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Special Ops: Vulnerable Populations and Tobacco Treatment

Chizimuzo T.C. Okoli

University of Kentucky, ctokol1@uky.edu

Audrey Darville

University of Kentucky, audrey.darville@uky.edu

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Special Ops: Vulnerable Populations and Tobacco Treatment



Chizimuzo Okoli, PhD, MPH, RN

Director, Tobacco Treatment and Prevention Division, Kentucky Tobacco Policy Research Program
Assistant Professor, College of Nursing, University of Kentucky
Clinical Assistant Professor, Faculty of Nursing, University of British Columbia

Audrey Darville, PhD, ARNP, CTTS

Certified Tobacco Treatment Specialist, UK Healthcare
Tobacco Treatment and Prevention Division, Kentucky Tobacco Policy Research Program
UK College of Nursing

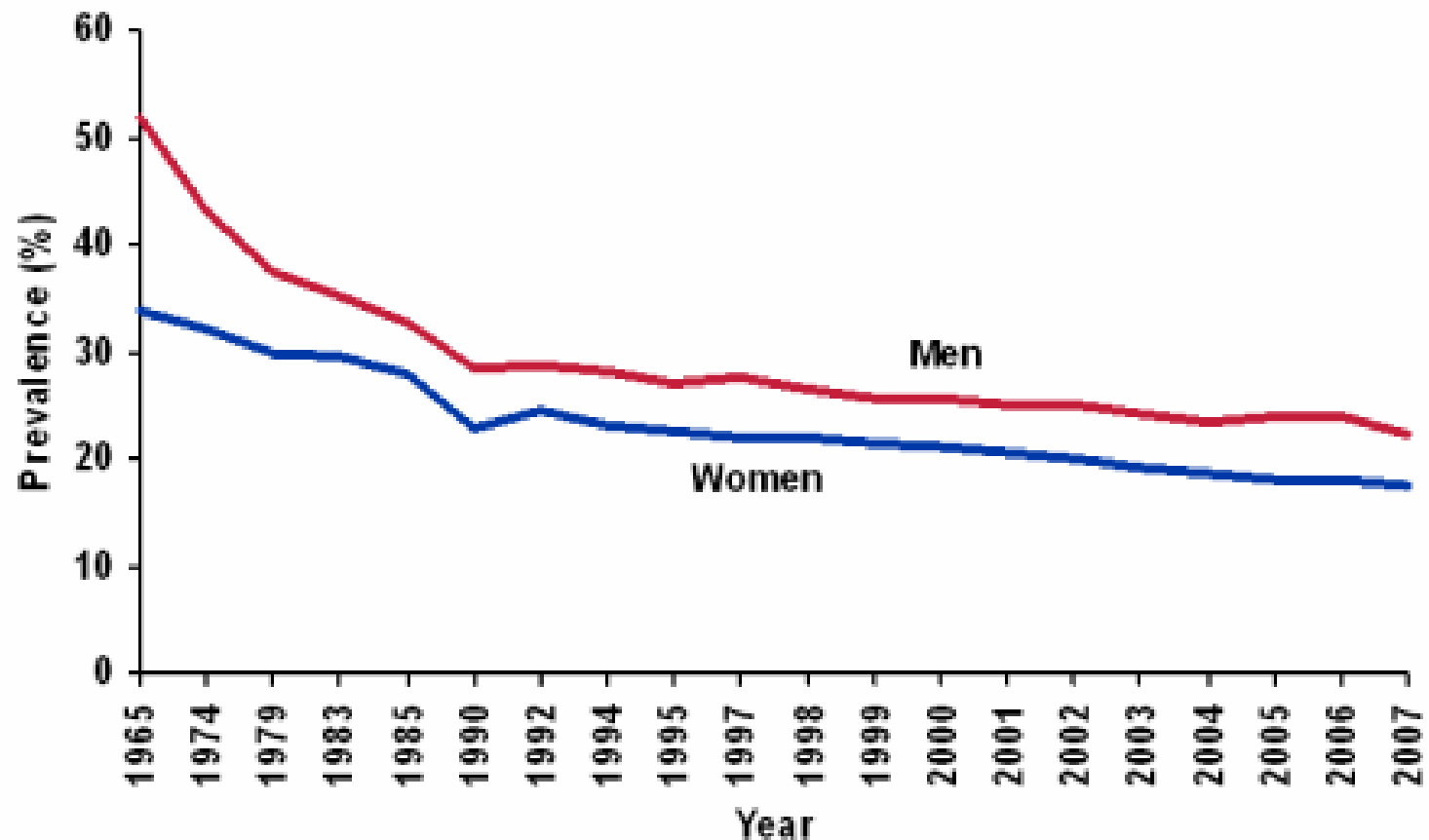
Outline

- 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

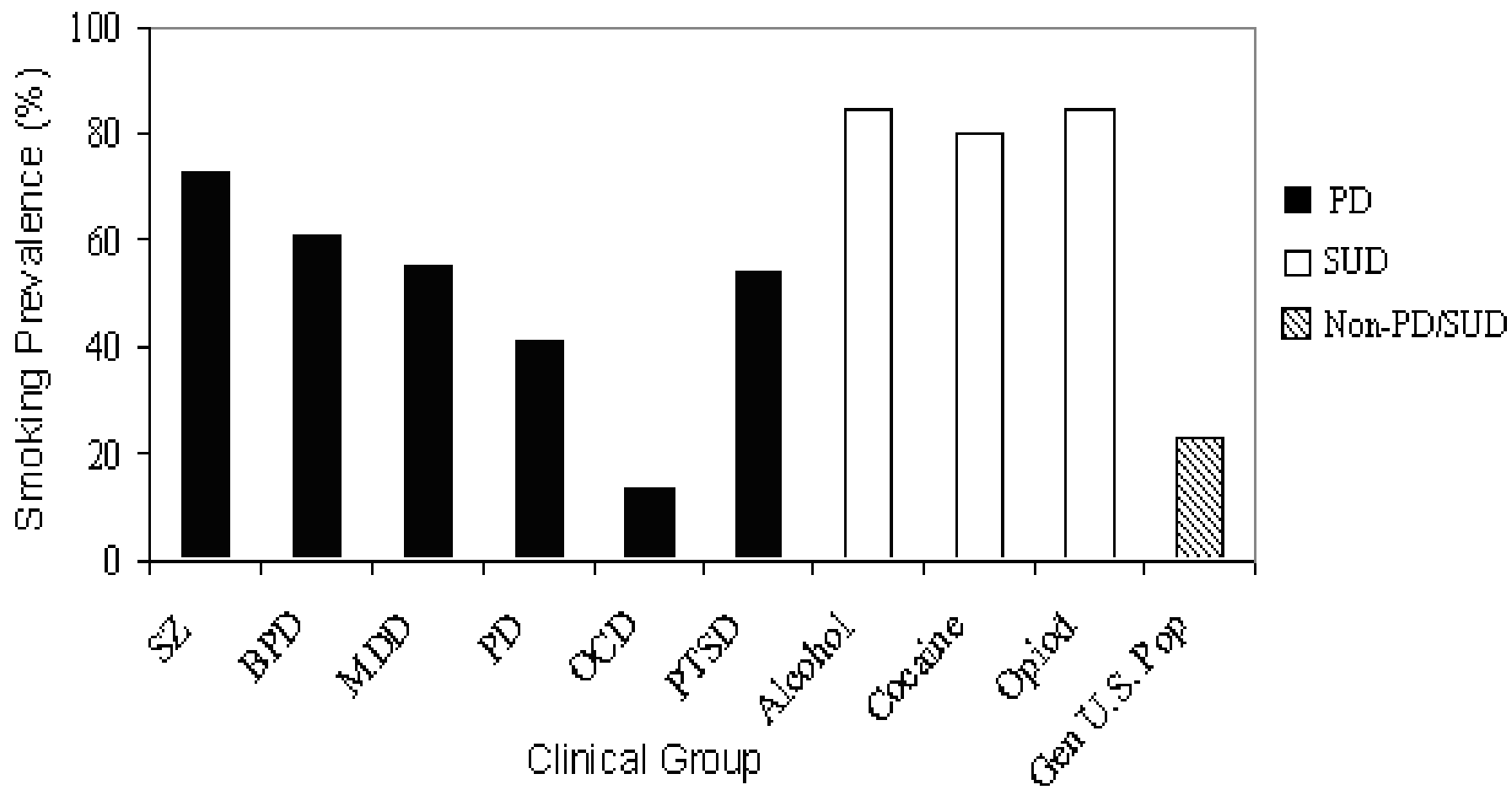


Trends in Cigarette Smoking Prevalence* (%), by Sex, Adults 18 and Older, US, 1965-2007



*Redesign of survey in 1997 may affect trends.

Source: National Health Interview Survey, 1965-2007, National Center for Health Statistics, Centers for Disease Control and Prevention, 2008.



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”



Grant, B.F. , Hasin, D.S., Chou, S.P., Stinson, F.S.& Dawson, D.A. (2004). Nicotine dependence and psychiatric disorders in the United States: Results from a national epidemiologic survey on alcohol and related conditions. Archives of General Psychiatry,61,1107-1115.

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

Hurt RD et al (2006) Mortality following in-patient addictions treatment. JAMA.

Hser YI et al (1994) Tobacco use as a distal predictor of mortality among long-term narcotic addicts. Preventative Medicine.

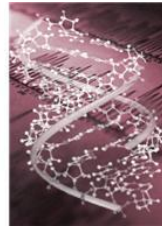
Blot WJ (1992) Alcohol and Cancer. Cancer Research.

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

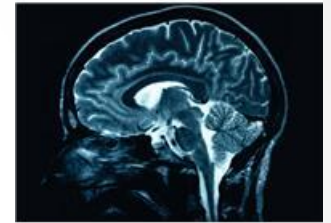


Reasons for Smoking among individuals with co-morbid SUD and PD

- Genetic



- Biologic



- Psychosocial





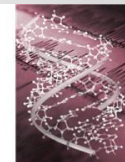
Substance use and smoking

Familial Transmission of Substance Dependence: Alcohol, Marijuana, Cocaine, and Habitual Smoking

A Report From the Collaborative Study on the Genetics of Alcoholism

Laura Jean Bierut, MD; Stephen H. Dinwiddie, MD; Henri Begleiter, MD; Raymond R. Crowe, MD;
Victor Hesselbrock, PhD; John I. Nurnberger, Jr, MD, PhD; Bernice Porjesz, PhD;
Marc A. Schuckit, MD; Theodore Reich, MD

- 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.



Substance use and smoking

Common Genetic Vulnerability for Nicotine and Alcohol Dependence in Men

William R. True, PhD, MPH; Hong Xian, PhD; Jeffrey F. Scherrer, MA; Pamela A. F. Madden, PhD; Kathleen K. Bucholz, PhD; Andrew C. Heath, DPhil; Seth A. Etsen, MD, MSc; Michael J. Lyons, PhD; Jack Goldberg, PhD; Ming Tsuang, MD, PhD, DSc

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

Mental health and smoking



(1,566 female twin pairs) average life time daily cigarette consumption was found to be associated with life time 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.

Kendler KS, Neale MC, MacLean CJ, et al. Smoking and Major Depression: A Causal Analysis. Archives of General Psychiatry 1993; 50:36-43

Lyons M, Hitsman B, Xian H, et al. A twin study of smoking, nicotine dependence, and major depression in men. Nicotine & Tobacco

● Research 2008; 10:97 - 108

Mental health and smoking



A Twin Registry Study of the Relationship Between Posttraumatic Stress Disorder and Nicotine Dependence in Men

Karestan C. Koenen, PhD; Brian Hitsman, PhD; Michael J. Lyons, PhD; Raymond Niaura, PhD; Jeanne McCaffery, PhD; Jack Goldberg, PhD; Seth A. Eisen, MD; William True, MD; Ming Tsuang, MD

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

Mental health and smoking



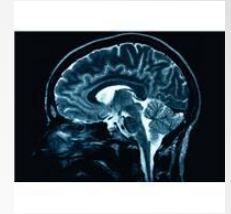
A Novel Permutation Testing Method Implicates Sixteen Nicotinic Acetylcholine Receptor Genes as Risk Factors for Smoking in Schizophrenia Families

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

Substance use and Smoking



Ford, Vu, Anthony Drug and Alcohol Dependence 2002; 67:243-248	Marijuana use reduces cessation of tobacco smoking in adults
Barrett, Tichauer, Leyton, et al. Drug and Alcohol Dependence 2006; 81:197-204	Nicotine increases alcohol self-administration in non-dependent male smokers.
Story & Stark. Journal of psychoactive drugs 1991; 23:203-215	increases in methadone dose could increase nicotine craving and cigarette consumption for opioid-dependent
Levine et al. Science translational medicine 2011; 3, 107, 107-109	Cigarette smoking can prime the brain to cocaine use

Mental health and smoking



Postma et al. Psychopharmacology (2006) 184: 589–599	nicotine reduces sensorimotor gating deficits in smokers with schizophrenia
Barr, Culhane, Jubelt, et al. Neuropsychopharmacology 2007; 33:480-490	administration of transdermal patch nicotine improves attention and response inhibition in nonsmokers with schizophrenia
Fowler, Volkow, Wang, et al. Proceedings of the National Academy of Sciences of the United States of America 1996; 93:14065-14069	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
McCabe, Chudzik, Antony, et al. Journal of Anxiety Disorders 2004; 18:7-18	Smokers with a primary diagnosis of anxiety disorder reported greater levels of general anxiety, distress, and depression as compared to nonsmokers.

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.

Glautier S, Clements K, White JAW, et al. Alcohol and the reward value of cigarette smoking. *Behavioural Pharmacology* 1996; 7:144-154

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 use disorders. *Journal of Substance Abuse Treatment* 2004; 26:219-224

Bobo JK, Husten C. Sociocultural Influences on Smoking and Drinking. *Alcohol Research & Health* 2000; 24:225-232

Crum RM, Lillie-Blanton M, Anthony JC. Neighborhood environment and opportunity to use cocaine and other drugs in late childhood and early adolescence. *Drug and Alcohol Dependence* 1996; 43:155-161

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**'

Kawachi I, Berkman L. Social ties and mental health. *Journal of Urban Health* 2001; 78:458-467

Lawn S. Cigarette smoking in psychiatric settings: occupational health, safety, welfare and legal concerns. *Australian and New Zealand Journal of Psychiatry* 2005; 39:886-891

Keizer I, Eytan A. Variations in Smoking during Hospitalization in Psychiatric In-Patient Units and Smoking Prevalence in Patients and Health-Care Staff. *International Journal of Social Psychiatry* 2005; 51:317-328

Morisano D, Bacher I, Audrain-McGovern J, et al. Mechanisms underlying the comorbidity of tobacco use in mental health and addictive disorders. *Canadian Journal Of Psychiatry. Revue Canadienne De Psychiatrie* 2009; 54:356-367

Arguments for Not Providing Tobacco Treatment....

“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

Bobo JK, McIlvain HE, Lando HA, et al. Effect of smoking cessation counseling on recovery from alcoholism: findings from a randomized community intervention trial. *Addiction* 1998; 93:877-887

McCarthy WJ, Zhou Y, Hser YI, et al. To smoke or not to smoke: Impact on disability, quality of life, and illicit drug use in baseline polydrug users. *Journal of Addictive Diseases* 2002; 21:35-54

Lemon SC, Friedmann PD, Stein MD. The impact of smoking cessation on drug abuse treatment outcome. *Addictive Behaviors* 2003; 28:1323-1331

McCarthy WJ, Collins C, Hser YI. Does cigarette smoking affect drug abuse treatment? *Journal of Drug Issues* 2002; 2:61-80

Prochaska JJ, Delucchi K, Hall SM. A meta-analysis of smoking cessation interventions with individuals in substance abuse treatment or recovery.

● *Journal of Consulting and Clinical Psychology* 2004; 72:1144-1156

“these patients are unable to quit”

- 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

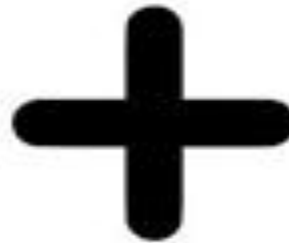
Oral Medications



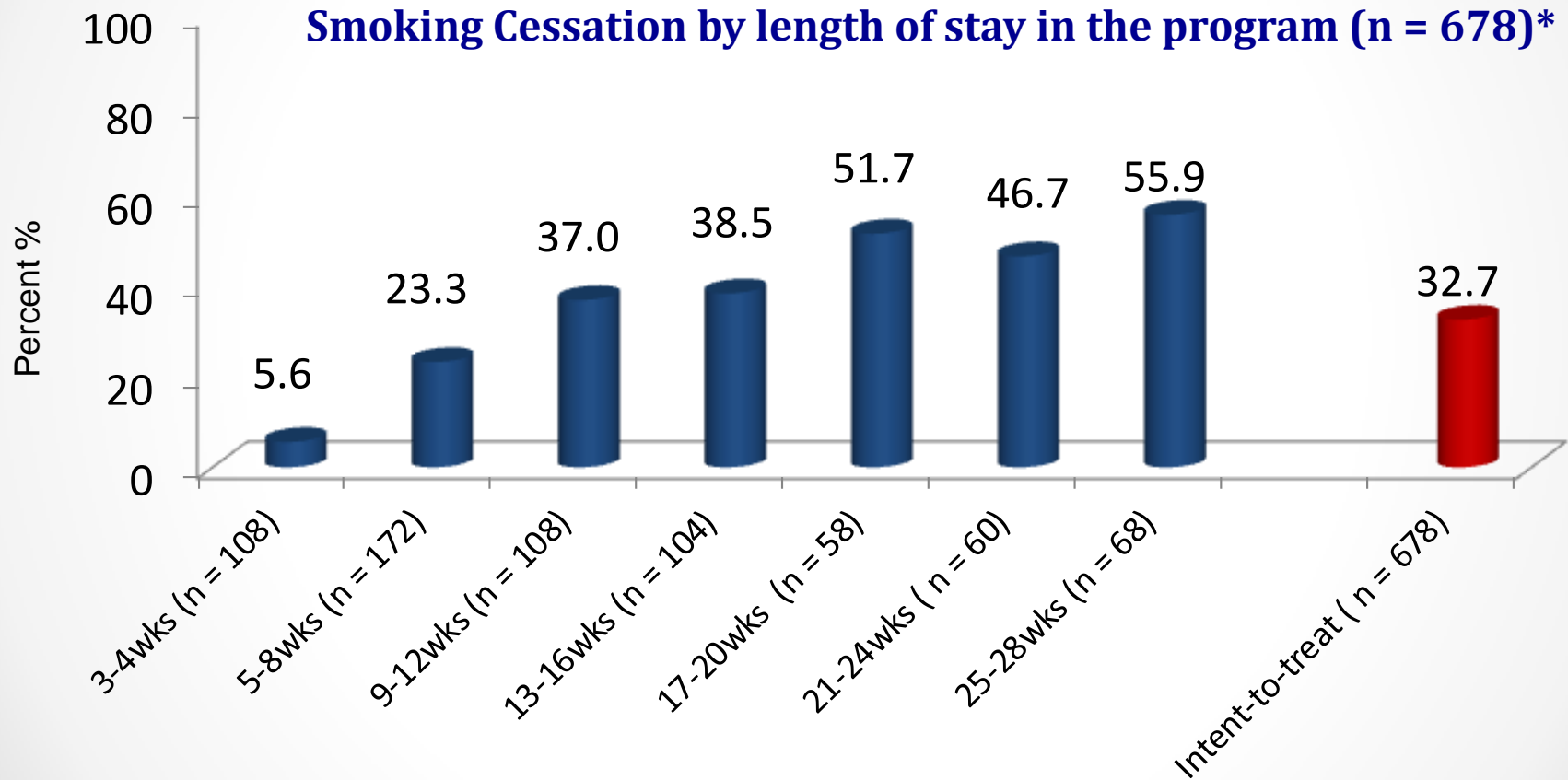
Zyban



Champix



Longer treatment duration



* 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.

Prochaska JJ, Delucchi K, Hall SM. A meta-analysis of smoking cessation interventions with individuals in substance abuse treatment or recovery. *Journal of Consulting and Clinical Psychology* 2004; 72:1144-1156

Joseph AM, Willenbring ML, Nugent SM, et al. A randomized trial of concurrent versus delayed smoking intervention for patients in alcohol dependence treatment *. *Journal of Studies on Alcohol* 2004; 65:681(611)

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

Patten C, Martin J. Does nicotine withdrawal affect smoking cessation? Clinical and theoretical issues. *Annals of Behavioral Medicine* 1996; 18:190-200

Breslau N, Kilbey MM, Andreski P. Nicotine withdrawal symptoms and psychiatric disorders: findings from an epidemiologic study of young adults. *American Journal of Psychiatry* 1992; 149:464-469

Adams CE, Stevens KE. Evidence for a role of nicotinic acetylcholine receptors in schizophrenia. *Frontiers in Bioscience* 2007; 12:4755-4772

Kumari V, Postma P. Nicotine use in schizophrenia: The self medication hypotheses. *Neuroscience & Biobehavioral Reviews* 2005; 29:1021-1034

el-Guebaly N, Cathcart J, Currie S, et al. Public health and therapeutic aspects of smoking bans in mental health and addiction settings. *Psychiatr Serv* 2002; 53:1617-1622

Ziedonis DMA, Williams JMb. Management of smoking in people with psychiatric disorders. *Current Opinion in Psychiatry* 2003; 16:305-315

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.

Bansal MA, Cummings KM, Hyland A, et al. Stop-smoking medications: Who uses them, who misuses them, and who is misinformed about them? *Nicotine & Tobacco Research* 2004; 6:303-310

Reilly P, Murphy L, Alderton D. Challenging the smoking culture within a mental health service supportively. *International Journal of Mental Health Nursing* 2006; 15:272-278

Fiore M, Jaén C, Baker T, et al. A Clinical Practice Guideline for Treating Tobacco Use and Dependence: 2008 Update: A U.S. Public Health Service Report. *American Journal of Preventive Medicine* 2008; 35:158-176

Raw M, McNeill A, West R. Smoking cessation: evidence based recommendations for the healthcare system. *British Medical Journal* 1999; 318:182-185

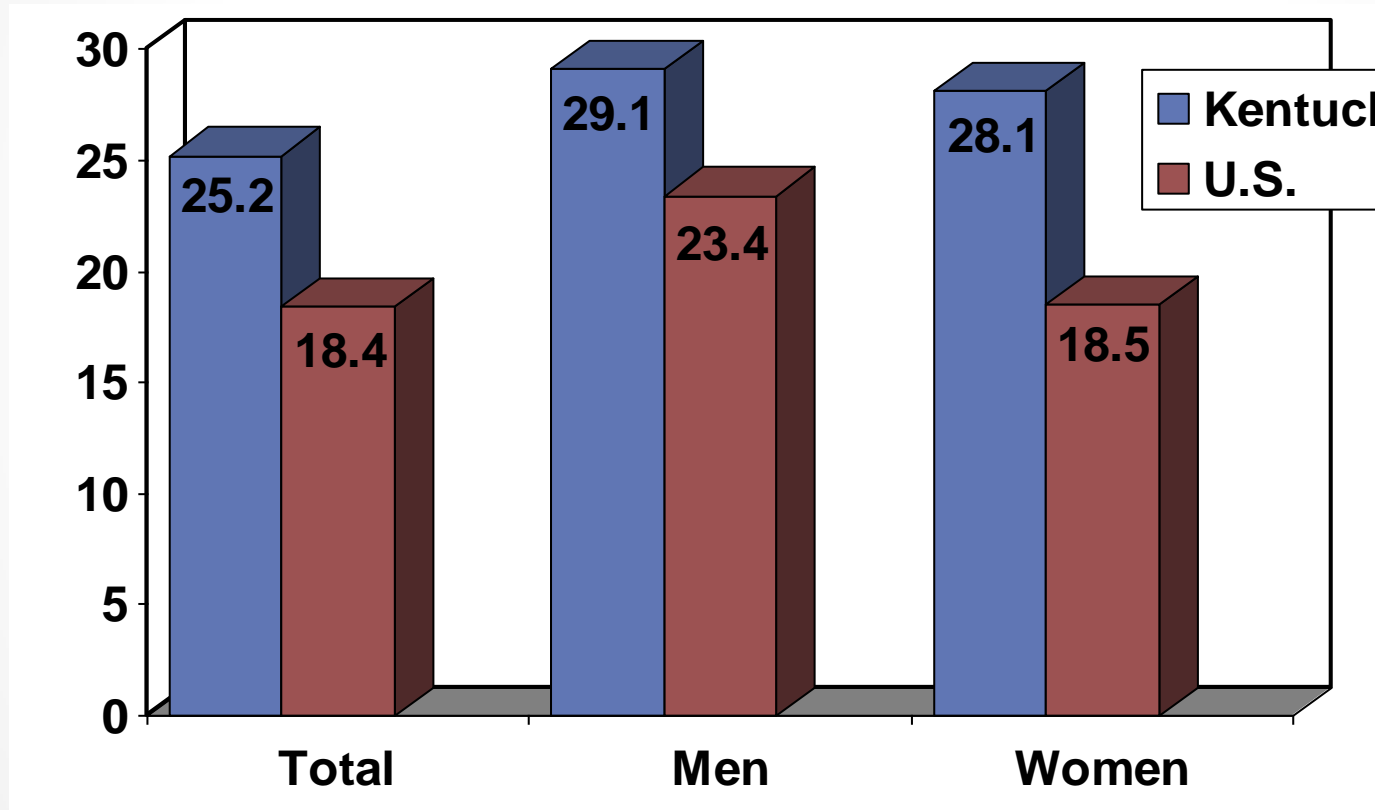
Tobacco Use and Cessation in Homeless Populations

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 $> \frac{1}{2}$ 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

Chizimuzo Okoli, PhD, MPH, RN

Assistant Professor and Director,
Tobacco Treatment and Prevention Division, Tobacco Policy Research Program,
University of Kentucky College of Nursing
315 College of Nursing Building
Lexington, KY 40536-0232
Office: 859-323-6606
Cell : 859-866-8508
Email: ctokol1@uky.edu

Audrey Darville, PhD, ARNP, CTTS

Certified Tobacco Treatment Specialist
UKHealthCare
University of Kentucky
450 F College of Nursing
Lexington, KY 40536-0284
859-323-4222
Email: audrey.darville@uky.edu