Cigarette Smoking in Persons with Mental Illness

What We Know and What We Can Do

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Sheppard Pratt
For NAMI Maryland Webinar
September 11, 2013
Smoking and Mental Illness: Outline of talk

What we know
• Prevalence
• Consequences
• Mechanisms
• Myths

What we can do
• Treatments
• Peer mentors
• Counseling after a psychiatric admission
• IDEAL intervention
Tobacco Use: The Problem

- Tobacco use is the #1 cause of preventable death and disease in the U.S.
- Tobacco use causes 443,000 deaths each year in the U.S.
- 50% of people who smoke die prematurely
- Nicotine is a very addictive substance
- Tobacco use is a chronic, relapsing condition
Giving up smoking is the easiest thing in the world. I know because I've done it thousands of times.

-Mark Twain
Smoking and Mental Illness: Prevalence

• Compared with the general population, individuals with mental illness
  – Have a higher prevalence of smoking
  – Smoke more cigarettes per person
  – Have a lower rate of quitting
  – Have a higher rate of relapse

• 44% of cigarettes in US are smoked by persons with a mental health disorder
Comparative Causes Of Annual Deaths in the United States

Individuals with mental illness or substance use disorders

Source: CDC
VOTED TOPS!
CHESTERFIELD
THE LARGEST SELLING CIGARETTE
IN AMERICA'S COLLEGES
( BY NATION-WIDE SURVEY )

Yes we're up
on our ABC's

ABC
ALWAYS MINDER
BETTER TASTING
COOLER SMOKING

Always Buy CHESTERFIELD
ALL OVER AMERICA - THEY'RE TOPS - They Satisfy
Not one single case of throat irritation due to smoking CAMELS!

Yes, these were the findings of noted throat specialists after a total of 2,420 weekly examinations of the throats of hundreds of men and women who smoked Camels—and only Camels—for 30 consecutive days.

Fred Astaire reports:

"I MADE MY OWN 30-DAY MILDNESS TEST. IT'S CAMELS FOR ME FROM NOW ON!"

Start your own 30-Day Camel Mildness Test Today!

The inimitable Fred Astaire has been King of the Dance for as long as most theatre-goers can remember. Fred calls time for a Camel as he works out a new ballroom routine at the famed Fred Astaire Dance Studios.

"Camels agree with my throat!"

---

Camel cigarettes. ThePeople's cigarette.
He's one of the busiest men in town. While his door may say Office Hours 2 to 4, he's actually on call 24 hours a day.

The doctor is a scientist, a diplomat, and a friendly sympathetic human being all in one, no matter how long and hard his schedule.

According to a recent Nationwide survey:

MORE DOCTORS SMOKE CAMELS THAN ANY OTHER CIGARETTE

DOCTORS in every branch of medicine—113,597 in all—were queried in this nationwide study of cigarette preference. Three leading research organizations made the survey. The gist of the query was: What cigarette do you smoke, Doctor?

The brand named most was Camel!

The rich, full flavor and cool mildness of Camel's superb blend of costlier tobaccos seem to have the same appeal to the smoking tastes of doctors as to millions of other smokers. If you are a Camel smoker, this preference among doctors will hardly surprise you. If you're not—well, try Camels now.

Your "T-Zone" Will Tell You...

T for Taste... T for Throat...

that's your proving ground for any cigarette. See if Camels don't suit your "T-Zone" to a "T."

CAMELS Costlier Tobaccos
CAMEL EVERY INCH A REAL SMOKE!

If you go where the action is...get with Camel!

Camel has taste that speaks with authority...flavor that's all there. It's got swagger—yet it's smooth. So get the clean-cut taste of rich tobaccos. Get with Camel. A real cigarette. Every inch a real smoke...comfortably smooth, too!

The best tobacco makes the best smoke!
Try something different for a change...

Turn to Salem for a taste that's Springtime Fresh

Rich tobacco taste · Menthol soft flavor
Try Salem filter cigarettes
Come to where the flavor is. Come to Marlboro Country.
Smoking in the US Adult Population

- 42.4% in 1965
- 19.3% in 2010

Graph showing the decrease in smoking rates from 1955 to 2005 for both men and women.
Smoking Prevalence in Sheppard Pratt Study Groups by Year of Study Entry

Dickerson et al. *Psychiatric Services*, 2013
## Risk Factors for Smoking among Persons with Serious Mental Illness (N=547)

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>History substance abuse</td>
<td>3.87</td>
<td>2.55, 5.85</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Years education</td>
<td>.80</td>
<td>.72, .87</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Caucasian race</td>
<td>1.70</td>
<td>1.12, 2.57</td>
<td>.013</td>
</tr>
<tr>
<td>Duration of illness</td>
<td>1.83</td>
<td>1.12, 2.57</td>
<td>.016</td>
</tr>
<tr>
<td>Male gender</td>
<td>1.41</td>
<td>.94, 2.10</td>
<td>.027</td>
</tr>
<tr>
<td>Diagnosis (bipolar disorder vs. schizophrenia)</td>
<td>.42</td>
<td>.25, .68</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Total symptom score</td>
<td>1.00</td>
<td>.99, 1.03</td>
<td>.207</td>
</tr>
<tr>
<td>Maternal education</td>
<td>.98</td>
<td>.91, 1.05</td>
<td>.481</td>
</tr>
</tbody>
</table>

Multivariate logistic regression
Smoking and Mental Illness: *Consequences*

- Contribution to excess morbidity and mortality
  - Cardiac and pulmonary disease
- High cost
  - In one study cigarettes consumed more than 1/3 of disability income
- Social disapproval and stigma
  - Society now less tolerant of smokers
- Effect on metabolism of psychiatric medications
- Trigger for other substance use and abuse
- Associated with worse mental health outcomes
The Quiet Tragedy of Premature Death Among Mental Health Consumers

Ronald W. Manderscheid, PhD, Director, Mental Health and Substance Use Programs, Constella Group, LLC

Persons with serious mental illnesses die 25 years younger than the general population, based on reports for consumers served by state mental health agencies. Male consumers are likely to die at about 53 years and female consumers, at 59 years. The 25-year disparity is due to two factors, chronic physical disabilities (which account for 15-20 years of the difference) and mental disabilities such as suicide (which account for 5-10 years).

These troubling numbers were uncovered by Craig Colton and me and reported in Preventing Chronic Disease in April 2006.¹
Sheppard Pratt Mortality Study

Sample

All patients with schizophrenia enrolled in the Stanley Research Program schizophrenia screening study since 1999 through December 31, 2009 (N=533)

Method

At follow-up, information about the date and cause of death obtained from the National Death Index (NDI) Kaplan-Meier and Cox proportional hazards to look at role of smoking and other determinants on mortality

Sheppard Pratt Mortality Study

*Measures*

**Demographics**
- Age, race, gender, educational level

**Clinical Data**
- **Psychiatric symptoms**: Positive and Negative Syndrome Scale (PANSS)
- **Cognitive functioning**: Repeatable Battery for the Assessment of Neuropsychological Status (RBANS)
- **Exposures**: Medications, smoking, substance abuse
- **Co-occurring conditions**: cardiovascular; dermatologic; endocrine; gastrointestinal; genitourinary; hematologic; immunologic; musculoskeletal; neoplastic; neurological; respiratory

Variables that *not* included in model that may be relevant to mortality: Body mass index, dietary exposure, maternal education
Laboratory Evaluations

**Antibodies to infectious agents**
- Herpes viruses
  - HSV1, HSV2, CMV, VZV, EBV, HHV6
- Retroviruses
- Corona virus
- Measles
- Influenza virus
- Chlorella viruses
- Toxoplasma gondii

**Genetic polymorphisms**

**DNA Methylation**

**Antibodies to food antigens**
- Gliadin and casein
- Saccharomyces cerevisiae (ASCA)

**Auto-antibodies**
- NMDA receptor
- Tissue transglutaminase

**Markers of inflammation**
- C-Reactive protein
- Pentraxin
- Cytokines, other markers

All samples saved for future analyses
## Characteristics of Schizophrenia Mortality Cohort at Study Entry (N=517)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean or %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>42.2 (±9.9) years</td>
</tr>
<tr>
<td>Race Caucasian</td>
<td>63%</td>
</tr>
<tr>
<td>Gender, Male</td>
<td>61%</td>
</tr>
<tr>
<td>Education</td>
<td>12.3 (±2.5) years</td>
</tr>
<tr>
<td><strong>Cigarette smoker</strong></td>
<td>64%</td>
</tr>
<tr>
<td>Packs per day, smokers</td>
<td>1.1 (±0.7) packs</td>
</tr>
<tr>
<td>Drug alcohol abuse</td>
<td>52%</td>
</tr>
<tr>
<td>PANSS symptom total</td>
<td>71.2 (±13.1)</td>
</tr>
<tr>
<td>RBANS cognitive score</td>
<td>65.8 (±13.6)</td>
</tr>
</tbody>
</table>
Mortality Data (N=517)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean follow-up interval</td>
<td>2270 days (6.2 years)</td>
</tr>
<tr>
<td>Total follow-up</td>
<td>3218 person years</td>
</tr>
<tr>
<td>Number of deaths due to natural causes</td>
<td>25 (4.8%)</td>
</tr>
<tr>
<td>Number of deaths due to unnatural causes</td>
<td>6 (1.2%)</td>
</tr>
</tbody>
</table>
# Standardized Mortality Ratios (SMRs) in Schizophrenia Cohort

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>SMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>2.80</td>
</tr>
<tr>
<td>White Males</td>
<td>2.19</td>
</tr>
<tr>
<td>White Females</td>
<td>5.27</td>
</tr>
<tr>
<td>Non-White Males</td>
<td>0.30</td>
</tr>
<tr>
<td>Non-White Females</td>
<td>3.57</td>
</tr>
</tbody>
</table>
Causes of Natural Death (n=24)

<table>
<thead>
<tr>
<th>Disease Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac</td>
<td>11</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>4</td>
</tr>
<tr>
<td>Cancer</td>
<td>4</td>
</tr>
<tr>
<td>Intestinal</td>
<td>2</td>
</tr>
<tr>
<td>Neurological</td>
<td>2</td>
</tr>
<tr>
<td>Unknown natural</td>
<td>1</td>
</tr>
</tbody>
</table>
## Predictors of Mortality from Natural Causes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Relative Risk</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cigarette smoker</strong></td>
<td><strong>4.41 (1.53, 18.62)</strong></td>
<td><strong>.0041</strong></td>
</tr>
<tr>
<td>Age</td>
<td>1.09 (1.04, 1.14)</td>
<td>.0002</td>
</tr>
<tr>
<td>Female gender</td>
<td>3.26 (1.45, 7.98)</td>
<td>.004</td>
</tr>
<tr>
<td>Epstein Barr virus</td>
<td>1.13 (1.03, 1.21)</td>
<td>.019</td>
</tr>
<tr>
<td>Herpes simplex virus type 1 antibody level</td>
<td>1.22 (1.05, 1.41)</td>
<td>.013</td>
</tr>
<tr>
<td>Toxoplasma antibody level</td>
<td>1.47 (1.02, 1.93)</td>
<td>.042</td>
</tr>
<tr>
<td>Immunologic condition</td>
<td>4.50 (1.50, 11.10)</td>
<td>.010</td>
</tr>
<tr>
<td>Musculoskeletal condition</td>
<td>3.24 (1.18, 7.71)</td>
<td>.025</td>
</tr>
<tr>
<td>Cardiovascular condition</td>
<td>2.50 (1.13, 5.76)</td>
<td>.023</td>
</tr>
<tr>
<td>Genitourinary condition</td>
<td>4.35 (1.78, 9.79)</td>
<td>.0022</td>
</tr>
</tbody>
</table>
Smoking and Mental Illness: Proposed Mechanisms

• Biological
• Psychological
• Social
Myths

- Smoking is necessary self medication for the mentally ill
  - Nicotine enhances concentration and attention transiently, but does not improve symptoms of mental illness

- People with mental illness are not interested in quitting
  - Their motivation may be lower, but people with mental illness know the dangers of smoking and many want to quit

Myths cont’d

• Mentally ill people cannot quit smoking
  – *Clinical trials show otherwise*

• Quitting smoking worsens psychiatric symptoms
  – *Most studies show that persons with mental illness who are engaged in smoking cessation show an improvement in their psychiatric symptoms and recovery*

• Smoking cessation treatment is not important in mental health care
  – *Historically, smoking not addressed in mental health settings but now more calls to action*
Successful Quitters Study

Sample: Persons with Serious Mental Illness who had been abstinent from smoking for >= 4 months (N=78)

- Mean age: 50 (±9.5) years
- 60 % male
- 72 % Caucasian
- 64 % schizophrenia
- Mean duration of smoking: 25.3 (±11.4) years
- Mean duration of current abstinence: 7.4 (±8.6) years

## Reasons Endorsed for Quitting Smoking

<table>
<thead>
<tr>
<th>Reason</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health problem or concern</td>
<td>57 (73%)</td>
</tr>
<tr>
<td>Cost of cigarettes</td>
<td>55 (71%)</td>
</tr>
<tr>
<td>Suggestion or advice from others excluding doctor</td>
<td>50 (64%)</td>
</tr>
<tr>
<td>Suggestion or advice from doctor</td>
<td>42 (54%)</td>
</tr>
<tr>
<td>Example of friend who quit</td>
<td>25 (32%)</td>
</tr>
<tr>
<td>Experience of being in a hospital where smoking was prohibited</td>
<td>22 (28%)</td>
</tr>
<tr>
<td>Smoking restrictions where live or work</td>
<td>13 (17%)</td>
</tr>
</tbody>
</table>
Treatments to Promote Smoking Cessation

• Medications
  – Nicotine Replacement Therapy
  – Bupropion (Wellbutrin/Zyban)
  – Varenicline (Chantix)

• Psychosocial interventions for general population
  – Quitlines
  – American Lung Association program
  – Nicotine Anonymous
  – 5 A’s
STEP 1
Get Ready for your quit date.

1) Pick a quit date.
   Pick a day without a lot of stress

2) Write your quit date on the calendar.
   This makes quitting more real and helps you plan

3) Start healthy habits.
   Start a new physical activity 3X a week;
   Stock the house with healthy snacks;
   Tell other people to stop smoking in your house or car

View Step 2

Call 1-800-784-8669:
It's Free, Confidential, and Anonymous

+The FOUR Steps to Quitting:
What they are and how we can help

The Counseling Process:
What to expect

See the Success Stories
Meet other people that have quit.

Event Calendar
Get involved. Total Events (2)

Thousands of Marylanders just like yourself have quit using
the program. See some of the successes or tell us your own
story.
Clinical Practice Guideline
Treating Tobacco Use and Dependence
US Public Health Service

THE 5 A’s for Brief Intervention
An Evidence-Based Approach
(Only takes 1 – 5 minutes to implement)
### The “5 A’s” For Brief Intervention

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASK</strong> about tobacco use (&lt;1 minute)</td>
<td>Identify and document tobacco use for EVERY patient at EVERY visit.</td>
</tr>
<tr>
<td><strong>ADVISE</strong> to quit smoking (&lt; 30 seconds)</td>
<td>In a clear, strong, personalized manner, urge EVERY user to quit.</td>
</tr>
<tr>
<td><strong>ASSESS</strong> willingness to make a quit attempt (&lt;1-2 minutes)</td>
<td>Is the tobacco user willing to make a quit attempt at this time?</td>
</tr>
<tr>
<td><strong>ASSIST</strong> in quit attempt (&lt;1-3 minutes)</td>
<td>Give all patients a brochure. For the patient willing to make a quit attempt, provide pharmacotherapy and counseling if possible.</td>
</tr>
<tr>
<td><strong>ARRANGE</strong> follow-up (&lt;1 minute)</td>
<td>Schedule follow-up contact, preferably within first week after the quit date.</td>
</tr>
<tr>
<td>ADVISE</td>
<td>Clear:  “I think it is important for you to quit smoking now, and I can help you.”</td>
</tr>
<tr>
<td></td>
<td>Strong: “As your doctor, I need you to know that quitting smoking is one of the most important things you can do to protect your health now and in the future.”</td>
</tr>
<tr>
<td></td>
<td>Personalized: “You said you were concerned about having a smokers cough. Quitting would help get rid of that.”</td>
</tr>
</tbody>
</table>
The GOOD NEWS on QUITTING!

• At every age, no matter how old or young, quitting increases your life expectancy. You live longer and better.
• 24 hours after quitting, chances of having a heart attack decrease.
• Within a month or two you can feel your lungs working better, you have more energy, and no more cough.
• Quitting will greatly lower your chances of having a stroke or getting cancer.
• The people you live with will be healthier.
• Smoking interferes with your sex life. By quitting, these risks decrease quickly.
Treatments to Promote Smoking Cessation in Mental Illness

• Specialized interventions
  – Tailored behavioral programs
  – Peer supports
  – Intensive telephone counseling
  – IDEAL trial
Treatments to Promote Smoking Cessation in Mental Illness cont’d

• Challenges
  – Low motivation to quit
  – Psychiatric symptoms
  – Myths

• Facilitating factors
  – Increasing concern about somatic health status
  – Environmental restrictions and cost

• Quit rates widely variable
  • Range from 15-50% at the end of the intervention
Stages of Behavioral Change: The Process of Quitting Smoking

- **Pre-contemplation** - Not ready to change
- **Contemplation** - Thinking about change
- **Preparation** - Getting ready to make change
- **Action** - Making the change
- **Maintenance** - Sustaining behavior change until integrated into lifestyle
- **Relapse and Recycling** - Slipping back to previous behavior and re-entering the cycle of change
- **Termination** – Leaving the cycle of change

DiClemente et al. 1991
STAGES OF CHANGE

CONTEMPLATION

RELAPSE & RECYCLE

MAINTENANCE

PREPARATION

ACTION

ADAPTED FROM MILLER AND ROLLNICK (1991)
Quit Smoking Group for Persons with Serious Mental Illness

• Motivational Enhancement
  – Positive and negative aspects of smoking
  – Personal reasons for quitting

• Goal Setting

• Skills Training
  – Strategies for quitting
  – Strategies for coping with negative mood states
  – How to avoid triggers and high risk situations

• Education including about smoking cessation medications

• Contingency management
Smokerlyzer
Peer Mentors to Improve Smoking Cessation in Persons with Serious Mental Illness

What is a Peer Mentor?
A person with serious mental illness who has successfully quit smoking

Other characteristics
Has similar experiences as the individuals they serve
Has demonstrated the ability to cope with their mental illness
Trained for the counseling role
Assigned specific roles and responsibilities
Why peer mentors for smoking cessation?

• Interventions for quitting smoking for persons with mental illness have only limited success
  – Smoking remains very prevalent among persons with serious mental illness
• People who have endured and overcome adversity can offer support, encouragement, hope, and mentorship to others facing similar situations
Peer Mentor Intervention: Structure

- Peers enhance a professionally-led quit smoking group
  - Group meets 2x/week for 12 weeks; NRT also provided
- Peers assist in group sessions
- Peers meet with participants individually between group sessions
  - Each peer mentor has 2-3 mentees
  - Maintain structured logs of all interactions
- Peers meet with participants for 3 months after group meetings have concluded
- Are paid part-time employees of Sheppard Pratt
- Participate in weekly group supervision
Peer Mentor Intervention: Measures

- Peers’ knowledge and skills after peer mentor training
- Fidelity of peer mentors’ performance of the peer program
- Feasibility and acceptability of the program to group participants
- Impact of program on the peers themselves
- Effect of peers on group participants
- Smoking outcomes of the participants
  - Self report of smoking severity
  - Attitudes about smoking
  - Biological measure of abstinence, salivary cotinine
Peer Mentor Intervention: Preliminary Observations

Positive Developments

• Capacity of peer mentors to perform despite mental illness
• Partnership and collaboration between peers and research staff
• Quality of interactions with participants
  – Intensely caring, accepting, tolerant
  – Can relate at a different level than traditional professionals

Challenges

• Definition of peer role boundaries
• No quick fix to enable people to quit smoking
Innovative Telephone Intervention to Promote Smoking Cessation after a Psychiatric Admission: *Background*

• Smoking correlated with psychiatric illness severity
  – Patients admitted to the hospital for psychiatric symptoms have high prevalence of smoking

• Critical opportunity of hospital admission
  – Enforced abstinence during the hospital stay
  – Patients available for health related programming

• Current practice
  – Nicotine replacement therapy during hospital stay
  – No referral for post-discharge smoking cessation treatment
Innovative Telephone Intervention to Promote Smoking Cessation after a Psychiatric Admission: *Strategy*

• Engage patients when they are in the hospital
  – Undergoing a successful quit and using NRT

• Provide intensive telephone counseling after hospital discharge
  – Use of Smartphone app adapted to the intervention
  – NRT free of charge
Clinical trial to test if an 18-month cardiovascular (CVD) risk reduction intervention will lead to

– Decreased heart disease risk
  • Smoking cessation, weight reduction, decreased blood cholesterol, improved healthy cholesterol, decreased blood pressure and improved diabetes control.

– Improved communication and collaboration with health care providers

– Improved self-reported health status and mental health

Daumit, PI; Dickerson, co-I
IDEAL Intervention

• Individual counseling sessions with a Heart Health Coach
  – Focuses on health risk behaviors including Smoking, Weight, Diet, Physical activity, Diabetes, Cholesterol, Blood Pressure
  – Meets 20-30 minutes per week for the first 6 months; biweekly for the next 12 months
  – Coordinates care with primary care provider and mental health staff

• Group exercise classes three times per week at PRP

• Healthy meal choices offered at PRP through the IDEAL dietary intervention

Daumit, PI; Dickerson, co-I
Treating Tobacco Addiction in Psychiatric Settings

• Mental health professionals and other care providers who work with persons with mental illness are well poised to address tobacco addiction

  - Tobacco addiction should be conceptualized as a chronic illness; we have experience treating other persistent illnesses

  - We often spend large amounts of time with our patients/clients and see them over a long course of time
Treating Tobacco Addiction in Psychiatric Settings cont’d

• Mental health professionals and other care providers are well poised to address tobacco addiction
  - We work with patients/clients around other day to day behaviors
  - We all now more attuned to the importance of overall health, not just mental health
Conclusions

• The prevalence of cigarette smoking remains alarming high among persons with mental illness
• Smoking is associated with premature mortality
• People with mental illness are interested in quitting and can stop smoking
• We all need to take action to help patients quit
Acknowledgements

Sheppard Pratt
- Cassie Stallings
- Andrea Origoni
- Lucy Billiter
- Christina Savage
- Emily Katsafanas
- Sunil Khushalani
- George Kolodner
- Robert Roca

University of Maryland Psychiatry
- Melanie Bennett
- Lisa Dixon
- Alicia Lucksted
- Richard Goldberg
- Deborah Medoff

Johns Hopkins School of Medicine
- Gail Daumit
- Joseph Gennusa
- Robert Yolken

University of Maryland Baltimore County
- Carlo DiClemente

Jennifer R. Schroeder, Ph.D.

Support from the Stanley Medical Research Institute (07R-1690) Dickerson PI; NIDA (1R34 DA030731-01) Dickerson PI; NHLBI (HL112299-01A1) Daumit PI