

Research Paper

Cigarette smoking among college students with disabilities: National College Health Assessment II, Fall 2008–Spring 2009

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Abstract

Background: People with disabilities are 1.5 times more likely to smoke than their peers without disabilities, intensifying risk of health related disparities and further loss of function. When compared with the general population, college students also have a higher smoking prevalence. This study explores smoking rates among college students with disabilities.

Objective/hypothesis: College students with disabilities have an increased likelihood of smoking, as compared with students without disabilities. Type of disability also influences smoking rates.

Methods: This study explores the association between smoking and disability using multiple regression analyses and data from the National College Health Assessment II (NCHA II), Fall 2008–Spring 2009 ($N = 79,915$). People with disabilities comprised 15.6% of the total sample: 3.4% reported a physical disability, 8.3% reported a mental disability, 2.5% reported a sensory disability, and 3.7% reported a learning disability.

Results: Smoking prevalence among those reporting disabilities was 23.1% versus 15% in those without disabilities. Those reporting mental disabilities had the highest rates (29.9%), followed by those with learning disabilities (23.7%), sensory disabilities (19.8%), and physical disabilities (16.4%). Students with disabilities were 1.23 times more likely to report current smoking than those without any disabilities, controlling for other factors (OR 1.23, 95% CI 1.16–1.30).

Discussion: Results are consistent with previous research regarding the general adult population. Epidemiologic data demonstrating differences in risk behaviors for young adults with disabilities are important in allocation of resources. Findings of this study highlight the need for tailored smoking cessation programs for college students with disabilities. © 2013 Elsevier Inc. All rights reserved.

Keywords: Smoking; People with disabilities; Student health

People with disabilities experience a number of health related disparities, including a higher smoking prevalence: according to data from the Behavioral Risk Factor Surveillance Survey (BRFSS), people with disabilities are one and half times more likely to smoke than their peers without disabilities.¹ Smoking has been targeted as the leading

preventable cause of morbidity and mortality in the United States, and is listed as a top priority in the national health agenda.^{1,2} Identifying key health disparities is crucial in the allocation and planning of public resources, consistent with the United States Surgeon General's Call to Action to Improve the Health and Wellness of People with Disabilities.³

There are approximately 50 million Americans currently affected by a disability, resulting in annual health care expenditures and lost productivity estimates exceeding \$300 billion.² Preventive care is an important cost-containment strategy, particularly in consideration of the large proportion of people with disabilities who are reliant on the overburdened Medicare system.¹ Smoking among people with disabilities is of particular concern given the compounding effects of other factors, including limited access to medical care.¹ Although people with disabilities are more likely to smoke than those

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without disabilities, they are less likely to be screened for tobacco use during medical encounters,⁴ and less likely to receive specific advice regarding tobacco cessation treatment options.¹ In addition to creating its own health risks, smoking among people with disabilities exacerbates existing conditions and contributes to functional decline.¹ This establishes a dangerous cycle where functional impairments further reduce activity levels, leading to sedentary lifestyle habits,⁵ which increase the risk of cardiovascular and metabolic disease.⁶ Certain stages of human development are marked by an increased likelihood of developing health-risk behaviors. Though smoking rates among adolescents and older adults continue to decline, smoking prevalence among young adults (aged 18–24 years) is rising.^{7,8} Among college students, current smoking prevalence ranges from 19% to 29%,^{9,10} and lifetime rates are estimated at 34%–75%.^{9–11} College-aged adults are more likely to initiate smoking, progress from intermittent to daily smoking, and develop nicotine dependence.^{7,12–14} Although college-educated individuals tend to have a lower rate of smoking than those who have not attended college, the increased likelihood of smoking among college-aged young adults, coupled with the increased likelihood of tobacco use among people with disabilities, warrants further investigation.

Young adults often associate tobacco use with long-range health effects, reducing their perceived susceptibility.¹⁵ However, the immediate risks of smoking among college-aged youth include diminished pulmonary function, increased incidence of asthma and acute respiratory infections, premature atherosclerosis,⁷ and reduced cardiovascular fitness.¹⁶ For people with mobility impairments, the effects of smoking are of particular concern due to associated reduction in muscle strength and endurance.^{17,18}

Epidemiologic data regarding differences in risk behaviors for people with disabilities represent the first step in preventive management. Prior studies investigating the impact of health-related behaviors among college students aged 18–24 years found that smokers had more mentally and physically unhealthy days, and smokers with mobility impairments had three times as many physically unhealthy days as their peers without disabilities.¹⁹ A better understanding of the predictors of smoking within populations distinguished by higher smoking prevalence²⁰ can assist in developing tailored intervention strategies and future research aimed at reducing the burden of morbidity and mortality for those in highest need. Therefore, the purpose of this study was to investigate the association between smoking and disability among college-aged young adults, aged 18–24 years, using data from the National College Health Assessment II (NCHA II).

Objectives

This study is based on secondary analysis of the NCHA II Fall 2008–Spring 2009 dataset. The original NCHA was

designed in 1998 by the American College Health Association (ACHA) to measure risk and protective health behaviors among college students. It was updated in 2008 (NCHA II), and tested for validity and reliability as compared with other national surveys of college populations.⁹ The NCHA II survey instrument is provided for a fee, and is used by universities to gather and compare information regarding students enrolled at their own and other institutions. Individual universities are responsible for obtaining approval from their Institutional Review Boards, selecting their own sampling procedures, and choosing the method of administration (paper-based versus web-based format). Although NCHA II does not employ a random sample of universities, the national dataset is restricted to those universities that incorporate random or census-based sampling by classroom or individual. Data are not weighted, and response rates for individual schools are not available; rather, data are reported in aggregate form. The Fall 2008–Spring 2009 time frame for the NCHA II was used to approximate a full academic year and eliminate duplication of schools within the sample. Students aged 18–24 were included resulting in 79,915 respondents. We used two models to explore the following research questions: 1) Do college students with perceived disabilities report higher rates of smoking than their peers without disabilities?; 2) Do smoking rates of students with perceived disabilities vary depending on the nature of the impairment?

Methods

For each model, current smoking represented the outcome of interest (dependent variable), and was derived from the NCHA II survey question, “Within the last 30 days, on how many days did you use cigarettes?” Response categories included “never used,” “used, but not the last 30 days,” “1–2 days,” “3–5 days,” “6–9 days,” “10–19 days,” “20–29 days,” and “used daily.” Categories were dichotomized into 1 = current smoker, i.e., – any cigarette use within the last 30 days,¹⁵ and 0 = non-smoker, i.e., – did not use cigarettes within the last 30 days.

Disability status was derived from nine survey questions. Responses were based on self-report and were not clinically verified. Survey participants were asked, “Do you have any of the following disabilities or medical conditions? Yes or No.” Categories included Attention Deficit Hyperactivity Disorder (ADHD), chronic illness, deaf/hard of hearing, learning disability, mobility/dexterity disability, partially sighted/blind, psychiatric condition, speech or language disorder, and other disability. Respondents may report concurrent disabilities in more than one category (4.7% of respondents reported having two or more disabilities).

The first model investigates the first question, “Do college students with perceived disabilities report higher rates of smoking than their peers without disabilities?”

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