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ARTICLES

Tobacco Use Prevalence and Factors Associated with Tobacco Use in New U.S. Army Personnel

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ABSTRACT. This study examined the prevalence of tobacco use and factors associated with pre-military service cigarette and smokeless tobacco use. From January 2000 to December 2006, military students arriving for Advanced Individual Training at the U.S. Army Ordnance School completed a questionnaire that asked about their use of tobacco products. The prevalence of smokeless tobacco use from 2000 to 2006 for women generally decreased, as did the number of cigarettes smoked per day by men. For men and women, factors associated with cigarette use included younger age, Caucasian race, and use of smokeless tobacco. Factors associated with smokeless tobacco use among men included younger age, Caucasian race, and cigarette use. For women, cigarette use was the only factor associated with smokeless tobacco use. The identified factors in this study could be used to establish strategies in the future to reduce tobacco use in the military.

KEYWORDS. Ordnance school, injury, illness, basic combat training, ethnicity, cigarettes, army, military

INTRODUCTION

Previous studies suggest that the incidence of smoking cigarettes increases after one enters

the military environment.^{1–3} Across the military services, 38% of current smokers reported that they started smoking after joining the military and 18% of men between 18 to 25 years

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reported that they began using smokeless tobacco after joining the military.⁴ Tobacco use is a concern of the Department of Defense due to smoking related illnesses, increased injury risk, reduced aerobic performance levels, related health care costs, lost productivity, absenteeism, and attrition.^{4–10} It is estimated that the Department of Defense spends \$564 million a year on health care costs associated with tobacco use¹¹ and \$130 million per year for early discharge associated with smoking.⁹ In 2006, the prevalence of any smoking in the U.S. Army (i.e., smoking at least once in the past 30 days) was 32% and the prevalence of heavy smoking (i.e., one or more packs per day in the last 30 days) was 11%.⁴

Previous studies have examined risk factors or possible predictors of tobacco use.^{12–19} A study examining risk factors for smoking among U.S. Air Force basic trainees found that smokers were more likely to be Caucasians, have less education, come from lower income households, and be married when compared to non-smokers.²⁰ Another study examining smokeless tobacco use in the U.S. Air Force found that use was higher among younger individuals and Caucasians (relative to other races) and that current smokers were almost 4 times more likely to use smokeless tobacco products compared to those who had never smoked.²¹

Although there have been several studies on factors associated with tobacco use in young adults,^{3,12,15,18,20,22–26} few^{14,10,27} have focused on U.S. Army personnel. The purpose of this analysis was to examine the prevalence of tobacco use over the years 2000 to 2006 and factors associated with cigarette smoking and smokeless tobacco use in a large cohort of recently enlisted U.S. Army personnel.

METHODS

Participants

Participants were service members attending Advance Individual Training at the U.S. Army Ordnance Center and School, Aberdeen Proving Ground, Maryland, from January 2000 to December 2006. New students were in-

processed every week (except for the last 2 weeks in December), and the average \pm SD weekly number of students was 99 ± 24 . They had recently (generally within a few days) graduated from basic training and had just arrived (within 1 to 3 days) to attend training for their military occupational specialty. A majority of the military occupational specialties at Aberdeen Proving Ground include metal workers, machinists, small arms/artillery repairers, field artillery systems repairers, utilities equipment repairers, power generation equipment repairers, wheel vehicle mechanics, and track vehicle repairers. Training can last anywhere from 9 to 26 weeks depending on the military occupational specialty.

Questionnaire

As a part of the in-processing procedures, each service member was asked to fill out a Soldier Health In-Processing questionnaire. The survey was developed for early identification of injuries and illnesses so that service members could be identified and receive immediate medical treatment.

The Soldier Health In-Processing questionnaire contained questions on date of birth, gender, military rank, race, where the service member completed basic training, whether the service member currently had an injury or illness, and history of tobacco use. Each of the questions was read by a moderator, and the service members answered the question after the reading. Service members could ask questions at any time during the process.

Tobacco History

The tobacco history questions queried both cigarette and smokeless tobacco use. One question asked whether the student had smoked cigarettes in the 30 days prior to BCT, and another asked whether the student had smoked cigarettes on at least 20 of the 30 days prior to BCT. Those who answered positively to the question on smoking in the 30 days before BCT but negatively to the question on smoking on 20 of the 30 days were considered "occasional smokers." Those who responded positively to the

question on smoking on at least 20 of 30 days before BCT were considered "frequent smokers."

A question asked whether the student had used smokeless tobacco in the 30 days prior to BCT, and another asked whether the student had used smokeless tobacco on at least 20 of 30 days prior to BCT. Those who answered positively to the question on smokeless tobacco use in the 30 days before BCT but negatively to the question on smokeless tobacco use on 20 of 30 days were considered "occasional smokeless tobacco users." Those who responded positively to the question on smokeless tobacco use on at least 20 of 30 days before BCT were considered "frequent smokeless tobacco users."

Data Analysis

The SPSS Version 15.0 was used for statistical analysis. Age was calculated from date of birth to the day of in-processing. To examine potential temporal changes in tobacco use variables, students were aggregated by year from 2000 to 2006. Potential risk factors (age, race, and cigarette use or smokeless tobacco use) for frequent cigarette use and frequent smokeless tobacco use (dependent variables) were explored using logistic regression. Univariate odds ratios (OR) and 95% confidence intervals (CI) were calculated for each smoking risk factor (independent variables). Risk factors from the univariate analysis with a $p < .05$ were selected for a backward stepping multivariate logistic regression. In the multivariate analysis, a value of $p < .05$ was required to be retained in the model.

RESULTS

Descriptive Data

There were 27,289 men and 3,856 women who completed the questionnaire. A majority of the service members were Caucasians (60%) between the ages of 17 and 24 (mean age \pm SD, 20 ± 2 years), were of lower military rank (Private 1, 52%), and had attended basic training at Fort Knox, Kentucky, or Fort Jackson, South Carolina (44% and 38%, respectively). Of the smokers, 8% were occasional smokers and 35% were frequent smokers. Among frequent smokers,

31% smoked less than 10 cigarettes per day, 45% smoked 10 to 20 cigarettes per day, and 24% smoked more than 20 cigarettes per day. Of the smokeless tobacco users, 5% were occasional smokeless tobacco users and 10% were frequent smokeless tobacco users. Among frequent smokeless tobacco users, 63% used less than 1 can, pouch, or plug per day on average, 31% used 1 can, pouch, or plug per day on average, and 5% used 2 or more cans, pouches, or plugs per day.

Men were 1.17 (95% CI: 1.09–1.26) times more likely to be frequent smokers compared to women. The odds of being an occasional smoker were the same for both men and women (odds ratio [men/women] = 1.02, 95% CI: 0.91–1.14). Men were 3.7 (95% CI: 2.83–4.92) and 7.1 (95% CI: 5.54–9.07) times more likely to be occasional smokeless tobacco users and frequent smokeless tobacco users, respectively, compared to women.

Trends in Cigarette Smoking

With some variation, the proportion of men and women using cigarettes and men using smokeless tobacco remained relatively stable over the years (2000 to 2006). However, the proportion of female frequent smokeless tobacco users, tended to decrease from 4% in 2000 to 1% in 2006. Men tended to smoke fewer cigarettes (number of cigarettes per day) over time, with a smaller proportion of men reporting smoking 20 or more cigarettes per day each year (2000: 10.4%, 2001: 10.7%, 2002: 9.0%, 2003: 9.5%, 2004: 8.0%, 2005: 8.3%, 2006: 7.6%).

Factors Associated with Smoking

Table 1 displays the results of the univariate logistic regression with frequent smoking as the dependent variable. For both men and women, the odds of cigarette use was lower for the 17 to 19 year olds when compared to the 20 to 24 year olds with the odds of cigarette use generally decreasing after the age of 24. The odds of cigarette use were also higher among Caucasians, occasional smokeless tobacco users, and frequent smokeless tobacco users. Use of less than

TABLE 1. Univariate Logistic Regression with Frequent Smoking as the Dependent Variable

Variable	Survey Question	Category	Men				Women			
			N	Smokers (%)	Odds Ratio (95% CI)	P Value	N	Smokers (%)	Odds Ratio (95%CI)	P Value
Age Group	Age group	17–19	12615	34.9	1.00	—	2037	29.8	1.00	—
		20–24	9622	41.0	1.29 (1.22–1.36)	<0.01	1154	39.4	1.53 (1.31–1.78)	<0.01
		25–29	2425	36.9	1.09 (1.00–1.19)	0.06	338	34.9	1.26 (0.99–1.61)	0.06
		≥ 30	1328	29.1	0.76 (0.67–0.86)	<0.01	180	35.6	1.30 (0.94–1.78)	0.11
Race	Race	Caucasian	16212	44.9	1.00	—	2006	44.5	1.00	—
		Black	3946	22.6	0.36 (0.33–0.39)	<0.01	765	15.8	0.23 (0.19–0.29)	<0.01
		Asian	798	29.7	0.52 (0.44–0.60)	<0.01	111	32.4	0.60 (0.40–0.90)	0.01
		Hispanic	3570	20.0	0.31 (0.28–0.33)	<0.01	534	18.7	0.29 (0.23–0.36)	<0.01
		Native American	694	33.1	0.61 (0.52–0.71)	<0.01	154	33.8	0.64 (0.45–0.90)	0.01
		Other	757	36.2	0.69 (0.60–0.81)	<0.01	143	33.6	0.63 (0.44–0.90)	0.01
		No	24343	35.1	1.00	—	3602	32.7	1.00	—
Tobacco (Smokeless)	Occasional smokeless tobacco use	Yes	1293	68.5	4.03 (3.57–4.54)	<0.01	53	69.8	4.75 (2.63–8.58)	<0.01
		No	22554	33.5	1.00	—	3575	32.6	1.00	—
	Frequent smokeless tobacco use	Yes	2827	59.4	2.90 (2.67–3.14)	<0.01	57	64.9	3.82 (2.21–6.61)	<0.01
		No	22554	33.5	1.00	—	3575	32.6	1.00	—
	Cans, pouches or plugs	Less than 1	1726	64.6	3.62 (3.27–4.01)	<0.01	37	75.7	6.42 (3.02–13.65)	<0.01
		1 on average	847	48.8	1.89 (1.64–2.17)	<0.01	7	57.1	2.75 (0.62–12.31)	0.19
		2 or more	143	53.1	2.25 (1.62–3.13)	<0.01	^a	^a	^a	^a

^a Not included in the model due to the limited number of responses (n=2).

one can, plug or pouch of smokeless tobacco was most strongly associated with cigarette use compared to greater smokeless tobacco use.

Table 2 displays the results of the backward stepping multivariate logistic regression analysis with frequent smoking as the dependent variable. There were 24,177 (89%) men and 3,527 (92%) women who complete data and could be included in the multivariate analysis. For both men and women, all four factors (age, race, and occasional and frequent smokeless tobacco use) were independent risk factors for cigarette use in the multivariate model.

Factors Associated with Smokeless Tobacco Use

Table 3 displays the results of the univariate logistic regressions with frequent smokeless tobacco use as the dependent variable. For men,

the odds of using smokeless tobacco was highest for 17 to 19 years olds, Caucasians, occasional cigarette smokers, frequent smokers, and those who had smoked a greater number of cigarettes per day. For women, the odds of smokeless tobacco use changed little with age but was higher among Caucasians (compared to Blacks and Hispanics), occasional smokers, frequent smokers, and those who had smoked a greater number of cigarettes per day.

Table 4 displays the results of the backward stepping multivariate logistic regression analysis with frequent smokeless tobacco use as the dependent variable. Data were completed by 24,818 (91%) men and 3,555 (92%) women and could be included in the multivariate analysis. For the men, all four factors (younger age, Caucasian race, and occasional and frequent smokers) were independent risk factors. For women, only occasional and frequent smokers were retained in the multivariate model.

TABLE 2. Multivariate Logistic Regression Results with Frequent Smoking as the Dependent Variable

Variable	Category	Men			Women		
		N	Odds Ratio(95%CI)	P Value	N	Odds Ratio (95%CI)	P Value
Age Group	17–19	11941	1.00	—	1937	1.00	—
	20–24	9130	1.40 (1.32–1.48)	<0.01	1099	1.56 (1.32–1.83)	<0.01
	25–29	2331	1.31 (1.19–1.44)	<0.01	316	1.41 (1.08–1.83)	0.01
	≥ 30	1258	0.89 (0.78–1.02)	<0.01	166	1.44 (1.01–2.05)	0.04
Race	Caucasian	15448	1.00	—	1917	1.00	—
	Black	3688	0.43 (0.39–0.46)	<0.01	714	0.23 (0.19–0.29)	<0.01
	Asian	745	0.59 (0.50–0.70)	<0.01	97	0.56 (0.36–0.88)	0.01
	Hispanic	3408	0.35 (0.32–0.39)	<0.01	509	0.30 (0.23–0.38)	<0.01
	Native American	659	0.66 (0.56–0.78)	<0.01	149	0.65 (0.46–0.93)	0.02
	Other	712	0.72 (0.62–0.85)	<0.01	132	0.64 (0.44–0.94)	0.02
Occasional smokeless tobacco users	No	23555	1.00	—	3473	1.00	—
	Yes	1105	3.74 (3.28–4.27)	<0.01	45	4.55(2.33–8.88)	<0.01
Frequent smokeless tobacco users	No	21909	1.00	—	3461	1.00	—
	Yes	2751	2.56 (2.36–2.78)	<0.01	57	3.31 (1.88–5.82)	<0.01

CI = confidence interval.

DISCUSSION

This study described the prevalence of tobacco use and identified factors associated with cigarette and smokeless tobacco use among new military service members. Despite some variation, prevalence of men and women using cigarettes and men using smokeless tobacco remained about the same from 2000 to 2006. However, the proportion of frequent smokeless tobacco users tended to decrease over the years for women, whereas men reported smoking fewer cigarettes. For men and women, factors associated with cigarette smoking included younger age, Caucasian race, and use of smokeless tobacco. Among men, factors associated with smokeless tobacco use included younger age, Caucasian race, and prior smoking. For women, only prior cigarette use was an independent factor associated with smokeless tobacco use.

Cigarette Use

Data analyzed from the 2006 National Health Interview Survey estimated that 45.3 million individuals (21% of the population) are current smokers.²⁸ The 2005 Department of Defense

Survey of Health Related Behaviors Among Active Duty Military Personnel,⁴ found that 32% of service members reported any smoking at least once in the past 30 days, which is lower than the 43% reporting any smoking (occasional and frequent smokers combined) in the current study. In the current study, heavy smoking among the men (1 or more packs per days) declined from 10% in 2000 to 8% in 2006. The CDC²⁹ and the Department of Defense⁴ have also found that heavy smoking by men decreased over the past 11 years from 19% in 1993 to 12% in 2004 among the general U.S. population and from 34% in 1980 to 11% in 2005 in the military population, respectively. The U.S. Army has a higher incidence of any smoking (38%) and heavy smoking (15%) compared to the other services.⁴ It would appear that there are a higher percentage of cigarette users (occasional and frequent smokers combined) (43%) in the Ordnance School compared to the broader U.S. Army (38%). When data from the current study was compared with another study involving a large BCT population³⁰ (N = 4,004), it was found that frequent smoking prevalence on entry to the Ordnance School was slightly higher than the prevalence reported in a previously studied Army BCT sample (35% vs. 31%, $P < 0.01$). It has been demonstrated

TABLE 3. Univariate Logistic Regression with Frequent Smokeless Tobacco Use as the Dependent Variable

Variable	Survey	Category	Men				Women			
			N	Smokeless users (%)	Odds Ratio (95%CI)	P Value	N	Smokeless users (%)	Odds Ratio (95%CI)	P Value
Age Group		17–19	12444	12.5	1.00	—	2022	1.8	1.00	—
		20–24	9520	10.9	0.86 (0.79–0.94)	<0.01	1138	1.9	1.06 (0.62–1.80)	0.84
		25–29	2421	8.8	0.67 (0.58–0.78)	<0.01	330	0.9	0.49 (0.15–1.61)	0.24
		≥ 30	1312	9.2	0.71 (0.59–0.86)	<0.01	175	2.3	1.26 (0.42–3.56)	0.67
Race		Caucasian	16004	16.1	1.00	—	1977	2.3	1.00	—
		Black	3919	1.7	0.09 (0.07–0.11)	<0.01	753	0.9	0.40 (0.18–0.90)	0.03
		Asian	780	3.5	0.19 (0.13–0.28)	<0.01	102	2.0	0.86 (0.21–3.59)	0.84
		Hispanic	3546	3.0	0.16 (0.13–0.19)	<0.01	535	0.7	0.32 (0.12–0.90)	.03
		Native American	684	12.3	0.73 (0.58–0.92)	<0.01	157	1.3	0.55 (0.13–2.31)	0.42
Tobacco	Occasional smoker	Other	749	10.0	0.58 (0.46–0.74)	<0.01	139	4.3	1.94 (0.81–4.62)	0.14
		No	23767	11.0	1.00	—	3395	1.5	1.00	—
	Smoker	Yes	1996	14.2	1.34 (1.18–1.53)	<0.01	286	3.8	2.57 (1.33–4.99)	<0.01
		No	16144	7.1	1.00	—	2428	0.8	1.00	—
		Yes	9237	18.2	2.90 (2.67–3.14)	<0.01	1204	3.1	3.82 (2.21–6.61)	<0.01
	Number of cigarettes per day	Non-smokers	16144	7.1	1.00	—	2428	0.8	1.00	—
		10 or less	2760	14.9	2.29 (2.03–2.58)	<0.01	469	2.1	2.62 (1.22–5.64)	<0.01
		10–20	4091	16.4	2.56 (2.31–2.84)	<0.01	504	2.8	3.44 (1.73–6.86)	<0.01
		20 or more	2228	25.4	4.43 (3.96–4.96)	<0.01	209	6.2	7.99 (3.91–16.30)	<0.01

TABLE 4. Multivariate Logistic Regression Results with Frequent Smokeless Tobacco Use as the Dependent Variable

Variable	Category	Men			Women		
		N	Odds Ratio (95%CI)	P Value	N	Odds Ratio (95%CI)	P Value
Age Group	17–19	12034	1.00	—	a	a	a
	20–24	9181	0.82 (0.75–0.90)	<0.01	a	a	a
	25–29	2335	0.70 (0.60–0.82)	<0.01	a	a	a
	≥ 30	1268	0.85 (0.69–1.05)	0.13	a	a	a
Race	Caucasian	15527	1.00	—	b	b	b
	Black	3726	0.11 (0.09–0.15)	<0.01	b	b	b
	Asian	754	0.20 (0.13–0.31)	<0.01	b	b	b
	Hispanic	3434	0.21 (0.17–0.26)	<0.01	b	b	b
	Native American	663	0.81 (0.63–1.03)	0.08	b	b	b
	Other	714	0.68 (0.53–0.87)	<0.01	b	b	b
Occasional Smoker	No	23186	1.00	—	3304	1.00	—
	Yes	1632	1.98 (1.68–2.33)	<0.01	251	3.67 (1.40–9.64)	<0.01
Frequent Smoker	No	15766	1.00	—	2364	1.00	—
	Yes	9052	2.58 (2.36–2.82)	<0.01	1191	4.81 (2.58–8.93)	<0.01

^a Not retained in the model because it did not meet the $p < .05$ criteria in the univariate analysis.

^b Did not reach the final step in the backwards stepping multivariate logistic regression.

that current smoking is highest among working class jobs,³¹ and individuals attending Ordnance School training might be considered in this category.

Smoking risk was highest for 20 to 24 year olds, and generally declined with age. However, risk was lower in the 17 to 19 year olds than among the 20 to 24 year olds. The lower risk in the 17 to 19 year olds might be due to the fact that smoking is illegal prior to 18 years of age and identification checks are often enforced at locations where cigarettes are purchased. The 20 to 24 year old age group may represent an experimentation period with cigarettes after which smoking risk declines, possibly due to better education on health risks of smoking, assumption of adult roles (getting married or becoming a parent), and a greater number of quit attempts leading to eventual success.

For both men and women in the univariate and multivariate analysis, smoking risk was highest among Caucasians as has been found in other military investigations.^{4,8,25,32} It has also been shown that all other ethnic groups are less likely than Caucasians to be heavy smokers (>20 per day), with the exception of Native Americans.³³ Investigations of ethnic differences in cigarette use have suggested that Blacks start using

tobacco at an older age,³⁴ are 1.5 times more likely to report a stronger desire to quit compared to Caucasians, and are 1.8 times more likely to favor tobacco restrictions when compared to Caucasians.³⁵

The current study showed that both men and women smokeless tobacco users, had higher odds of being a frequent smoker, with occasional smokeless tobacco users having the highest risk. Other studies have also demonstrated that smoking is strongly associated with smokeless tobacco use.^{12,17,21,36} Some smokers may be using smokeless tobacco as an alternative source of nicotine dosing. The odds of smokeless tobacco use increased progressively with progressively higher cigarette use (Table 3).

Smokeless Tobacco Use

The current study found that 4.5% of the Ordnance School students (5% of men and 1% of women) were occasional smokeless tobacco users and 9.7% of the service members (11% of men and 2% of women) were frequent smokeless tobacco users. In a study looking at smokeless tobacco use in basic trainees, 15% reported any smokeless tobacco use,¹⁴ which is similar to the 14.2% reported in the Ordnance School when

combining occasional and frequent smokeless tobacco users. Overall, the U.S. Army has a 19% prevalence of smokeless tobacco use,⁴ which is 5% higher than the current study when combining occasional and frequent smokeless tobacco users. Smokeless tobacco use in the Department of Defense has increased from 12% in 2002 to 15% in 2005,⁴ whereas the smokeless tobacco use in the Ordnance School (occasional and frequent smokeless tobacco use combined) has remained relatively stable from 2000 to 2006.

Previous studies show that smokeless tobacco has been predominantly used by men,^{4,12} and that the average time men chewed tobacco per day was 481 minutes compared to women at 282 minutes per day.³⁷ The 2005 National Youth Risk Behavior Survey found that 14% of male and 2% of female high school students used smokeless tobacco at least once in the past 30 days,³⁸ which is similar to the proportions found in the current study. When examining the prevalence of smokeless tobacco use, women tended to use less smokeless tobacco over the years (2000 to 2006), which is in contrast to findings in the Youth Risk Behavior Surveillance System, where the use of smokeless tobacco increased among women in the same time period.³⁹

The 2005 Department of Defense survey found that smokeless tobacco use for the Department of Defense decreases with age.⁴ In the current study, smokeless tobacco use also decreases with age until approximately 25 years old, after which prevalence remained about the same.

For both men and women in the univariate and multivariate analysis, smokeless tobacco use was highest among Caucasians, in consonance with other military studies.^{12,14,21,32} Smokeless tobacco experimentation has been shown to be higher for Caucasians who did not have two married parents in the household, participated in organized sports or physical activities (compared to those who were non-participates), and perceived their friends would approve or not care if they used smokeless tobacco.²²

In the current study, the highest risk of smoking was among frequent smokeless tobacco users and the youngest age group (17 to 19 years) was at the highest risk of using smokeless tobacco. A study investigating smokeless tobacco as a risk factor for smoking found that 12 to

18 year olds who were not smokers but were smokeless tobacco users were more than 3 times as likely as never users to become smokers after 4 years. Smokeless tobacco may be a starter product for subsequent smoking among youth ages 11 to 19 years old.¹⁵ Parents of smokers and smokeless tobacco users are more likely to tolerate smokeless tobacco use compared to cigarette smoking;⁴⁰ smokeless tobacco users are less concerned about the negative social consequences of use than cigarette smokers;²⁴ and smokeless tobacco use is affected by peer influences.²³ It may also be easier for youth to conceal smokeless tobacco use and then begin smoking at a later age when it may be more acceptable or tolerated. In a study following U.S. Air Force recruits for 1 year, it was found that smokeless tobacco users were 2.3 times more likely to have initiated smoking compared to nonusers.²⁰ Another study examining smokeless tobacco use in the military found that 20% of smokeless tobacco users also smoked cigarettes¹³ compared to 18% in the current study. The risk of becoming a frequent smokeless tobacco user was 2 times higher for those who smoked more than 20 cigarettes a day compared to smoking 10 to 20 or less than 10 cigarettes per day. Smokeless tobacco users may switch to cigarettes as their tolerance to nicotine develops and their dependence on nicotine progresses possibly due to the much faster increase in nicotine levels from cigarettes as compared to the much slower increase in nicotine levels acquired by smokeless tobacco use.⁴¹

CONCLUSIONS

This study examined factors associated with tobacco use in a large cohort of new Army personnel. Results from this study indicate that younger age, Caucasian race, and smokeless tobacco use are factors associated with cigarette use. It also suggests that Caucasian men, younger men, and cigarette use (both men and women) represent a high risk population of potential smokeless tobacco users. Prevalence of tobacco use over the period 2000 to 2006 changed little with two notable exceptions: men were smoking fewer cigarettes and women were

using less smokeless tobacco. The identified factors in this study could be used to establish strategies in the future to reduce tobacco use in the military.

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