Improving Smoking Cessation Treatment for People with Schizophrenia

A Collaboration Between NIDA, NIMH and NCI

Lisa Onken
National Advisory Council on Drug Abuse
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Planning Committee

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May 2013
Statement of Problem

• High prevalence of smoking, but lower cessation rates

• Significant morbidity and early mortality
  * Schizophrenia patients had markedly premature mortality, and the leading causes were ischemic heart disease and cancer

• Population is often excluded from clinical trials

• Effective cessation treatments exist, but relapse is still the rule

*Swedish Cohort Study- supported by NIDA grant R01DA030005

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Other Agencies: Smoking & Mental Illness

• CDC: “Vital Signs” Report (Feb 2013) Smoking in adults with mental illness

• SAMHSA: National Survey on Drug Use & Health on smoking and mental illness

• HHS Tobacco Control Implementation Steering Committee: Topic of ongoing development
Purpose of Workshop

• Gather experts in both areas (smoking cessation and schizophrenia)

• Review the current state of the field

• Identify research gaps, opportunities, and new directions
Workshop Panels

- Medications
- Behavioral Treatments
- Putative Mechanisms Underlying Treatments
- Integrating Cessation Interventions within Larger Systems of Care
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The 2008 Update panel concluded that the interventions found to be effective in this guideline are effective in a variety of populations including those with health disparities. In addition, many of the studies supporting these interventions comprised diverse samples of tobacco users. As a result, the panel concluded that the interventions identified as effective in the 2008 Update should be recommended for use by all individuals who use tobacco except when medication use is contraindicated or with specific populations in which medication use has not been shown to be effective (pregnant women, smokeless tobacco users, light smokers, and adolescents). This recommendation applies to a broad population of smokers including HIV-positive smokers, hospitalized smokers, lesbian/gay/bisexual/transgender smokers, those with low SES/limited formal education, smokers with medical co-morbidities, older smokers, smokers with psychiatric disorders including substance use disorders, racial and ethnic minorities, and women smokers.
Behavioral Treatments for Smoking Cessation in People with Schizophrenia

- Contingency Management -- with or without bupropion -- is effective at reducing smoking (short-term) in people with schizophrenia.

- CBT + extended duration pharmacotherapy substantially reduces relapse for smokers with schizophrenia.

- Under development:
  - Web-based motivational decision support system
  - Behavioral group intervention
Behavioral Treatments: Future Directions
Task Persistence

- is compromised in people with schizophrenia
- predicts smoking cessation in people with and without schizophrenia
- is currently being targeted in a smoking cessation treatment under development (for people without schizophrenia)
- Would targeting task persistence help for smoking cessation interventions in people with schizophrenia?
Behavioral Treatment: Future Directions
Cognitive Remediation

- Cognitive deficits are fundamental to schizophrenia
- Neurocognitive function is a predictor of response to behavioral treatments for schizophrenia
- Cognitive remediation for people with schizophrenia is associated with significant and durable improvements in:
  - cognitive functioning
  - psychosocial adjustment
- Patients may smoke to alleviate cognitive symptoms
- Would amelioration of cognitive deficits help with smoking cessation in people with schizophrenia?
Working Memory + Varenicline

Working memory:
- is a major deficit in schizophrenia
- worsens with abstinence in people with schizophrenia
- deficits are a barrier to cessation

Varenicline:
- attenuates abstinence-induced deficits in working memory
- may reduce psychosis
- is safe and well-tolerated
- is an effective smoking cessation pharmacotherapy
Dopamine

- Schizophrenia and comorbid addiction, including nicotine addiction, is associated with profound dopamine depletion

- Negative symptoms are inversely related to dopamine levels in ventral striatum in patients with schizophrenia

- Should treatments target loss of dopamine to address negative and cognitive deficits?
Nicotine receptor deficit observed among people with schizophrenia

Paradox:

Nicotine is not a helpful neurocognitive drug for people with schizophrenia who smoke, despite its effects in people with schizophrenia who do not smoke.
**α7-nicotinic receptors**

- Many people with schizophrenia have α7-nicotinic receptor-mediated deficits
- High doses of nicotine are necessary to activate α7-nicotinic receptors & are preferred by smokers with schizophrenia
- Clozapine indirectly stimulates α7-nicotinic receptors & decreases smoking
- α7-nicotinic agonists have positive effects on neurocognition and negative symptoms in schizophrenia & may alter smoking behavior

(NRT labels may change, allowing it to be used longer and in conjunction with multiple products)

http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm345087.htm
Research recommendations:

• Research on how existing interventions for smoking cessation can be disseminated and adopted.

• Research to develop improved behavioral and pharmacological treatments. This research should examine the putative mechanisms of nicotine addiction in people with schizophrenia, and on the hypothesized biological and behavioral targets of behavior change.
Next Steps

Continue collaboration with NIMH and NCI

Continue to encourage research in this area

Welcome the perspective of Council