

Smoking Cessation Approaches for Persons With Mental Illness or Addictive Disorders

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Objective: Persons with psychiatric illnesses are about twice as likely as the general population to smoke tobacco. They also tend to smoke more heavily than other smokers. This critical review of the literature identified 24 empirical studies of outcomes of smoking cessation approaches used with samples of persons with mental disorders. **Methods:** The authors conducted searches of large health care and other databases for the years 1991 through 2001, using the key terms smoking, smoking cessation, nicotine, health/hospital/smoke-free policy, and psychiatry/mental/substance abuse disorders. **Results and conclusions:** The majority of interventions combined medication and psychoeducation. Although the studies were not uniform enough to allow a meta-analysis, the recorded quit rates of patients with psychiatric disorders were similar to those of the general population. Clinicians could usefully devote more effort to smoking cessation in populations with mental illness or addictions. (*Psychiatric Services* 53:1166–1170, 2002)

Persons with psychiatric illnesses are about twice as likely as the general population to smoke tobacco (1), and those with schizophrenia are three or four times as likely (2,3). Alcohol and drug abuse are also strongly associated with a high rate of smoking, with prevalence estimates ranging from 71 to 100 percent (4–6). Compounding the high prevalence of smoking is the fact that individuals who are mentally ill or have substance dependence tend to smoke much more heavily than smokers in the general population (1).

Both neurobiological and psy-

chosocial factors are thought to reinforce the use of nicotine in psychiatric populations (7,8). For many people with persistent mental illness, smoking is a major part of their daily routine and constitutes an activity that provides some structure to a day with few activities. Smoking also has long been considered an integral part of the psychiatric culture. Moreover, clinicians often believe that persons with mental illness are not able or willing to quit. Increasingly, however, health care facilities are implementing and enforcing smoking bans on their premises. These policies have

heightened interest in outcomes of smoking cessation strategies for persons with mental illness or addictions.

Methods

We undertook a critical review of the literature to assess the impact of smoking cessation approaches on individuals with mental illness or addictive disorders. We conducted searches of large health care and other databases using the key terms smoking, smoking cessation, nicotine, health/hospital/smoke-free policy, and psychiatry/mental/substance abuse disorders. The databases and the year spans used were MEDLINE, 1997–2000; CINAHL, 1990–2000; PsycINFO, 1990–2000; Best Evidence, 1991–2000; Healthstar, 1996–2000; Cochrane Database of Systematic Reviews, 2000; Legal Trac, Bioethicsline, 1973–2000; Philosopher's Index, 1940–2000; and Dissertation Abstracts, 1990–2000.

Many of the papers that address smoking cessation treatment for this population are reviews or discussion papers or are based on anecdotal evidence. We included only studies that presented data on samples of people with diagnoses of specific mental illness or addictive disorders, with no restrictions as to methodology. Broader studies reporting symptomatic subgroups in their analysis, such as persons with depressive symptoms, were not included. Overall, 15 studies were excluded.

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Table 1

Findings of studies of smoking cessation approaches used with persons with schizophrenia between 1991 and 2001

Study	N	Intervention	Quit rates	Other outcomes
Breckenridge (9)	23	Group and individual support with nicotine gum and behavioral techniques	35% posttreatment and 21% at 12 months versus 29% median abstinence in nonpsychiatric population	
Hartman et al. (10)	13	Nicotine patch vs. placebo, crossover design over two days		Smoking decreased 24% among heavy smokers using a nicotine patch
George et al. (11)	29	Clozapine		Smoking decreased from 2.4 to 1.7 packs a day
McEvoy et al. (12)	12	12-week trial with three clozapine plasma levels measured		Number of cigarettes and CO levels declined significantly at therapeutic levels of clozapine, but not below
Addington et al. (13)	50	Seven-week American Lung Association program modified for patients' cognitive ability; nicotine patches available	42% posttreatment, 16% at three months, and 12% at six months	Outcome improved with attendance
McEvoy et al. (14)	70	Clozapine versus conventional agents		Patients taking clozapine smoked less
George et al. (15)	45	Randomized to two ten-week programs: American Lung Association as in Addington et al. (13) or ALA manual; CO levels monitored	56% posttreatment for patients taking atypical antipsychotics, 22% for those taking conventional agents; at six months, 16.7% and 7.4%, respectively	No program difference in retention and smoking cessation outcomes
Weiner et al. (16)	9	14 weeks of supportive therapy and 300 mg bupropion		Nobody quit, but the mean CO level decreased from 39.44 to 18.38 ppm

Results

Smoking cessation approaches

Twenty-four studies addressing the impact of smoking cessation strategies in samples of persons with mental illness or addictive disorders were reviewed. Eight included persons with schizophrenia, eight had substantial proportions of persons with depression, and eight focused on persons with addictive disorders. Tables 1, 2, and 3 list the studies (4–6,9–30), the interventions they used, their quit rates, and other outcomes of interest.

The majority of interventions used a combination of medication and educational and cognitive-behavioral approaches. Variables that affected outcome included number of cigarettes smoked per day, duration of previous quit attempts, history of alcohol or drug problems, and confidence about succeeding. The outcomes included quit rates, number of cigarettes smoked, and expired

breath carbon monoxide levels. The time intervals for assessment varied from two days to 16 months.

The studies of persons with schizophrenia mostly involved small clinical samples. Posttreatment quit rates ranged from 35 percent to 56 percent. Two studies replicating one another's methods reported six-month overall quit rates of 12 percent (13), compared with 16.7 percent for patients taking atypical antipsychotics and 7.4 percent for patients taking conventional antipsychotics (11). The use of clozapine seems to reduce smoking.

The studies of persons with depression involved larger, media-recruited samples of smokers and may represent a wider range of morbidity than the schizophrenia group. Quit rates in these studies ranged from 31 percent to 72 percent at the end of treatment and from 11.8 percent to 46 percent at 12 months. The integration of cog-

nitive-behavioral therapy with standard smoking cessation strategies appears to result in higher quit rates for persons with a history of major depression. In one study the efficacy of bupropion for smoking cessation was found to be independent of any history of depression or alcoholism (24).

The studies of persons with addictive disorders included both clinical and community samples. Quit rates ranged from 7 percent to 60 percent after treatment and from 13 percent to 27 percent at 12 months. When staff members quit smoking, it may provide positive role modeling for patients and increase staff willingness to provide smoking cessation support and intervention (29).

Discussion and conclusions

Studies of different approaches to smoking cessation for persons with mental illness or addictive disorders are not sufficiently uniform to allow

Table 2

Findings of studies of smoking cessation approaches used with persons with depression between 1991 and 2001

Study	N	Intervention	Quit rates	Other outcomes
Hall et al. (17)	149	31% with a history of depression; ten randomly assigned to cognitive-behavioral therapy mood management sessions and five to information sessions; all used nicotine gum	72% posttreatment, 34% at 12 months	Greater quit rates with cognitive-behavioral therapy among subjects with a history of depression
Hall et al. (18)	201	22% with a history of depression; mood management versus health education and nicotine gum versus placebo	52% posttreatment for both mood management and health education; 33% and 22%, respectively, at 12 months; nicotine gum same as placebo	
Kinnunen et al. (19)	269	34% with depression; nicotine gum versus placebo	43% for nicotine gum and 25% for placebo at one month; 36% and 14%, respectively, at three months	Nicotine gum increased success, especially among patients with depression
Ginsberg et al. (20)	453	Sample of women, 18% with a history of major depressive disorder; 13 weeks of cognitive-behavioral therapy with nicotine, an appetite suppressant, or placebo gum		No significant difference in compliance between subjects with or without a history of major depressive disorder
Hall et al. (21)	199	32% with history of major depressive disorder; 12 weeks of cognitive-behavioral therapy with or without nortriptyline	Cognitive-behavioral therapy more effective among subjects with a history of depression; 47% at three months, 24% at 16 months	Nortriptyline improved the quit rate independently of history of depression
Patten et al. (22)	29	Cognitive-behavioral therapy versus behavioral counseling	69% cognitive-behavioral therapy and 31% behavioral counseling posttreatment; 46% and 13%, respectively, at 12 months	
Hayford et al. (23)	615	15% with major depressive disorder, 7% with alcoholism, and 3% with both; placebo versus bupropion		Efficacy of bupropion independent of history of depression or alcoholism
Brown et al. (24)	179	Sample with history of major depressive disorder; random assignment to cognitive-behavioral therapy for smoking cessation alone or with cognitive-behavioral therapy for depression	At one month, 33.3% and 37.6%, respectively, for cognitive-behavioral therapy for smoking cessation alone and for both therapies, and at 12 months, 24.7% and 32.5%	

meta-analysis. Diagnoses encompass a broad range of dysfunction, particularly in the samples of persons with depression and addictions, and the degree of dysfunction affects outcome. The studies also do not use a standard time interval between intervention and outcome assessment. In addition, using measures of the use of or abstinence from a substance with-

out using measures of other domains of functioning may oversimplify outcome assessment.

Generally, although quit rates of psychiatric populations may be lower than those of nonpsychiatric populations, the reasons for quitting smoking, such as health concerns and costs, are comparable (31,32). Poorer outcomes for smoking cessation

strategies among psychiatric patients may have been expected because of the suspected use of nicotine for self-medication in this population. Nevertheless, posttreatment and 12-month quit rates for psychiatric patients appear to be only marginally lower than those for nonpsychiatric samples (33).

These findings suggest that conventional attitudes about persons

Table 3

Findings of studies of smoking cessation approaches used with persons with addiction disorders between 1991 and 2001

Study	N	Intervention	Quit rates	Other outcomes
Hughes (25)	315	2% of the sample had a history of alcohol problems; nicotine gum versus placebo	7% posttreatment among those with history of problems with alcohol, 19% among those without	
Hurt et al. (26)	101	Ten hours of psychoeducation and relapse prevention, and a control group; optional nicotine gum	21.6% of the intervention group and 10% of the control group posttreatment, and 11.8% of the intervention group and none of the control group at 12 months	Intervention did not interfere with abstinence from alcohol or drugs
Hurt et al. (27)		31 recovering alcoholics versus 209 nonalcoholics; nicotine patch versus placebo		Quit rates higher for nicotine patch than for placebo, sustained at 12 months for the nonalcoholic group only
Ker et al. (4)	34	36% of sample pregnant; involuntary smoking cessation policy in two long-term residential programs		Both programs decreased the level of smoking and increased motivation to quit
Martin et al. (6)	205	Sample with a history of alcohol abuse; standard behavioral program plus Nicotine Anonymous; behavioral counseling plus exercise; and behavioral counseling plus nicotine gum	Posttreatment, standard behavioral program plus Nicotine Anonymous, 31%; behavioral counseling plus exercise, 60%; behavioral counseling plus nicotine gum, 52%; at 12 months, 27% of all three groups	Alcohol relapse did not differ by treatment group or smoking status
Saxon et al. (28)	49	Nicotine patch	14.3% posttreatment, 10.2% at six weeks	
Campbell et al. (29)	48 (eight staff and 40 patients)	12-week cognitive-behavioral therapy groups for staff and clients separately plus nicotine patch and booster phone calls	17.5% posttreatment	Staff smoking cessation may serve as role model
Burling et al. (30)	200	Random assignment to multicomponent smoking treatment; multicomponent smoking treatment plus generalization of smoking cessation to drug or alcohol cessation; or usual care	At one month, multicomponent smoking treatment, 40%; multicomponent smoking treatment plus generalization to drug or alcohol cessation, 27%; usual care, 2%; at 12 months, 19%, 13%, and 13%, respectively	

with mental illness being unable to quit smoking need to be modified. More resources should be devoted to cessation efforts for these populations, and clinicians should be more direct in asking patients about their interest in quitting smoking. Relatively brief interventions can increase the number of quitters, although smoking cessation tends to be a lengthier process for persons with mental illness. Staff training is a cost-effective investment. ♦

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