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Employment characteristics and tobacco product use, United States, 2021

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Abstract

Introduction: Over 30 million U.S. working adults use tobacco, and tobacco use varies by occupation. Limited information is available on employment characteristics and tobacco use prevalence. The purpose of this study was to describe the prevalence of current tobacco use by employment characteristics and occupation group among U.S. working adults.

Methods: This cross-sectional study used 2021 National Health Interview Survey data for currently working adults (n=16,461) analyzed in 2023. Multivariable logistic regression was used to estimate adjusted odds of tobacco use by employment characteristics and occupation group.

Results: In 2021, 20.0% of working adults used tobacco. Any tobacco use was significantly lower among workers who were offered workplace health insurance (aOR=0.86, 95% CI=0.77–0.97), had paid sick leave (aOR=0.81, 95% CI=0.73–0.91), and government vs. private employment (aOR=0.61, 95% CI=0.52–0.70). Any tobacco use was significantly higher among workers who usually worked ≥35 hours per week vs. did not usually work ≥35 hours per week (aOR=1.21, 95% CI=1.06–1.39), worked a rotating or 'some other' shift vs. daytime shift (aOR=1.19, 95% CI=1.02–1.38), experienced schedule instability (aOR=1.17, 95% CI=1.03–1.31), and worked while physically ill in the past 3 months (aOR=1.25, 95% CI=1.11–1.41). Tobacco use by employment characteristics also varied by occupation group.

Conclusions: Current tobacco use varied according to employment characteristics and occupation group. Findings from this study could inform workplace tobacco cessation interventions and policies (e.g., access to paid sick leave or insurance coverage) to better support tobacco cessation and overall worker health.

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Keywords

employment; working; tobacco; cessation; NHIS; occupation

Introduction

Commercial tobacco product use [tobacco use] is the leading preventable cause of disease and death in the United States.[1] While adult cigarette smoking has declined over the last decade, from 19.0% in 2011[2] to 11.5% in 2021,[3] newer products, such as e-cigarettes, have entered the market and increased in prevalence.[4,5] In October 2023, approximately 60% of the U.S. civilian, non-institutionalized population was employed.[6] The average annual prevalence of any tobacco use among working adults between 2014–2016 was 22%.[7] Disparities existed by occupation, ranging from 9% in life, physical, and social science occupations to 37% in construction and extraction occupations.[7]

Cigarette smoking is higher among workers with higher psychological work demands,[8] job insecurity,[9,10] and temporary work status,[10] and is associated with greater absence from work due to sickness.[11–13] There are limited data on how employment characteristics are associated with other forms of tobacco product use and how these associations might differ by occupation. Given changing patterns of tobacco use and disparities observed by occupation, further research in these areas could inform more focused efforts to increase cessation. This cross-sectional study describes the prevalence of current tobacco use by employment characteristics and occupation group among U.S. working adults.

Methods

The National Health Interview Survey (NHIS) is a nationally representative, cross-sectional household interview survey.[14] This study used 2021 NHIS data from employed adults (N=16,461), defined as respondents who: (1) worked for pay in the last week; (2) did not work for pay in the last week, but had a job or business in the last week and were temporarily absent due to illness, vacation, family or maternity leave, or some other reason; (3) performed seasonal or contract work in the past 12 months; or (4) worked at a family-owned job or business but not for pay.[14] Institutional Review Board approval was exempted under the Common Rule (45 CFR §46) because the study used de-identified and publicly available data.

The main outcome was any tobacco use and was defined as current use of one or more of the following: cigarettes; regular cigars, cigarillos, or little filtered cigars [cigars]; e-cigarettes; regular pipe, water pipe, or hookah [pipes]; and smokeless tobacco. This study also examined use of each individual product, dual use of cigarettes and e-cigarettes, and multi-product use (i.e., use of two or more tobacco products).

The following employment characteristics were measured as dichotomous (yes vs. no): workplace health insurance offered; paid sick leave; full-time status (i.e., usually worked ≥35 hours per week); experienced job insecurity; experienced work-life imbalance; experienced schedule instability; missed work in the past 12 months due to illness, injury, or

disability; and worked while physically ill in the past 3 months. Employment type (private; government; self-employed or working at a family-owned job or business but not for pay [other type]) and work shift (daytime; evening/night; rotating or 'some other' shift) were also examined.

Workers were grouped into one of five occupation groups based on the 2018 U.S. Bureau of Labor Statistics Standard Occupational Classification and Coding Structure[15]: management, business, science, and arts; service; sales and office; natural resources, construction, and maintenance; and production, transportation, and material moving (see Appendix Table 1). See table footnotes for detailed information on the measures.

Data analysis was conducted in SAS 9.4 (SAS Institute Inc.) and used the survey weights and design variables to account for the complex sample design and produce national estimates. The prevalence of current tobacco use by employment characteristics and occupation group was examined. 95% CIs were produced to allow for informal, conservative comparisons of prevalence estimates. Multivariable logistic regression was used to estimate adjusted odds of any tobacco use by employment characteristics; separate models were run for each employment characteristic.

Results

Of the estimated 149 million working adults in the United States (Table 1), 20.0% (95% CI=19.2–20.8) currently used tobacco (Table 2). By occupation group and employment characteristics, any tobacco use was highest among workers in the natural resources, construction, and maintenance occupation group and who worked while physically ill in the past 3 months (46.3%; 95% CI=38.1–54.5) (Table 3).

Adjusted odds of any tobacco use (Table 4) were significantly lower among workers who were offered health insurance at their workplace (AOR=0.86; 95% CI=0.77–0.97); had paid sick leave (AOR=0.81; 95% CI=0.73–0.91); and government vs. private employment (AOR=0.61; 95% CI=0.52–0.70). Odds were significantly higher among workers who usually worked ≥35 hours per week (AOR=1.21; 95% CI=1.06–1.39); worked a rotating or 'some other' shift vs. daytime shift (AOR=1.19; 95% CI=1.02–1.38); experienced schedule instability (AOR=1.17; 95% CI=1.03–1.31); and worked while physically ill in past 3 months (AOR=1.25; 95% CI=1.11–1.41).

In the management, business, science, and arts group, higher odds of any tobacco use were observed among workers who usually worked ≥35 hours per week (AOR=1.32; 95% CI=1.02–1.70); worked a rotating or 'some other' shift (AOR=1.41; 95% CI=1.10–1.81); experienced schedule instability (AOR=1.29; 95% CI=1.04–1.60); and worked while physically ill in the past 3 months (AOR=1.30; 95% CI=1.09–1.56). Odds were significantly lower among workers in government employment (AOR=0.64; 95% CI=0.52–0.79).

In the service group, lower odds were observed among workers who had paid sick leave (AOR=0.68; 95% CI=0.52–0.89) and government employment (AOR=0.50; 95% CI=0.37–0.68). In the production, transportation, and material moving group, odds were significantly higher among workers who usually worked ≥35 hours per week (AOR=1.69; 95% CI=1.15–

2.47) and worked while physically ill in the past 3 months (AOR=1.44; 95% CI=1.08–1.92). There were no significant associations between employment characteristics and any tobacco use in the sales and office group and natural resources, construction, and maintenance group.

Discussion

In 2021, an estimated 20% of U.S. working adults used commercial tobacco products, and prevalence was higher among some employment characteristics and occupation groups. Current study findings add to the limited evidence on how tobacco use varies by employment characteristics and occupation, including how the workplace environment might impact workers' tobacco use. The Guide to Community Preventive Services recommends several tobacco cessation interventions that can be implemented in the workplace, including smoke-free policies and reducing out-of-pocket costs for evidence-based cessation treatments.[16] Group therapy programs have also proven effective.[17] Workplaces that have a higher prevalence of tobacco use could consider focused implementation of these strategies to reduce tobacco-related disparities and chronic disease.

Higher odds of any tobacco use were found among rotating or 'some other' shift workers and workers who experienced schedule instability. These findings are also consistent with previous studies, which have found higher levels of smoking among workers with rotating shifts[18] and low job control.[19] Providing greater stability of shift work when possible could reduce workers' tobacco use. For example, Hurtado et al.[20] found reductions in cigarette consumption at workplaces implementing an intervention focused in part on increasing schedule control.

Missing work due to illness, injury, or disability was not associated with any tobacco use. This finding differs from previous studies, which have found tobacco use to be associated with higher illness-related absence from work and subsequent annual excess costs to employers.[11–13,21,22] One explanation for this finding is the increased role of telework since the COVID-19 pandemic. Telework may increase working while ill,[23] so it is possible that some workers who used tobacco who might have otherwise had an illness-related absence worked from home instead.

Odds of any tobacco use were also lower among government vs. private workers. These findings might be partially explained by availability of smoke-free policies and comprehensive insurance coverage for cessation in some government workspaces.[24–27] For example, 40 states have laws that prohibit cigarette smoking within government workplaces.[25] The Federal Employees Health Benefits Program is required to provide comprehensive cessation support to federal employees, including FDA-approved cessation medication and counseling, with no cost sharing (e.g., no copayments).[26] In contrast, there is substantial variability in state and local smoke-free laws for private-sector workplaces,[28] as well as insurance coverage for tobacco cessation medications offered in private and public workplaces.[29]

Limitations

Data collection procedures in 2021 differed from previous years due to challenges resulting from the COVID-19 pandemic[14]; findings may be less generalizable and comparable to other years. Due to small sample sizes, this study was unable to examine disparities in tobacco use by individual occupations or tobacco products by occupation group. The NHIS is a cross-sectional survey, limiting our ability to examine causal directions and pathways between employment characteristics and tobacco use.

Conclusions

One in five U.S. workers used some form of tobacco product and differences existed by occupation group, with as many as 1 in 3 workers using tobacco in the national resources, construction, and maintenance occupation group. Tobacco use was also higher among workers employed at workplaces that did not offer health insurance, had no paid sick leave, usually worked ≥35 hours per week, were employed with a private company, worked a rotating or 'some other' shift, experienced schedule instability, and worked while physically ill in the past 3 months. These findings could inform workplace interventions and policies to better support worker health, including tobacco cessation, among occupation groups with higher tobacco-use prevalence.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1.

Sample and Population Estimates, Working Adults, United States, 2021

Variable	n[a]	N x 1,000[b]	% (95% CI)[b]
Total	16,125	149,039	61.7 (61.0–62.5)
Occupation Group [c]			
Management, Business, Science, and Arts[d]	7,556	64,645	43.4 (42.3–44.5)
Service[e]	2,318	23,329	15.7 (14.9–16.4)
Sales and Office[f]	3,143	29,239	19.6 (18.9–20.4)
Natural Resources, Construction, and Maintenance[g]	1,270	12,946	8.7 (8.1–9.2)
Production, Transportation, and Material Moving[h]	1,838	18,880	12.7 (11.9–13.4)
Employment Characteristics [i]			
Workplace health insurance offered[j]			
No	4,500	43,905	29.6 (28.6–30.6)
Yes	11,576	104,489	70.4 (69.4–71.4)
Paid sick leave available[k]			
No	4,803	46,215	31.3 (30.4–32.3)
Yes	11,183	101,331	68.7 (67.7–69.6)
Usually worked ≥35 hours per week[l]			
No	3,069	29,312	19.7 (18.8–20.5)
Yes	13,042	119,619	80.3 (79.5–81.2)
Employment type[m]			
Private	11,546	109,018	73.5 (72.5–74.5)
Government	2,587	22,311	15.0 (14.3–15.8)
Other type	1,912	16,993	11.5 (10.8–12.1)
Work shift[n]			
Daytime	12,971	117,909	79.3 (78.5–80.1)
Evening or night	1,304	13,491	9.1 (8.5–9.7)
Rotating or ‘some other’	1,804	17,245	11.6 (11.0–12.2)
Experienced job insecurity[o]			
No	13,670	126,319	85.8 (85.0–86.5)
Yes	2,248	20,929	14.2 (13.5–15.0)
Experienced work-life imbalance[p]			
No	12,662	116,372	78.5 (77.7–79.3)
Yes	3,371	31,883	21.5 (20.7–22.3)
Experienced schedule instability[q]			
No	12,974	118,824	80.0 (79.2–80.8)
Yes	3,092	29,702	20.0 (19.2–20.8)

Variable	n[a]	N x 1,000[b]	% (95% CI)[b]
Missed work in past 12 months due to illness, injury, or disability[r]			
No	9,422	87,516	59.1 (58.2–60.0)
Yes	6,594	60,533	40.9 (40.0–41.8)
Worked while physically ill in past 3 months[s]			
No	12,946	119,614	81.5 (80.7–82.2)
Yes	2,934	27,190	18.5 (17.8–19.3)

Note: Frequencies may not add to totals due to missing data.

[a]Number of working adults in the 2021 National Health Interview Survey dataset.

[b]National estimates for the number and percentage of working adults in the United States.

[c]Based on the 2018 U.S. Bureau of Labor Statistics Standard Occupational Classification and Coding Structure. Workers that were missing data for occupation (n=328) and in the military specific occupation group (n=8) were excluded from analysis.

[d]Includes architecture and engineering; arts, design, entertainment, sports, and media; business and financial operations; community and social services; computer and mathematical; education, training, and library; healthcare practitioners and technical; legal; life, physical, and social science; and management occupations.

[e]Includes building and grounds cleaning and maintenance; food preparation and serving related; healthcare support; personal care and service; and protective service occupations.

[f]Includes office and administrative support; and sales and related occupations.

[g]Includes construction and extraction; farming, fishing, and forestry; and installation, maintenance, and repair occupations.

[h]Includes production; and transportation and material moving occupations.

[i]Each employment characteristic was measured with one question (described in detail in the footnotes below). For all measures, ‘refused’ and ‘don’t know’ responses were coded as missing.

[j]Workers asked whether health insurance was offered to them through their workplace (yes or no). This measure is distinct from worker health insurance status; it is possible for the worker to have answered yes to this question without being covered by the insurance offered.

[k]Workers asked whether they had paid sick leave available if needed (yes or no).

[l]Workers asked whether they usually worked 35 hours or more per week in total at all jobs or businesses (yes or no).

[m]Workers asked what category best described their main job (employee of a private company for wages; a federal government employee; a state government employee; a local government employee; self-employed in own business, professional practice, or farm; working without pay in a family-owned business or farm). Federal, state, and local government workers were combined into one category. Workers who were self-employed or working without pay were coded as ‘other type’.

[n]Workers asked what category best described their usual hours of work at their main job (daytime shift; evening shift; night shift; rotating shift; some other shift). Workers with evening and night shifts were combined into one category. Workers with a rotating or ‘some other’ shift were combined into one category.

[o]Workers asked how likely it was that they would lose their job or be laid off in the next 12 months (very likely; fairly likely; somewhat likely; not at all likely). Workers who responded very likely, fairly likely, or somewhat likely were coded as ‘yes’ for job insecurity.

[p]Workers asked how easy or difficult it was for them to change their work schedule to do things that were important to them or their family (very easy; somewhat easy; somewhat difficult; very difficult). Workers who responded somewhat difficult or very difficult were coded as ‘yes’ for work-life imbalance.

[q]Workers asked whether their work schedule at their main job changed on a regular basis (yes or no). Workers who responded yes were coded as ‘yes’ for schedule instability.

[r]Workers asked how many days of work they missed in the past 12 months because of an illness, injury, or disability. Workers who missed ≥1 days were coded as 'yes'.

[s]Workers asked how many days they worked while physically ill in the past 3 months. Workers who worked ≥1days while ill were coded as 'yes'.

Table 2.

Current Commercial Tobacco Product Use[a] by Workers' Employment Characteristics, United States, 2021

Variable	Current Tobacco Use, % (95% CI)[b]							
	Any Product[c]	Cigarettes	Cigars[d]	E-Cigarettes	Pipes[e]	Smokeless	Dual Use[f]	≥2 Products[g]
Total	20.0 (19.2–20.8)	11.0 (10.4–11.6)	4.1 (3.8–4.5)	5.4 (4.9–5.8)	1.0 (0.8–1.2)	2.7 (2.4–3.0)	1.4 (1.2–1.6)	3.7 (3.3–4.0)
Occupation Group [h]								
Management, Business, Science, and Arts[i]	14.2 (13.2–15.1)	6.4 (5.7–7.1)	3.4 (2.9–3.8)	4.0 (3.5–4.5)	1.1 (0.8–1.3)	1.7 (1.4–2.1)	0.8 (0.6–1.0)	2.1 (1.7–2.4)
Service[j]	22.2 (20.1–24.2)	14.5 (12.8–16.1)	3.9 (2.9–4.8)	6.7 (5.4–8.0)	0.8 (0.4–1.3)	1.8 (1.2–2.4)	2.2 (1.4–3.0)	4.9 (3.8–5.9)
Sales and Office[k]	18.6 (17.0–20.2)	9.5 (8.3–10.6)	4.1 (3.4–4.9)	6.0 (5.0–7.1)	1.2 (0.7–1.7)	1.7 (1.1–2.2)	1.3 (0.8–1.8)	3.6 (2.7–4.4)
Natural Resources, Construction, and Maintenance[l]	36.0 (32.9–39.1)	21.9 (19.2–24.5)	6.9 (5.2–8.6)	6.0 (4.4–7.5)	1.1 (0.5–1.6)	8.9 (7.1–10.7)	2.1 (1.2–3.1)	7.5 (5.8–9.1)
Production, Transportation, and Material Moving[m]	28.6 (26.3–30.9)	17.4 (15.5–19.3)	5.2 (4.1–6.4)	7.0 (5.6–8.5)	ES	4.5 (3.4–5.6)	2.2 (1.4–3.0)	5.4 (4.2–6.5)
Employment Characteristic [n]								
Workplace health insurance offered[o]								
No	21.7 (20.3–23.2)	12.6 (11.5–13.7)	3.7 (3.1–4.4)	6.1 (5.3–7.0)	1.2 (0.8–1.6)	2.2 (1.7–2.7)	1.5 (1.1–1.9)	3.5 (2.9–4.2)
Yes	19.3 (18.4–20.2)	10.3 (9.6–11.0)	4.3 (3.9–4.8)	5.0 (4.6–5.5)	1.0 (0.8–1.2)	3.0 (2.6–3.3)	1.4 (1.1–1.6)	3.7 (3.3–4.1)
Paid sick leave available[p]								
No	23.1 (21.7–24.6)	13.9 (12.8–15.0)	4.1 (3.4–4.8)	6.1 (5.3–6.9)	1.1 (0.7–1.6)	2.5 (2.0–3.0)	1.8 (1.3–2.2)	4.2 (3.5–4.8)
Yes	18.6 (17.7–19.5)	9.7 (9.0–10.4)	4.2 (3.7–4.6)	5.0 (4.5–5.5)	1.0 (0.8–1.2)	2.8 (2.4–3.2)	1.3 (1.0–1.5)	3.5 (3.1–3.9)
Usually worked ≥35 hours per week[q]								
No	16.3 (14.8–17.8)	9.7 (8.5–10.8)	2.6 (2.0–3.2)	5.5 (4.6–6.5)	1.0 (0.5–1.5)	0.7 (0.4–1.0)	1.1 (0.7–1.5)	2.7 (2.0–3.3)
Yes	20.9 (20.0–21.8)	11.3 (10.6–12.0)	4.5 (4.1–5.0)	5.3 (4.8–5.8)	1.0 (0.8–1.2)	3.2 (2.8–3.6)	1.5 (1.2–1.8)	3.9 (3.5–4.3)
Employment type[r]								
Private	21.1 (20.1–22.1)	11.8 (11.1–12.5)	4.1 (3.7–4.6)	6.0 (5.4–6.6)	1.1 (0.9–1.4)	2.6 (2.3–3.0)	1.7 (1.4–1.9)	3.9 (3.5–4.4)
Government	13.4 (11.9–15.0)	6.8 (5.8–7.8)	3.2 (2.4–4.0)	2.7 (2.0–3.4)	ES	3.2 (2.4–4.0)	0.6 (0.3–0.9)	2.6 (1.8–3.3)
Other type	21.4 (19.3–23.6)	11.5 (9.8–13.2)	5.4 (4.2–6.5)	4.5 (3.4–5.6)	ES	2.8 (2.0–3.7)	0.9 (0.5–1.4)	3.3 (2.4–4.2)
Work shift[s]								
Daytime	19.1 (18.3–20.0)	10.3 (9.7–11.0)	4.0 (3.5–4.4)	4.8 (4.3–5.2)	0.9 (0.7–1.0)	2.8 (2.5–3.2)	1.2 (0.9–1.4)	3.1 (2.8–3.5)

Variable	Current Tobacco Use, % (95% CI)[b]							
	Any Product[c]	Cigarettes	Cigars[d]	E-Cigarettes	Pipes[e]	Smokeless	Dual Use[f]	≥2 Products[g]
Evening or night	23.5 (20.8–26.2)	14.9 (12.6–17.2)	4.0 (2.8–5.3)	8.0 (6.2–9.8)	1.6 (0.7–2.5)	2.0 (1.1–2.9)	3.1 (1.8–4.3)	6.3 (4.6–8.0)
Rotating or ‘some other’	23.2 (20.8–25.6)	12.5 (10.7–14.4)	5.6 (4.4–6.7)	7.5 (5.8–9.1)	1.7 (1.0–2.5)	2.7 (1.8–3.5)	1.9 (1.2–2.6)	5.6 (4.4–6.8)
Experienced job insecurity[t]								
No	19.6 (18.8–20.5)	10.5 (9.8–11.1)	4.2 (3.8–4.6)	5.2 (4.7–5.7)	0.9 (0.7–1.1)	2.8 (2.5–3.2)	1.3 (1.1–1.6)	3.5 (3.1–3.9)
Yes	22.2 (20.1–24.4)	13.7 (12.1–15.4)	3.8 (2.9–4.8)	6.5 (5.2–7.8)	1.7 (1.0–2.5)	2.0 (1.4–2.6)	1.9 (1.2–2.7)	4.7 (3.6–5.8)
Experienced work-life imbalance[u]								
No	19.6 (18.7–20.4)	10.5 (9.9–11.2)	4.3 (3.8–4.7)	5.1 (4.6–5.6)	1.0 (0.8–1.2)	2.7 (2.3–3.0)	1.3 (1.1–1.5)	3.5 (3.1–3.8)
Yes	21.4 (19.8–23.1)	12.5 (11.2–13.8)	3.6 (2.9–4.4)	6.4 (5.4–7.5)	1.1 (0.7–1.4)	2.9 (2.2–3.5)	1.9 (1.3–2.5)	4.5 (3.6–5.3)
Experienced schedule instability[v]								
No	19.3 (18.5–20.1)	10.6 (10.0–11.3)	3.9 (3.5–4.3)	5.0 (4.6–5.5)	1.0 (0.7–1.2)	2.6 (2.3–3.0)	1.3 (1.0–1.5)	3.4 (3.0–3.8)
Yes	22.8 (20.9–24.7)	12.4 (11.0–13.8)	5.3 (4.4–6.2)	6.7 (5.6–7.8)	1.3 (0.8–1.7)	3.0 (2.3–3.7)	1.9 (1.3–2.5)	4.8 (3.9–5.7)
Missed work in past 12 months due to illness, injury, or disability[w]								
No	19.0 (18.0–20.1)	10.6 (9.9–11.4)	4.2 (3.7–4.7)	4.7 (4.2–5.2)	1.0 (0.8–1.2)	2.5 (2.1–2.9)	1.3 (1.0–1.6)	3.4 (2.9–3.8)
Yes	21.3 (20.1–22.5)	11.5 (10.6–12.3)	4.1 (3.5–4.6)	6.3 (5.6–7.1)	1.1 (0.8–1.4)	3.1 (2.6–3.6)	1.5 (1.2–1.9)	4.1 (3.6–4.7)
Worked while physically ill in past 3 months[x]								
No	18.8 (18.0–19.7)	10.2 (9.6–10.9)	4.0 (3.6–4.3)	4.8 (4.4–5.3)	1.0 (0.8–1.2)	2.6 (2.3–2.9)	1.2 (1.0–1.4)	3.3 (2.9–3.6)
Yes	25.1 (23.1–27.1)	14.1 (12.7–15.5)	4.9 (3.9–6.0)	7.8 (6.6–9.1)	1.2 (0.7–1.7)	3.1 (2.4–3.9)	2.2 (1.6–2.9)	5.4 (4.4–6.5)

Abbreviations: ES, estimate suppressed.

[a] Defined as having ever used the tobacco product (for cigarettes, ever smoked at least 100 cigarettes in lifetime) and current use every day or some days.

[b] Estimates are weighted to represent the national population. Estimates with relative standard errors ≥30% were suppressed.

[c] Current use of ≥1 of the following products: cigarettes; regular cigars, cigarillos, or little filtered cigars [cigars]; e-cigarettes; regular pipe, water pipe, or hookah [pipes]; smokeless tobacco.

[d] Includes regular cigars, cigarillos, and little filtered cigars.

[e] Includes regular pipe, water pipe, and hookah.

[f] Current use of cigarettes and e-cigarettes.

[g] Current use of ≥2 of the following products: cigarettes; regular cigars, cigarillos, or little filtered cigars [cigars]; e-cigarettes; regular pipe, water pipe, or hookah [pipes]; smokeless tobacco.

[h] Based on the 2018 U.S. Bureau of Labor Statistics Standard Occupational Classification and Coding Structure. Workers that were missing data for occupation (n=328) and in the military specific occupation group (n=8) were excluded from analysis.

[i] Includes architecture and engineering; arts, design, entertainment, sports, and media; business and financial operations; community and social services; computer and mathematical; education, training, and library; healthcare practitioners and technical; legal; life, physical, and social science; and management occupations.

[j] Includes building and grounds cleaning and maintenance; food preparation and serving related; healthcare support; personal care and service; and protective service occupations.

[k] Includes office and administrative support; and sales and related occupations.

[l] Includes construction and extraction; farming, fishing, and forestry; and installation, maintenance, and repair occupations.

[m] Includes production; and transportation and material moving occupations.

[n] Each employment characteristic was measured with one question (described in detail in the footnotes below). For all measures, 'refused' and 'don't know' responses were coded as missing.

[o] Workers asked whether health insurance was offered to them through their workplace (yes or no). This measure is distinct from worker health insurance status; it is possible for the worker to have answered yes to this question without being covered by the insurance offered.

[p] Workers asked whether they had paid sick leave available if needed (yes or no).

[q] Workers asked whether they usually worked 35 hours or more per week in total at all jobs or businesses (yes or no).

[r] Workers asked what category best described their main job (employee of a private company for wages; a federal government employee; a state government employee; a local government employee; self-employed in own business, professional practice, or farm; working without pay in a family-owned business or farm). Federal, state, and local government workers were combined into one category. Workers who were self-employed or working without pay were coded as 'other type'.

[s] Workers asked what category best described their usual hours of work at their main job (daytime shift; evening shift; night shift; rotating shift; some other shift). Workers with evening and night shifts were combined into one category. Workers with a rotating or 'some other' shift were combined into one category.

[t] Workers asked how likely it was that they would lose their job or be laid off in the next 12 months (very likely; fairly likely; somewhat likely; not at all likely). Workers who responded very likely, fairly likely, or somewhat likely were coded as 'yes' for job insecurity.

[u] Workers asked how easy or difficult it was for them to change their work schedule to do things that were important to them or their family (very easy; somewhat easy; somewhat difficult; very difficult). Workers who responded somewhat difficult or very difficult were coded as 'yes' for work-life imbalance.

[v] Workers asked whether their work schedule at their main job changed on a regular basis (yes or no). Workers who responded yes were coded as 'yes' for schedule instability.

[w] Workers asked how many days of work they missed in the past 12 months because of an illness, injury, or disability. Workers who missed ≥1 days were coded as 'yes'.

[x] Workers asked how many days they worked while physically ill in the past 3 months. Workers who worked ≥1days while ill were coded as 'yes'.

Table 3.

Prevalence of Any Current Commercial Tobacco Product Use[a], Employment Characteristics[b] and Occupation[c], United States, 2021

Variable	Occupation Group, % (95% CI)[d]				
	Management, Business, Science, and Arts[e]	Service[f]	Sales and Office[g]	Natural Resources, Construction, and Maintenance[h]	Production, Transportation, and Material Moving[i]
Workplace health insurance offered[j]					
No	15.8 (13.5–18.1)	22.8 (19.8–25.8)	19.2 (16.1–22.2)	33.4 (28.8–38.1)	25.0 (20.2–29.7)
Yes	13.8 (12.7–14.8)	21.8 (19.0–24.6)	18.3 (16.3–20.2)	38.1 (34.4–41.9)	30.0 (27.2–32.8)
Paid sick leave available[k]					
No	15.9 (13.6–18.2)	24.6 (21.5–27.6)	20.1 (17.0–23.1)	35.6 (31.1–40.0)	26.9 (22.9–30.8)
Yes	13.8 (12.7–14.8)	19.8 (17.1–22.6)	17.8 (15.9–19.7)	36.5 (32.3–40.7)	29.9 (26.9–33.0)
Usually worked ≥35 hours per week[l]					
No	11.0 (8.8–13.2)	19.5 (16.5–22.6)	14.5 (11.6–17.5)	32.3 (23.4–41.1)	19.0 (13.8–24.2)
Yes	14.7 (13.6–15.7)	23.6 (20.9–26.3)	19.8 (17.9–21.7)	36.4 (33.1–39.7)	30.7 (28.2–33.3)
Employment type[m]					
Private	15.2 (14.0–16.4)	24.2 (21.6–26.8)	18.8 (17.0–20.6)	35.8 (32.4–39.3)	28.7 (26.2–31.3)
Government	9.9 (8.4–11.5)	16.7 (12.9–20.6)	14.3 (9.8–18.8)	35.7 (24.5–46.9)	24.1 (14.7–33.5)
Other type	15.4 (12.6–18.2)	20.0 (14.9–25.1)	19.5 (14.9–24.1)	36.9 (30.0–43.8)	29.7 (20.5–38.8)
Work shift[n]					
Daytime	13.5 (12.5–14.5)	20.9 (18.3–23.4)	18.6 (16.8–20.5)	36.0 (32.6–39.3)	27.7 (25.0–30.5)
Evening or night	18.3 (13.0–23.7)	25.6 (20.4–30.7)	15.1 (9.5–20.6)	36.9 (21.9–51.9)	29.7 (23.9–35.5)
Rotating or ‘some other’	18.4 (15.0–21.8)	23.4 (18.5–28.3)	20.7 (15.8–25.6)	36.3 (25.7–46.9)	31.4 (24.8–38.1)
Experienced job insecurity[o]					
No	13.8 (12.8–14.8)	21.8 (19.5–24.0)	18.4 (16.7–20.1)	35.4 (32.0–38.8)	29.2 (26.7–31.8)
Yes	16.1 (13.2–19.0)	24.6 (19.2–30.0)	20.5 (15.8–25.2)	37.7 (30.6–44.9)	25.5 (20.0–31.1)
Experienced work-life imbalance[p]					
No	14.0 (13.0–15.0)	21.4 (19.1–23.7)	18.1 (16.4–19.7)	37.6 (34.0–41.2)	27.4 (24.7–30.0)
Yes	14.5 (12.5–16.6)	24.7 (20.2–29.2)	20.9 (16.7–25.1)	30.0 (23.7–36.4)	32.2 (27.4–37.0)

Variable	Occupation Group, % (95% CI)[d]				
	Management, Business, Science, and Arts[e]	Service[f]	Sales and Office[g]	Natural Resources, Construction, and Maintenance[h]	Production, Transportation, and Material Moving[i]
Experienced schedule instability[q]					
No	13.5 (12.5–14.5)	20.9 (18.5–23.2)	18.6 (16.8–20.4)	35.6 (32.0–39.2)	28.8 (26.2–31.3)
Yes	17.3 (14.6–20.0)	26.2 (21.9–30.5)	18.7 (14.9–22.6)	37.2 (30.8–43.5)	27.6 (22.6–32.6)
Missed work in past 12 months due to illness, injury, or disability[r]					
No	13.6 (12.4–14.7)	20.4 (17.8–23.1)	17.5 (15.6–19.5)	32.8 (28.8–36.7)	27.8 (24.6–31.1)
Yes	14.8 (13.4–16.3)	24.6 (21.3–28.0)	19.9 (17.4–22.5)	41.9 (37.1–46.8)	30.0 (26.2–33.7)
Worked while physically ill in past 3 months[s]					
No	13.2 (12.2–14.2)	21.1 (18.8–23.3)	17.5 (15.9–19.1)	34.0 (30.8–37.3)	26.5 (24.1–29.0)
Yes	17.9 (15.7–20.2)	27.9 (22.8–32.9)	23.4 (19.2–27.7)	46.3 (38.1–54.5)	38.7 (32.5–44.9)

[a] Current use of ≥1 of the following products: cigarettes; regular cigars, cigarillos, or little filtered cigars [cigars]; e-cigarettes; regular pipe, water pipe, or hookah [pipes]; smokeless tobacco.

[b] Each employment characteristic was measured with one question (described in detail in the footnotes below). For all measures, 'refused' and 'don't know' responses were coded as missing.

[c] Based on the 2018 U.S. Bureau of Labor Statistics Standard Occupational Classification and Coding Structure. Workers missing data for occupation (n=328) and in the military specific occupation group (n=8) were excluded.

[d] Estimates are weighted to represent the national population.

[e] Includes architecture and engineering; arts, design, entertainment, sports, and media; business and financial operations; community and social services; computer and mathematical; education, training, and library; healthcare practitioners and technical; legal; life, physical, and social science; and management occupations.

[f] Includes building and grounds cleaning and maintenance; food preparation and serving related; healthcare support; personal care and service; and protective service occupations.

[g] Includes office and administrative support; and sales and related occupations.

[h] Includes construction and extraction; farming, fishing, and forestry; and installation, maintenance, and repair occupations.

[i] Includes production; and transportation and material moving occupations.

[j] Workers asked whether health insurance was offered to them through their workplace (yes or no). This measure is distinct from worker health insurance status; it is possible for the worker to have answered yes to this question without being covered by the insurance offered.

[k] Workers asked whether they had paid sick leave available if needed (yes or no).

[l] Workers asked whether they usually worked 35 hours or more per week in total at all jobs or businesses (yes or no).

[m] Workers asked what category best described their main job (employee of a private company for wages; a federal government employee; a state government employee; a local government employee; self-employed in own business, professional practice, or farm; working without pay in a family-owned business or farm). Federal, state, and local government workers were combined into one category. Workers who were self-employed or working without pay were coded as 'other type'.

[n] Workers asked what category best described their usual hours of work at their main job (daytime shift; evening shift; night shift; rotating shift; some other shift). Workers with evening and night shifts were combined into one category. Workers with a rotating or 'some other' shift were combined into one category.

[o] Workers asked how likely it was that they would lose their job or be laid off in the next 12 months (very likely; fairly likely; somewhat likely; not at all likely). Workers who responded very likely, fairly likely, or somewhat likely were coded as 'yes' for job insecurity.

[p] Workers asked how easy or difficult it was for them to change their work schedule to do things that were important to them or their family (very easy; somewhat easy; somewhat difficult; very difficult). Workers who responded somewhat difficult or very difficult were coded as 'yes' for work-life imbalance.

[q] Workers asked whether their work schedule at their main job changed on a regular basis (yes or no). Workers who responded yes were coded as 'yes' for schedule instability.

[r] Workers asked how many days of work they missed in the past 12 months because of an illness, injury, or disability. Workers who missed ≥1 days were coded as 'yes'.

[s] Workers asked how many days they worked while physically ill in the past 3 months. Workers who worked ≥1days while ill were coded as 'yes'.

Table 4.

Odds of Any Current Commercial Tobacco Product Use[a], Employment Characteristics[b] and Occupation[c], United States, 2021

Variable	Total	Occupation Group, aOR (95% CI)[d]				
		Management, Business, Science, and Arts[e]	Service[f]	Sales and Office[g]	Natural Resources, Construction, and Maintenance[h]	Production, Transportation, and Material Moving[i]
Workplace health insurance offered[j]						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	**0.86 (0.77–0.97)**	0.88 (0.72–1.09)	0.82 (0.63–1.07)	0.88 (0.68–1.15)	0.98 (0.73–1.32)	1.13 (0.82–1.56)
Paid sick leave available[k]						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	**0.81 (0.73–0.91)**	0.92 (0.76–1.13)	**0.68 (0.52–0.89)**	0.86 (0.67–1.11)	0.89 (0.66–1.21)	1.21 (0.93–1.59)
Usually worked ≥35 hours per week[l]						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	**1.21 (1.06–1.39)**	**1.32 (1.02–1.70)**	1.10 (0.83–1.47)	1.30 (0.94–1.78)	0.99 (0.64–1.55)	**1.69 (1.15–2.47)**
Employment type[m]						
Private	Ref	Ref	Ref	Ref	Ref	Ref
Government	**0.61 (0.52–0.70)**	**0.64 (0.52–0.79)**	**0.50 (0.37–0.68)**	0.71 (0.47–1.06)	0.78 (0.45–1.35)	0.78 (0.44–1.40)
Other type	0.98 (0.85–1.13)	0.96 (0.75–1.22)	0.82 (0.56–1.18)	1.06 (0.76–1.48)	1.05 (0.75–1.48)	1.15 (0.70–1.86)
Work shift[n]						
Daytime	Ref	Ref	Ref	Ref	Ref	Ref
Evening or night	1.16 (0.98–1.36)	1.28 (0.89–1.86)	1.10 (0.79–1.54)	0.65 (0.40–1.04)	0.82 (0.38–1.75)	1.19 (0.86–1.64)
Rotating or ‘some other’	**1.19 (1.02–1.38)**	**1.41 (1.10–1.81)**	1.00 (0.70–1.41)	1.10 (0.78–1.56)	1.00 (0.60–1.67)	1.18 (0.82–1.69)
Experienced job insecurity[o]						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.11 (0.97–1.28)	1.09 (0.86–1.39)	1.25 (0.89–1.75)	1.12 (0.82–1.52)	1.26 (0.90–1.78)	0.88 (0.63–1.21)
Experienced work-life imbalance[p]						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.04 (0.93–1.16)	1.02 (0.85–1.24)	1.05 (0.79–1.38)	1.18 (0.89–1.56)	0.74 (0.52–1.04)	1.13 (0.86–1.48)

Variable	Total	Occupation Group, aOR (95% CI)[d]				
		Management, Business, Science, and Arts[e]	Service[f]	Sales and Office[g]	Natural Resources, Construction, and Maintenance[h]	Production, Transportation, and Material Moving[i]
Experienced schedule instability[q]						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	**1.17 (1.03–1.31)**	**1.29 (1.04–1.60)**	1.31 (0.99–1.74)	1.00 (0.74–1.35)	0.98 (0.70–1.36)	0.92 (0.69–1.22)
Missed work in past 12 months due to illness, injury, or disability[r]						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.04 (0.94–1.14)	1.04 (0.89–1.21)	1.01 (0.78–1.31)	1.07 (0.85–1.34)	1.17 (0.88–1.56)	0.94 (0.71–1.25)
Worked while physically ill in past 3 months[s]						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	**1.25 (1.11–1.41)**	**1.30 (1.09–1.56)**	1.21 (0.89–1.66)	1.18 (0.89–1.57)	1.35 (0.91–1.99)	**1.44 (1.08–1.92)**

Note: Boldface indicates statistical significance ($p<0.05$).

[a] Current use of ≥1 of the following products: cigarettes; regular cigars, cigarillos, or little filtered cigars [cigars]; e-cigarettes; regular pipe, water pipe, or hookah [pipes]; smokeless tobacco.

[b] Each employment characteristic was measured with one question (described in detail in the footnotes below). For all measures, 'refused' and 'don't know' responses were coded as missing.

[c] Based on the 2018 U.S. Bureau of Labor Statistics Standard Occupational Classification and Coding Structure. Workers missing data for occupation (n=328) and in the military specific occupation group (n=8) were excluded.

[d] Logistic regression was used to calculate aORs, defined as the adjusted odds of any tobacco use (=1) vs. no tobacco use (=0). Separate models were run for each employment characteristic while adjusting for age group (18–24; 25–34; 35–44; 45–54; 55–64; ≥65 years), sex (female; male), race and ethnicity (non-Hispanic Asian; non-Hispanic Black or African American; non-Hispanic White; non-Hispanic American Indian or Alaska Native, alone or with other racial identities, and other single and multiple racial identities [other race]; Hispanic or Latino), sexual orientation (bisexual; gay or lesbian; straight; other sexual orientation), family income as a percentage of the federal poverty level (<100%; ≥100 to <200%; ≥200% to <400%; ≥400%), county classification (rural; urban), U.S. census region (Northwest; Midwest; South; West), self-rated health (excellent/very good/good; fair/poor), and whether the worker had ever been diagnosed with any type of depression (yes; no). County classification was defined based on the 2013 National Center for Health Statistics Urban-Rural Classification Scheme for Counties. Counties designated as large central metropolitan, large fringe metropolitan, medium metropolitan, and small metropolitan were coded as urban, while counties designated as micropolitan or non-core were coded as rural.

[e] Includes architecture and engineering; arts, design, entertainment, sports, and media; business and financial operations; community and social services; computer and mathematical; education, training, and library; healthcare practitioners and technical; legal; life, physical, and social science; and management occupations.

[f] Includes building and grounds cleaning and maintenance; food preparation and serving related; healthcare support; personal care and service; and protective service occupations.

[g] Includes office and administrative support; and sales and related occupations.

[h] Includes construction and extraction; farming, fishing, and forestry; and installation, maintenance, and repair occupations.

[i] Includes production; and transportation and material moving occupations.

[j] Workers asked whether health insurance was offered to them through their workplace (yes or no). This measure is distinct from worker health insurance status; it is possible for the worker to have answered yes to this question without being covered by the insurance offered.

[k] Workers asked whether they had paid sick leave available if needed (yes or no).

[l] Workers asked whether they usually worked 35 hours or more per week in total at all jobs or businesses (yes or no).

[m] Workers asked what category best described their main job (employee of a private company for wages; a federal government employee; a state government employee; a local government employee; self-employed in own business, professional practice, or farm; working without pay in a family-owned business or farm). Federal, state, and local government workers were combined into one category. Workers who were self-employed or working without pay were coded as 'other type'.

[n] Workers asked what category best described their usual hours of work at their main job (daytime shift; evening shift; night shift; rotating shift; some other shift). Workers with evening and night shifts were combined into one category. Workers with a rotating or 'some other' shift were combined into one category.

[o] Workers asked how likely it was that they would lose their job or be laid off in the next 12 months (very likely; fairly likely; somewhat likely; not at all likely). Workers who responded very likely, fairly likely, or somewhat likely were coded as 'yes' for job insecurity.

[p] Workers asked how easy or difficult it was for them to change their work schedule to do things that were important to them or their family (very easy; somewhat easy; somewhat difficult; very difficult). Workers who responded somewhat difficult or very difficult were coded as 'yes' for work-life imbalance.

[q] Workers asked whether their work schedule at their main job changed on a regular basis (yes or no). Workers who responded yes were coded as 'yes' for schedule instability.

[r] Workers asked how many days of work they missed in the past 12 months because of an illness, injury, or disability. Workers who missed ≥1 days were coded as 'yes'.

[s] Workers asked how many days they worked while physically ill in the past 3 months. Workers who worked ≥1days while ill were coded as 'yes'.