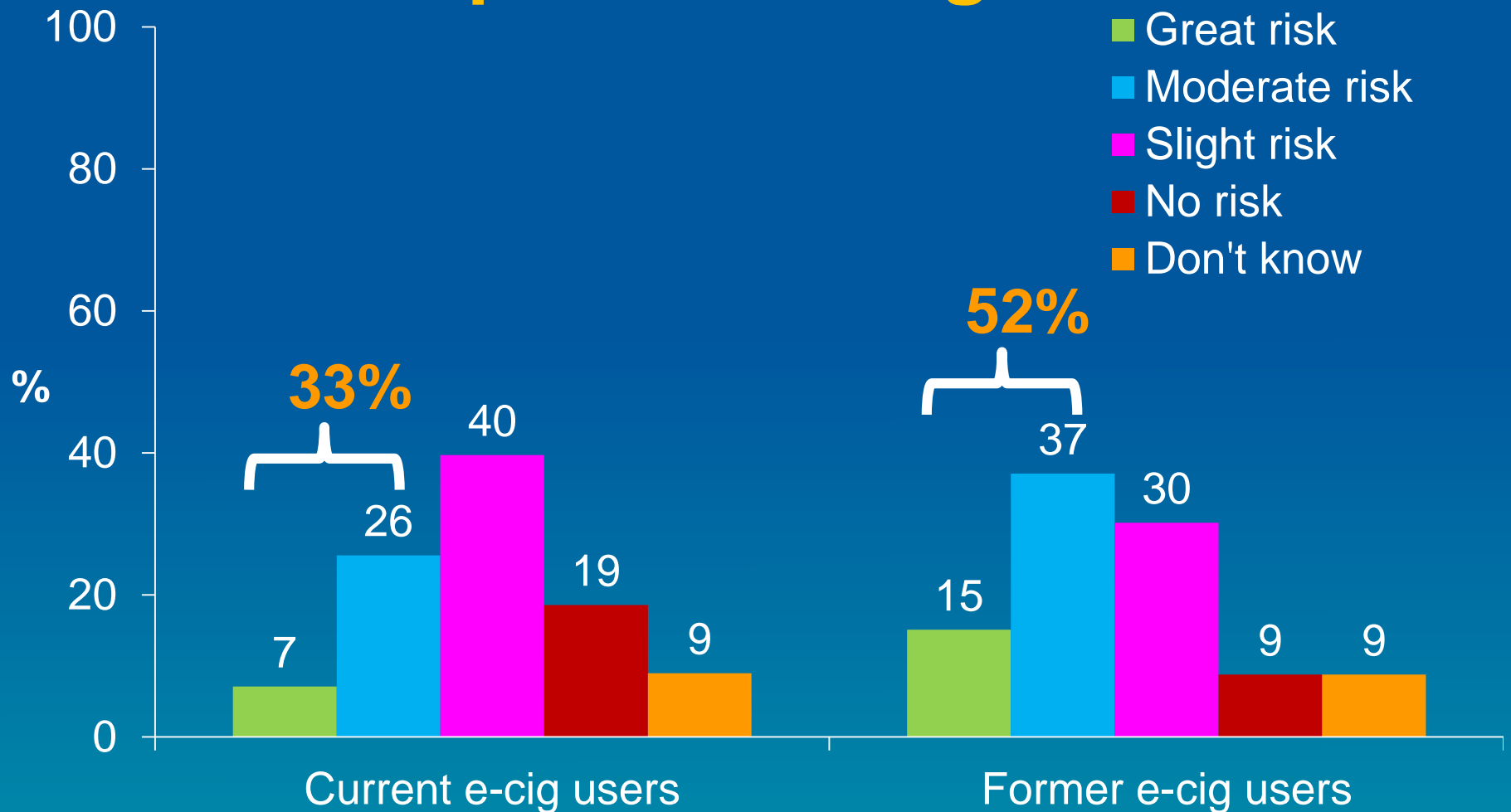
Significant Factor	Prevalence	Adj OR	P value
Smoking: Never	6%	Referent	
Current	11%	1.25	>0.05
Former	32%	6.78	<0.01
No. puffs per day: <50	6%	Referent	
≥50	37	3.33	<0.05
E-cigarette size: 	3%	Referent	
	16%	1.77	>0.05
	50%	7.66	<0.01

Note: Logistic regression model included all demographic, smoking, and e-cigarette use factors. Only significant factors are presented here.

Youth and Young Adults: Places of Using the Last E-Cigarette






Youth and Young Adults: Perception of E-Cigarettes



Risk of Using E-Cigarettes Daily

Youth and Young Adults: In Relation to Quitting Tobacco

Outcome	Sig. Factor	Prevalence	Adj OR†
Quitting ≥ 1 month	Size of e-cigarette:		
		18.8%	Referent
		28.1%	1.43
		48.4%	5.98*
Quitting > 6 months	No sig. factors		
Quit attempt	No sig. factors		

* $p < 0.05$

† Model included sociodemographic factors and e-cig use factors

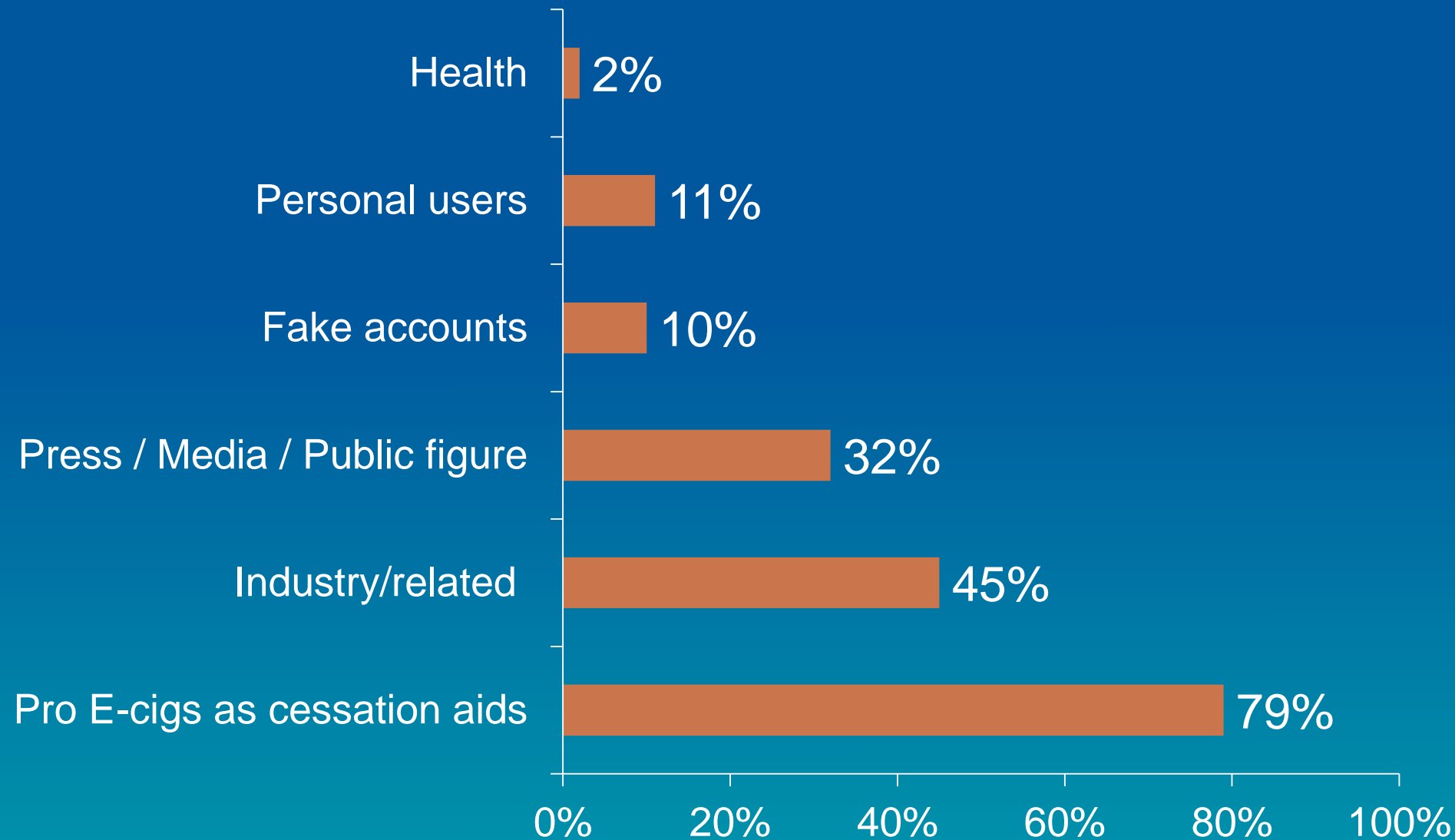
Tweeting about E-cigarettes as Cessation Aids

SOCIAL MEDIA ANALYSIS

Method

- Sample of 300 high-authority tweets
- High authority tweets come from users with the broadest reach within the social network
- Captures tweets from the most popular 5% of Twitter users, who are estimated to generate up to 75% of activity.

Findings



Take Home Messages



- Vaping is popular in both youth and adults
- Smokers and younger people appear to have higher prevalence of use
- Hints that substantial numbers of youth/young adult non-smokers are trying e-cigarettes
- Most ever vapers do not continue vaping
- Fewer users perceive using e-cigarettes daily as risky

Reserved (if time permits)

Health Canada's Position

E-cigarettes for nicotine use or cartridges/liquid containing nicotine

Illegal

E-cigarettes not for nicotine use but make a health claim

Illegal

E-cigarettes not for nicotine use and do not make a health claim

Legal

Adults: Reasons of Using E-Cigarettes

Reasons	Current Users	Former Users
To reduce or quit tobacco cigarettes	91%	60%*
Curiosity	43%	69%*
To avoid relapsing to tobacco smoking	64%	36%*
Perceived it as a healthier alternative	63%	32%*
To avoid exposing others from SHS of tobacco smoking	44%	24%*
To deal with stress	39%	20%*
To smoke in places banning tobacco smoking	33%	22%*
E-cigarettes are cheaper than tobacco cigarettes	36%	11%*
Enjoy the taste	33%	12%*
Because of friend(s) using e-cigarettes	16%	19%
To control body weight	4%	5%

Youth and Young Adults: Reasons of Using E-Cigarettes

Reasons	Current Users	Former Users
Curiosity	55%	74%*
To reduce or quit tobacco cigarettes	62%	40%*
Enjoy the taste	56%	25%*
Perceived it as a healthier alternative	52%	27%*
To deal with stress	35%	16%*
To avoid relapsing to tobacco smoking	33%	16%*
E-cigarettes are cheaper than tobacco cigarettes	31%	12%*
To smoke in places banning tobacco smoking	25%	13%*
Because of friend(s) using e-cigarettes	24%	23%
To control body weight	6%	2%




Adults: Source of the Last E-Cigarette

	Current Users	Former Users
At a vape shop or lounge	54%	13%*
At a convenience store or small grocery store	15%	30%*
On the internet	11%	11%
At a gas station	4%	7%*
At a pharmacy	1%	5%*
At a supermarket	0.2%	2%*
Other (e.g., from friends, free samples, etc.)	14%	32%*




Youth and Young Adults: Source of the Last E-Cigarette

	Current Users	Former Users
At a vape shop or lounge	43%	9%*
At a convenience store or small grocery store	17%	25%
On the internet	8%	5%
At a gas station	5%	6%
Bummed/borrowed one	19%	46%*
Other (e.g., from friends, free samples, etc.)	9%	9%

Adults: Last E-Cigarette

	Current Users	Former Users
Disposable	14%	35%*
Refillable	84%	50%
	23%	56%*
	58%	37%
	18%	1%
Containing nicotine	71%	44%*
Flavour		
Tobacco	30%	30%
Fruit	30%	19%
Mint/Menthol	13%	12%
Flavourless	3%	10%
Bought it in Canada	87%	83%
Bought it online	5%	8%
Bought it outside Canada	8%	9%

Youth and Young Adults: Last E-Cigarette

	Current Users	Former Users
Disposable	22%	47%*
Refillable	78%	53%
	27%	59%*
	52%	36%
	20%	5%
Containing nicotine	62%	35%*
Flavour		
Tobacco	17%	9%*
Fruit	45%	44%
Mint/Menthol	13%	10%
Flavourless	1%	4%
Bought it in Canada	79%	79%
Bought it online	10%	7%
Bought it outside Canada	6%	6%

Questions?



Please enter your questions and comments in the chat box. If you are experiencing technical difficulties, please email your question(s) to debbie.kwan@cancercare.on.ca

Thank you for participating

Your feedback is important to us!

A link to our **webinar survey** will be emailed to you following this webinar.

For more information about the services and resources of the
Program Training & Consultation Centre

Contact:

1-800-363-7822

admin@ptcc-cfc.on.ca

www.ptcc-cfc.on.ca

