

Influence of Gender on Initiation of Tobacco and Nicotine Containing Product Use among U.S. Air Force Trainees

Christi A. Patten, Xin-Qun Wang, Melissa A. Little, Jon O. Ebbert, Gerald W. Talcott, Ann S. Hryshko-Mullen & Robert Klesges

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INTRODUCTION

Tobacco use remains the leading cause of preventable death in the US (USDHHS, 2014). Use of tobacco and associated disease burden is increasingly concentrated among vulnerable and frequently overlapping disparity populations (Jha et al., 2016; Drope et al., 2018). In particular, recent attention has focused on young adulthood as a distinct developmental period with heightened vulnerability to initiation of tobacco and nicotine containing product (TNCP) use (Foldes et al., 2010; Fuemmeler et al., 2013; Hammond, 2005; Richardson et al., 2014; Soneji et al., 2016; Thompson et al., 2015; Thompson et al., 2018; Cantrell et al., 2018; Rath et al., 2012; Terry-McElrath & O'Malley, 2015). Military personnel are a subgroup of young adults at particular risk for TNCP use (Drope et al., 2018). An earlier study of young adult (aged 18-25 years) military personnel who were current smokers found that 39% retrospectively reported they initiated smoking after joining the military (Bray, 2006). There is limited *prospective* research among never users that examined TNCP initiation after Basic Military Training (BMT). Among large samples of U.S. Air Force (USAF) trainees (largely a racially/ ethnically diverse, non-college attending young adult population, with average age of 20.5 years), between 8-11% of never smokers were found to initiate cigarette smoking within the first year after BMT (Klesges et al., 1999; Klesges et al., 2010; Little et al. 2019); initiation of smokeless tobacco (ST) was 7.9% (Dunkle et al., 2018). However, less is known about initiation of other TNCPs (e.g., Hookah and e-cigarette use).

Factors associated with increased likelihood of cigarette smoking or ST use initiation among USAF trainees included male gender, and identifying as other race or more than one race (Dunkle et al., 2018; Little et al., 2019). Social-environmental influences, including peer tobacco use, have been associated with trajectories of cigarette smoking initiation and escalation among young adults generally (Gray et al., 2016; Foldes et al., 2010; Johnson et al., 2019; Fuemmeler et al., 2013; Klein et al., 2013), as well as initiation of cigarette smoking among USAF trainees (Green et al., 2008; Little et al. 2019). Intentions or susceptibility to use tobacco are robust proximal predictors of future tobacco use in representative young adult samples (Stewart and Moreno, 2013; Wakefield et al., 2004; Warren et al., 2006). Among USAF trainees, however, tobacco use intentions were not associated with initiation of cigarette smoking (Little et al., 2019) or ST use (Dunkle et al., 2018) in the year following BMT.

In a recent report (Patten et al., 2019), we examined predictors of intentions to use tobacco after BMT among USAF trainees. We found that prior tobacco use was associated with increased likelihood of tobacco use intentions. In addition, gender moderated effects of peer tobacco use on tobacco use intentions such that women were influenced more by friends who smoked cigarettes and men by peers who used ST. Interesting, among the sub-group of never tobacco users, we observed that women reported higher tobacco use intentions than men. Building on this previous work, the current study of USAF trainees assessed initiation of TNCP use one year after BMT among baseline never users. We extended prior research by examining interactions of gender and peer tobacco use, and tobacco use intentions, on initiation of TNCPs; and by assessing a broader range of products. Based on an integrative model (Fishbein & Yzer, 2003) from social cognitive theory (Cohen, 2004) and theory of reasoned action (Fishbein & Ajzen, 1975), and drawing from research findings described above, we hypothesized that women

would be influenced to use TNCPs more by peer use of tobacco and tobacco use intentions on initiation as compared with men.

METHODS

Study Design

Longitudinal cohort assessment study with baseline and 1-year follow-up surveys.

Participants and Procedures

The study was approved by the 59th Medical Wing's Department of Defense (DoD) and the University of Virginia, Charlottesville Institutional Review Boards.

Participants were US Airmen receiving training at one of six Technical Training Air Force Bases (Lackland, Fort Sam Houston, Keesler, Sheppard and Goodfellow) between March 2011 and March 2015. During the first week of Technical Training, a total of 27,544 Airmen were convened by squadron in groups of about 50, and were provided a description of the study which was to evaluate tobacco initiation and re-initiation among military personnel. After the opportunity to ask and have questions answered, informed consent and HIPPA forms were signed by participants in accordance with 59th Medical Wing Institutional Review Boards requirements. A total of 78.6% of Airmen consented to participate and complete the baseline questionnaire (N= 21,650). Ninety-four (0.3%) were ineligible due to being under 18 years of age, and 5,800 (21.1%) declined to participate.

A 1-year follow-up survey was conducted only among active duty Airmen. Three months before the 1-year follow-up window opening, 2,226 non-active duty Airmen (i.e., National Guard [n= 1,046] or Reserve [n= 1,180]) were identified. Of the remaining 19,424 Active Duty Airmen, we estimated that 25% were ineligible due to being overseas, separated, or incarcerated;

and that an additional 15% would be ineligible or terminated due to other reasons, e.g., deceased, deployed, switched service branches). Thus, we oversampled in our stratified random sampling procedure to achieve a 25% follow-up rate. Airmen were stratified by Air Force Base.

Among the 19,424 (89.7%) participants eligible for the 1-year follow-up, 8,022 (41.3%) were randomly selected. A list of these participants was sent to the Defense Manpower Data Center (DMDC) to obtain participants' contact information. The DMDC maintains the largest archive of personnel, manpower, training, and financial data in the DoD. Of the 8,022 eligible active duty Airmen randomly selected for 1 year follow up, 1380 were either ineligible (n= 995, 12.4%), terminated (n= 365, 4.5%), or withdrew from the study (n= 20, 0.2%). Airmen were ineligible for follow-up if they were stationed overseas (n= 703, 50.9%), deployed (n= 286, 20.7%), switched to a different branch of the military (n= 4, 0.34%), or other (n= 2, 0.2%). Airmen were terminated if they had separated from the Air Force (n= 359, 26.0%), were deceased (n= 4, 0.3%), or incarcerated (n= 2, 0.1%).

Eligible participants were contacted by phone to complete the follow up. The 1-year assessment was completed by N= 4,596 (69.2%) of selected Airmen. Of these, 2393 reported never use of TNCPs on the baseline questionnaire. At 1-year follow-up, there were 1283 participants who answered not using any TNCPs (Nonuse: reference outcome category). However, there were an additional 566 participants who responded not using some of the TNCPs, but missed answering for the other products. These individuals were classified as "Other" 1-year outcome category.

Measures

Participants completed surveys at two time points, at baseline and at 1-year follow-up.

Demographics. Characteristics assessed on the baseline survey were gender (men, women), age (continuous), marital status (single/separated/divorced, married/living as married), education (high school diploma/GED, some education beyond high school, 4-year degree or more), race (White, Black/African American, Asian, more than one race, other), and Hispanic ethnicity (yes, no).

Peer tobacco use. On the baseline survey, participants were asked about their friends' use of tobacco prior to BMT. There were two different versions of the baseline survey administered in this military cohort that asked about peer use of tobacco differently. In version 1, participants were asked three questions to assess, prior to BMT, how many of their closest friends smoked cigarettes, used ST, or both, respectively. In version 2, participants were asked only one question to assess, prior to BMT, how many of their closest friends smoked cigarettes or used some other form of tobacco. Response options for items were identical across the two baseline surveys: almost all (80% or more), many (50% - 79%), some (20% - 49%), few (less than 20%), or none. Variables were collapsed across the two surveys to indicate, prior to BMT, how many of the participant's closest friends smoked cigarettes or used some other form of tobacco, with the same response options as above.

Tobacco use intentions. On the baseline questionnaire, participants were asked "Once you complete Technical Training, which of these best describes you?" with response options: "I plan to remain tobacco-free," "I am thinking about using tobacco products," or "I will definitely use tobacco products." Those indicating they planned to remain tobacco-free were classified as no tobacco use intentions. Consistent with prior studies (Gregoire et al., 2016; Ladapo et al., 2014), participants indicating they were thinking about or definitely planning to use tobacco were classified as tobacco use intentions.

TNCP use. At baseline, participants were tobacco-free when surveyed; therefore questions addressed use of TNCPs before BMT. The questionnaire assessed ever use of the following TNCPs: cigarettes, roll your own cigarettes, cigarillos, cigars, pipe, ST use (chew, snuff, snus, dissolvables), Hookah use, and electronic cigarettes/vape. Participants reporting never use of any these TNCPs at baseline were classified as never users (Klesges et al., 2011).

The 1-year follow-up questionnaire assessed any use of the same TNCPs over the past 12 month period. At 1-year follow-up, participants were classified as: (1) Non-users: reported none of these TNCPs in the past 12 months; (2) Seldom TNCP users: reported use of any of these TNCPs in the past 12 months but use was less than once per month; or (3) Regular TNCP users: used any of these TNCPs in the past 12 months and used at least once per month; (4) Other: reported no use of some of these TNCPs, but missed reporting for other products.

Statistical Analyses

All eligible randomly selected Airmen were included in the final analysis. Our primary analytic approach was to use a multinomial logistic regression model to assess how gender and social-environmental factors (peer tobacco use and tobacco use intentions) influenced use of TNCPs at 1-year follow-up. Specifically, we assessed potential two-way interaction effects between participants' gender and peer tobacco use, as well as gender and tobacco use intentions, on use of TNCPs at one year follow-up. The model was also adjusted for other participant demographic characteristics (i.e., age, race, ethnicity, education, and marital status). Because eligible Airmen were randomly selected within each squadron across bases, the model was also adjusted for the sample design which included both stratification and clustering where the strata were the bases and the clusters were squadrons, and the sampling weights due to different selection probabilities for the different bases. Taylor series variance estimation method was used

for adjusting for the variance of the fit to correct for correlations between Airmen within each squadron. Because we were interested in the subsample of Airmen who never used any TNCPs at baseline, a domain analysis of the multinomial logistic regression model was employed to incorporate the variability of the formation of different domains of use of any TNCPs at baseline into the variance estimation. The overall ability of the multinomial logistic regression model to discriminate between the four TNCP use categories was quantified by estimating nonparametric polytomous discrimination index and bootstrapped 95% confidence interval (Van Calster et al., 2012; Li et al., 2017), and pairwise C-statistics (Hand & Till, 2001) between each categories can be calculated to find out which categories can be well discriminated. To control type I error rate due to multiple comparisons, Bonferroni multiple comparisons adjustment was used for comparisons of primary interests. The significance level was specified at 0.05. All analyses were performed in SASv9.4 (Cary, NC, USA) and R3.6.0 (The R Foundation for Statistical Computing).

RESULTS

Participants

Table 1 presents baseline demographic characteristics by TNCP use at one year follow-up. Participants ($N = 2,393$) were primarily male (73%) with a mean age of 20.5 ($SD = 2.4$) (range 18-36) years and 95% were aged 18-25 years. Overall, 88% were single, 52% reported only a high school education, 36% were racial minorities and 16% were of Hispanic ethnicity. At baseline, 31% reported that prior to BMT none of their close friends used tobacco, and 95% reported no intentions to use tobacco after Technical Training.

Tobacco and Nicotine Containing Product Use at 1-Year Follow-up

At one year follow-up, 1,283 (53.6%) remained non-users of TNCPs, 240 (10.0%) reported regular use of any TNCP, 304 (12.7%) reported seldom use of any TNCP, and 566 (23.7%) were categorized as Other (**Table 1**). Thus, overall 22.7% initiated any TNCP use at 1-year follow-up (20.0% among women, 23.7% among men). Significant (all $p < 0.001$) univariate associations were detected for regular TNCP use at one year follow-up with age, gender, education level, marital status, race, ethnicity, tobacco use intentions, and having close friends using tobacco prior to BMT.

Multivariable Predictors of Tobacco and Nicotine Containing Product Use at 1-Year Follow-up

Primary comparison of TNCP use (regular use vs. nonuse): From the multivariable logistic regression model (see **Table 2**) there were significant main effects in the prediction of regular TNCP use for number of close friends who used tobacco prior to BMT, with greater likelihood of using TNCPs regularly at 1-year follow-up associated with almost all or many of close friends used tobacco compared with none (OR=2.8, 95% CI 1.6-4.7, Bonferroni corrected $p=0.001$), and with some or few close friends used tobacco (OR=1.8, 95% CI: 1.3 to 2.5, Bonferroni corrected $p=0.003$). Significant two-way interactions effects were also detected between gender and number of close friends used tobacco on regular TNCP use at 1-year follow-up ($p < 0.0001$), indicating that women and men were influenced differently by number of close friends who used tobacco. Among women, those reporting almost all or many close friends used tobacco were almost six times as likely to report regular TNCP use compared to those with none (OR=5.8, 95% CI 2.5-13.5, Bonferroni corrected $p < 0.0001$). Those with some or few close friends used tobacco were more than twice as likely compared to those with none to report

regular TNCP use (OR=2.4, 95% CI 1.4-3.9, Bonferroni corrected $p=0.003$). In contrast, having close friends who used tobacco seemed to have no or little influence on predicting regular TNCP use among men. There were no significant differences in predicting regular TNCP use among men when comparing those with few, some, many or almost all with no close friends who used tobacco. And, from Table 2, among women as compared to men, those with no close friends used tobacco prior to BMT appeared to be protective for initiating regular use of TNCPs. Men with none or even some or few peers used tobacco were nearly 13, and 7 times as likely to initiate regular TNCP use compared with women (OR=12.8, 95% CI 3.7-44.2, Bonferroni corrected $p<0.0001$; OR=7.1, 95% CI: 2.0-25.3, Bonferroni corrected $p=0.01$, respectively).

Significant two-way interactions were also detected between gender and tobacco use intentions ($p=0.015$), with tobacco use intentions appearing to influence men more than women in predicting initiation of regular TNCP use (**Table 2**). Among those with tobacco use intentions, men were more likely to report regular TNCP use compared with women (OR=38.3, 95% CI 4.3-341.0, Bonferroni $p=0.002$). For men, the odds of regular TNCP use for those with tobacco use intentions was eight times greater compared to those with no tobacco use intentions (OR=8.0, 95% CI 4.7-13.6, Bonferroni corrected $p<0.0001$). In contrast, among women, there was no significant difference between those with and without tobacco use intentions.

Secondary comparison of TNCP use (seldom use vs. nonuse). As with regular TNCP use, men with tobacco use intentions were more than 3 times as likely to initiate seldom use of TNCPs compared with those who reported no tobacco use intentions (95% CI 1.8-5.8, Bonferroni corrected $p < 0.0001$). In contrast, tobacco use intentions appeared to have no or little influence in predicting seldom use of TNCPs among women at 1-year follow-up (**Table 2**).

Because our outcome has four categories (nonuse, regular TNCP use, seldom TNCP use, and other), the null polytomous discrimination index (PDI) of the overall model is $\frac{1}{4}=0.25$ (viz., random guess). The estimated PDI of 0.37 (bootstrapped 95% confidence interval: 0.36-0.38) from our overall model is about 1.5 times of the lower bound which corresponds to no discriminative ability, indicating that our overall model has moderately good predictive discriminative ability. The pairwise C-statistics of 0.72 for the comparison of 'regular TNCP use' and 'Nonuse' categories indicated that our model has good discriminative ability for the comparison of the primary interests.

DISCUSSION

This study of USAF trainees observed the rate of initiation of use of TNCPs one year following BMT to be 23% (20% women, 24% men). This was despite the fact that at baseline, 95% of the sample reported no tobacco use intentions after Technical Training. Our rate of initiation is much higher than previously reported among USAF trainees, but past studies were limited to initiation of cigarette smoking (Klesges et al., 1999; Klesges et al., 2010; Little et al., 2019) and ST products (Dunkle et al., 2018), respectively. For example, Klesges et al. (2010) found that at 1-year follow-up, 13% of USAF trainees initiated tobacco (cigarette smoking, ST use, or both). Our findings are innovative and extend the literature by examining the potential moderating role of gender and peer tobacco use, and tobacco use intentions, on TNCP use initiation. Key findings were that women were influenced more than men by peer use of tobacco before BMT, with fewer peers who used tobacco appearing to have a protective effect on initiation among women. In contrast, men were more influenced by tobacco use intentions as compared with women. Our prior report indicated that women who were never users had increased likelihood of tobacco use intentions as compared with men (Patten et al., 2019), but

unexpectedly, in the current study, tobacco use intentions did not appear to influence females on actual uptake of use of TNCPs during a one year time period.

Our results have implications for tobacco control interventions in the military targeting prevention of tobacco and nicotine product use uptake after Technical Training. Brief behavioral intervention efforts among USAF trainees were effective for reducing current cigarette smoking (Klesges et al., 1999) but had limited success on initiation (Klesges et al., 2006). In particular, new types of interventions may be needed to address these “late starters.” Reducing social smoking may be a key target for intervention efforts for women USAF trainees. For example, consistent with social learning theory, one strategy could be to develop a social media-based platform for women to reinforce connections with, and social support from, non-using peers (Graham et al., 2019; Kim et al., 2017; Villanti et al., 2019). Initiation of TNCP use is increasingly becoming more concentrated in young adulthood (Thorndike, 2019; Villanti et al. 2019). As the nation’s largest employer, the military provides an opportune platform for prevention efforts among young adults (Chang, 2015). The potential public health impact of effective prevention interventions for this tobacco-use disparity group is considerable.

Strengths and Limitations

This study has several strengths including, the large sample size, longitudinal data, and assessment of use of several contemporary TNCPs. Our final multivariable model had good predictive discrimination power for the primary comparison of TNCP use. Moreover, the sample comprised non-college attending young and middle-aged adults, primarily between the ages of 18 to 25 (95%).

Some study limitations need to be considered when interpreting the results. First, we assessed peer tobacco use before BMT, and did not collect information on current social

influences, including military friends. Future studies should measure the extent that current peer selection and influence has on TNCP use initiation among military personnel. Second, we did not include body mass index (BMI), as this variable was only measured in one of the surveys (n=1160 of 2393) from which these data were analyzed. However, prior follow-up studies of USAF trainees at 1-year after BMT found no association of BMI with initiation of ST use (Dunkle et al., 2018) or with cigarette smoking (Little et al., 2019). Third, we surveyed individuals of only one service branch in the U.S. military. However, after the Army the USAF is the second largest of the service branches. Fourth, our follow-up spanned only a 1-year period. Future work could examine trajectories of use of TNCPs among USAF trainees over a longer time period.

CONCLUSIONS

Our results contribute to the tobacco control field on initiation of use of TNCPs among military personnel. Significant initiation of TNCP use occurred in the first year following basic military training, among both men and women, in this large sample of USAF trainees. As in our prior work (Patten et al., 2019), the current findings reinforce the importance of examining gender influences in both theoretical and analytical models of TNCP use initiation, escalation and entrenchment among military personnel. For women, having peers before BMT who do not use tobacco appears to be protective, while reporting tobacco use intentions increases risk for initiation among men. Gender-specific prevention interventions are therefore warranted.

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Declaration of Interests

None.

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Disclaimers

The views expressed are those of the authors and do not reflect the official views or policy of the Department of Defense or its Components.

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Table 1: Descriptive statistics of Air Force Trainees' demographic and baseline information by any tobacco and nicotine containing product use at 1-year follow-up among never users at baseline (N=2393)

Variable at Baseline	Tobacco and Nicotine Containing Product Use at 1-Year Follow-up			
	Nonuse (n=1283)	Regular Use of Any Products (n=240)	Seldom Use of Any Products (n=304)	Other (n=566)
Age* (n=2393)	20.7 (19.0, 20.0, 22.0)	19.8 (18.0, 19.0, 21.0)	20.2 (19.0, 20.0, 22.0)	20.7 (19.0, 20.0, 22.0)
Gender (n=2392)				
Male	955 (74.49%)	200 (83.33%)	217 (71.38%)	386 (68.20%)
Female	327 (25.51%)	40 (16.67%)	87 (28.62%)	180 (31.80%)
Race (n=2393):				
White	845 (65.86%)	160 (66.67%)	177 (58.22%)	359 (63.43%)
Black/African American	225 (17.54%)	38 (15.83%)	54 (17.76%)	102 (18.02%)
Asian	52 (4.05%)	7 (2.92%)	14 (4.61%)	29 (5.12%)

More Than One Race	82 (6.39%)	15 (6.25%)	26 (8.55%)	40 (7.07%)
Other Race	79 (6.16%)	20 (8.33%)	33 (10.86%)	36 (6.36%)
Hispanic (n=2364): Yes	182 (14.38%)	38 (16.17%)	69 (22.85%)	91 (16.22%)
No	1084 (85.62%)	197 (83.83%)	233 (77.15%)	470 (83.78%)
Education (n=2383): Bachelor's Degree or Higher	82 (6.42%)	14 (5.83%)	21 (6.95%)	44 (7.80%)
High School Graduate/GED	661 (51.76%)	155 (64.58%)	179 (59.27%)	253 (44.86%)
Some Education after High School	534 (41.82%)	71 (29.58%)	102 (33.77%)	267 (47.34%)

Marital Status (n=2391): Married/Living as Married	191 (14.91%)	21 (8.75%)	21 (6.91%)	59 (10.42%)
Single/Separated/Divorced	1090 (85.09%)	219 (91.25%)	283 (93.09%)	507 (89.58%)
Prior to BMT, how many of your closest friends smoked cigarettes or used some other form of tobacco (n=2393): Almost all	40 (3.12%)	13 (5.42%)	11 (3.62%)	12 (2.12%)
Many	132 (10.29%)	36 (15.00%)	34 (11.18%)	31 (5.48%)
Some	218 (16.99%)	56 (23.33%)	64 (21.05%)	85 (15.02%)
Few	473 (36.87%)	85 (35.42%)	89 (29.28%)	190 (33.57%)
None	420 (32.74%)	50 (20.83%)	106 (34.87%)	248 (43.82%)

Once you complete Technical Training, which of these best describes you (n=2390): Plan to remain tobacco free	1240 (96.72%)	196 (82.01%)	278 (91.75%)	548 (96.82%)
Thinking about using tobacco products	19 (1.48%)	16 (6.69%)	12 (3.96%)	3 (0.53%)
Will definitely use tobacco products	23 (1.79%)	27 (11.30%)	13 (4.29%)	15 (2.65%)

* Continuous variable displayed as mean (1st quartile, median, 3rd quartile).

Regular Use: at least monthly use; Seldom Use: less than monthly use; Other: answer 'Never' to some of tobacco products use and miss information on answering to the other tobacco products use; Never Use/Nonuse: Never/No use of any tobacco products.

Univariate multinomial logistic regression analyses indicate that there were significant associations between tobacco use at the 1-year follow-up and each of risk factors ($p < 0.001$, respectively).

BMT=Basic Military Training.

Table 2: Interaction effects between gender and peer influence and tobacco use intentions in predicting probability of any tobacco and nicotine containing product use at 1-year follow-up among never users at baseline

Variable at baseline	Regular Use of Any Product vs. Nonuse			Seldom Use of Any Product vs. Nonuse		
	Odds Ratio	95% CI	P-value	Odds Ratio	95% CI	P-value
Number of close friends who smoke cigarettes or use some other form of tobacco:						
Almost All/Many vs. None	2.77	1.62-4.74	0.0002	1.05	0.63-1.74	0.865
Some/Few vs. None	1.76	1.25-2.49	0.001	0.95	0.63-1.43	0.806
Almost All/Many vs. Some/Few	1.57	1.00-2.48	0.050	1.10	0.65-1.87	0.724
Females & number of close friends who smoke cigarettes or use some other form of tobacco:						
Almost All/Many vs. None	5.76	2.45-13.54	< 0.0001	1.06	0.42-2.66	0.905
Some/Few vs. None	2.37	1.42-3.94	0.001	1.17	0.66-2.09	0.594
Almost All/Many vs. Some/Few	2.43	1.18-5.02	0.016	0.90	0.35-2.37	0.837
Males & number of close friends who smoke cigarettes or use some other form of tobacco:						
Almost All/Many vs. None	1.33	0.90-1.98	0.152	1.03	0.70-1.53	0.870
Some/Few vs. None	1.31	0.89-1.93	0.176	0.77	0.52-1.13	0.185
Almost All/Many vs. Some/Few	1.02	0.61-1.69	0.943	1.34	0.84-2.13	0.215
Number of close friends who smoke cigarettes or use some other form of tobacco:						
Among Almost All/Many: Male vs. Female	2.97	0.91-9.67	0.071	2.44	0.99-6.05	0.053
Among Some/Few: Male vs. Female	7.09	1.98-25.33	0.003	1.65	0.46-5.86	0.441
Among None: Male vs. Female	12.82	3.72-44.20	< 0.0001	2.50	0.75-8.37	0.137
Males & Intentions to use any tobacco products: Yes vs. No	8.01	4.73-13.59	< 0.0001	3.23	1.81-5.75	< 0.0001
Intentions to use any tobacco products: Male vs. Female	38.30	4.30-340.97	0.001	5.19	0.69-39.18	0.110

Females & Intentions to use any tobacco products: Yes vs. No	0.23	0.03-1.79	0.160	0.56	0.09-3.59	0.540
No-intentions to use any tobacco products: Male vs. Female	1.09	0.74-1.61	0.663	0.90	0.65-1.24	0.518

Note: The multinomial logistic regression model was also adjusted for age, gender, race/ethnicity, education, marital status, intentions to use any tobacco products, and number of close friends who smoke cigarettes or use some other form of tobacco.

There were significant interaction effects between gender and peer influence ($p < 0.0001$) and between gender and intentions to use tobacco products ($p = 0.015$).

Regular Use: at least monthly use; Seldom Use: less than monthly use; Other: answer 'Never' to some of tobacco/nicotine product use and missing information on answering to the other product use; Never Use/Nonuse: Never/No use of any tobacco/nicotine product.