Adverse Childhood Experiences, Social Determinants of Health, Behavioral Health Disparities, and the Use of Substances among Adolescents

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Director of the UNCG Center for Housing and Community Studies
In this workshop you will....

- Learn about how to use data to create a narrative
- Better understand the relationship between social determinants and negative behavioral health
- Examine the correlation between ACEs and SUDs
- Review data on local adolescent substance use
The total population of this region is just over 1 million and counties range from as low as 37,847 in Yadkin County and as high as 221,923 in Gaston County. Yadkin is the least densely populated, while Gaston (on the outskirts of Charlotte, NC) is the most densely populated.
The percentage of children 0-17 years is consistent throughout most counties, with Iredell having the highest overall proportion under 18 years old by only a few percentage points.

However, there are pockets where the proportion of youth is higher in rural areas.
Median household income is lowest in Rutherford County, 24.3% lower than the median for the state of North Carolina. Meanwhile, the median household income in Iredell County, where the educational attainment is the highest, is 7.3% greater than the median for the state.
Cleveland County, with a population just under 100,000, has the greatest diversity, with 26.8% non-white.

The Hispanic highest as a proportion of the total population in Yadkin County (11.0%), while the largest proportion of Black population is in Cleveland County (22.1%).
Community Contexts Matter
CHCS conducted a 10-month long needs assessment/asset cataloging/data collection process to establish an inter-agency, collaborative Community Action Plan (CAP) to improve the quality of life in the region.
Estimated percent of all people that are living in poverty as of 2011-2015.
“This is a great place to live, but a very hard place to make a living.”

More than 80% of the informants said the lack of job opportunities paying at least a living wage was a significant problem in this region.
Clay County, North Carolina had between 12.1 and 14.0 lethal overdoses in 2002, according to CDC estimates.
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October 2014 - September 2015

7 out of 7 total removals to foster care were due to caretaker drug or alcohol abuse, while only 3 out of 7 neglect, and 2 out of 7 inadequate housing.

5 out of 11 were discharged with to adoptive families and 4 out of 11 were reunited with family.

Director of Clay County DSS (2016 stats from clay county DSS)

“18 children in foster care currently, all 18 are from parental drug abuse. 10 of the children are placed with relatives, and 8 of the children are in a foster home.”
DATA POINTS DON’T SPEAK FOR THEMSELVES

- Use data to provide context for your narratives.
- Use the narrative to show causal connections
End of extraction industries

De-industrialization

Prescription drugs availability

Shift to recreation & retirement

Shift to heroin & pill traffickers

Prescription crackdown

Economic boom then sudden downturn

Demographic shift

"Unemployables"

Casino and other industries lack workers & import from elsewhere

Housing shortage & housing inflation

Further poverty

Housing, food and medical care shortage, homelessness, and increased incidences of use and ODs

1970s - 1980s

1990s - 2000s

1990s - 2000s

1990 - 2000

2015 - 2017

2010 - 2015

2000 - 2010

2010 - 2017

2014 - 2017

2014 - 2017

2014 - 2017

2014 - 2017

Today
What’s your narrative?

What do you know about your own community contexts?

List two unique characteristics of your community
Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.

Source: Social Determinants of Health (SDOH)
https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health
Workforce Development
Safe, Affordable Housing
Fair Housing
Fair labor Practices
Walkability
Parks and Recreational Activities
Neighborhood and Built Environment
Health Insurance Coverage
Community Clinics
Health and Health Care
Food/Nutrition Programs
Behavioral Health Resources
Social and Community Context
Disability Services
Community and Family Safety
Special Education Services
Afterschool Enrichment Programs
Pre-K Services
Education
Credit Repair
Unemployment Benefits
Economic Stability
Source: Social Determinants of Health (SDOH)
https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health
Rurality can also function as a social determinant of health.

This is another context of many of your communities that has the power to influence the narrative (as with Clay and Cherokee counties further west).

Keeping all this in mind, we are going to discuss more specifically some data for substance use among youth and young adults in North Carolina, and we can try to frame some of these figures in terms of these social contexts that we’ve talked about.
Trauma and adverse experiences can also shape health outcomes.
Trauma and Behavioral Risk Factors

The original ACEs study (Felitti et al., 1998) identified a series of traumatic adverse childhood experiences:

- physical, emotional, or sexual abuse;
- physical or emotional neglect;
- parental separation or divorce;
- incarcerated household member;
- substance abuse or mental illness within the household;
- witnessing domestic violence.
ACEs and Negative Health Outcomes

Adults with childhood exposure to ACEs were more likely to have social, emotional, and cognitive impairments which led to the adoption of health risk behaviors.
ACEs and Negative Health Outcomes

ACEs have been linked to substance use (Ford et al., 2011; Anda et al., 2008; Dube et al., 2006).

ACEs are often interrelated, and that the presence of one adverse childhood experience significantly increases the likelihood of having multiple ACEs (Donga et al., 2004).
The concept of stress proliferation posits that an initial stressor can lead to the emergence of additional stressors, and that stress can proliferate in the short-term, over the life course, or intergenerationally (Pearlin, Shieman, Fazio, & Meersman, 2005; Pearlin, 1999).
Life Stress Framework

Primary Stressors
- Homelessness
- Parental Incarceration
- Violence in the home

Secondary Stressors
- Poor mental health
- Substance use
- Risky behavior

(Tyler and Schmitz, 2018)
Students experiencing homelessness used substances at *1.6 times the rate* of students who lived at home with their parent guardian.

Students with at least one incarcerated parent used substances at *1.5 times the rate* of students without an incarcerated parent.

Students who experienced violence at home on a monthly basis used substances at more than *twice the rate* of students who did not.
We’re going to talk for a minute here about how adult trends impact childhood trauma using the case of incarceration, and how this can compound negative impacts on and outcomes for kids.
Adult Justice Involved Populations 160k!

How many people are in North Carolina’s criminal justice system?

160,000 North Carolina are behind bars or under criminal justice supervision.

- Probation: 81,000
- State Prisons: 36,000
- Federal Prisons: 11,000
- Local Jails: 19,000
- Parole: 12,000
- Youth: 470
- Involuntary Commitment: 210

Sources and data notes: See https://www.prisonpolicy.org/reports/correctionalcontrol2018.html
More than 1 in 4 (27%) of inmates are in prison for substance use offences.

- Most Frequent Crimes of Inmates Entering Prison in CY 2017
  - #1 Drugs Possession/ Sell (or intent), 4,476 individuals, 17% of inmates
  - #5 DWI 1,567, individuals, 6% of inmates
  - #11 Drugs Trafficking, 1,119 4% of inmates

Similarly, substance use charges were the most frequent type of crime committed by new entries to probation in 2017 (41%)

- Drugs Possession/ Sell (or intent), 12,085, 24%
- DWI, 8,560, 17%
Adult Justice Involved Populations

Incarceration Rates
Comparing North Carolina and Founding NATO Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Incarceration Rate per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>698</td>
</tr>
<tr>
<td>North Carolina</td>
<td>639</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>139</td>
</tr>
<tr>
<td>Portugal</td>
<td>129</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>115</td>
</tr>
<tr>
<td>Canada</td>
<td>114</td>
</tr>
<tr>
<td>France</td>
<td>102</td>
</tr>
<tr>
<td>Italy</td>
<td>96</td>
</tr>
<tr>
<td>Belgium</td>
<td>94</td>
</tr>
<tr>
<td>Norway</td>
<td>74</td>
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<tr>
<td>Netherlands</td>
<td>59</td>
</tr>
<tr>
<td>Denmark</td>
<td>59</td>
</tr>
<tr>
<td>Iceland</td>
<td>38</td>
</tr>
</tbody>
</table>
Homelessness and Parental Incarceration, DSS 2013-2016 11th grade

- Sleep at home with parent/guardian:
  - No parent incarcerated: 92.7%
  - Parent incarcerated (past year): 7.3%

- Homeless:
  - No parent incarcerated: 75.3%
  - Parent incarcerated (past year): 24.7%
Protective factors

“...individual or environmental characteristics, conditions, or behaviors that reduce the effects of stressful life events.”
(CDC, 2017)

Parent engagement
School connectedness
Substance Use in North Carolina...

An Overview
Alcohol
Researchers have found that among people who start drinking before age 15, approximately 40% develop alcohol dependence later in life. However, among those who begin drinking at age 21 or older, only about 10% will develop alcohol dependence later in life.

(Grant and Dawson, 1997; USDHHS, 2000)

Data Source: CDC Youth Risk Behavior Survey (YRBS), 2017
Trends in NC High School Student Alcohol Use (as %)

- **Past month use**
  - 2007: 37.70%
  - 2009: 35.00%
  - 2011: 34.30%
  - 2013: 32.20%
  - 2015: 29.20%
  - 2017: 26.50%

- **First drink before 13**
  - 2007: 19.70%
  - 2009: 19.00%
  - 2011: 18.20%
  - 2013: 14.30%
  - 2015: 14.00%
  - 2017: 15.60%
Current drinking by grade (NC YRBS 2017)

- **Binge drinking**:
  - Total: 6.50%
  - 9th grade: 10.80%
  - 10th grade: 14.80%
  - 11th grade: 12.40%
  - 12th grade: 19.40%

- **Past month drinking**:
  - Total: 26.50%
  - 9th grade: 16.50%
  - 10th grade: 23.90%
  - 11th grade: 32.60%
  - 12th grade: 35.70%
### Alcohol use patterns among adults, by age group

<table>
<thead>
<tr>
<th></th>
<th>18-24</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Past month alcohol use</strong></td>
<td>54.2%</td>
<td>64.1%</td>
<td>58.3%</td>
<td>51.6%</td>
<td>47.5%</td>
<td>32.8%</td>
</tr>
<tr>
<td><strong>Binge drinking</strong></td>
<td>19.9%</td>
<td>28.6%</td>
<td>20.9%</td>
<td>13.5%</td>
<td>9.5%</td>
<td>4.6%</td>
</tr>
<tr>
<td><strong>Heavy drinking</strong></td>
<td>6.4%</td>
<td>7.7%</td>
<td>8.3%</td>
<td>5.9%</td>
<td>4.9%</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

*Heavy drinking = 7 drinks for females or 14 drinks for males in one week*

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Data Source: CDC Adult Behavioral Risk Factor Surveillance System, 2017
Marijuana
Most recent estimates from the Monitoring the Future Survey indicate that for the first time, more 12th grade students are daily marijuana users than cigarette users.

Trend data from MTF also suggests that marijuana usage among teens has mostly remained steady.

Students also report relatively low perceptions of risk associated with regular marijuana use.

Past month marijuana use, by age and region

Source: National Survey of Drug Use and Health (NSDUH), 2016-2017
Perceptions of great risk from monthly marijuana use, by age and region

Source: National Survey of Drug Use and Health (NSDUH), 2016-2017
Opiates
Limited trend data or past month data for many indicators of prescription misuse, since this has become a concern in recent years.

2017 YRBS
Prescription Misuse

15% of NC high school students report misusing prescription pain medicine at least once in their lifetime.
Past year pain reliever misuse, by age and region

Source: National Survey of Drug Use and Health (NSDUH), 2016-2017
Past year heroin use, by age and region

Source: National Survey of Drug Use and Health (NSDUH), 2016-2017
Other Illicit Drugs
Past month illicit drug use (excluding marijuana), by age and region

Source: National Survey of Drug Use and Health (NSDUH), 2016-2017
What new trends have emerged in your local population in the last 2 years?

What trends are emerging now?

What shifts in use have you seen by age, race, sex, and other demographic characteristics?
Treatment Admissions Across NC

2017 Treatment Episode Data Set (TEDS)
## Primary Drug at Admission, ages 12 and older

<table>
<thead>
<tr>
<th></th>
<th>Partners Counties* (n=25,658)</th>
<th>North Carolina (n=83,744)</th>
<th>South Atlantic* (n=341,769)</th>
<th>Total U.S.* (n=2,005,395)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marijuana</td>
<td>20.4%</td>
<td>20.3%</td>
<td>12.5%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>26.8%</td>
<td>26.1%</td>
<td>22.6%</td>
<td>29.4%</td>
</tr>
<tr>
<td>Heroin</td>
<td>13.7%</td>
<td>12.7%</td>
<td>32.7%</td>
<td>26.6%</td>
</tr>
<tr>
<td>Rx Opiates</td>
<td>14.4%</td>
<td>14.8%</td>
<td>13.6%</td>
<td>7.24%</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>1.7%</td>
<td>1.2%</td>
<td>1.1%</td>
<td>1%</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>5.5%</td>
<td>4.6%</td>
<td>2.6%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>7.6%</td>
<td>9.1%</td>
<td>6.5%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Other drugs</td>
<td>1.1%</td>
<td>1.1%</td>
<td>2.5%</td>
<td>--</td>
</tr>
<tr>
<td>None reported</td>
<td>7.4%</td>
<td>8.3%</td>
<td>3.3%</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

Note: -- indicates no data or less than 1% reported

Partners Counties include: Burke, Catawba, Rutherford, Gaston, Lincoln, Cleveland, Iredell, Yadkin, and Surry
South Atlantic States includes: DE, DC, FL, GA, MD, NC, SC, VA, and WV
Two states (Georgia and Oregon) did not report sufficient data and were excluded from 2017 analysis.
Do these patterns change with younger age groups?
## Primary Drug at Admission, ages 12-14

<table>
<thead>
<tr>
<th></th>
<th>Partners Counties* (n=48)</th>
<th>North Carolina (n=62)</th>
<th>South Atlantic* (n=1,670)</th>
<th>Total U.S.* (n=12,843)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marijuana</td>
<td>79.2%</td>
<td>80.6%</td>
<td>69.6%</td>
<td>68.3%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>4.2%</td>
<td>3.2%</td>
<td>5.9%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Rx Opiates</td>
<td>2.1%</td>
<td>1.6%</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>10.4%</td>
<td>3.2%</td>
<td>1.3%</td>
<td>--</td>
</tr>
<tr>
<td>OTC Drugs</td>
<td>--</td>
<td>1.6%</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Meth</td>
<td>--</td>
<td>1.6%</td>
<td>--</td>
<td>1.3%</td>
</tr>
<tr>
<td>Other sedatives</td>
<td>2.1%</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Other drugs</td>
<td>--</td>
<td>--</td>
<td>4.2%</td>
<td>--</td>
</tr>
<tr>
<td>None reported</td>
<td>2.1%</td>
<td>8.1%</td>
<td>13.9%</td>
<td>4.3%</td>
</tr>
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## Primary Drug at Admission, ages 15-17

<table>
<thead>
<tr>
<th></th>
<th>Partners Counties* (n=426)</th>
<th>North Carolina (n=857)</th>
<th>South Atlantic* (n=8,913)</th>
<th>Total U.S.* (n=63,115)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marijuana</td>
<td>85.7%</td>
<td>76.8%</td>
<td>79.4%</td>
<td>72.9%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>6.3%</td>
<td>5.6%</td>
<td>6.3%</td>
<td>9.3%</td>
</tr>
<tr>
<td>Heroin</td>
<td>--</td>
<td>1%</td>
<td>--</td>
<td>1.2%</td>
</tr>
<tr>
<td>Rx Opiates</td>
<td>--</td>
<td>1.2%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>1.9%</td>
<td>1.5%</td>
<td>1.1%</td>
<td>1.4%</td>
</tr>
<tr>
<td>OTC Drugs</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>--</td>
<td>2%</td>
<td>1.1%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.1%</td>
</tr>
<tr>
<td>Other sedatives</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Other drugs</td>
<td>--</td>
<td>-</td>
<td>3.7%</td>
<td>--</td>
</tr>
<tr>
<td>None reported</td>
<td>2.6%</td>
<td>9.8%</td>
<td>3.9%</td>
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## Primary Drug at Admission, ages 18-20

<table>
<thead>
<tr>
<th></th>
<th>Partners Counties* (n=1,111)</th>
<th>North Carolina (n=3,502)</th>
<th>South Atlantic* (n=9,998)</th>
<th>Total U.S.* (n=70,343)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marijuana</td>
<td>64.3%</td>
<td>60.5%</td>
<td>49.7%</td>
<td>40.5%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>6%</td>
<td>7.3%</td>
<td>10.5%</td>
<td>15.1%</td>
</tr>
<tr>
<td>Heroin</td>
<td>7.6%</td>
<td>6.9%</td>
<td>13%</td>
<td>15%</td>
</tr>
<tr>
<td>Rx Opiates</td>
<td>5.2%</td>
<td>4.9%</td>
<td>5.9%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>2.2%</td>
<td>1.7%</td>
<td>2%</td>
<td>2.6%</td>
</tr>
<tr>
<td>OTC Drugs</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>2.6%</td>
<td>3.2%</td>
<td>3%</td>
<td>11.6%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>--</td>
<td>2.1%</td>
<td>2.8%</td>
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<td>Other sedatives</td>
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<td>1.4%</td>
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<tr>
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<td>6.1%</td>
<td>1.9%</td>
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Two states (Georgia and Oregon) did not report sufficient data and were excluded from 2017 analysis.
What about referral sources to treatment?
Self Referrals to Treatment, 12 and older

Data source: 2017 Treatment Episode Data Set (TEDS)
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Health care provider referrals to treatment, 12 and older

Data Source: 2017 Treatment Episode Data Set (TEDS)
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Criminal Justice Referrals to treatment, under 21

Data Source: 2017 Treatment Episode Data Set (TEDS)
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Where else do we see disparities?
White students report past month alcohol use and binge drinking* at higher rates than other racial and ethnic groups of high school students in 2017.

*Binge drinking is defined by the YRBS as 4 or more drinks in one occasion for women, and 5 or more drinks in one occasion for men.
Bullying and Substance Use (YRBS 2017)

- Alcohol (past month):
  - Bullied: 35.30%
  - Not bullied: 27.60%
- Marijuana (past month):
  - Bullied: 23.10%
  - Not bullied: 19.10%
- Rx Painkillers (ever):
  - Bullied: 22.40%
  - Not bullied: 12.10%
What disparities do you see among the populations you serve?

What services do you offer that are tailored to ethnic or racial groups, sexual and gender minorities, those who have experience rape or sexual trauma, or those who have attempted suicide?

How can your organization better address these disparities by considering unique needs of youth?
References


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