Motivating Smoking Cessation Behaviors among People with Serious Mental Illnesses:

The Impact of a Web-Based Decision Support System

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1 Background

Nicotine dependence is the most common addiction among people with serious mental illnesses[1], who are more likely to initiate cigarette smoking and less likely to quit than those without mental illness. Not surprisingly, they have higher rates of smoking-related morbidities and their life expectancy is 25 years less than that of the general population[2]. Behavioral interventions combined with medication have proven effective in reducing nicotine dependence among people with mental illnesses. In spite of their desire to quit, however, they underutilize such treatments and try to quit on their own with very low rates of success.

http://dbm.maryland.gov/benefits/pages/wellnessHome.aspx

2 Aims

The study's primary aim was to assess the effectiveness of a web-based decision support system, designed specifically for people with serious mental illnesses, to increase motivation to quit smoking by initiating evidence-based treatments (defined as individual counseling, group counseling, and/or a medication).

A secondary aim was to assess whether the web-based system was equally effective when combined with a carbon monoxide monitor versus a health checklist.

3 Methods

The Decision Support System (DSS) is a 30-90 minute modularized web program hosted by a peer ex-smoker. The system is tailored to accommodate high levels of misinformation about the health effects of and treatments for nicotine dependence, minimal exposure to computers, and cognitive limitations. The online host guides users through 5 modules containing information, standardized assessments, motivational activities, and quit-smoking success stories. Each user receives a personalized assessment of the individual, financial, and health impacts of cigarette smoking.

Subjects were recruited from an urban outpatient mental health program and assessed for smoking history, psychiatric symptoms (verified via record review), and cognition. All 124 subjects interacted with the online Decision Support System. Half also were randomly chosen to receive additional feedback from a carbon monoxide monitor on the toxin levels in their bodies. Such monitors are commonly used to increase cessation motivation, but are costly and burdensome to maintain. The other half received personalized feedback via a health checklist instead.

All subjects were assessed by researchers blind to study condition at baseline and two months after using the motivational system for the main outcome – initiation of evidence-based cessation treatment (available to all subjects from the mental health agency). Also assessed were: amounts/rates of smoking, quit attempts, and other clinician contact about cessation.

4 Results

Participant demographics (N=124)
- Mean (sd) age: 46.5 (10.1)
- 71.8% male; 28.2% female
- 48.4% African American; 14.5% Latino/a
- 67.7% primary diagnosis of schizophrenia
- Mean (sd) years of education 11.4 (2.4)
- Mean (sd) cigarettes/day: 15 (11.2)

Motivation for cessation treatment over 2 months post-intervention

	DSS with CO N=58	DSS without CO N=66	Test Statistic
Number (%) initiating treatment	14 (24.1)	24 (36.4)	$X^2=3.11$, df=1 $p=0.08$
Mean (sd) daily cigarettes smoked	11.9 (9.6)	12.8 (10.3)	$t=0.51$, $p=.61$

Motivation behavior at 2 months	N (%) (N=121)*
Met with doctor to discuss cessation	44 (36.7)
Met with cessation specialist	38 (31.4)
Started cessation counseling w/o meds	10 (8.3)
Started cessation meds w/o counseling	13 (10.7)
Started counseling and cessation meds	16 (13.2)
Started any treatment	39 (32.2)
Made quit attempt w/o treatment	30 (24.8)
Engaged in any cessation behavior	64 (52.9)

*3 participants were lost to follow-up. Numbers add up to more than total because many subjects reported more than one cessation behavior.

5 Discussion

• Over half of the participants engaged in at least one cessation behavior. Approximately one-third used an evidence-based intervention, while a quarter tried to quit without any treatment[3].

• The main outcome did not differ between groups, indicating that the program with carbon monoxide feedback was not more effective than the program substituting a health checklist.

• Participants in both groups reported high levels of satisfaction with the program (75%).

These outcomes echo previous studies of this intervention[4], as well as the level of treatment engagement resulting from in-person motivational interventions for consumers[5]. Use of the carbon monoxide monitor did not enhance motivational response. Thus, a web-based intervention, together with a health checklist, have the potential to reach more people and increase their motivation to quit smoking at a lower cost than in-person counseling. More research is needed to confirm and expand upon these findings.

6 References

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