Treating Special Populations for Tobacco Use: Mental Health/Substance Use/Adolescents

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President, the Association for the Treatment of Tobacco Use and Dependence (ATTUD)
Disclosures

– I’m a healthcare provider, not an investor

– Every day I see the toll tobacco takes on people’s lives: Nothing kills like tobacco (CDC, WHO)

– Every day I am reminded of the powerful addictive effects of nicotine

– I am the Course Director for the BREATHE Online Tobacco Treatment Specialist Training Program

– I am the current president of ATTUD
Objectives

1. Describe the characteristics of three populations at-risk for adverse outcomes from tobacco use.
2. Discuss barriers to tobacco dependence treatment for vulnerable populations.
3. Recommend evidence-based strategies to reach and treat vulnerable populations.
Approximately 1 in 4 adults in the U.S. report a mental illness or substance use disorder.

40% of cigarettes smoked are by adults with these disorders.

According to SAMHSA, \textit{at minimum}, 65\% of clients in treatment for SUD smoke cigarettes.

Data from Guydish, et al (2011)
At Risk: Persons with Mental Illness

Data from National Survey on Drug Use, 2016
Accessed from: https://www.cdc.gov/tobacco/disparities/mental-illness-substance-use/index.htm
### At Risk: Substance Use

Current Illicit Drug and Alcohol Use Among Adult Cigarette Smokers Compared with Non-Smokers, NSDUH 2016

<table>
<thead>
<tr>
<th></th>
<th>Smokers</th>
<th>Non-Smokers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current illicit drug use (in past month)</strong></td>
<td>25.3%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Marijuana</td>
<td>21.8%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>2.5%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Heroin</td>
<td>0.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>1.5%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Inhalants</td>
<td>0.4%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Non-medical use of prescription drugs</td>
<td>5.9%</td>
<td>1.5%</td>
</tr>
<tr>
<td><strong>Current alcohol use (in past month)</strong></td>
<td>63.5%</td>
<td>52.8%</td>
</tr>
<tr>
<td>Binge drinking</td>
<td>43.5%</td>
<td>21.7%</td>
</tr>
<tr>
<td>Heavy drinking</td>
<td>14.6%</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

[https://www.cdc.gov/tobacco/disparities/mental-illness-substance-use/index.htm](https://www.cdc.gov/tobacco/disparities/mental-illness-substance-use/index.htm)
NIDA Assist Quick Screen:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>Never</td>
</tr>
<tr>
<td></td>
<td>Once or Twice</td>
</tr>
<tr>
<td></td>
<td>Monthly</td>
</tr>
<tr>
<td></td>
<td>Weekly</td>
</tr>
<tr>
<td></td>
<td>Daily or Almost Daily</td>
</tr>
<tr>
<td>Tobacco</td>
<td>Never</td>
</tr>
<tr>
<td></td>
<td>Once or Twice</td>
</tr>
<tr>
<td></td>
<td>Monthly</td>
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<tr>
<td></td>
<td>Weekly</td>
</tr>
<tr>
<td></td>
<td>Daily or Almost Daily</td>
</tr>
<tr>
<td>Marijuana*</td>
<td>Never</td>
</tr>
<tr>
<td></td>
<td>Once or Twice</td>
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<td></td>
<td>Monthly</td>
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<tr>
<td></td>
<td>Weekly</td>
</tr>
<tr>
<td></td>
<td>Daily or Almost Daily</td>
</tr>
<tr>
<td>Prescription drugs for non-medical reasons</td>
<td>Never</td>
</tr>
<tr>
<td></td>
<td>Once or Twice</td>
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<tr>
<td></td>
<td>Monthly</td>
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<td></td>
<td>Weekly</td>
</tr>
<tr>
<td></td>
<td>Daily or Almost Daily</td>
</tr>
<tr>
<td>Illegal drugs</td>
<td>Never</td>
</tr>
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<td></td>
<td>Once or Twice</td>
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<tr>
<td></td>
<td>Monthly</td>
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<td></td>
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</tr>
</tbody>
</table>

NIDA Drug Screening Tool: Quick Screen [https://www.drugabuse.gov/nmassist/](https://www.drugabuse.gov/nmassist/)

* Marijuana added as this may not be illegal in some states but can impact tobacco use
Youth: The Vaping Epidemic

From This:

To this:
At Risk: Youth (High School Age, 2018)

https://www.cdc.gov/tobacco/info graphics/youth/index.htm#youth- tobacco
The Tobacco Industry and Vulnerable Groups
Excerpt of letter sent to Lorillard in 1995:

“Residential Treatment Services of Alamance, Inc. (RTS), is a private non-profit organization that provides community based residential services to clients who suffer from mental illness and/or substance abuse...

In the past, your company has made our clients a lot happier during the holidays by providing us with several cases of cigarettes, so that "SANTA" can slip a few packs in their Christmas bags!! We would appreciate it if you would be able to help put some smiles on their faces again this Christmas. We are grateful for any assistance your company could offer to make our clients transition through the holiday season less stressful and more enjoyable.”

Truth Tobacco Industry Documents: https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=mxyh0110
• The Tobacco Industry (TI) funds research perpetuating the myths that:
  – Cessation is “too stressful” and “potentially harmful” to persons with mental illness
  – Persons with mental illness use nicotine to self-medicate mood and psychiatric disorders
• TI supports efforts to block smoke-free psychiatric hospital policies (and other smoke-free policies which put vulnerable populations at risk)

Still at it…

Our Mission

Improve the lives of the world’s one billion adult smokers by eliminating cigarettes.

Juul Labs was founded by former smokers, James and Adam, with the goal of improving the lives of the world’s one billion adult smokers by eliminating cigarettes. We envision a world where fewer people use cigarettes, and where people who smoke cigarettes have the tools to reduce or eliminate their consumption entirely, should they so desire.
Youth Education for Prevention: Industry Style

“SaltNic, Inc. acknowledges the ongoing youth prevention campaigns by the FDA and many others. We believe that it is necessary to work towards eliminating youth e-cigarette usage and are dedicated to keeping electronic cigarettes out of the hands of underaged individuals.

SaltNic Labs demonstrates responsible marketing techniques by not specifically appealing to or engaging youths on any advertising banners or on social media platforms.

We believe that parental guidance and education is also necessary to detract from underage usage, and suggest the following:

– Educate yourself as to the several varieties of electronic cigarettes and the liquids they may contain to understand what signs to look for to distinguish whether or not your child may be using electronic cigarettes.

– Take the opportunity to discuss with your child the adverse consequences of nicotine usage, so that they understand the impact of their decision to use nicotine. Consider storing your ATM cards, credit cards and identification card in a place where your child will not have immediate access to them.”
It’s all about nicotine in a vulnerable host
<table>
<thead>
<tr>
<th>Neurotransmitter</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dopamine</strong></td>
<td>Increases pleasure; Suppress appetite</td>
</tr>
<tr>
<td><strong>Norepinephrine</strong></td>
<td>Improved arousal; Suppress appetite</td>
</tr>
<tr>
<td><strong>Acetylcholine</strong></td>
<td>Improved arousal; Enhanced cognition</td>
</tr>
<tr>
<td><strong>Glutamate</strong></td>
<td>Learning and memory</td>
</tr>
<tr>
<td><strong>Serotonin</strong></td>
<td>Modulate mood; Suppress appetite</td>
</tr>
<tr>
<td><strong>Beta-Endorphins</strong></td>
<td>Reduce tension &amp; anxiety</td>
</tr>
<tr>
<td><strong>GABA</strong></td>
<td>Reduces inhibitory effects</td>
</tr>
</tbody>
</table>
Dependence & Addiction

- **Tobacco dependence** is when psychological or biological processes occur when the body adapts to nicotine and produces drug-specific physical or mental symptoms when stopped abruptly.

- **Tobacco addiction** is compulsive tobacco use despite harmful consequences:
  - Inability to stop using a drug
  - Failure to meet work, social, or family obligations
  - Tolerance and withdrawal

Nicotine and Mental Illness

- Nicotine affects mood: Increasing anxiety, depressive symptoms and “stress” associated with withdrawal
- Nicotine can temporarily mask the symptoms of mental illness
- Nicotine addiction has a profoundly negative effect on the overall health, well-being and longevity of persons with mental illness
- Tobacco can interfere with the effectiveness of some antipsychotic medications
- Quitting can lead to improvements in depression and anxiety, with an effect similar to using antidepressant medication (Taylor, et al., 2014)
Nicotine and Substance Use

• Nicotine effects regions of the brain associated with addiction:
  • Stress
  • Learning
  • Self-control
• Effects are transient, resulting in a need for frequent “dosing”
• Nicotine can have a “priming” effect for other substances
• Youth who smoke are at increased risk for using other substances

Nicotine and Youth

- 90% of tobacco use begins by age 18; 98% by age 26
- Youth can be “hooked” after only transient use
- Roughly one quarter of youth who experiment with tobacco become dependent
- Repeated use causes structural changes to the brain
- Risk factors for dependence include:
  - Early experimentation and onset of use
  - Behavioral health problems (mental illnesses and substance use disorders)
We are treating the DEADLIEST addiction.

Tobacco companies kill their best customers.

~ The Fresh Quotes ~
Why Can’t 95 out of 100 People “Just Quit”? 

*Why Can’t Addicts Just Quit?*

*Because Addiction Changes Brain Circuits*

Adapted from Volkow et al., Neuropharmacology, 2004.
Treatment: Persons with Mental Illness

- Quitting smoking does not adversely affect psychiatric symptoms
- Tailored approaches to medications are frequently needed
- Persons with mental illness often have higher levels of nicotine dependence: smoke more cigarettes per day (CPD) and inhale more deeply
- Intensive medication and counseling most effective
- Access to treatment major barrier: “Opt-out” model needed

(Gilbody, et al, 2019)
Always Ask!

Do you want to quit?

On a scale of 0 to 10, how important is it for you to quit and how confident are you that you can?
EAGLES Trial

- Well-designed study in over 8000 subjects with and without psychiatric illness to evaluate the safety and efficacy of cessation medications
- No significant increase in neuropsychiatric adverse events attributable to varenicline or bupropion relative to nicotine patch or placebo were observed
- Varenicline was more effective than placebo, nicotine patch, and bupropion in helping smokers quit
- Bupropion and nicotine patch were more effective than placebo

Treatment: Persons with Substance Use

- Quitting smoking can enhance recovery and there is no clear evidence of interference
- Persons in recovery want to quit
- Smoking cessation treatment during substance use treatment has been associated with a 25% increased likelihood of long-term abstinence from alcohol and other drugs (Baca & Yahne, 2009)
Medication Caveats: Substance Use Treatment

- NRT is safe and effective
- Bupropion can precipitate seizures in persons at risk for withdrawal seizures from acute substance withdrawal
- Varenicline has been associated with rare risk of seizure
- Varenicline can decrease alcohol tolerance
ATTUD and Behavioral Health

- Working to strengthen collaborative relationships among tobacco dependence, mental health, and addiction treatment stakeholders to influence agency, state and national policies promoting the treatment of tobacco use and dependence among persons with mental illness and substance use disorders.

- White papers: Integrating Tobacco Treatment Within Behavioral Health

Treatment: Youth

- Ask about all substances used: Smoking ≠ Vaping or Juuling
- Pre-vaping evidence found NRT is not effective in youth
- Valid assessment of Nicotine Dependence: Hooked on Nicotine Checklist
HONC (DiFranza, et al, 2002)

- 10-item measure primarily used to assess **loss of autonomy** over tobacco use among adolescents
- Was developed specifically for use with adolescent smokers
- Has strong reliability and validity
- Is predictive of smoking
- Available in the Stanford University Tobacco Prevention Toolkit:
Medication Caveats: Youth

- Nicotine Replacement Therapy (NRT):
  - Studies don’t demonstrate effectiveness for youth, but also don’t find harm (lower nicotine exposure than most tobacco products)
- Bupropion:
  - Used to treat depression in adolescents but not found to be helpful for cessation in this population
- Varenicline:
  - Not indicated for use in adolescents
Selected resources for treating youth and prevention:

- Smoke-Free Teen: [https://teen.smokefree.gov/](https://teen.smokefree.gov/)
- MD Anderson ASPIRE: [https://www.mdanderson.org/about-md-anderson/community-services/aspire.html](https://www.mdanderson.org/about-md-anderson/community-services/aspire.html)
- Truth Initiative This is Quitting E-Cigarettes: [https://truthinitiative.org/research-resources/ Quitting-smoking-vaping/ quitting-e-cigarettes](https://truthinitiative.org/research-resources/ Quitting-smoking-vaping/ quitting-e-cigarettes)
- CATCH E-cigarette prevention program: [https://catchinfo.org/modules/e-cigarettes/](https://catchinfo.org/modules/e-cigarettes/)
- Stanford University Tobacco Prevention Toolkit: [www.tobaccopreventiontoolkit.stanford.edu](http://www.tobaccopreventiontoolkit.stanford.edu)
Questions?

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