North Carolina Substance Use Landscape:
Findings from the NC Youth and Youth Adult Prevention Survey

NORTH CAROLINA PREVENTION CONFERENCE

MAY 15, 2023

NC Youth and Young Adult Prevention Survey Team

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Learning Objectives

By the end of this session, participants will….

- Understand how substance use and misuse vary across NC, as well as by social determinants of health (SDoH) and demographics.

- Be able to specify where and how youth and young adults get substances they consume, as well as how this varies by substance, SDoH, and demographics.

- Be able to identify potential risk and protective factors (aka intervening variables) and how they might vary by substance, as well as by SDoH and demographics.

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Background

Substance use….

- Is a leading preventable cause of morbidity and mortality.[1]

- Costs NC more than **$6.8 Billion annually**, including cost due to:

  - Lost productivity
  - Accidents
  - Injuries
  - Illnesses
  - Property damage
  - Violence
  - Utilization of health, social, and criminal justice systems.[2]

- Usually begins in youth and young adulthood.[1]

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Substance Use Can be Prevented or Delayed with Effective Prevention

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Effective Prevention Begins with a Comprehensive Community Assessment

This includes assessing…

1. Substance misuse and related harmful behaviors

2. Risk and protective factors that influence substance misuse

3. Community capacity for prevention

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NC Youth & Young Adult Prevention Survey Goal

PROVIDE INFORMATION FOR DATA DRIVEN COMMUNITY ASSESSMENT WITHIN REGIONS AND ACROSS NORTH CAROLINA
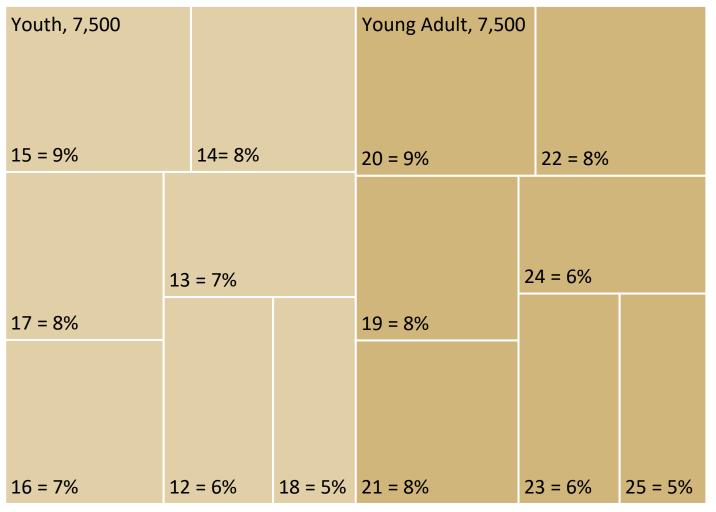
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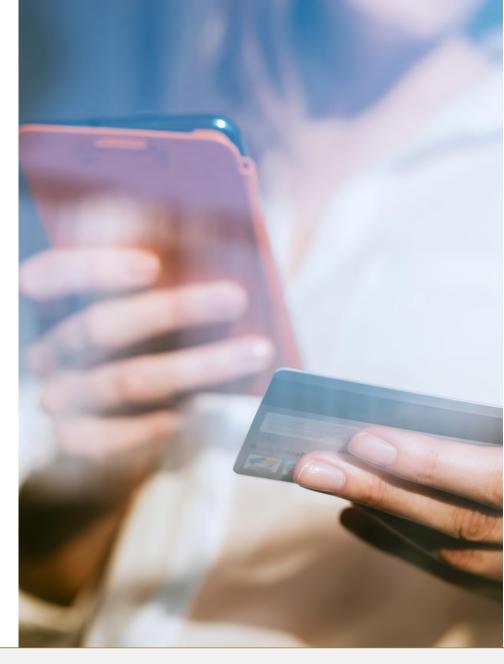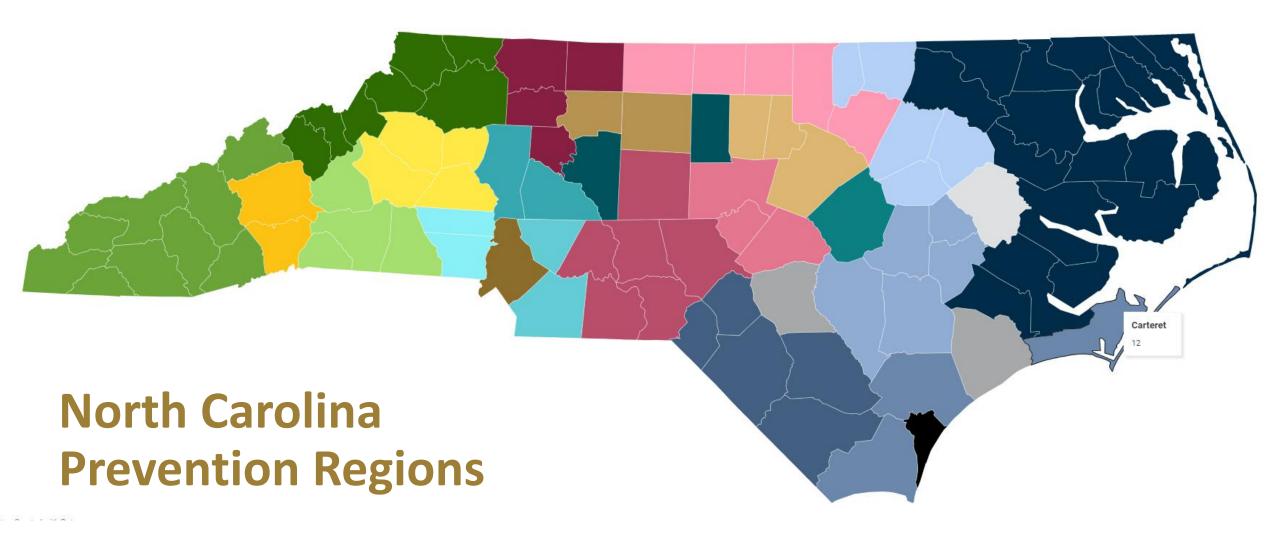
Data Collection

- Qualtrics panel survey
- Recruited on-line by region
- Surveyed by telephone
- Average interview lasted 29 minutes
- $25 equivalent incentive
- December 2022 to February 2023
- Monitored for representation of all counties within in a region, and to balance responses on age, sex, and race/ethnicity

North Carolina Prevention Regions

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Survey Measures

Substance Use
- Have you ever...
- When was the last time...

Substance Use Context
- Who did you get from...
- Where did you use...

Risk & Protective Factors
- Individual
  - Prosocial Activities
  - Perceived Harms
  - Close Relationships
  - Connectedness
- Peer
  - Peer Use
  - Peer Disapproval
- Family
  - Parental Disapproval
  - Parental Use
  - Parental Monitoring
  - Likelihood of Being Caught by Parents
- School and Community
  - Difficulty of Access
  - Likelihood of being caught by school and police
  - Community Disapproval

SDoH
- Transportation
- Food Insecurity
- Parental Separation
- Homelessness
- Housing Quality Concern
- Residential Stability
- Immigration Concerns
- Every Day Discrimination
- Community ACEs

Demographics
- Age
- Biological Sex
- Race/Ethnicity
- Gender and Sexuality

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Data Analysis
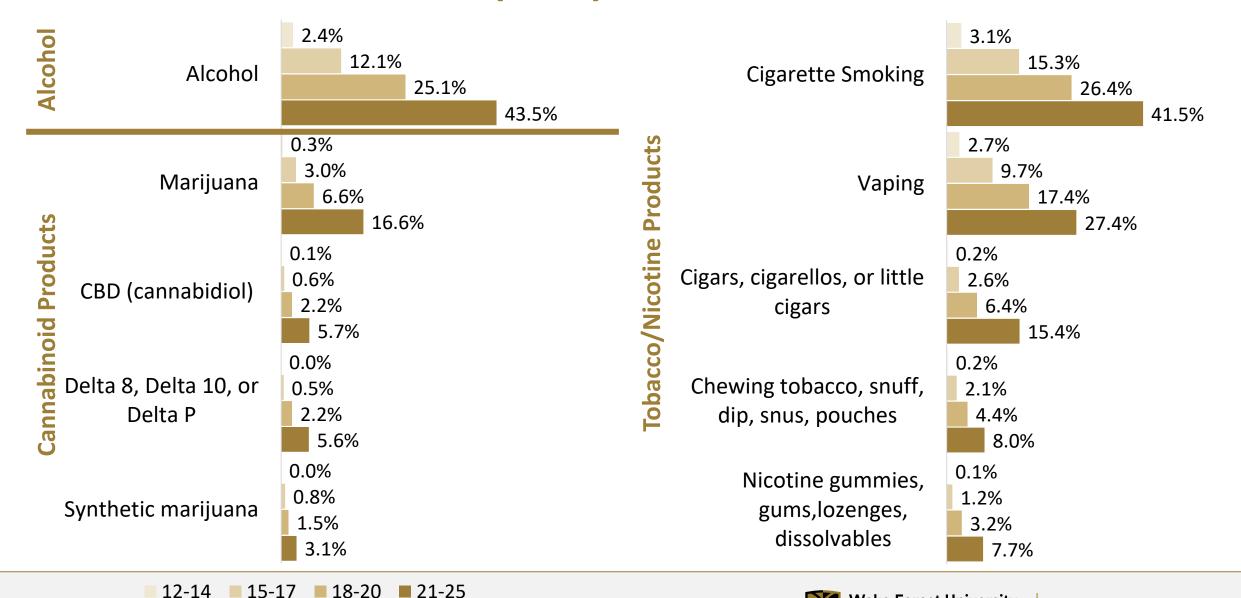
- **Descriptive statistics**
  - Percentages

- **Strength of association between measures**
  - Area Under the Receiver Operating Characteristic Curve (AUC).
    - The closer the AUC is to 1, the greater the predictive ability of the measure in predicting use of the substance.
    - AUC very close to 0.5 indicate a lack of predictive ability.
  - Cramer's V and Fisher's exact tests
    - The closer the V is to ±1, the greater the strength of association of the measure with the way the youth/young adult get the substance.
    - V very close to 0 indicate a lack of an association.

- **Includes all respondents unless we say otherwise**

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Substance Use

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Substances Consumed (Ever)

Alcohol

Alcohol
- 2.4%
- 12.1%
- 25.1%
- 43.5%

Cannabinoid Products

Marijuana
- 0.3%
- 3.0%
- 6.6%
- 16.6%

CBD (cannabidiol)
- 0.1%
- 0.6%
- 2.2%
- 5.7%

Delta 8, Delta 10, or Delta P
- 0.0%
- 0.5%
- 2.2%
- 5.6%

Synthetic marijuana
- 0.0%
- 0.8%
- 1.5%
- 3.1%

Tobacco/Nicotine Products

Cigarette Smoking
- 3.1%
- 15.3%
- 26.4%
- 41.5%

Vaping
- 2.7%
- 9.7%
- 17.4%
- 27.4%

Cigars, cigarellos, or little cigars
- 0.2%
- 2.6%
- 6.4%
- 15.4%

Chewing tobacco, snuff, dip, snus, pouches
- 0.2%
- 2.1%
- 4.4%
- 8.0%

Nicotine gummies, gums, lozenges, dissolvables
- 0.1%
- 1.2%
- 3.2%
- 7.7%

Legend: ▉ 12-14 ▉ 15-17 ▉ 18-20 ▉ 21-25

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Substances Consumed (Ever)

Medications

OTC Meds
- 3.3%
- 4.2%
- 6.5%
- 12.3%

Rx Meds
- 0.3%
- 1.2%
- 3.2%
- 7.8%

Other Substances

Inhalants
- 0.3%
- 1.7%
- 3.3%
- 5.9%

Kratom
- 0.1%
- 0.5%
- 1.6%
- 4.2%

Steroids
- 0.0%
- 0.4%
- 0.6%
- 1.1%

Poly

Polysubstance use
- 0.4%
- 2.3%
- 7.7%
- 18.6%

Other Substances

Cocaine
- 0.0%
- 0.5%
- 1.9%
- 5.6%

Hallucinogens
- 0.1%
- 0.8%
- 1.9%
- 5.0%

Methamphetamines
- 0.0%
- 0.2%
- 0.8%
- 2.0%

Heroin/Fentanyl
- 0.0%
- 0.3%
- 1.0%
- 1.6%

Legend: ■ 12-14 ■ 15-17 ■ 18-20 ■ 21-25

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Of Note…

- Substance use rates were lower than we expected.

- We continue to explore this, but we think this is…

- Partly a true effect, with multiple large state and nationwide surveys showing a decline in substance misuse

- Partly due to methodology, with…
  - Some groups potentially more sensitive to accidental disclosure concerns, e.g.
    - Youth and underage persons concerned that their parents may overhear their responses
    - Historically marginalized populations fearing consequences if their responses are known.
  - People who are using substances may be hidden populations

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Most Recent Substance Use

Alcohol: 17.4% (Last 30 days), 5.8% (In the last 12 mos but >30 days), 0.6% (More than 12 mos. Ago), 76.2% (Never used)

Cigarette Smoking: 19.8% (Last 30 days), 3.8% (In the last 12 mos but >30 days), 0.4% (More than 12 mos. Ago), 76.0% (Never used)

Vaping: 11.6% (Last 30 days), 3.7% (In the last 12 mos but >30 days), 0.5% (More than 12 mos. Ago), 84.2% (Never used)

Marijuana: 4.7% (Last 30 days), 2.8% (In the last 12 mos but >30 days), 0.7% (More than 12 mos. Ago), 91.9% (Never used)

Rx Meds: 1.2% (Last 30 days), 2.1% (In the last 12 mos but >30 days), 0.7% (More than 12 mos. Ago), 96.0% (Never used)

Legend:
- Last 30 days
- In the last 12 mos but >30 days
- More than 12 mos. Ago
- Never used

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Relationship Between Last 30-day Substance Use and Demographics
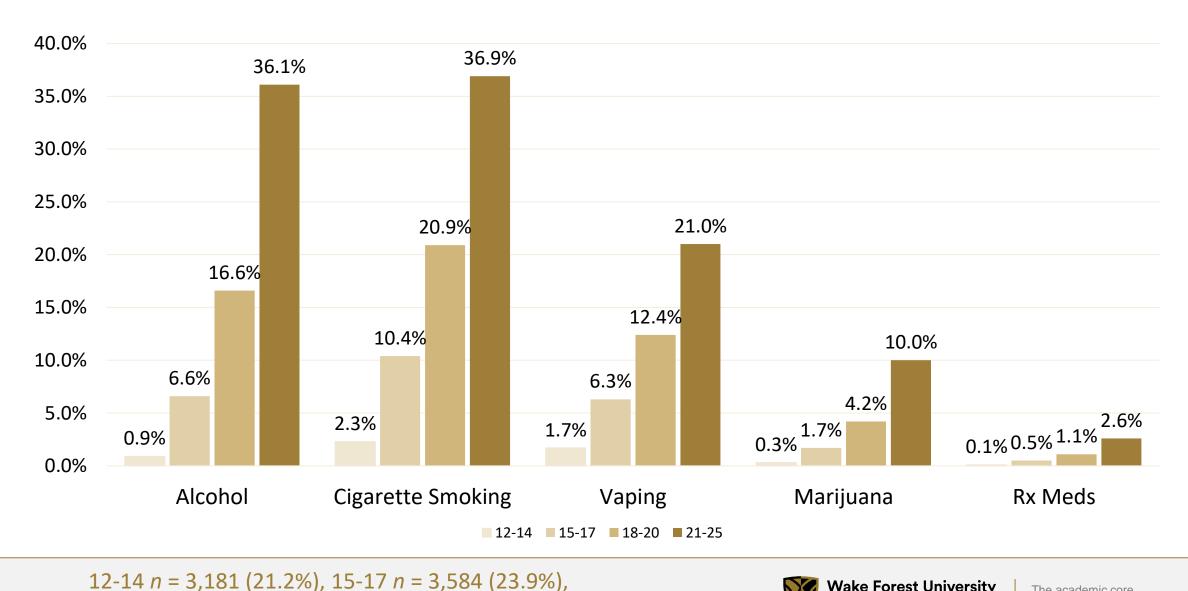
	Alcohol	Cigarette Smoking	Vaping	Marijuana	Prescription Medication
Age group	.780	.744	.710	.742	.748
Sex	.569	.575	.566	.613	.598
Race/Ethnicity	.511	.510	.526	.512	.575
Sexual Orientation/ Gender Identity	.517	.513	.513	.535	.527

Of all demographics assessed, age has the strongest relationship with substance use.

AUC = Area Under the Receiver Operating Characteristic Curve. As AUC increases, predictive ability increases due to strength of relationship.

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Last 30-Day Substance Use by Age

12-14 *n* = 3,181 (21.2%), 15-17 *n* = 3,584 (23.9%),
18-20 *n* = 3,197 (21.3%), 21-25 *n* = 5,038 (33.6%)

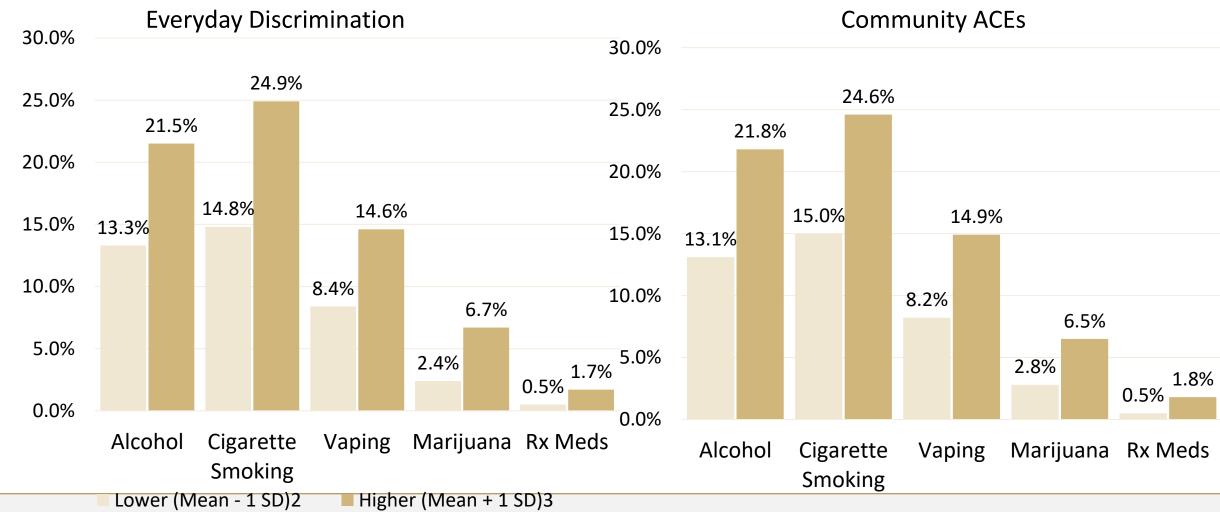Wake Forest University
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Relationship Between Last 30-Day Substance Use and SDoH

	Alcohol	Cigarette Smoking	Vaping	Marijuana	Prescription Medication
Everyday Discrimination	.575	.598	.595	.665	.769
Community ACEs	.582	.590	.591	.622	.773
Parental Separation	.550	.536	.535	.566	.633
Residence Stability	.509	.509	.603	.561	.559
Housing Quality Concerns	.508	.507	.509	.520	.544
Lack of Reliable Transportation	.516	.509	.511	.518	.529
Homelessness	.511	.509	.509	.517	.518
Food Insecurity	.505	.503	.503	.510	.518
Immigration Concerns	.501	.500	.502	.503	.503

Of all the social determinants of health assessed, everyday discrimination and Community ACES have the strongest relationship with substance use.

Reminder: AUC illustrates the strength of relationship, NOT the direction of the relationship.

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Last 30-Day Substance Use by Everyday Discrimination and Community ACEs

Everyday Discrimination

Substance	Lower (Mean - 1 SD)	Higher (Mean + 1 SD)
Alcohol	13.3%	21.5%
Cigarette Smoking	14.8%	24.9%
Vaping	8.4%	14.6%
Marijuana	2.4%	6.7%
Rx Meds	0.5%	1.7%

Community ACEs

Substance	Lower (Mean - 1 SD)	Higher (Mean + 1 SD)
Alcohol	13.1%	21.8%
Cigarette Smoking	15.0%	24.6%
Vaping	8.2%	14.9%
Marijuana	2.8%	6.5%
Rx Meds	0.5%	1.8%

Legend: Lower (Mean - 1 SD)2 | Higher (Mean + 1 SD)3

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Substance Use Access

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Where and How Youth and Young Adults 12-20 get the Substances they Consume

	Alcohol	Cigarette Smoking	Vaping	Marijuana	Rx Meds
Friend	75.1%	62.5%	61.4%	69.6%	23.3%
Family	1.6%	0.5%	0.6%	0.9%	14.1%
Someone Else	5.4%	7.1%	14.9%	27.1%	11.0%
Took w/o Permission	11.6%	13.2%	8.9%	2.1%	27.0%
Bought	6.4%	16.8%	14.2%	N/A	N/A
Dispensary	N/A	N/A	N/A	0.3%	N/A
Own Rx	N/A	N/A	N/A	N/A	24.5%

Friends are the most common way to get substances for all but Rx Meds

Of the 15,000 youth and young adults, 9,962 (66.4%) were under 21 years old. 23.2% consumed alcohol, 24.0% smoked cigarettes, 15.8% vaped, 8.1% consumed marijuana, and 4.0% misused prescription medications.

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Relationship Between Where/How 12-20 Year Olds Get Substances and Demographics
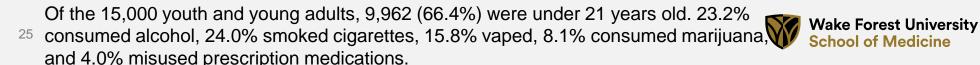
	Alcohol	Cigarette Smoking	Vaping	Marijuana	Rx Meds
Age group	.302	.224	.227	.163	.ns
Sex	.ns	.ns	.112	.ns	.250
Race/Ethnicity	.ns	.137	.124	.ns	.226
Sexual Orientation/ Gender Identity	.ns	.ns	.ns	.ns	n/a

Of all demographics assessed, age has the strongest relationship with substance use.

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Where/How 12-20 Year Olds get Alcohol, Cigarettes, and Vapes by Age

		Friend	Family	Someone Else	Took w/o Permission	Bought
Alcohol	12-14	43.2%	0.0%	2.5%	54.3%	0.0%
	15-17	76.6%	1.6%	3.6%	17.5%	0.7%
	18-20	77.3%	1.8%	6.6%	4.1%	10.1%
Cigarettes	12-14	67.0%	0.0%	5.8%	26.2%	1.0%
	15-17	69.3%	0.7%	7.8%	17.3%	4.8%
	18-20	57.7%	0.4%	6.8%	8.9%	26.3%
Vapes	12-14	64.0%	0.0%	11.2%	22.5%	2.3%
	15-17	62.9%	1.2%	19.1%	12.4%	4.4%
	18-20	59.9%	0.4%	12.9%	4.6%	22.2%

25 Of the 15,000 youth and young adults, 9,962 (66.4%) were under 21 years old. 23.2% consumed alcohol, 24.0% smoked cigarettes, 15.8% vaped, 8.1% consumed marijuana, and 4.0% misused prescription medications.

Relationship Between Where/How 12-20 Year Olds Get Substances and SDoH

	Alcohol	Cigarette Smoking	Vaping	Marijuana	Rx Meds
Everyday Discrimination	.ns	.106	.126	.ns	.241
Community ACEs	**.074**	**.094**	**.174**	**.150**	**.276**
Parental Separation	.100	.216	.ns	.ns	.271
Residence Stability	.ns	.138	.464	.ns	.ns
Housing Quality Concerns	.ns	.100	.110	.ns	.ns
Lack of Reliable Transportation	.ns	.121	.ns	.ns	.350
Homelessness	.103	.ns	.ns	.ns	.304
Food Insecurity	.ns	.ns	.ns	.170	.265
Immigration Concerns	.193	.267	.221	.ns	.ns

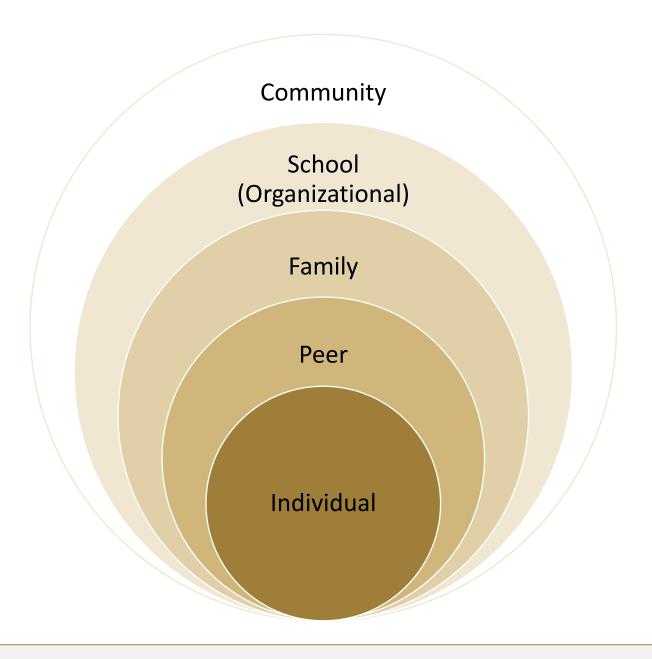**Of all social determinants of health assessed, Community ACEs have the strongest relationship with substance use.**

Reminder: Cramer's V illustrates the <u>strength</u> of relationship, <u>NOT</u> the direction of the relationship.

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Where/How 12-20 Year Olds Substances by Community ACEs

		Friend	Family	Someone Else	Took w/o Permission	Bought	Another Way
Alcohol	Lower	74.5%	1.9%	4.8%	11.9%	6.8%	n/a
	Higher	70.3%	1.1%	6.8%	14.5%	7.4%	n/a
Cigarettes	Lower	70.4%	0.3%	8.2%	7.9%	13.3%	n/a
	Higher	56.0%	1.0%	6.0%	16.4%	20.6%	n/a
Vapes	Lower	66.1%	0.0%	7.0%	7.6%	19.3%	n/a
	Higher	64.1%	0.7%	9.7%	10.3%	15.2%	n/a
Marijuana	Lower	61.8%	0.0%	35.3%	0.0%	n/a	2.9%
	Higher	65.3%	0.8%	29.8%	4.0%	n/a	0.0%
Rx Meds	Lower	20.0%	40.0%	10.0%	30.0%	n/a	0.0%
	Higher	21.8%	10.3%	13.8%	19.5%	n/a	34.5%

Risk and Protective Factors

Community

School (Organizational)

Family

Peer

Individual

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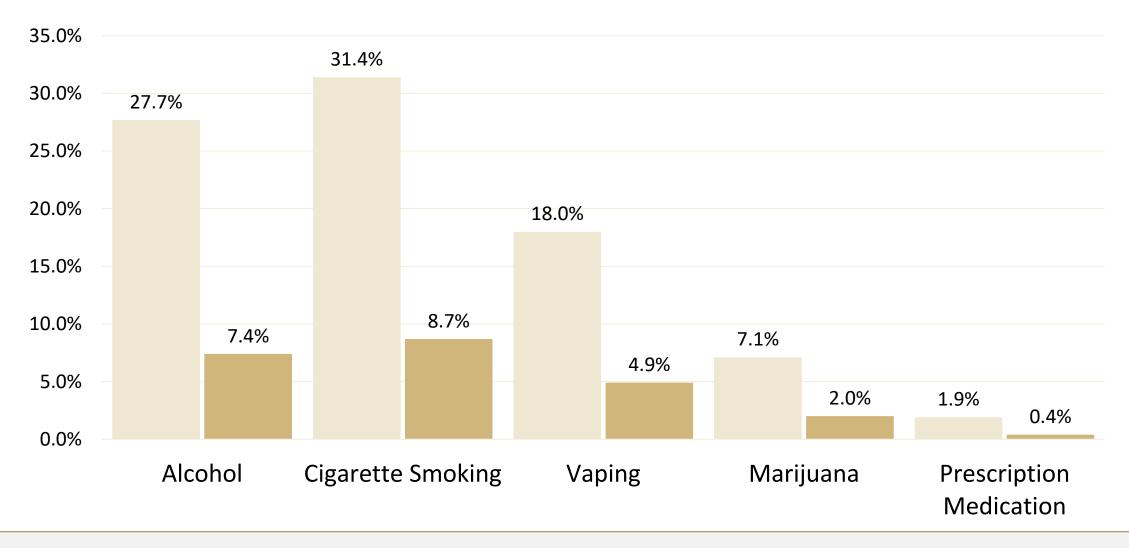**School of Medicine**
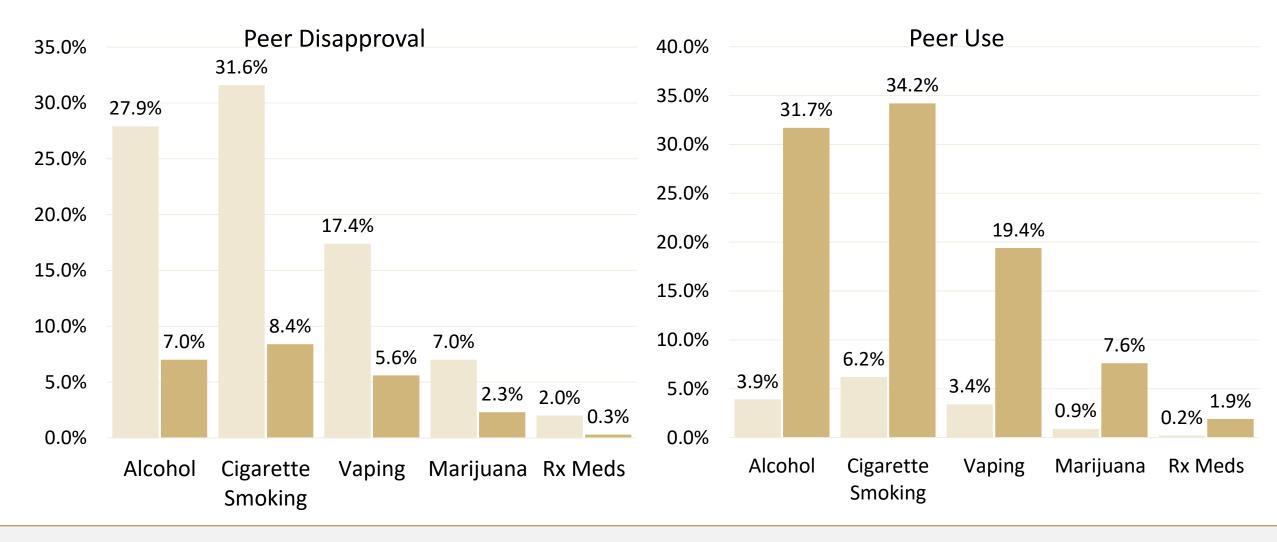
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Relationship Between Individual Risk & Protective Factors and Last 30-Day Substance Use

	Alcohol	Cigarette Smoking	Vaping	Marijuana	Rx Meds
Future	.578	.555	.574	.627	.681
Prosocial activities	.586	.585	.542	.632	.767
Perceived harms	**.706**	**.704**	**.706**	**.675**	**.757**
Close relationships	.583	.578	.567	.619	.685
Connection	.602	.586	.605	.586	.780

Of all individual level risk and protective factors assessed, perceived harms have the strongest relationship with substance use.

Reminder: AUC illustrates the strength of relationship, NOT the direction of the relationship.

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Last 30-Day Substance Use by Perceived Harms

Substance	Lower (Mean − 1 SD)	Higher (Mean + 1 SD)
Alcohol	27.7%	7.4%
Cigarette Smoking	31.4%	8.7%
Vaping	18.0%	4.9%
Marijuana	7.1%	2.0%
Prescription Medication	1.9%	0.4%

Lower (Mean - 1 SD)   Higher (Mean + 1 SD)

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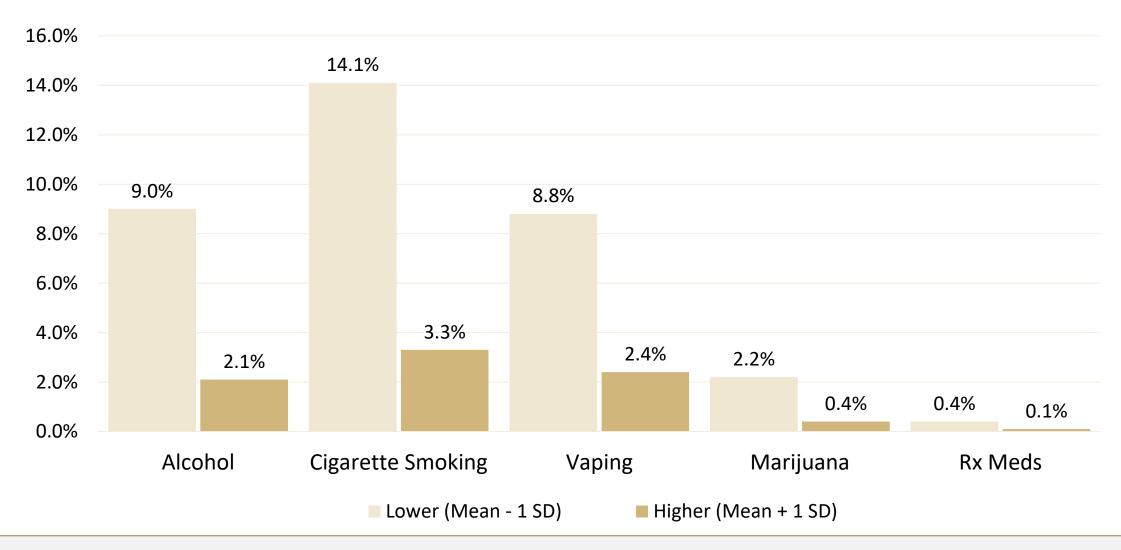School of Medicine

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Relationship Between Peer Risk & Protective Factors and Last 30-Day Substance Use

	Alcohol	Cigarette Smoking	Vaping	Marijuana	Rx Meds
Peer disapproval	.734	.730	.690	.678	.770
Peer use	.837	.799	.790	.827	.817

Of all Peer level risk and protective factors assessed, peer use has the strongest relationship with substance use.

Reminder: AUC illustrates the <u>strength</u> of relationship, <u>NOT</u> the direction of the relationship.

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Last 30-Day Substance Use by Peer Disapproval & Peer Use

Lower (Mean - 1 SD) Higher (Mean + 1 SD)

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Relationship Between Family Risk & Protective Factors and Last 30-Day Substance Use

	Alcohol	Cigarette Smoking	Vaping	Marijuana	Rx Meds
Parental disapproval	.648	.611	.623	.598	.649
Parental use	.637	.597	.629	.555	.587
Parental monitoring	**.683**	**.669**	**.687**	**.733**	**.867**
Likelihood of being caught by parents	.576	.593	.565	.633	.858

Of Family level risk and protective factors assessed, parental monitoring has the strongest relationship with substance use.

Of the 15,000 respondents, only 12-18 year olds (n=7,500) were asked about families.
Reminder: AUC illustrates the <u>strength</u> of relationship, <u>NOT</u> the direction of the relationship.

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Last 30-Day Substance Use by Parental Monitoring

Of the 15,000 respondents, only 12-18 year olds (n=7,500) were asked about families.

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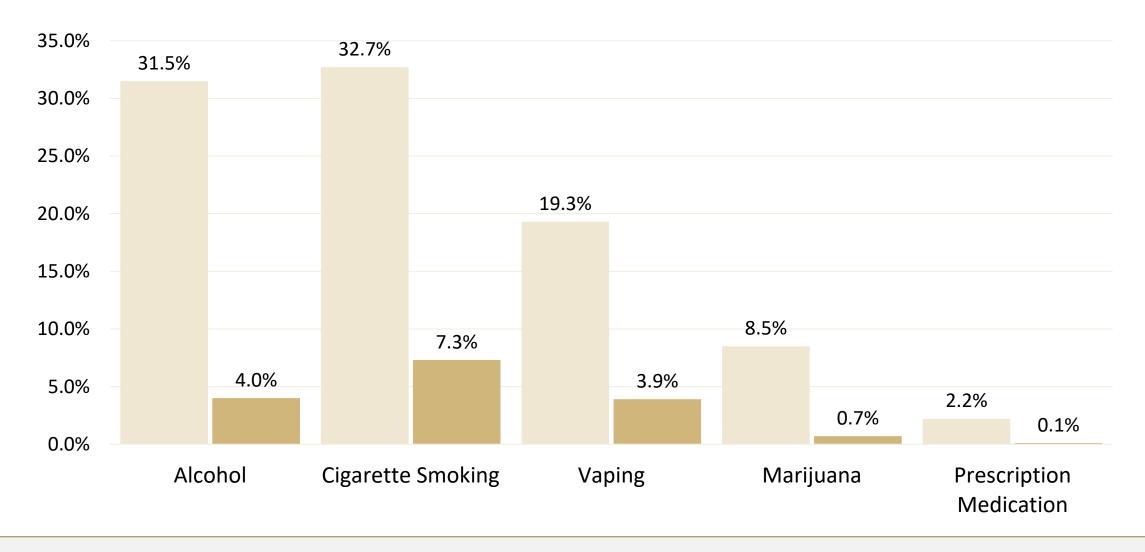
Relationship Between School and Community Risk & Protective Factors and Last 30-Day Substance Use

	Alcohol	Cigarette Smoking	Vaping	Marijuana	Rx Meds
Difficulty of access	**.776**	**.727**	**.723**	**.788**	**.817**
Likelihood of being caught by school	.537	.592	.597	.728	.812
Likelihood of being caught by police	.522	.582	.612	.716	.817
Community disapproval	.539	.572	.648	.714	.840

Of all school and community level risk and protective factors assessed, access difficulty has the strongest relationship with substance use.

Of the 15,000 respondents, only 12-18 year olds (n=7,500) were asked about likelihood of being caught.
Reminder: AUC illustrates the strength of relationship, NOT the direction of the relationship.

Last 30-Day Substance Use by Difficulty of Access

There were Differences in Risk and Protective Factors by Demographics and SDoH

- But that is 975 different relationships examined, all but 15 of which had significant differences!

- That means it may be important to consider different interventions for different populations, particularly if you have an identified disparity in substance use in your community and would like to reduce substance use for the population with elevated prevalence rates.

- But what that looks like will have to be a presentation for another day!

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Conclusions

Substance use patterns differ by demographics and social determinants of health

- Substance use increases with age
- Substance use increases with perceived everyday discrimination and community aces

12-20 year olds predominately get substances from friends

- But 12-14 year olds are more likely to take the substances without permission compared to 15-17 and 18-20 year olds.
- And those experiencing high Community ACES are more likely to take the substances without permission compared to those with low community ACES, with the exception of prescription medications.

There are many potential risk and protective factors that are strongly related to substance use, and those that are most strongly related to substance use have a wide variety of potential interventions. They are modifiable!

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Next Steps

- Data is still new. Things might change slightly as we explore the data (e.g., weighting data).

- Data will be disseminated by a data dashboard, reports and publications, and presentations.

- We hope to share data on Nicotine gums and gummies, CBD, Delta 8/10/P, Kratom, and polysubstance use at NPN in August.

- We will provide training in using the prevention data dashboard for community assessment this fall.

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Prevention Data Dashboard Pilot

- Dashboard Purpose: Making it easier to use data for your community needs assessment!

- Pilot Purpose: Give the local prevention workforce a chance to tell us....
  - What you like
  - What you don't like
  - What's missing
  - What you don't need
  - How we can make our data dashboard easier and more effective for you to use

Express Dashboard Pilot Participation Interest

OR
https://forms.gle/svVu6zEzeiiWVzUy5

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Thank you !

MELINDA PANKRATZ,
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JENNIFER ROSS,
JUSTIN MOORE,
THOMAS MCCOY,
AMITA MITTAL,
JONNA DANIEL, AND
RENATA YASSA