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Adam Edward Lang

Aleksandra Yakhkind

Adena J. Schonfeld

Virginia Institute of Marine Science

Frank T. Leone

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Soldier's beliefs in abstinence before and after the implementation of a novel army nicotine-free policy

Adam Edward Lang ^{1,2*}, Aleksandra Yakhkind³, Adena J. Schonfeld⁴, and Frank T. Leone⁵

¹Department of Primary Care, McDonald Army Health Center, Fort Eustis, VA, USA; ²Department of Family Medicine and Population Health, Virginia Commonwealth University School of Medicine, Richmond, VA, USA; ³Department of Neurology, Tufts University School of Medicine, Boston, MA, USA; ⁴Virginia Institute of Marine Science, William & Mary, Gloucester Point, VA, USA; and ⁵Comprehensive Smoking Treatment Program, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA

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United States Army soldiers have used tobacco for decades¹ despite known health risks associated with these products.² Material connections between the tobacco industry and the military during the early part of the 20th century, coupled with pervasive advertising images of soldiers using tobacco during combat, served to promote tobacco use among young recruits entering training.³ A variety of policies have been instituted during the training period, to varied and sometimes suboptimal effect.⁴ Currently, tobacco (defined as any non-therapeutic nicotine product) is banned during basic combat training (BCT), the first phase of training in a soldier's career, which lasts 10 weeks. It is allowed in the longer subsequent advanced individual training (AIT), during which soldiers learn their military occupation specialty. Trainee soldiers in an AIT aviation battalion on Fort Eustis in Virginia previously reported a reduction in overall tobacco use following BCT,⁵ prompting a decision to institute a proposed nicotine-free policy during AIT, which lasts approximately 3–6 months. This study aimed to determine if the AIT nicotine-free policy implementation process would change the tobacco user's intention to remain abstinent following AIT, when tobacco use would not be restricted.

Trainees received education on tobacco dependence and treatment, including pharmacotherapeutic and behavioural interventions.⁶ Nicotine replacement therapy (NRT) and individual behavioural counseling were made available. A resource package was distributed to provide behavioural strategies for coping, including gum, mints, toothpicks, dental hygiene products, and a stress ball. Two confidential surveys were given to trainees, one 6 weeks prior to the nicotine-free policy implementation ($n = 973$) and one 2 weeks after the policy effective date ($n = 119$). The pre-policy survey was used to gauge tobacco use prevalence and interest in available resources for treatment of tobacco dependence amongst the AIT trainees. The post-policy survey was provided to trainees who

received NRT for tobacco dependence treatment. Only those respondents who indicated on the pre-policy survey that they were both using tobacco products and interested in receiving NRT were included in the analysis. Respondents from either survey that did not answer the post-AIT use expectation were excluded. A χ^2 test was used to compare post-AIT abstinence beliefs prior to and following the policy implementation. A logistic regression was used to determine the influence of age on this belief. Demographic data were compared using a Fisher's test for gender and a t -test and F -test for age distribution characteristics (mean and variance, respectively) and excluded those who did not provide these characteristics. The study was deemed exempt from review by the Clinical Investigation Department at Naval Medical Center Portsmouth. Statistical analyses were conducted using R, version 4.0.3.

Of the 973 trainee soldiers who completed the pre-policy survey, 313 used tobacco products. A total of 876 met exclusion criteria, and 97 were included in the analysis. There were 119 respondents to the post-policy survey, and one was excluded. Before policy implementation, 70.1% (68) soldiers using tobacco products with interest in NRT believed they would go back to using after completing AIT. After the policy implementation, 52.5% (62) soldiers held this same belief. This represented a significant increase in reported expectation to stay nicotine-free after AIT ($\chi^2 = 6.9$; $P < 0.01$). One respondent was excluded from each survey for gender proportion comparisons, and the same respondent from the pre-policy survey was excluded from age analyses. Demographic characteristics of the surveys were similar. There were not significant differences in the proportion of gender of respondents ($P = 0.07$), nor in the variance and mean of respondents' ages ($F = 1.2$; $P = 0.41$; and $t = 0.3$; $P = 0.76$, respectively) (Table 1). Age did not affect belief in remaining abstinent following the intervention in either the pre-policy or post-policy surveys ($P = 0.57$ and $P = 0.73$, respectively).

Table 1 Summary statistics

| | Pre-policy survey | Post-policy survey | P-value |
|---|---------------------|--------------------|----------------------------|
| Total number included | 97 | 118 | |
| Age, mean (SD) | 20.6 (3.4) | 20.5 (3.2) | Mean: 0.76; variance: 0.42 |
| Gender, n (%) | | | 0.07 |
| | Male 94 (96.9) | 107 (90.7) | |
| | Female 2 (2.1) | 10 (8.5) | |
| | Unspecified 1 (1.0) | 1 (0.8) | |
| Belief in resuming tobacco use after AIT, n (%) | 68 (70.1) | 62 (52.5) | < 0.01 |

These results support the hypothesis that a prolonged nicotine-free policy, spanning both BCT and AIT, can result in lower rates of tobacco use in the US Army. The implementation of an AIT nicotine-free policy with comprehensive education and treatment, including pharmacotherapy and behavioural interventions, is essential to prevent relapse in soldiers.^{7,8} The trainees were not asked in the post-policy survey why their views might have changed, but based on discussion, the results are attributable to three main factors. First, most trainees received tobacco education that they had not been exposed before, which influenced their views of tobacco's effect on health, performance, and survival in combat. Second, many had experienced cessation without treatment or resources at least once due to BCT. The relative ease and comfort of quitting using guided expectations with appropriate preparation and treatment changed the trainees' thoughts on tobacco's control over them. Lastly, this intervention normalized the idea of being nicotine-free in the military, where a tobacco culture has always prevailed.

Participant anonymity precluded the ability to perform paired sample statistics to evaluate change; therefore, the assumption of independence was not met, and lack of independence may have affected the significance. Other limitations include incomplete survey responses, limiting the post-policy survey to soldiers that received NRT, and a low representation of women.

Increased belief in abstinence would likely be seen if tobacco product use was also restricted amongst cadre, or non-trainee senior soldiers, within the AIT brigade that these trainees fall under. These cadre work with the trainees daily, and rates of use in the cadre population are substantial, creating an environment that may influence trainee use.⁹

The findings of this policy implementation suggest the development of self-efficacy among soldiers.¹⁰ Self-efficacy, or the perception of one's ability to follow through with certain actions, is associated with subsequent behaviour change, related to both tobacco use and other behaviours.^{10–12}

Sufficient education and treatment are crucial first steps in decreasing the trainee soldiers' interest to use tobacco products. Without these interventions, the culture of tobacco use in the US Army will not change. The lack of actionable interventions in the military to reduce use is concerning. Increasing the wellbeing and readiness of the country's soldiers by targeting tobacco use, and subsequently decreasing healthcare costs,⁵ must be a priority for the US military as a whole.

Authors' contributions

A.E.L. contributed to the conceptualization, methodology, project administration, supervision, and writing—original draft preparation. A.E.L. and A.J.S. contributed to the data curation. A.E.L., A.J.S., and F.T.L. contributed to the formal analysis. A.Y., A.J.S., and F.T.L. contributed to writing—reviewing and editing. All authors contributed to interpretation of the data and gave final approval and agree to be accountable for all aspects of work ensuring integrity and accuracy.

Conflict of interest: None declared.

Data availability

Data available on request from the corresponding author.

References

- Conway TL. Tobacco use and the United States military: a longstanding problem. *Tob Control* 1998;**7**:219–221.
- U.S. Department of Health and Human Services. The health consequences of smoking—50 years of progress: a report of the surgeon general. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014 [accessed 2021 Jun 01].
- Conway TL. Tobacco use and the United States military: a longstanding problem. *Tob Control* 1998;**7**:219–221.
- Jahnke SA, Hoffman KM, Haddock CK, Long MAD, Williams LN, Lando HA, Poston WSC. Military tobacco policies: the good, the bad, and the ugly. *Mil Med* 2011;**176**:1382–1387.
- Lang AE, Yakhkind A, Lamb RW, Stack KM. Effect of a basic training nicotine-free policy on soldiers in the United States army. *Chest* 2021;**160**:1137–1139.
- Lang AE, Yakhkind A. Implementing a nicotine-free policy in the United States military. *Chest* 2022;**161**:845–852.
- US Preventive Services Task Force. Interventions for tobacco smoking cessation in adults, including pregnant persons: US preventive services task force recommendation statement. *JAMA* 2021;**325**:265–279.
- O'Connell KA, Gerkovich MM, Cook MR, Shiffman S, Hickcox M, Kakolewski KE. Coping in real time: using ecological momentary assessment techniques to assess coping with the urge to smoke. *Res Nurs Health* 1998;**21**:487–497.
- Lang AE, Yakhkind A, Prom-Wormley E. Tobacco and nicotine use in the United States army trainee soldier's environment. *Lung* 2022. (in press).
- Strecher VJ, DeVellis BM, Becker MH, Rosenstock IM. The role of self-efficacy in achieving health behavior change. *Health Educ Q* 1986;**13**:73–92.
- Stuart K, Borland R, McMurray N. Self-efficacy, health locus of control, and smoking cessation. *Addict Behav* 1994;**19**:1–12.
- Herd N, Borland R, Hyland A. Predictors of smoking relapse by duration of abstinence: findings from the international tobacco control (ITC) four country survey. *Addiction* 2009;**104**:2088–2099.