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Risk of Smoking and Receipt of Cessation Services Among Veterans Affairs Patients With Mental Disorders

Dr. Sonia A. Duffy, PhD, RN, **Dr. Amy M. Kilbourne, PhD, MPH**, **Ms. Karen L. Austin, MPH**, **Dr. Gregory W. Dalack, MD**, **Dr. Emily M. Woltmann, PhD, MSW**, **Dr. Jeanette A. Waxmonsky, PhD**, and **Dr. Devon Noonan, PhD, FNP-BC**
Dr. Duffy, Dr. Kilbourne, Ms. Austin, and Dr. Woltmann are affiliated with the VA Ann Arbor Center for Clinical Management Research, Serious Mental Illness Treatment Resource and Evaluation Center 2215 Fuller Rd., Ann Arbor, MI 48105 (bump@umich.edu). Dr. Duffy, Dr. Kilbourne, and Dr. Dalack are with the Department of Psychiatry, University of Michigan, Ann Arbor, MI. Dr. Duffy is with the Department of Otolaryngology, University of Michigan, Ann Arbor, MI. Dr. Waxmonsky is with the Depression Center and the Department of Psychiatry, University of Colorado School of Medicine, Aurora, CO. Dr. Duffy and Dr. Noonan are with the School of Nursing, University of Michigan, Ann Arbor, MI

Abstract

Objective—The purpose of this study was to determine rates of smoking and receipt of provider recommendations to quit smoking among patients with mental disorders treated in U.S. Department of Veterans Affairs (VA) treatment settings.

Methods—The authors conducted a secondary analysis of the yearly, cross-sectional 2007 Veterans Health Administration Outpatient Survey of Healthcare Experiences of Patients (N=224,193). Logistic regression was used to determine the independent association of mental health diagnosis and the dependent variables of smoking and receipt of provider recommendations to quit smoking.

Results—Patients with mental disorders had greater odds of smoking, compared with those without mental disorders ($p<.05$). Those with various mental disorders reported similar rates of receiving services (more than 60% to 80% reported receiving selected services), compared with those without these disorders, except that those with schizophrenia had more than 30% lower odds of receiving advice to quit smoking from their physicians ($p<.05$). Moreover, those who had co-occurring posttraumatic stress disorder or substance use disorders had significantly greater odds of reporting that they received advice to quit, recommendations for medications, and physician discussions of quitting methods, compared with those without these disorders ($p<.05$). Older patients, male patients, members of ethnic minority groups, those who were unmarried, those who were disabled or unemployed, and those living in rural areas had lower odds of receiving selected services ($p<.05$).

Conclusions—The majority of patients with mental disorders served by the VA reported receiving cessation services, yet their smoking rates remained high, and selected groups were at risk for receiving fewer cessation services, suggesting the continued need to disseminate cessation services.

The prevalence of smoking among patients with mental disorders is four times the rate in the general population (1), and almost one-half of all cigarettes purchased are consumed by

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persons with mental illness (2). Veterans with mental illness, posttraumatic stress disorder (PTSD), and substance use disorders smoke at nearly twice the rate of people without mental disorders, they smoke more heavily (3), and they have lower quit rates (4). On average, persons with mental illness die 13–25 years earlier than the general population (5,6), consistent with the risk of premature death associated with smoking-related diseases such as heart disease, cancer, stroke, and respiratory illness (7,8).

Compared with nonsmokers, smokers have twice as many hospital stays, have longer hospital stays, and incur greater expenses per admission (9). The total annual cost of medical services for smokers in the United States is estimated to be $75.5 billion, with another $92 billion estimated in lost productivity (10). Compared with other preventive and invasive interventions, smoking cessation programs represent one of the most cost-effective chronic disease prevention interventions (11).

Despite the availability of efficacious cessation treatments, a culture of care has existed within psychiatric facilities that tends to minimize the focus on smoking cessation. Staff may perceive the “competing” demands of other psychiatric and medical comorbidities as more important than providing cessation services. Many staff are not trained in how to provide cessation services (12,13). Some staff fear that tobacco cessation will exacerbate patients’ psychiatric symptoms or substance use disorder problems and believe that tobacco cessation may compromise recovery (14), and thus advise patients to delay quitting (15). There is also an assumption that psychiatric patients are not motivated to quit and a belief that quitting is too overwhelming a task to approach for psychiatric patients (16–18). Some providers believe in maintaining patient autonomy (right to smoke versus right to good health) and feel that treatment settings such as U.S. Department of Veterans Affairs (VA) facilities are already too restrictive in regulating smoking (13,17).

Consequently, persons with mental illness, PTSD, and substance use disorders may have limited access to smoking cessation strategies. Despite barriers, many patients with mental illness are interested in quitting and are successful in doing so (2,19–24). Although much has been written on the delivery of smoking cessation programs to patients outside the VA, little is known about the receipt of smoking cessation among veterans with mental illness, PTSD, and substance use disorders. The study reported here is based on survey data representing one of the largest nationally representative samples of VA patients. The purpose of the study is to estimate the prevalence of tobacco use and receipt of cessation services among VA patients with mental illness, PTSD, and substance use disorders and to determine the clinical, treatment, and demographic factors associated with receipt of cessation services.

Methods

Design, sample, procedures

This study was a secondary analysis of the 2007 Veterans Health Administration (VHA) Outpatient Survey of Healthcare Experiences of Patients (SHEP). Information related to the creation, validity, and distribution of the SHEP has been published elsewhere (25,26). In brief, the SHEP is a cross-sectional, self-completed survey that was mailed to a random sample of 432,099 veterans who had received outpatient care within the VHA medical system in fiscal year (FY) 2007, of whom 237,828 (55.1%) returned the survey; due to missing data, 224,193 respondents were included in the final analyses. The SHEP is sent to patients immediately after their last general medical visit, and questions are asked about their most recent clinical encounter. For the current study, SHEP data were linked to VA administrative data on diagnosis and sociodemographic characteristics of the respondents. Institutional review board approval was received from the VA.

Measures

Dependent variables—Patients were classified according to their smoking status as a current smoker, former smoker, or never smoker. Current and former smokers were asked how many medical visits they had during which their doctors had advised them to quit, had recommended medication for tobacco cessation, and had discussed quitting methods overall. Patients who responded “none” were categorized as not receiving cessation services; patients who responded “yes” for one or more visits were categorized as having received cessation services.

Independent variables—The primary independent variable of interest was mental disorder diagnosis, obtained from *ICD-9* codes available from the VA National Patient Care Database, which was linked to SHEP data. In the VA, providers record diagnoses using standardized forms for each encounter. Professional coders verify diagnoses and assign corresponding *ICD-9* codes. Patients were identified on the basis of having a diagnosis of mental disorder during at least one inpatient hospitalization or two outpatient encounters. This method of identification has been shown to have a greater specificity, compared to use of diagnostic information obtained from clinical assessment (27). Mental disorder diagnoses included schizophrenia (295.0–295.99), bipolar disorder (296.0–296.1, 296.4–296.8), other psychotic disorder (297.0–298.9), and unipolar depression (296.2x, 296.3x, 296.9x, 293.83, 300.4, 309.0, 309.1, 311, and 301.12). Consistent with previous VA studies (28–30), diagnoses were categorized on the basis of the most frequently occurring diagnosis in FY 2007; if there were equal numbers of diagnoses, then the following hierarchy was used on the basis of the relative severity of diagnosis: schizophrenia, bipolar disorder, other psychosis, or depression. This hierarchy was also based on data from the World Health Organization Global Burden of Disease, which identified schizophrenia as the most debilitating diagnosis (31). As other mental health diagnoses such as PTSD and substance use disorders are also prevalent in the VA population, yet are not considered mutually exclusive with mental disorders or unipolar depression, they were listed as separate diagnoses. Posttraumatic stress disorder was defined based on a current *ICD-9* code of 309.81, and substance use disorders were defined as any *ICD-9* current diagnosis of an alcohol or drug use disorder (291, 292, 303, 304, or 305).

Covariates—Patient demographics were derived from SHEP self-reported data and consisted of age, sex, race-ethnicity, marital status, education, and current employment. Rural residence was determined based on the patients’ residence zip code and coded as rural or urban in accordance with VA Office of Rural Health procedures. Clinical covariates included medical comorbidities (categorized as none, one, or two or more) based on *ICD-9* inpatient and outpatient visit codes from VA administrative data. Self-reported height and weight was used to derive body mass index (BMI). Additional variables derived from SHEP included self-reported use of VA services only versus use of other providers. Number of inpatient days and number of outpatient visits were based on VA administrative data.

Data analysis

Means and percentages were calculated for all variables. Bivariate and multivariate analyses were conducted to compare the prevalence of current smoking and receipt of cessation services by our primary variables of interest (mental disorder, PTSD, and substance use disorders), as well as other patient clinical and treatment factors. Given that PTSD and substance use disorder are common co-occurring conditions among those with mental disorders or unipolar depression, additional analyses that included the interactive effects of these conditions were done, and no significant interactive effects were found (data not shown).

Results

Sample description and bivariate analyses

Table 1 shows descriptive data and results for bivariate analyses. Approximately 19% of the SHEP sample reported that they currently smoked. Almost one-quarter of the total sample had a diagnosis of mental disorder or depression, 9% reported PTSD, and 6% reported substance use disorder. Those with substance use disorders had the highest smoking rates (53%), followed by those with schizophrenia (48%), bipolar disorder (39%), and PTSD (31%). The rate of receipt of physician advice to quit smoking was around 80% for all groups, and the rate of receipt of both recommendation for medications and physician discussion of quitting methods was about 60% for all groups (Table 1).

Multivariate analyses

Current smoker—The results of multivariate analyses are shown in Table 2. Those with schizophrenia, bipolar disorder, and unipolar depression had respectively a 1.8, 1.5, and 1.2 greater odds of being current smokers, compared to those without a mental disorder or depression. Those with substance use disorders had 2.6 greater odds of current smoking. Even though smoking rates were significantly higher among those with PTSD in the bivariate analyses (Table 1), the multivariate analyses showed no difference in smoking rates between those with and without PTSD.

Current smokers also had significantly greater odds of being younger, male, and not married, of having a lower educational level, of being disabled or unemployed, and of living in a rural area, while having decreased odds of being Latino. In addition, smokers had greater odds of having more medical comorbidities and decreased odds of being overweight or obese. Smokers also had significantly decreased odds of using the VA as their only service provider. Even though the bivariate analyses (Table 1) showed significant differences for increased hospital days and increased outpatient visits among smokers versus nonsmokers, the multivariate analyses showed no differences between smokers and nonsmokers in the numbers of inpatient and outpatient days.

Receipt of services—Multivariate analyses showed that those with schizophrenia had more than 30% lower odds of reporting that they received advice to quit smoking from their physicians, but they reported similar levels of receiving recommendations for medications or physician discussion of quitting methods, compared with other smokers. With that exception, those with schizophrenia, bipolar disorder, other psychoses, and depression all reported similar levels of receipt of services, compared with those without these disorders. Moreover, those who had co-occurring PTSD or substance use disorders all had significantly greater odds of reporting receipt of cessation services, compared with those without these disorders.

Older persons and members of ethnic minority groups had lower odds of reporting receipt of all three cessation services, while male respondents had lower odds of reporting that they received advice to quit (Table 2). Compared with those who were married, those who were not married had about 5% lower odds of reporting that their physicians recommended medications and discussed quitting methods. Those who were disabled or unemployed had slightly lower odds of reporting receipt of selected cessation services, compared with those who were employed, retired, a homemaker, or a student. Those living in rural (compared with urban) areas had lower odds of reporting that they received advice to quit from their physicians and that their physicians discussed quitting methods.

Those with higher numbers of comorbidities reported significantly greater odds of receiving all three services than those without comorbidities. There were slightly increased odds of receiving recommendations for medications among those who were overweight, compared to those were obese (identified by BMI). Compared to those who were not hospitalized, those who were hospitalized reported slightly greater odds of receiving recommendations for medications; however, hospitalization did not predict receipt of advice to quit or physician discussion of quitting methods. More outpatient visits predicted increased odds of recommendation of medications and discussion of quitting methods.

Discussion

The rate of receipt of cessation services in this study was higher than rates reported elsewhere, including the rate found in a meta-analysis showing that 42% of patients received advice to quit (32). Similarly, in a national sample of outpatient substance abuse treatment programs, 41% of the programs offered smoking cessation counseling (33). In the current study, there were few differences in receipt of services among those with and without mental disorders, except that those with PTSD or substance use disorders were more likely to receive cessation services than those without those disorders. Our experience has been that once trained, providers working on psychiatric and substance abuse units are highly likely to implement cessation services, as they are much more accustomed to providing behavioral interventions than those working on, for example, medical-surgical units. Moreover, patients hospitalized for mental disorders, PTSD, and substance use disorders may be more receptive to receiving behavioral interventions. In fact, our prior work has shown that patients with psychiatric disorders are highly motivated to quit (34).

Similar to other studies, most of our results showed that smoking rates were higher among those with mental disorders and substance use disorders. It is interesting to note that those with PTSD showed higher rates of smoking in the bivariate analyses, but this was no longer true in the multivariate analyses. PTSD is highly comorbid with other axis I disorders, and perhaps the symptoms associated with these disorders (e.g., psychosis) were stronger correlates of smoking than PTSD alone.

Compared with whites, all groups of nonwhite smokers reported less receipt of cessation services. Yet our prior work (35) and the work of others has shown that blacks may be more motivated than whites to quit smoking (36,37). Seventy percent of African American smokers want to quit smoking completely and they make serious, yet unsuccessful attempts to quit (38,39). Even though cessation medications greatly increase the probability of quitting among blacks (40), both within and outside the VA, blacks are significantly less likely than whites to report using nicotine replacement therapy for smoking cessation (41), perhaps due to mistrust of physicians, negative attitudes toward treatment, skepticism about effectiveness, lack of knowledge regarding benefits, and concerns about medication side effects. Similar to findings in other studies, we found that Latinos smoked less, yet those who smoked were least likely to receive cessation services (42); this difference may be related to differences in health care providers' experiences or perceptions of the effectiveness or need for cessation advice in this ethnic subgroup (43). Clearly, there is a need for the VA to develop strategies to reach members of minority populations who are smokers.

Access to care may be a problem for those who are older, not married, unemployed, and living in rural areas; respondents with any of these characteristics reported that they were less likely to receive cessation services. Telephone-based cessation interventions have been shown to be efficacious (44) and may be useful in providing services to these hard-to-reach populations. Web-based cessation interventions, which have been shown to be efficacious

(45–47), may also allow smokers to quit on their own and may be more popular with younger, Internet-savvy Operation Enduring Freedom/Operation Iraqi Freedom veterans, among whom smoking is especially prevalent (48,49).

Smokers who used both the VA and other providers and smokers who had more than one outpatient visit were more likely to report receipt of services, suggesting that repeated contact with providers both within and outside the VA increases receipt of cessation services. Previous research findings showed that receipt of provider advice from more than one provider increases the likelihood of a quit attempt (50). Because this study focused on advice from physicians, the findings provide no information about cessation services given by other disciplines.

Although the bivariate analyses showed that smokers have more hospital days and outpatient days than nonsmokers, this was no longer true in the multivariate analyses, suggesting that other factors, such as comorbidities, may take precedence in predicting utilization of services. About two-thirds of the sample had at least one medical comorbidity, and those with medical comorbidities were more likely to be smokers and were fortunately more likely to receive cessation services. Among the general population and among veterans with psychiatric disorders, medical comorbidities have been shown to increase motivation to quit smoking (51–53). When a patient experiences a life-altering health-related event or symptoms related to comorbidities, they may become more willing to make lifestyle changes to prevent future recurrences (54).

Although those who were hospitalized reported more receipt of medication recommendations, they reported less receipt of physician advice and counseling. Anecdotal evidence suggests that nicotine replacement therapy is often provided to inpatients for symptom control with little counseling. Clinical trials have shown the potential effectiveness of inpatient smoking cessation programs in VA hospitals (55), which are described in the Veterans Affairs/Department of Defense Clinical Practice Guideline for the Management of Tobacco Use (56, 57).

The high rates of reported provision of cessation services most likely reflect the enormous effort by the VA to address veterans' smoking. Since 2005, performance measures mandate that all VA patients be screened for smoking and provided counseling. Tobacco cessation assessment is now a part of the VA clinical reminder system, and the tobacco screening reminder at most VA facilities has been regularly updated to reflect recommendations included in revised clinical practice guidelines (57). Moreover, since 2003, VA primary care clinics have been able to offer smoking cessation medications (49).

Several programs are currently being implemented in the VA to assist veterans with smoking cessation, including telephone counseling (44, 58), implementation of a nurse-administered Tobacco Tactics intervention for all inpatient smokers, and smoking cessation treatment integrated within mental health care for PTSD delivered by mental health clinicians (59). Moreover, the VA has implemented practices to change the culture of smoking in VA hospitals. Indoor smoke-free policies have been in effect since 1992, and most VA facilities have discontinued the practice of selling cigarettes. Although most VA facilities have offered behavioral counseling to employees who smoke, a recent 2010 VA directive made it possible to offer free, over-the-counter nicotine replacement therapy to employees who smoke (60). These cultural changes, along with continued efforts to improve implementation of smoking cessation interventions for at-risk veterans, have the potential to decrease smoking rates and reduce smoking-related morbidity and mortality among veterans.

In interpreting the findings of the current study, it is important to consider several study characteristics. The study was cross-sectional and did not account for changes over time. Reliance on self-report for many of the variables introduces the possibility of recall bias. Despite the large number of patients with mental disorder diagnoses, we were unable to fully verify and assess the sensitivity and specificity of the *ICD-9* code-based diagnoses, compared to a gold standard (direct clinical interview). The rates of mental disorders and co-occurring PTSD and substance use disorders were lower than reported in other studies (3, 28), which may be due to a selection bias in that healthier veterans may be more likely to respond to surveys. Finally, the questions used to measure receipt of services were heavily weighted toward physician counseling and medications and did not take into consideration services provided by other health care professionals; had these been included, the results may have been even more positive.

Conclusions

The VA is providing cessation services to those with mental disorders and co-occurring PTSD and substance use disorders at a rate at least as high, or higher, than for the general VA population. Yet smoking rates among those with mental disorders continue to be higher than in the general VA population. Moreover, subgroups of veterans are at risk for not receiving services, suggesting that more effective smoking cessation interventions and their widespread dissemination and implementation in health care settings, including VA settings, are warranted. Future studies should examine the effect of receipt of services on sustained quit attempts, as well as receipt of services provided by various types of health care providers and their effects on smoking cessation outcomes.

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Table 1

Bivariate analyses of smoking rates and receipt of smoking services among patients who completed the 2007 Veterans Health Administration outpatient survey (N=224,193)

					Patients reporting smoking and use of Veterans Affairs (VA) services in fiscal years 2006 or 2007					
	Total (N=224,193)		Current smokers (N=42,212)		Physician advised quitting (N=41,084)		Physician recommended medication (N=41,034)		Physician discussed quitting methods (N=41,065)	
	N	%	N	%	N	%[1]	N	%[1]	N	%[1]
Mental disorder[†]										
Schizophrenia	2,998	1.3	1,430	47.7	1,105	80.1	864	62.6	840	60.6
Bipolar disorder	4,144	1.9	1,612	38.9	1,326	84.4	1,041	65.6	960	60.8
Other psychoses	1,946	.9	450	23.1	359	82.7	285	65.1	264	60.0
Depression only	40,877	18.2	11,068	27.1	9,242	85.5	7,146	66.3	6,733	62.2
No mental disorder or depression	174,228	77.7	27,652	15.9	22,259	82.8	16,513	61.5	15,721	58.6
Other mental health diagnoses										
Posttraumatic stress disorder	19,713	8.8	6,071	30.8**	5,059	85.6**	4,061	68.4**	3,766	63.5**
No posttraumatic stress disorder	204,480	91.2	36,141	17.7	29,232	83.1	21,788	62.1	20,752	59.1
Substance use disorder	14,081	6.3	7,520	53.4**	6,332	86.4**	5,055	68.8**	4,826	65.6**
No substance use disorder	210,112	93.7	34,692	16.5	27,959	82.8	20,794	61.7	19,692	58.4
Age (years)										
Younger than 45	7,710	3.4	2,473	32.1	1,934	79.5	1,413	58.2	1,370	56.3
45 to 64	83,834	37.4	27,103	32.3**	2,524	85.0**	17,456	65.8**	16,515	62.2**
65 and older	132,649	59.2	12,636	9.5	9,833	81.0	6,980	57.8	6,633	54.8
Sex										
Male	216,279	96.5	40,252	18.6	32,641	83.4	24,622	63.0	23,351	59.7
Female	7,914	3.5	1,960	24.8**	1,650	85.7*	1,227	63.9	1,167	60.9
Race-ethnicity (N=213,968)										
Black	13,421	6.3	4,025	30.0**	3,199	81.6	2,426	62.1	2,447	62.3
Latino, nonblack	7,021	3.3	1,254	17.9	946	76.9	655	53.6	671	54.7
White, not Latino	186,247	87.0	33,138	17.8	27,216	84.3**	20,589	83.8**	19,334	59.9**
Other	7,279	3.4	1,941	26.7	1,540	81.7	1,170	61.8	1,101	58.1

	Total (N=224,193)		Current smokers (N=42,212)		Patients reporting smoking and use of Veterans Affairs (VA) services in fiscal years 2006 or 2007					
					Physician advised quitting (N=41,084)		Physician recommended medication (N=41,034)		Physician discussed quitting methods (N=41,065)	
	N	%	N	%	N	%[1]	N	%[1]	N	%[1]
Marital status (N=221,506)										
Married	147,449	66.6	20,671	14.0	16,764	83.3	12,636	62.8	11,960	59.4
Not married	74,057	33.4	20,955	28.3**	17,093	83.8	12,881	63.2	12,229	59.9
Education (N=222,206)										
High school or less	115,474	52.0	22,578	19.6**	18,329	83.7	13,849	63.4	13,048	59.7
Some college or more	106,732	48.0	19,323	18.1	15,743	83.3	11,834	62.6	11,305	59.8
Employment (N=222,651)										
Unemployed	6,238	2.8	2,488	39.9**	2,009	82.4	1,544	63.3	1,483	60.6
Disabled	34,756	15.6	12,608	36.3	10,434	84.8**	7,958	64.6**	7,361	60.0
Employed, retired, student, or homemaker	181,657	81.6	26,784	14.7	21,617	83.0	16,162	62.2	15,503	59.6
Location of residence (N=223,795)										
Urban	100,891	45.1	18,285	18.1	14,925	83.8	11,166	62.8	10,902	61.3**
Rural	122,904	54.9	23,815	19.4**	19,275	83.2	14,616	63.2	13,551	58.5
Medical comorbidities										
None	87,143	38.9	16,743	19.2**	13,071	79.9	9,848	60.1	9,496	58.0
One	72,859	32.5	13,644	18.7	11,207	84.5	8,453	63.9	7,999	60.3
Two or more	64,191	28.6	11,825	18.4	10,013	87.4**	7,548	66.1**	7,023	61.4**
Weight (BMI) (N=195,448)										
Underweight	2,076	1.1	841	40.5**	695	85.4	492	60.6	459	56.9
Normal	49,235	25.2	12,339	25.1	9,995	83.5	7,542	63.0	7,127	59.5
Overweight	94,824	48.5	16,200	17.1	13,118	83.0	10,001	63.5	9,448	59.9
Obese	49,313	25.2	8,110	16.5	6,652	84.0	4,998	63.1	4,756	60.1
VA utilization (N=220,054)										
VA use only	89,900	40.9	24,014	26.7**	19,935	85.3**	15,276	65.4**	14,596	62.4**
Non-VA, other, none	130,154	59.1	17,443	13.4	13,801	81.2	10,157	59.9	9,530	56.2
Hospitalization days in fiscal year 2007										

	Total (N=224,193)		Current smokers (N=42,212)		Patients reporting smoking and use of Veterans Affairs (VA) services in fiscal years 2006 or 2007					
					Physician advised quitting (N=41,084)		Physician recommended medication (N=41,034)		Physician discussed quitting methods (N=41,065)	
	N	%	N	%	N	%[1]	N	%[1]	N	%[1]
One or more	10,777	4.8	3,130	29.0**	2,649	87.0**	2,104	68.7**	1,906	62.5*
None	213,416	95.2	39,082	18.3	31,642	83.2	23,745	62.5	22,612	59.5
Outpatient visits in fiscal year 2007										
One or more	127,237	56.8	27,310	21.5**	22,416	84.3**	17,118	64.5**	16,129	60.7**
None	96,956	43.2	14,902	15.4	11,875	81.9	8,731	60.3	8,389	58.0

† p<.001, all outcomes differed significantly by mental health diagnosis category

[1] Percentages are based on non-missing values for the physician intervention questions

* p<.05

** p<.001

Table 2

Multivariate analyses predicting smoking and the receipt of cessation services by patients who completed the 2007 Veterans Health Administration outpatient survey (N=224,193)

			Patients reporting smoking and use of Veterans Affairs (VA) services					
	Current smokers		Physician advised quitting		Physician recommended medication		Physician discussed quitting methods	
Characteristic	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Mental disorder (reference: no diagnosis)								
Schizophrenia	1.78	1.62–1.96**	.69	.58–.81**	.92	.80–1.05	1.00	.88–1.15
Bipolar disorder	1.46	1.34–1.59**	.90	.76–1.06	1.01	.88–1.14	.97	.86–1.10
Other psychoses	.94	.82–1.08	.92	.68–1.25	.99	.79–1.24	.90	.72–1.12
Depression	1.18	1.13–1.22**	1.04	.96–1.13	1.07	1.01–1.14*	1.05	.99–1.12
Posttraumatic stress disorder (PTSD) (reference: no PTSD)	.95	.92–1.00	1.09	.99–1.19	1.14	1.06–1.23*	1.09	1.02–1.17*
Substance use disorder (reference: no substance use disorder)	2.74	2.63–2.87**	1.26	1.15–1.37**	1.25	1.17–1.33**	1.28	1.20–1.36**
Age (years) (reference: 65 or older)								
Younger than 45	3.78	3.54–4.04**	1.09	.96–1.25	1.16	1.04–1.30*	1.13	1.02–1.26*
45 to 64	3.78	3.67–3.90**	1.48	1.38–1.59**	1.47	1.39–1.55**	1.39	1.32–1.47**
Male (reference: female)	1.12	1.05–1.19**	.78	.68–.90*	.94	.85–1.05	.93	.84–1.03
Race (reference: white [not Latino])								
Black	1.12	1.07–1.18**	.75	.68–.83**	.86	.79–.93**	.98	.91–1.06
Latino, nonblack	.69	.65–.75**	.59	.51–.68**	.60	.53–.68**	.74	.66–.84**
Other	1.16	1.09–1.24**	.81	.71–.93*	.85	.76–.94*	.87	.79–.97*
Not married (reference: married)	1.66	1.61–1.70**	.98	.92–1.04	.95	.91–1.00*	.95	.90–.99*
High school or less (reference: some college or more)	1.29	1.26–1.32**	1.02	.96–1.08	1.04	.99–1.08	1.02	.97–1.07
Employment (reference: other[a])								
Disabled	1.53	1.48–1.59**	.94	.87–1.01	.87	.83–.92**	.82	.78–.87**
Unemployed	1.62	1.52–1.73**	.85	.75–.96*	.91	.83–1.01	.89	.81–.98*
Rural residence (reference: urban)	1.14	1.11–1.18**	.91	.85–.97*	.99	.94–1.03	.88	.84–.93**
Medical comorbidities (reference: none)								

			Patients reporting smoking and use of Veterans Affairs (VA) services					
	Current smokers		Physician advised quitting		Physician recommended medication		Physician discussed quitting methods	
Characteristic	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Two or more	1.32	1.28–1.37**	1.85	1.71–2.01**	1.36	1.29–1.45**	1.26	1.19–1.33**
One	1.19	1.15–1.23**	1.40	1.31–1.51**	1.22	1.16–1.29**	1.16	1.10–1.22**
Weight (reference: obese)								
Normal	2.32	2.24–2.41**	1.03	.95–1.12	1.05	.99–1.12	1.02	.96–1.08
Overweight	1.32	1.28–1.37**	.97	.90–1.05	1.07	1.01–1.13*	1.03	.97–1.09
Underweight	4.03	3.62–4.49**	1.10	.89–1.37	.92	.79–1.08	.89	.76–1.03
VA utilization								
VA use only (reference: non-VA, other, none)	.64	.62–.66**	.77	.73–.82**	.81	.78–.85**	.79	.76–.83**
One or more hospital day in fiscal year 2007 (reference: none)	.95	.89–1.00	1.03	.91–1.17	1.11	1.01–1.22*	.97	.88–1.06
One or more outpatient visit in fiscal year 2007 (reference: none)	1.00	.97–1.03	1.08	1.00–1.15*	1.07	1.01–1.13*	1.04	.99–1.10

[a] Employed, retired, homemaker, or student

* p<.05

** p<.001