Smokers With Behavioral Health Comorbidity Should Be Designated a Tobacco Use Disparity Group

Smokers with co-occurring mental illness or substance use disorders are not designated a disparity group or priority population by most national public health and tobacco control groups.

These smokers fulfill the criteria commonly used to identify groups that merit special attention: targeted marketing by the tobacco industry, high smoking prevalence rates, heavy economic and health burdens from tobacco, limited access to treatment, and longer durations of smoking with less cessation. A national effort to increase surveillance, research, and treatment is needed.

Designating smokers with behavioral health comorbidity a priority group will bring much-needed attention and resources. The disparity in smoking rates among persons with behavioral health issues relative to the general population will worsen over time if their needs remain unaddressed. (*Am J Public Health.* 2013;103:1549–1555. doi:10.2105/AJPH.2013.301232)

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ELIMINATING DISPARITIES IN health and health care is a major priority in the United States.[1,2] Groups with health disparities are referred to as vulnerable or priority populations and can be defined by factors such as race/ethnicity, socioeconomic status, geography, gender, age, disability status, or sexual orientation.[3] The sources of these disparities are complex, rooted in historic and social inequities.[4] Cigarette smoking, the leading cause of preventable death, is listed as one of 21 conditions with ongoing health disparities that must be addressed.[1] Indeed, as the American Legacy Foundation points out, tobacco is not an equal opportunity killer.[5] The criteria organizations such as the Centers for Disease Control and Prevention use to designate a tobacco disparity group are that they experience disproportionate tobacco consumption, disproportionate consequences or health burden from tobacco use, disproportionate economic burden from tobacco use, or limited access to tobacco-related health care.[1,6,7] These groups may also be targeted by the tobacco industry with special marketing.[6] Increased tobacco consumption may stem from differences in risk for tobacco use initiation or progression, differences in tobacco use prevalence and rates of nicotine dependence, and differences in smoking cessation rates.

Smokers with a co-occurring mental illness or substance use disorder (SUD) have historically been underserved.[8–13] Persons with behavioral health conditions, a collective term whose use is increasing because it may reduce stigma, compose a significant subset of smokers in the United States. A recent study found that cigarette smoking prevalence was 37.8% among people with any anxiety disorder, 45.1% among those with any affective disorder, 63.6% among those with a substance use disorder, and only 21.3% among those with no mental disorder.[14] Smoking rates have plateaued despite ongoing tobacco control efforts, and clinical data support the concern that public health techniques that have been largely successful in the past may have reduced impact with remaining smokers.[15,16] Although population-level data are less consistent on this point, data from both the National Health Interview Survey[17] and the National Survey of Drug Use and Health[18] suggest that smokers with moderate to high levels of general psychological distress are less likely than those with lower levels to have quit smoking. These data raise the possibility that behavioral health comorbidity may contribute to existing concerns about the impact of current tobacco approaches on today's smokers.

Surprisingly, most tobacco control Web sites and organizations, such as the Centers for Disease Control and Prevention's Office on Smoking and Health,[19] *Healthy People 2020*,[2] and the American Legacy Foundation,[20] do not designate smokers with behavioral health comorbidity as a disparity group or priority population. Understanding and eliminating disparities are such high priorities that these larger organizations have sponsored dedicated spin-off groups, such the National Networks for Tobacco Control and Prevention (sponsored by the Centers for Disease Control and Prevention)[21] and the Tobacco Research Network on Disparities (TReND; cosponsored by the National Cancer Institute and American Legacy Foundation).[22] These groups have paid only cursory attention to smokers with behavioral health comorbidity.[23] For example, these smokers are included on the TReND Web site with a long list of "other historically underserved groups" that includes lesbian, gay, bisexual, and transgender persons; people with disabilities; and the military. (Major tobacco control groups in the United States and their identified disparity populations are listed in Table 1).

REVIEW OF EVIDENCE

This article reviews the literature that supports the need to recognize and identify smokers with behavioral health comorbidity as an important disparity group of tobacco users in the United States today. The validity of designating smokers with comorbid mental illness or SUDs as a priority population is shown by applying each of the criteria that qualify other groups for this attention to the population of smokers with behavioral health comorbidity.

TABLE 1—Disparity Groups Identified by Key Tobacco Control Organizations and Health Opinion Leaders in the United States

Organization/Report	Source	Racial/Ethnic Minorities[a]	Persons With Low SES[b]	Pregnant Women	LGBT Persons	Gender	Youths	Older Adults	Military Personnel	Persons With Mental Health and Substance Use Disorders
CDC Office on Smoking and Health	http://www.cdc.gov/tobacco/basic_information/health_disparities/index.htm	X	X	X	X	X	X			
National Networks for Tobacco Control and Prevention[c]	http://www.tobaccopreventionnetworks.org/site/c.ksJPKXPFJpH/b.2588535/k.6D55/Eliminating_Disparities.htm	X	X		X		X			
Surgeon general's reports (2000, 2001, 2004, and 2012)	http://www.surgeongeneral.gov/library/index.html	X		X			X			
Healthy People 2020	http://healthypeople.gov/2020/LHI/tobacco.aspx	X	X	X		X	X			
American Legacy Foundation	http://www.legacyforhealth.org/2165.aspx	X	X		X		X			
Tobacco Research Network on Disparities[d]	http://www.tobaccodisparities.org	X	X	X	X	X	X		X	X
American Lung Association	http://www.lung.org/stop-smoking/about-smoking/facts-figures/specific-populations.html	X	X	X	X	X	X	X	X	
Tobacco Cessation Leadership Network	http://www.tcln.org/cessation/priority-populations.html			X			X			X
Society for Research on Nicotine and Tobacco Tobacco Related Health Disparities Network	http://www.srnt.org/about/networks.cfm	X								
Smoking Cessation Leadership Center	http://smokingcessationleadership.ucsf.edu/BehavioralHealth.htm									X

Note. CDC = Centers for Disease Control and Prevention; LGBT = lesbian, gay, bisexual, transgender; SES = socioeconomic status.
[a]African American, American Indian, Alaska Native, Asian American, Pacific Islander, and Hispanic.
[b]Indicated by poverty, low education level, unemployment.
[c]Sponsored by CDC.
[d]Cosponsored by the National Cancer Institute and American Legacy Foundation.

Disproportionate Tobacco Consumption

According to *Healthy People 2020*, a disparity exists if a health outcome is greater in certain populations.[2] In the past 20 years, numerous studies have demonstrated higher rates of ever, daily, and heavy smoking among Americans with mental illness or SUDs than among individuals without these conditions.[14,24–27] Studies have documented higher rates of smoking in nearly every type of behavioral health condition.[24,25,27–31] Studies of smokers accessing tobacco treatment services in community settings or via quit lines have also indicated that about half of these smokers report a lifetime behavioral health condition.[32–37] Comparative smoking prevalence rates for groups classified as tobacco use disparity populations are shown in Table 2.

Lasser et al. used data from the 1991 to 1992 National Comorbidity Survey to show that 41% of cigarette smokers met criteria in the past month for some type of mental health condition or addiction (as defined in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*[45]).[24] These findings have been replicated in the past decade.[14,26] People with behavioral health comorbidity represent about one third, or 16 million people, of an estimated total 51 million adult smokers in the United States.[14] Several states have confirmed higher smoking rates in adults who report poor mental health in Behavioral Risk Factor Surveillance System data.[46–48] In at least one state, smoking rates are not decreasing among respondents reporting poor mental health.[46]

Smokers with comorbid mental illness or SUDs may have more difficulty in quitting, which may

TABLE 2—Smoking Prevalence Rates in Identified US Disparity Groups

Group	Smoking Prevalence Rate, %	Data Source
US general population	19.3–20.6	2009–2010 NHIS[38,39]
Low SES		
Poverty	31.1–36.5	2006–2008 NSDUH,[38,39] 2009 NHIS,[38,39]
< high school diploma	28.5–32.0	
Unemployed	44.7	
Racial/ethnic minorities		
African American	21.3–26.9	2006–2008 NSDUH, 2009 NHIS[38,39]
Hispanic	14.5–22.9	2006–2008 NSDUH, 2009 NHIS[38,39]
American Indian/Alaska Native	23.2–42.2	2006–2008 NSDUH, 2009 NHIS[38,39]
Asian American	12.0–14.7	2006–2008 NSDUH, 2009 NHIS[38,39]
Pacific Islander	16.5	2009 NHIS[40]
Pregnant Women	12.8	2008 PRAMS[41]
LGBT sexual orientation	24–48	State data sources[42]
Gender		
Men	21.5–23.5	2009–2010 NHIS[38,39]
Women	17.3–17.9	2009–2010 NHIS[38,39]
Youths		
High school	17.2	2009 NYTS[43]
Middle school	5.2	2009 NYTS[43]
Mental health and substance use disorders		
Mental illness	40.1	2001–2003 NCS,[14] 2002 NSDUH,[44] 2005 NHIS[17]
Substance use	63.6	
Serious psychological distress[a]	41.9–44.5	

Note. LGBT = lesbian, gay, bisexual, transgender; NCS = National Comorbidity Study; NHIS = National Health Interview Survey; NSDUH = National Survey on Drug Use and Health; NYTS = National Youth Tobacco Survey; PRAMS = Pregnancy Risk Assessment and Monitoring System; SES = socioeconomic status.
[a]Measured by the K6 scale.[44]

contribute to higher prevalence rates. This has been shown in clinical populations as well as in population data.[24,25,49,50] There is evidence that not only are current symptoms and illness severity related to quitting smoking, but even a history of a disorder, such as major depression, is linked to lower short- and long-term abstinence.[28,51] Specialty tobacco cessation services also have reported that behavioral health comorbidity is a predictor of reduced cessation.[33,37,52]

Groups with greater risk for tobacco use progression are also considered priority populations. Studies have found that youths with behavioral health comorbidity are more likely to progress to nicotine dependence or daily smoking.[53–58] Behavioral health comorbidity is included in a recent US Surgeon General's report, *Preventing Tobacco Use Among Youth and Young Adults*,[59] although surveillance instruments such as the Global Youth Tobacco Survey[60] do not assess depression or mental health.

Disproportionate Health Consequences

The consequences of tobacco use among persons with mental illness or SUDs are considerable: increased morbidity, mortality, and burden of tobacco-related illness relative to those without behavioral disorders. Evidence shows that tobacco contributes to more deaths in this group than does the primary behavioral health disorder.[61,62] The 3 major conditions caused by tobacco use are cancer, cardiovascular disease, and respiratory disease, and these illnesses are seen commonly among persons with mental illness or SUDs.[1] Mental disorders, even milder ones, are associated with elevated risks of premature mortality.[63–65] For those with serious mental illness, this translates into 25 years of reduced life expectancy[66,67] with most excess deaths attributable to cardiovascular disease. In a sample of patients with psychosis aged 35 to 54 years, the odds of cardiac-related death were 12 times as high among smokers as among nonsmokers.[68] Individuals with serious mental illness have elevated rates of cancer; lung cancer is the most common type in men.[69,70] Comorbid medical and behavioral health conditions are likely synergistic, with the cumulative burden, including higher costs, greater than the sum of the individual conditions.[62,71]

Disproportionate Economic Burden and Purchasing

Like other low-income groups, individuals with behavioral health disorders bear a tremendous economic burden resulting from their tobacco use. Two studies have found that persons with current mental disorders or addictions purchase and consume at least 40% of the cigarettes sold in the United States.[24,26] Although price increases and taxation are an important aspect of tobacco control that can reduce smoking prevalence in a population, it is not known to what extent smokers with comorbidity are price sensitive. One analysis estimated that smokers with mental illness were responsive to price, although it did not control for level of dependence, which may be higher in this group.[72] Smokers with serious mental illness such as schizophrenia spend a considerable portion of their disability income to buy tobacco.[73–75] Although they economize by smoking more generic and discount value brands than do smokers without mental illness,[73,76] high cigarette taxes still impose a considerable burden on all low-income smokers.[77] In addition, they may also be less sensitive to price if their tobacco consumption is subsidized by their families and caregivers. In a recent survey, 60% of disabled mental health consumers reported that their families bought them tobacco.[78] One difficulty in

understanding price sensitivity is that smokers with behavioral health comorbidity are not a single group but reflect a large spectrum of illnesses, with varying socioeconomic status and degrees of disability. Smokers with serious mental illness, although perhaps the most financially burdened, represent a relatively small segment (<10%) of the entire group with behavioral health comorbidity.

Targeted Marketing by the Tobacco Industry

The tobacco industry targets marketing to vulnerable or receptive populations such as young adults, socially disadvantaged groups, and various racial/ethnic groups.[79] Ample evidence shows that the tobacco industry segments consumer markets and targets advertising toward psychosocial needs satisfaction. Marketing addresses psychological needs such as stress relief, behavioral arousal, performance enhancement, and obesity reduction.[80,81] Evidence from tobacco industry document review reveals targeting to psychologically vulnerable populations, including the mentally ill. Until recently, most psychiatric hospitals sold cigarettes in the hospital store, and they received frequent sales promotions and giveaways from major cigarette companies promoting value brands.[82] The tobacco industry also supported efforts to block smoking bans in these settings.[83]

Reduced Access to Resources

One factor that may be linked to the continued high prevalence of smoking among people with mental illness and SUDs is lack of access to cessation services, particularly in the behavioral health setting. Rates of tobacco documentation and treatment in these settings are very low,[9,10] and psychiatrists are less likely than physicians in other specialties to be aware of state-funded tobacco services.[11] In psychiatry residency training programs, tobacco education is not a requirement, and only half of programs provide it.[84] A survey conducted by the Association of American Medical Colleges found that few psychiatrists reported being very well prepared by previous education to help patients stop smoking, and more than 30% felt that continuing education was unavailable.[12]

Because many individuals with behavioral health conditions are treated in the primary care setting, strategies are needed to help these smokers in a variety of health care settings. Models for collaborative care management are increasingly being used to deliver evidence-based practices for behavioral health problems in mental health settings.[85] Some models for medical health homes are locating behavioral health professionals in primary care physicians' offices to provide better access to services; this may provide opportunities for addressing tobacco addiction.

DISPARITY DESIGNATION

Smokers with behavioral health comorbidity clearly meet the definition of a tobacco use disparity group. In fact, they fulfill all the criteria commonly used to designate such groups. Individuals with behavioral health comorbidity are a considerable portion of the remaining smokers in the United States. Although the classification of behavioral health comorbidity is broad and inclusive, other disparate groups defined by race or gender are also broad and inclusive. Some groups that have been classified as tobacco use disparity groups have tobacco use prevalence rates that are lower than those of comorbid smokers (Table 2).[14,17,38–44] The disparity in smoking rates between persons with behavioral health conditions and the general population may also worsen over time if their needs remain unaddressed.

Effects of Designation

Designation as a priority group is not merely an academic issue. It can lead to greater access to scientific funding and treatment resources, which in turn may lead to the development and evaluation of tailored and therefore more effective smoking cessation interventions. Furthermore, models for integrating smoking cessation services into behavioral health care and outreach models to link smokers with behavioral health comorbidity who are not receiving any health care to services can be developed and tested. Although this has not been measured, it is likely that minimal tobacco control dollars at the state or federal level are being directed toward this group. Several factors likely contribute to the absence of a significant national agenda on behavioral health and smoking comorbidity. National behavioral health organizations have been slow to organize on this issue, and behavioral health advocacy groups have not been advocating for greater access to resources. Research on tobacco use and behavioral health spans at least three separate agencies in the National Institutes of Health (the National Institute on Drug Abuse, National Institute of Mental Health, and National Cancer Institute), yet not one joint funding announcement or special request for applications for research on this comorbidity has appeared. Partnerships are needed between state tobacco control offices (often located in departments of health) and behavioral health services (often located in departments of human services) to develop effective strategies and share resources.

Finally, lack of attention given to smokers with behavioral health comorbidity may represent stigma, because no other group with such profound evidence of tobacco devastation has been neglected in a similar way. Prejudice and discrimination are believed to be important contributors to the production of health disparities,[4] and behavioral health disorders carry society's most negative stigma. Unconscious forms of bias exist even in the absence of overt expressions of prejudicial attitudes, and, although these stigma models originated from studies of race, they are increasingly being applied to populations with mental illness or obesity.[86] Stigma contributes to the belief that comorbid smokers cannot or will not give up tobacco because it is "all they have." Evidence for this is found in the scarcity of smoking cessation activity or discussion at prominent conferences and publications in behavioral health recovery. We have seen groups that champion recovery models for overcoming behavioral health disorders nonetheless subtly undermine smokers' sense that they can recover from tobacco dependence as well. Interestingly, similar claims are not made to justify use of other addicting and deadly substances in behavioral health care.

A limitation of our review was that data sources for this population are incomplete. Many gaps exist in the current literature, and we have better estimates of tobacco use prevalence in other segments of the population. Making comorbid smokers a priority population, however, would greatly increase surveillance and

TABLE 3—Criteria Met by Tobacco Use Disparity Groups in the United States

Criterion	Racial/Ethnic Minorities[a]	Persons With Low SES[b]	Pregnant Women	LGBT Persons	Gender	Youths	Persons With Mental Health and Substance Use Disorders
Differences in risk for tobacco use initiation or progression	X	X		X		X	X
Differences in tobacco use prevalence	X	X		X			X
Differences in rates of nicotine dependence	X	X			X	X	X
Differences in cessation rates	X	X		X		X	X
Disproportionate health burden from tobacco use	X	X	X				X
Disproportionate economic burden from tobacco use	X	X			X	X	X
Disproportionate tobacco purchasing	X	X		X	X	X	X
Targeted by the tobacco industry with special marketing	X	X		X	X	X	X
Reduced access to resources including treatment	X	X					X

Note. LGBT = lesbian, gay, bisexual, transgender; SES = socioeconomic status.
Source. Centers for Disease Control and Prevention.[1,6,7]
[a]African American, American Indian, Alaska Native, Asian American, Pacific Islander, and Hispanic.
[b]Indicated by poverty, low education level, unemployment.

improve existing data collection instruments to ensure that behavioral health comorbidity is being assessed in national data sets that track tobacco use. Reaching the national *Healthy People 2020* goal[2] of eliminating health disparities related to tobacco use will necessitate improved collection and use of standardized and qualitative data to identify disparities in both health outcomes and efficacy of prevention programs among various population groups.

Need for a National Effort

Smokers with behavioral health comorbidity have received attention in peer-reviewed publications in relevant journals, but these represent the efforts of individual scientists and are not reflective of a unified or purposeful effort. Our review of key public health and tobacco control Web sites showed that this issue is still largely invisible. The efforts of the Smoking Cessation Leadership Center[87] are an exception, but this is not enough. Since 2001, the Centers for Disease Control and Prevention's National Tobacco Control Program has worked with states to develop strategic plans to address disparities. It is not known how many of these plans included smokers with behavioral health comorbidity because this was not a requirement to receive federal funding. Merely allowing states to take the initiative will not be enough: a national plan is critically needed for this major public health issue. A document such as a surgeon general's report on this topic would bring national attention to this issue.

A critical aspect of designating a disparity group is recognizing that standard or population-based approaches that benefit many people may not work. California, which has the lowest smoking rates in the country, has found that statewide tobacco control approaches may not benefit some disparity groups, such as lesbian, gay, bisexual, and transgender persons and military personnel.[88] The group of people with behavioral health issues likely comprises many subgroups with important distinctions stemming from diagnosis, illness severity, and functional impairment that are best addressed by tailored tobacco control approaches. When working with vulnerable tobacco-using populations, it is critical to understand in detail the cultural context of smoking and quitting, which may be best ascertained through qualitative research.[89]

Resources should be directed toward those with greatest need. The only group that approximates the smoking prevalence rates of comorbid smokers is low-income smokers, and presumably these groups overlap to some degree. Future tobacco control efforts should prioritize low-income and comorbid smokers. Funding decisions should reflect current need and not merely replicate activities of the past. In addition to enhanced surveillance, priority should be given to tobacco control funding that seeks to answer basic questions about access to treatment, effectiveness of evidence-based treatments, and barriers to cessation for smokers with behavioral health comorbidity. Studies are also needed to assess whether this group benefits from traditional tobacco control techniques, such as taxation and clean indoor air legislation. A national effort to address educational deficits and policies to promote tobacco treatment by behavioral health professionals is also needed.

Behavioral health is one of only three groups meeting all criteria for a tobacco use disparity group (Table 3). Although racial/ethnic minorities and persons with low socioeconomic status also meet all criteria, they meet criteria with lower severity. Smoking prevalence is higher among persons with behavioral health conditions than among nearly all other groups that bear disparity burdens. We are, therefore, confident that smokers with behavioral health comorbidity are the disparity group most deserving of attention in the United States today. ■

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Contributors

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