

EXPLORING MENTAL STATES AND VAPING BEHAVIORS  
OF  
US FEMALE TEEN E-CIGARETTE USERS  
EMPHASIS ON  
AMERICAN NATIVE & ALASKAN INDIAN

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# AGENDA

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Health Issue

Origin & Barriers

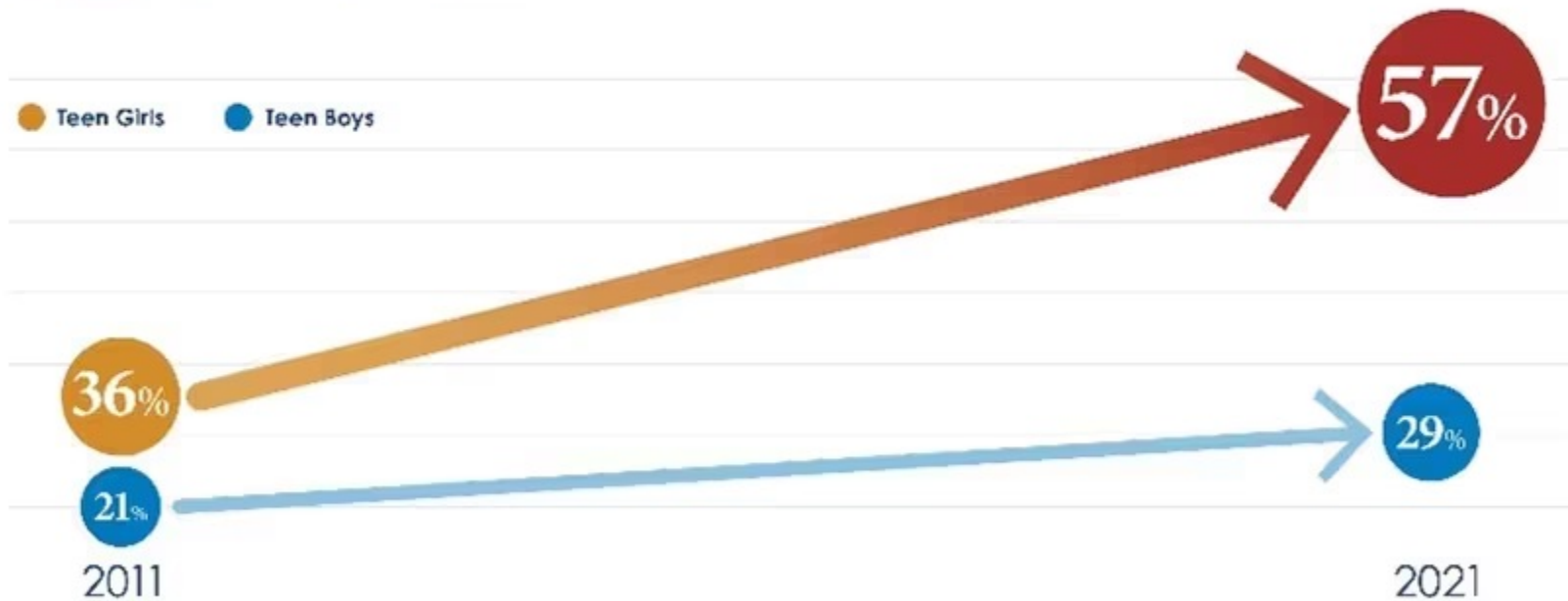
Theoretical

Methodology

Final tips & takeaways

U.S. TEEN GIRL POPULATION  
MENTAL HEALTH

## TEEN GIRLS WHO PERSISTENTLY FELT SAD OR HOPELESS INCREASED DRAMATICALLY FROM 2011 TO 2021

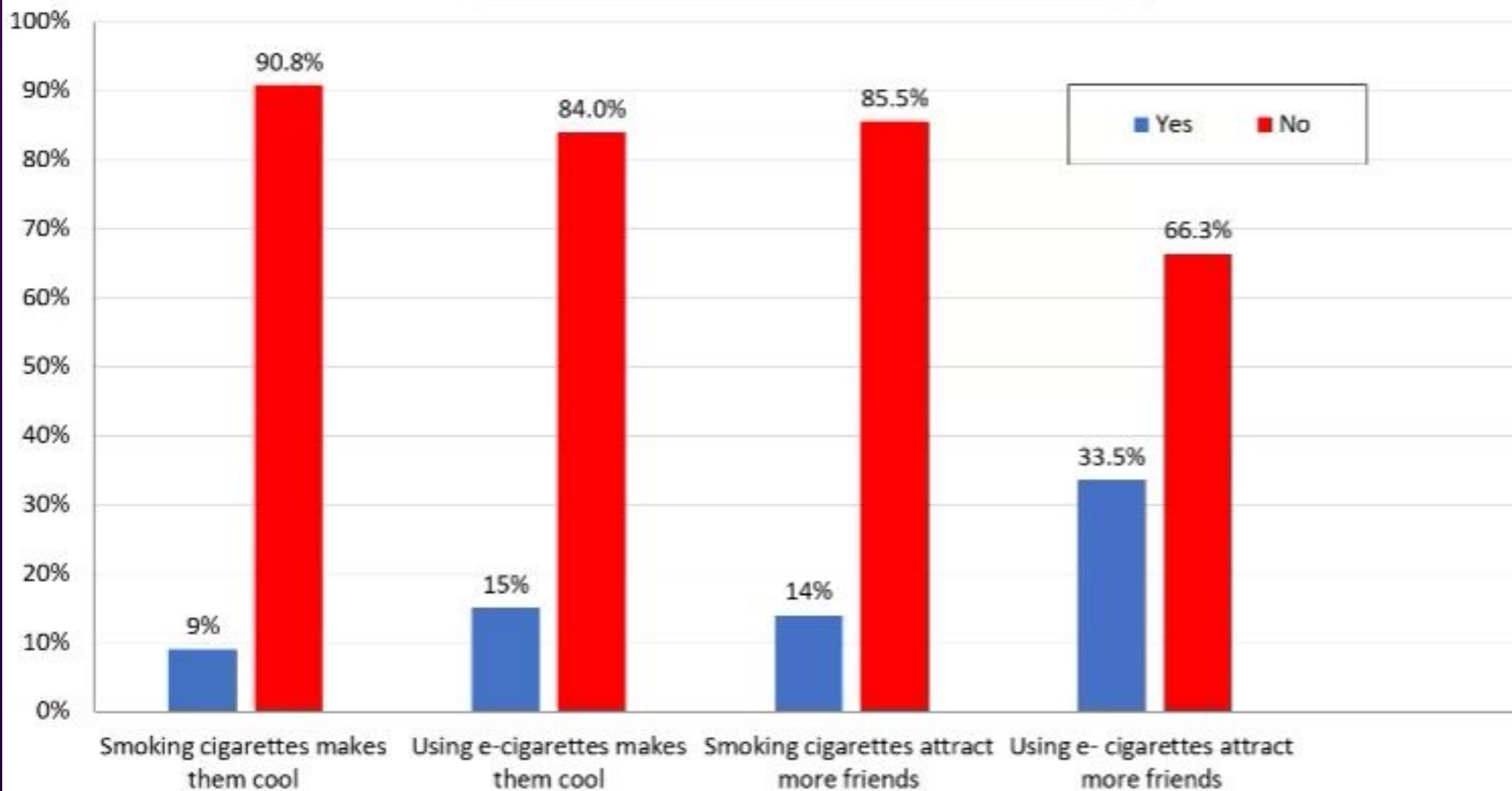


TEEN GIRLS WHO  
**EXPERIENCED SEXUAL VIOLENCE**  
**INCREASED**

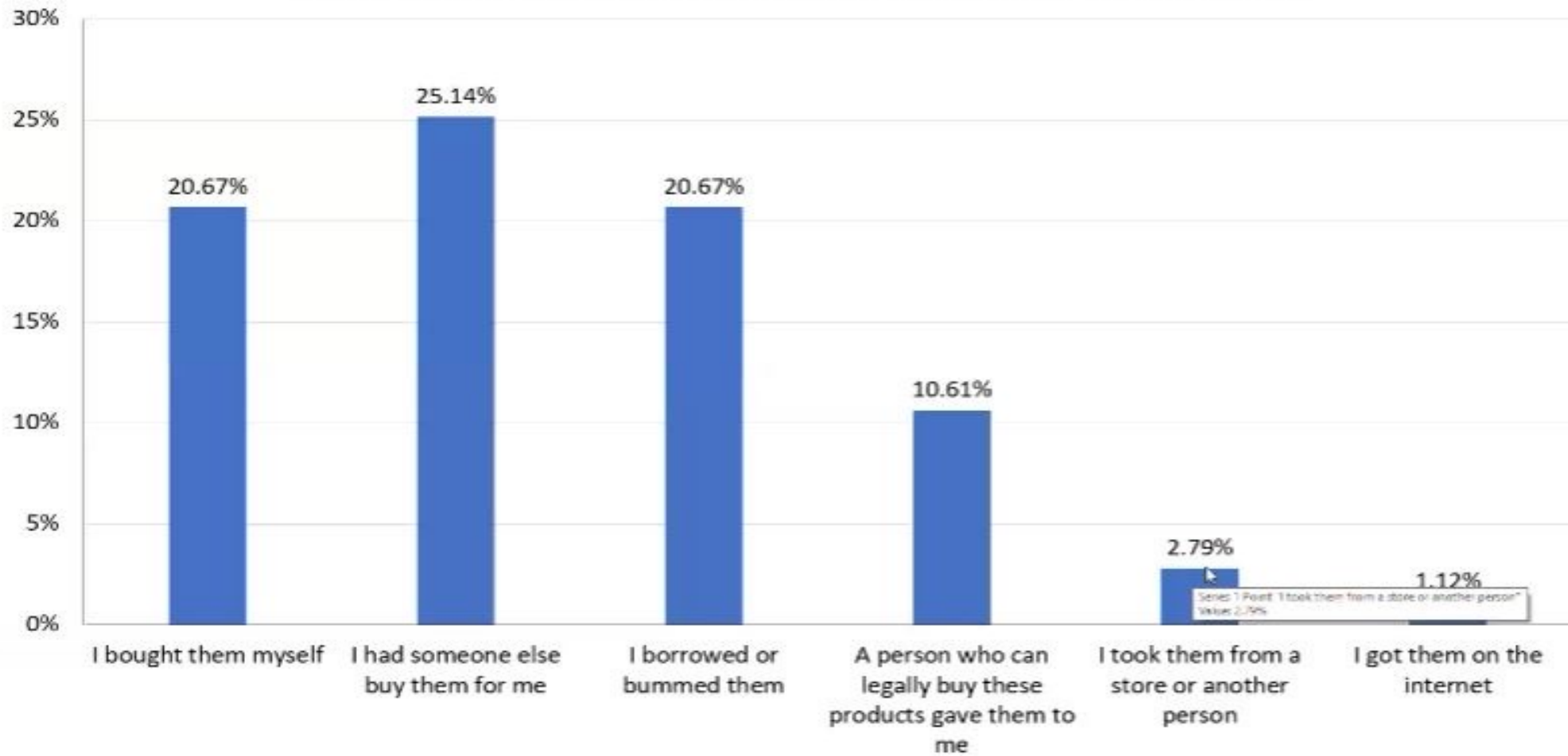
**20%** 

BETWEEN 2017 AND 2021

Attitude and beliefs about tobacco use, 2023 MYTS



During the past 30mdays, how did you get your own e-cigarette? 2023 MYTS



# The Facts About Vaping

**2,711+**

lung injury cases in the U.S. associated with vaping.\*



**Nicotine**

can permanently change the developing teenage brain, creating a nicotine addiction for life.

**10 million**

youth in the United States used, or were open to using, e-cigarettes in 2018.



**60+**

deaths associated with vaping.\*



**Eighth graders who vape**

are 10 times more likely to eventually smoke cigarettes than their non-vaping peers.

**135% increase**

in high school students using e-cigarettes, reported between 2017 to 2019.



**60%**

of young people



think e-cigarettes are mostly flavor; the truth is that more than 98% of products tested contained nicotine.

\*As of January 2020

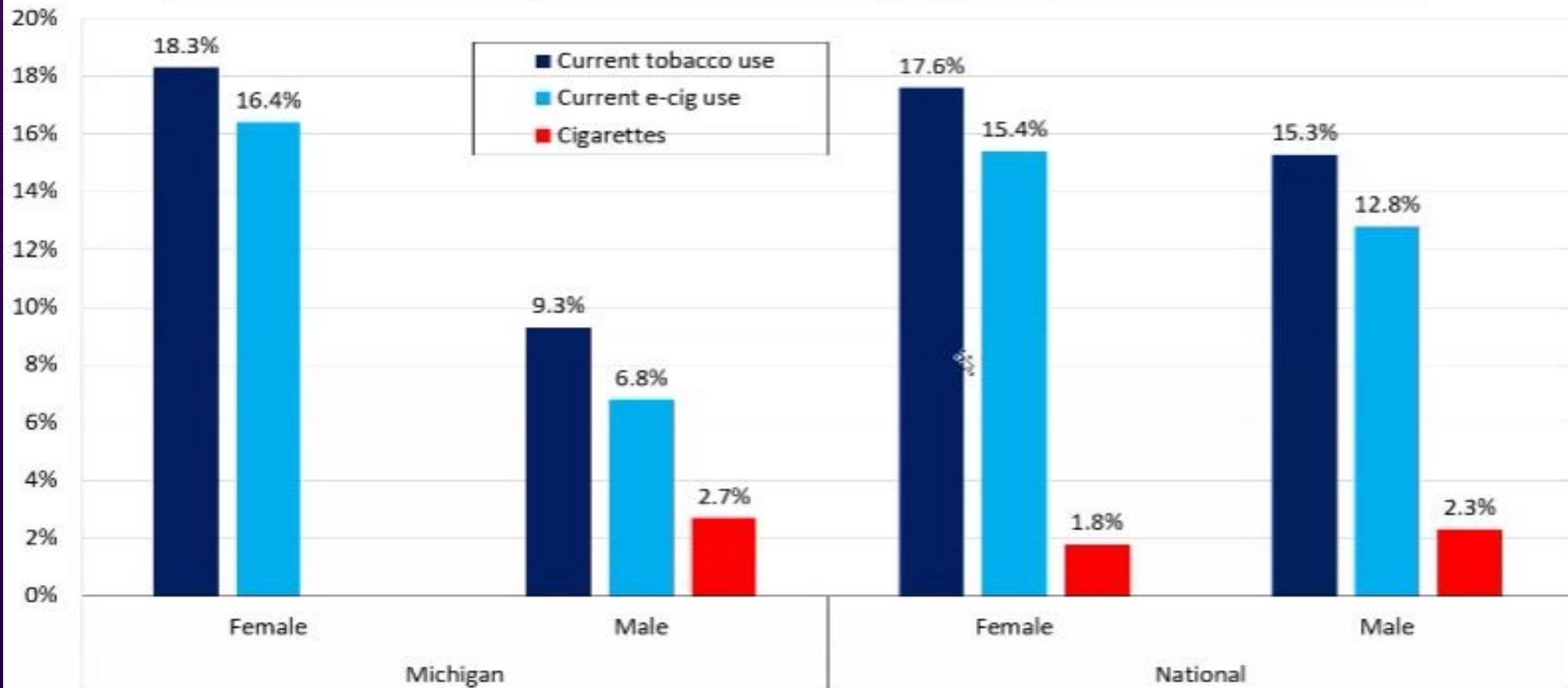


**Spectrum  
Health**





Current tobacco use, e-cigarette use and cigarette smoking rates among HS students in Michigan compared to the national average by gender, 2023



WHAT ABOUT  
AMERICAN INDIAN  
&  
ALASKA NATIVE TEENS

LET'S TAKE A LOOK

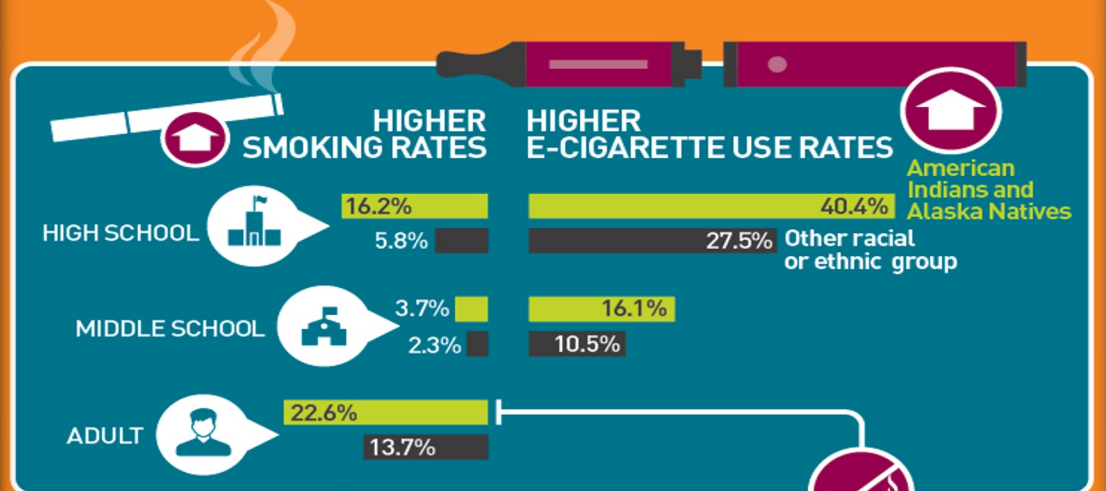


2019 Youth Behavior Survey



# AMERICAN INDIANS/ ALASKA NATIVES

American Indians and Alaska Natives **use tobacco more** than any other racial or ethnic group in the U.S.



Tobacco companies have **exploited the cultural significance of tobacco** in indigenous communities.



# WHAT ARE THE STATISTICS????

**Highest Rate**

**vs.**

**5.8% High Schoolers Overall**

**Vs.**

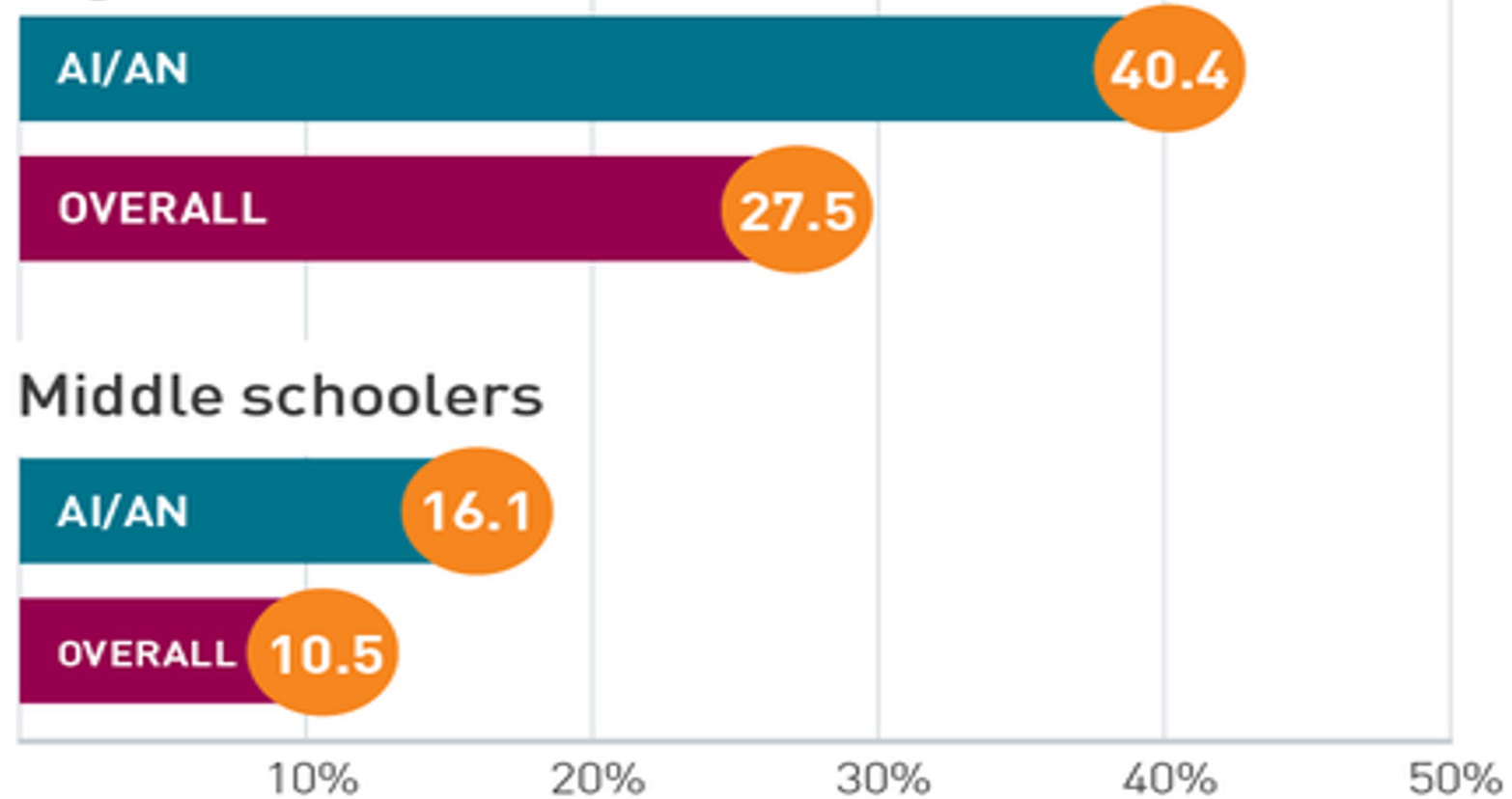
**2.3% Middle Schoolers Overall**

**16.2% AI/AN High Schoolers**

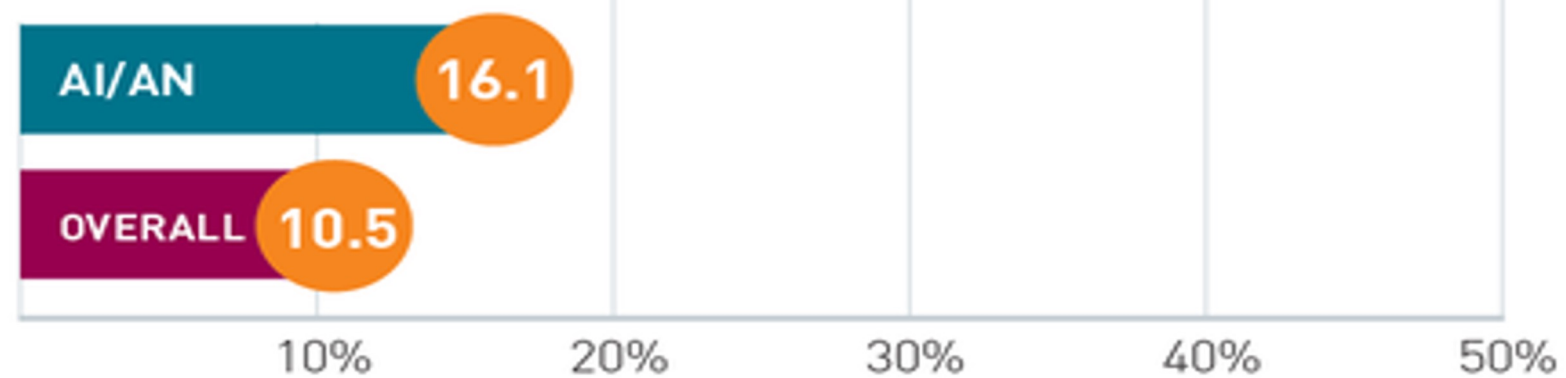
**3.7% AI/AN Middle Schoolers**

## E-cigarette use among middle and high schoolers

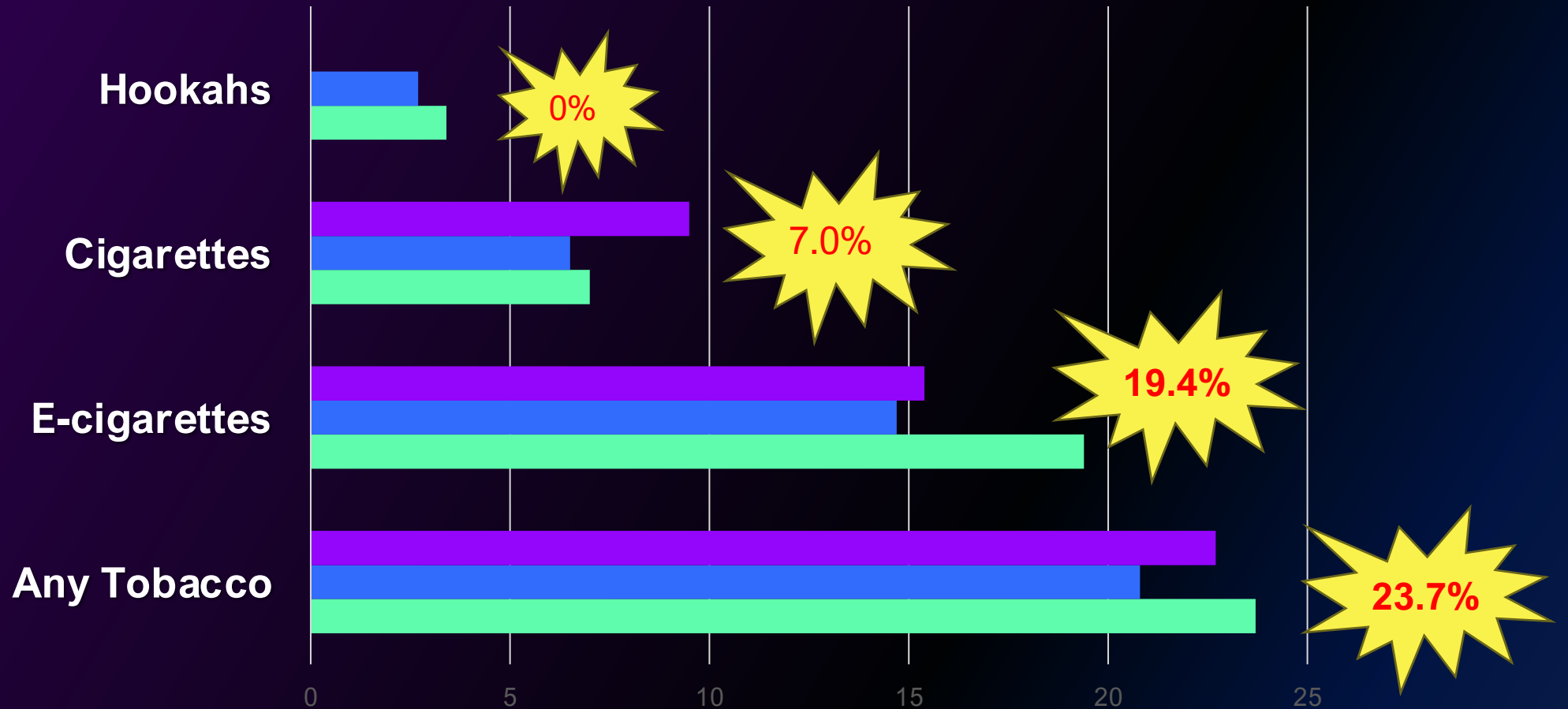
### High schoolers



### Middle schoolers



## 2023 National Youth Tobacco Survey AI/AN



NATIVE YOUTH ARE MORE SUSCEPTIBLE THAN  
NON-NATIVE PEERS

SOCIAL DETERMINANTS OF HEALTH

- HIGHER RATES OF POVERTY
- ACCESS TO QUALITY CARE/HEALTH INEQUITY
  - INTERGENERATIONAL STRESSORS
  - SOCIOECONOMIC STATUS

CULTURAL  
&  
SOCIAL  
NORMS

E-CIGARETTES  
VS.  
SACRED TOBACCO



# COMMERCIAL TOBACCO

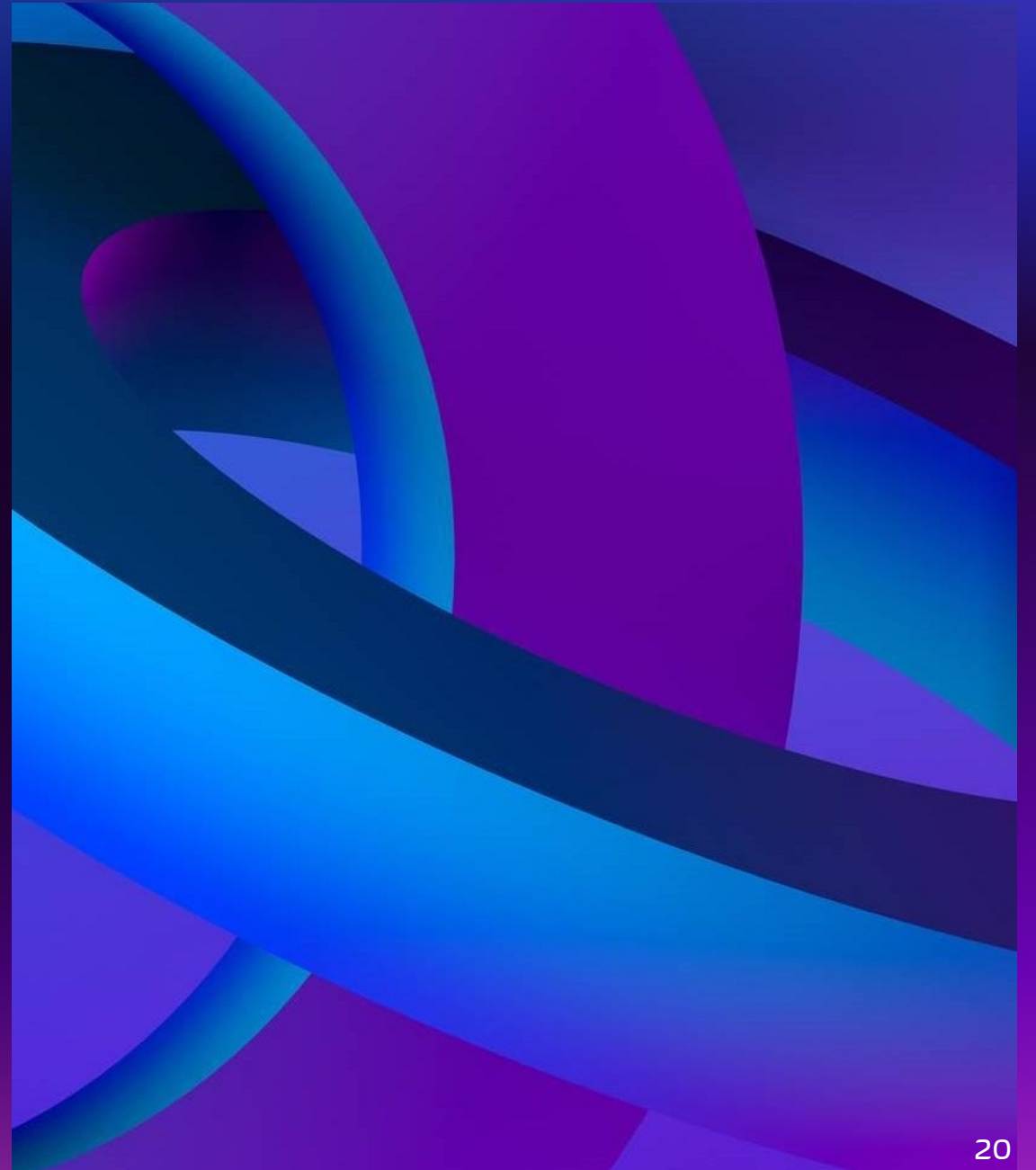
- DESIGNED FOR RECREATIONAL & HABITUAL USE
- SOLD FOR PROFIT
- CONTAINS OVER 7,000 CHEMICAL COMPOUNDS
- IMMEDIATE STIMULATION FOLLOWED BY MENTAL HEALTH ISSUES

# SACRED TOBACCO

# TAKING PRIDE & INCREASING KNOWLEDGE

- IMMERSION OF TEENS IN NATIVE AMERICAN
- YOUTH MENTORS AS SACRED LEADERS
- LEARNING FROM ELDERS ON THE IMPORTANCE OF CANSASA (SACRED TOBACCO), TRADITIONAL HARVESTING PRACTICES, AND RITUALS
- HEALTH LITERACY ON COMMERCIAL TOBACCO, E-CIGARETTES, & HOOKA
- KEEPING TOBACCO SACRED : NATIONAL NATIVE NETWORK, 2012

OVERCOMING  
NERVOUSNESS  
ANXIETY  
SELF-WORTH  
LONELINESS  
DEPRESSION



## COVID IMPACTS,

**(37%)** OF HIGH SCHOOL STUDENTS REPORTED THEY EXPERIENCED POOR MENTAL HEALTH

**(44%)** REPORTED PERSISTENTLY FELT SAD OR HOPELESS

**(55%)** REPORTED EXPERIENCED EMOTIONAL ABUSE BY A PARENT OR OTHER ADULT IN THE HOME, INCLUDING SWEARING AT, INSULTING, OR PUTTING DOWN THE STUDENT.

**(11%)** EXPERIENCED PHYSICAL ABUSE BY A PARENT OR OTHER ADULT IN THE HOME, INCLUDING HITTING, BEATING, KICKING, OR PHYSICALLY HURTING THE STUDENT.

**(29%)** REPORTED A PARENT OR OTHER ADULT IN THEIR HOME LOST A JOB

Source: Centers for Disease Control and Prevention



# DRS. GEORGE ENGLE AND JOHN ROMANO BIOPSYCHOSOCIAL–SPIRITUAL MODEL

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- encompasses a holistic integrated approach to the psychological, spiritual social, and biological well-being of the target population
- increase understanding and knowledge of current mental states due to the individual's ecological system
- identify factors/ controls associated with vaping behaviors
  - Controls- race and e-cigarette use in the home

# SYSTEMATIC QUANTITATIVE APPROACH & CROSS-SECTIONAL DESIGN

## LIMITATIONS

- LACK OF RESOURCES FOR DATA COLLECTION
- EXCLUDING US FEMALE TEENS THAT ARE HOME-SCHOOLED, NON-ENROLLED IN SCHOOL TEENS, AND TEENS THAT ARE IN JUVENILE DETENTION CENTERS
- SECONDARY DATA THAT INCLUDES SELF-REPORTING BY PARTICIPANTS
- POSSIBILITY OF IGNORING CONTEXTUAL FACTORS OR HUMAN COMPLEXITY THAT MAY INFLUENCE MENTAL STATE AND HEALTH CHOICES THAT AFFECT DATA VALIDITY AND INTERPRETATION

# CASE STUDIES

## AMERICAN HEART ASSOCIATION. (2023). DEPRESSION & ANXIETY SYMPTOMS LINKED TO VAPING NICOTINE AND THC IN TEENS AND YOUNG ADULTS.

- STUDIED THE ASSOCIATION BETWEEN DEPRESSION AND ANXIETY SYMPTOMS TO VAPING NICOTINE AND THC AMONG TEENS AND YOUNG ADULTS.
- THE FINDINGS OF THIS STUDY IDENTIFIED THAT VAPING NICOTINE AND THC, WHICH IS THE PSYCHOACTIVE COMPONENT IN MARIJUANA, WAS ASSOCIATED WITH SELF-REPORTED SYMPTOMS OF DEPRESSION AND ANXIETY.
- ALSO, THERE IS A SIGNIFICANCE OF ISSUES WITH MENTAL HEALTH IN BOTH USERS OF NICOTINE VAPES AND THC VAPES.

## PATTEN S. B. (2021). VAPING AND MENTAL HEALTH. JOURNAL OF THE CANADIAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY, 30(1), 3-5.

- PROVIDED DISCUSSION ON ADOLESCENT AND YOUTH E-CIGARETTE SMOKING PERCEPTIONS, PATTERNS, AND GAPS IN RESEARCH PERTAINING TO MENTAL HEALTH CHANGES ASSOCIATED WITH VAPING.
- THE FINDINGS INCLUDED DERIVED FROM THE CANADIAN TOBACCO AND NICOTINE SURVEY OF 2019. THE SURVEY IDENTIFIED THAT AGES 15-24 REPORTED WITHIN THE PAST MONTH 15% FREQUENCY E-CIGARETTE USE, COMPARED TO 3% FREQUENCY IN PARTICIPANTS OVER 25 YEARS OLD.



# RESEARCH QUESTIONS

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RQ 1: To what extent does current mental states predict vaping frequency among female US teen e-cigarette users while controlling for race and e-cigarette use in the home?

## Independent Variables

- a) Little interest or pleasure in doing things
- b) Feeling down, depressed, or hopeless
- c) Feeling nervous, anxious, or on edge
- d) Not being able to stop or control worrying

## Dependent Variable

- During the past 30- days how many days did you use an e-cigarette?

RQ 2: To what extent does current mental states predict access of e-cigarettes among US female teen e-cigarette users while controlling for race and e-cigarette use in the home?

## Independent Variables

- a) Little interest or pleasure in doing things
- b) Feeling down, depressed, or hopeless
- c) Feeling nervous, anxious, or on edge
- d) Not being able to stop or control worrying

## Dependent Variable

- During the past 30 days, how did you get your e-cigarette devices, pods, cartridges, or e-liquid refills?



# SOCIAL CHANGE

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- Mental States
- Dual-Use & Concealment
- Health Literacy Level
- Social Aspects and Norms

# NATIONAL YOUTH TOBACCO SURVEY (NYTS) 2022

IMPACT FACTOR	MEASUREMENT	Significance	Results
Mental State	Percentage (%)	x	x
Access	Percentage (%)	x	x
Frequency	Average rating	x	x
Race	Percentage (%)	x	x
Biasness	# of Limitations	x	x

# FINAL TIPS & TAKEAWAYS

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- Holistic Approach
  - Strengthening, Empowerment, & Autonomy
  - Identify Barriers, Biasness, and Challenges
- Policy Changes & Implementation
  - Review & Effective
  - account for manufacturers that are not successfully preventing widespread youth use of their products: entire category of cartridges
  - NICOTINE, Marijuana, & THC
- Social Change
  - Evidence-Based Results and Behavior Change

# Q&A SESSIONS & REFERENCES

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American Heart Association. (2023). Depression & anxiety symptoms linked to vaping nicotine and THC in teens and young adults. <https://newsroom.heart.org/news/depression-anxiety-symptoms-linked-to-vaping-nicotine-and-thc-in-teens-and-young-adults>

CDC (2022)

Patten S. B. (2021). Vaping and mental health. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 30(1), 3–5. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7837520/>.

Michigan Youth Tobacco Survey 2023

National Youth Tobacco Survey (NYTS) 2022

# THANK YOU

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