Special Ops: Vulnerable Populations and Tobacco Treatment

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Special Ops: Vulnerable Populations and Tobacco Treatment

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Outline

• Background and Significance

• Reasons for Smoking among individuals with co-morbid substance use (SUD) and/or psychiatric disorders (PD)

• Smoking cessation treatment for individuals with co-morbid substance use (SUD) and/or psychiatric disorders (PD)

• Smoking among the Homeless population
Background and Significance

- Better health
- Live longer
- Less medication
- Less depression
- Save £400-£1,400/year

- Die 10 yrs earlier
- More depression
- More anxiety
- More alcohol problems
- Chest & heart problems
- More suicide
- Sexual problems
Trends in Cigarette Smoking Prevalence* (%), by Sex, Adults 18 and Older, US, 1965-2007

*Redesign of survey in 1997 may affect trends.
Kalman, Morissette and George (2005), Am. J. Addict., 14: 106-123
• “Nicotine-dependent individuals with a comorbid psychiatric disorder made up 7.1% of the population yet consumed 34.2% of all cigarettes smoked in the United States”

Individuals with SUD and PD are disproportionately affected by tobacco caused mortality...

• In an 11 year retrospective study of 845 individuals who had received residential treatment, more than half of all deaths were due to tobacco-related causes.

• In a 24 year prospective study of heroin users in treatment, death rate of smokers x4 (v non-smokers).

• Tobacco and alcohol can act synergistically....heavy users increase cancer risk x 37 (v abstainers).

• Individuals with Schizophrenia have elevated rates of respiratory and breast cancers and respiratory cancer deaths than individuals without schizophrenia

Osborn et al. (2007). Relative Risk of Cardiovascular and Cancer Mortality in People With Severe Mental Illness From the United Kingdom’s General Practice Research Database. Arch Gen Psychiatry
Reasons for Smoking among individuals with co-morbid SUD and PD

- Genetic
- Biologic
- Psychosocial
Substance use and smoking

Both common and specific addictive factors for alcohol, marijuana, cocaine, and habitual smoking transmitted in families

This specificity suggested independent causative factors for the development of each substance dependence.

• 68% of the association between nicotine and alcohol dependence explained by shared genetic effects.

Mental health and smoking

(1,566 female twin pairs) average lifetime daily cigarette consumption was found to be associated with lifetime prevalence of major depression, suggesting that the relationship between smoking and major depression resulted solely from genes which predispose to both conditions.

(8,169 male twins) shared genetic disorders further predispose to major depression and nicotine dependence.

63% of the association between post traumatic stress disorder and nicotine dependence co-morbidity was explained by shared genetic effects.

Mental health and smoking

A Novel Permutation Testing Method Implicates Sixteen Nicotinic Acetylcholine Receptor Genes as Risk Factors for Smoking in Schizophrenia Families

Stephen V. Faraone a,b Jessica Su b Levi Taylor c Marsha Wilcox c
Paul Van Eerdewegh c,d Ming T. Tsuang a,b,c,e

• Found a group of candidate genes and individual genes among individuals with schizophrenia which were significantly linked to smoking behaviors.

Faraone et al. (2004). A novel permutation testing method implicates sixteen nicotinic acetylcholine receptor genes as risk factors for smoking in Schizophrenia families
<table>
<thead>
<tr>
<th>Author(s) and Source</th>
<th>Findings</th>
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<tbody>
<tr>
<td>Ford, Vu, Anthony Drug and Alcohol Dependence 2002; 67:243-248</td>
<td>Marijuana use reduces cessation of tobacco smoking in adults</td>
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<tr>
<td>Levine et al. Science translational medicine 2011; 3, 107, 107-109</td>
<td>Cigarette smoking can prime the brain to cocaine use</td>
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<tr>
<td>Reference</td>
<td>Summary</td>
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<td>Barr, Culhane, Jubelt, et al. Neuropsychopharmacology 2007; 33:480-490</td>
<td>Administration of transdermal patch nicotine improves attention and response inhibition in nonsmokers with schizophrenia</td>
</tr>
<tr>
<td>Fowler, Volkow, Wang, et al. Proceedings of the National Academy of Sciences of the United States of America 1996; 93:14065-14069</td>
<td>Brain levels of monoamine oxidase A (MAO-A) (an enzyme associated with depression) were reduced in smokers relative to nonsmokers; suggesting that people with affective disorders may smoke to reduce elevated MAO-A levels in the brain</td>
</tr>
<tr>
<td>McCabe, Chudzik, Antony, et al. Journal of Anxiety Disorders 2004; 18:7-18</td>
<td>Smokers with a primary diagnosis of anxiety disorder reported greater levels of general anxiety, distress, and depression as compared to nonsmokers.</td>
</tr>
</tbody>
</table>
Substance use and Smoking

• The use of other substances may foster tobacco use.

• Drug treatment facilities may provide an environment that supports tobacco use or a factor for delayed tobacco use cessation.

• Factors such as neighborhood disadvantage and early exposure to substance use may present an ‘exposure opportunity’ for subsequent substance use.

King AC, Epstein AM. Alcohol Dose-Dependent Increases in Smoking Urge in Light Smokers. Alcoholism: Clinical & Experimental Research 2005; 29:547-552
Friend KB, Pagano ME. Smoking initiation among nonsmokers during and following treatment for alcohol u se disorders. Journal of Substance Abuse Treatment 2004; 26:219-224
Wagner FA, Anthony JC. Into the world of illegal drug use: Exposure opportunity and other mechanisms linking the use of alcohol, tobacco, marijuana, and cocaine. Am. J. Epidemiol. 2002; 155:918-925
Mental health and smoking

• History of tobacco use as a token economy—cigarettes used as a ‘reward’ for appropriate behavior (i.e., smoking privileges)

• Smoking among clients and staff to encourage ‘socialization’

“these patients don’t want to quit”

- 80% of participants in a methadone maintenance program and 75% of participants in an alcohol abuse program endorsed a desire to quit (Richter KP et al., 2001; Ellingstad TP et al., 1999)

- In a review of 9 studies of motivation to quit smoking among individuals with psychiatric disorders at least 50% are contemplating cessation (Siru, Hulse & Tait, 2009).
“these patients will relapse (to other substances) if they try to quit”

- Smoking cessation related to improved quality of life

- Meta-analysis (n = 19 studies) of smoking cessation among individuals in addiction treatment and recovery found that smoking cessation efforts can ENHANCE rather than compromise long-term sobriety


Meta-analysis (n = 19 studies) of smoking cessation among individuals in addiction treatment and recovery found increased cessation at end of 12 weeks treatment (BUT NO SIGNIFICANT EFFECT AT 6 MONTHS!)

(Prochaska JJ et al, 2004).

Recent study found end-of-treatment smoking cessation rates of 20% among individuals with psychiatric disorders accessing outpatient tobacco treatment program

(Selby et al, 2010)

Another recent study found end-of-treatment (between 8 to 26 weeks) smoking cessation rates of 40% among individuals with SUD and/or PD who completed an intensive tailored smoking cessation intervention that provided no-cost pharmacotherapy combined with behavioural counseling

(Khara and Okoli, 2011)
Treating tobacco use in co-morbid substance use and psychiatric populations

Combination Pharmacotherapy

Nicotine Replacement Therapy
- Patch
- Gum
- Lozenge
- Inhaler

Oral Medications
- Zyban
- Champix
Longer treatment duration

Smoking Cessation by length of stay in the program (n = 678)*

* Statistically significant differences between groups
Barriers to Facilitating tobacco treatment

Smoking cessation and concurrent substance use treatment and recovery

- Treatment of smoking cessation does not exacerbate the use or lead to relapse of another substance-
  - meta-analysis found summary relative risk was 1.25 (95% CI, 1.07–1.46) indicating a significant increase in the likelihood of abstinence from substance use among those in smoking cessation treatment as compared with the control condition

- Issues related to concurrent vs. sequential tobacco treatment for individuals with alcohol use-
  - study found no difference in the cessation rates at 18 months (12.4% vs. 13.7%) but prolonged alcohol abstinence for 30 days and 6 months was worse in the concurrent group than in the delayed group at 6, 12 and 18 months.

Role of smoking cessation in mental health services

- Concerns that smoking cessation will increase psychiatric symptoms or relapse among patients.
  - Among individuals with depression, smoking cessation related to increased depression symptomatology, which is one of the symptoms of the nicotine withdrawal syndrome.
  - Individuals with anxiety disorders and depression report more severe withdrawal symptoms.
  - Smoking is associated with improvements in prepulse inhibition and sensory gating which may be affected by smoking cessation.

- Smoke-free policy and mental health facilities.
  - A review of studies examining prohibitions of smoking in psychiatric facilities suggests that prohibitions do not have long-term effects on behavioral unrest or noncompliance, but neither do they appear to effect smoking cessation.

Adams CE, Stevens KE. Evidence for a role of nicotinic acetylcholine receptors in schizophrenia. Frontiers in Bioscience 2007; 12:4755-4772
Costs associated with smoking cessation treatment

• Even though less expensive than purchasing cigarettes, the cost of pharmacotherapy and counseling presents an important barrier to seeking treatment.

• Such cost barriers to accessing treatment and the potential cost-effectiveness of treatment have prompted guidelines about reducing medication costs (reduced cost or free of charge), inclusion of medications as benefits on drug insurance plans, and setting up systems for reimbursement for tobacco cessation treatment for health care providers.

Tobacco Use and Cessation in Homeless Populations

Case Example: Salvation Army Clinic Tobacco Treatment Program
Kentucky Continues to be National Leader in Adult Cigarette Smoking

Centers for Disease Control and Prevention, 2008 (gender estimates for 2006)
Homelessness & Tobacco Use

- Specific data is limited but indicate higher levels of cardiovascular and lung disease in homeless or recently homeless persons
- Infectious disease concerns from sharing cigarettes/smoking butts on the street
- Multiple stressors and lack of access to treatment contribute to high prevalence of smoking
Factors contributing to high smoking rates in the homeless include:

- substance abuse
- lack of shelter and the stress of caring for family and children while homeless, lack of private living conditions
- lack of social support and lack of care from society/social empathy
- low self esteem
- unemployment
- lack of education
- hunger and starvation (smoking has been linked to food insecurity due to the appetite suppressing effects of nicotine)
- little or no access to healthcare
- tobacco use among peers
Benefits of Quitting for the Homeless:

- Lower financial strain of smoking
- Less tobacco related illness for smoker and their family (less SHS exposure)
- Treatment for other substance use is more likely to be successful
- Increased self-efficacy
- Social normalization
Recommendations of Expert Panel on Reducing Tobacco Effects in the Homeless:

• Having all facility staff committed to tobacco cessation and decreasing tobacco use among their clients

• Providing access to NRT and a safe and smoke-free environment will increase the chances that a client can quit tobacco successfully

• Treatment for nicotine addiction should be integrated into a comprehensive approach to improving the overall health of clients.
Helping Tobacco Users Quit at the SAC

- Smoking Cessation Group started in Spring of 2010 with a Chest Foundation Grant (Dr. Don Hayes) of $5000
- Students worked with UK Tobacco Treatment Specialist to develop format for the group
- An open group format, provision of medication (primarily NRT, PAP applications for Chantix), quit kits, and contingency reward program ($5 gift cards for abstinence) was developed
What’s Working

• Nicotine replacement has been a critical element of the program
• Structured accountability to the group
• Reward cards
• “Café” atmosphere
• Motivational counseling/goal setting
• Great student involvement
• Smooth transition of leadership at end of student experience
Challenges

- Limited funding
- Limited funding
- Limited funding...
- Transiency of the participants
- Dedicated meeting space
- Smoking area
How We Do What We Do

Motivational Counseling:
Meet the client “where they are”
Draw on strengths
Work positively to overcome barriers
Promote individualized goal setting over specific time frame
Celebrate successes
**Nicotine Replacement**

- Dose/form tailored to the individual
- Use patch (21 mg/14 mg/7 mg) and/or gum and/or lozenges (2 or 4 mg.)
- Given out for 1 week duration
- Use encouraged if smoking > ½ pack/day
- Dose based on current smoking (each cigarette is approx. 2-3 mg. nicotine)
Oral Medications

- Chantix not routinely prescribed due to expense (approx. $135/month) but is available through PAP if sent to clinic
- Bupropion SR is contraindicated with a history of seizures, not available through PAP but is on some of Medicaid formularies; can be used with NRT
- Need to ensure follow up to monitor for side effects
Student Involvement

• Opportunity to work on tobacco cessation, the leading cause of morbidity and mortality, in a challenging setting
• Develop motivational interviewing skills
• Fun group to work with!
Contact information

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