

Military Service and Smoking in a Cohort of Northern Vietnamese Older Adults

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Introduction & Background

Studies of US veterans, in particular those who served in Vietnam and other foreign wars of the 20th century, have demonstrated a marked effect of past military service upon health status and health trajectories in later adulthood (Wilmoth et al., 2010; Elder, Shanahan and Clipp, 1997). Alongside the wide ranging literature on PTSD and its associated physical maladies, another body of research has shown that military service affects health through its impacts on a range of health behaviors, in particular the higher rate of smoking observed among veterans and current service members relative to nonveteran counterparts (Wedge and Bondurant, 2009). Rather than an extension of selectivity in military participation, the greater odds of smoking have been shown to arise as a result of military service, for instance military normative behavior and maladaptive coping to the stresses of combat duty. Cigarettes were also heavily marketed to U.S. military personnel by the tobacco industry. The health-associated costs among U.S. veterans have been great and the increased risk of tobacco addiction and related disease has been considered another war hazard (Smith & Malone 2009: 1595). Bedard and Deschenes (2006) attribute significant premature veteran mortality to 'military induced smoking,' especially the practice by the U.S. military of distributing cigarettes to personnel stationed overseas as part of rations or the selling of cigarettes at reduced cost on military bases. Bedard and Deschenes, for instance, observed that excess veteran mortality after the age of 40 was particularly pronounced for heart disease and lung cancer, two conditions closely linked to tobacco use.

In the meantime, smoking is an 'epidemic' in contemporary Vietnam, where 'taking and offering a cigarette is like a handshake,' in greetings among men (Lam, 2013). We ask whether, among men of a certain age, their wartime experience has contributed to the smoking habit. War and its aftermath clearly have powerful, but often underappreciated, impacts on the global burden of disease. Especially since the inclusion of PTSD in the DSM-III following the Vietnam War (Scott, 1990), a burgeoning scholarship has assessed the impacts of war on US soldiers, immediately post-conflict and into their late adulthood. A parallel literature on military conflict's impact on veterans and civilians in societies of the Global South is sparse. A few notable exceptions assess war's impacts on mortality and morbidities among displaced persons and affected civilians from recent (ongoing) wars in Afghanistan, Iraq, Somalia and elsewhere in Sub-Saharan Africa (Levy and Sidel, 2011; Burnham et al., 2006; Toole et al., 1993). However, these have tended to focus on outcomes during war-time and the immediate aftermath, rather than considering lasting impacts upon war-exposed survivors as they age. The few recent studies that have taken this longer view, examining older adults in Vietnam and Cambodia who experienced the decade-long American War during their early adulthood have revealed lasting, ill health effects associated with particular types of war exposure (Korinek and Teerawichitchainan 2014; Teerawichitchainan and Korinek, 2012). This small but growing literature opens many questions about the mechanisms that may link military service, exposure to trauma and other wartime experiences to health in late adulthood. Health behavioral adaptations among veterans, like those seen in other veteran populations, are one such possible mechanism. In North Vietnam, direct involvement of tobacco companies and the armed forces in promoting or distributing tobacco products did not occur (to the best of our knowledge). Yet, the very stressful, male-dominated milieu in which wartime service was performed, often for tours very lengthy in duration, was likely to have been conducive to initiating smoking and smoking with high levels of frequency. Thus, our analyses aim to discern whether having

been a service member is associated with current greater risk of smoking, earlier than average initiation of smoking, and lengthy duration of smoking over the life course.

Our focus on smoking behavior in Vietnam is motivated by two critical factors. First, as wars of the 20th and 21st centuries have concentrated in the Global South, Vietnam's population can be viewed as emblematic of a broader pattern in which the long-term health costs of war are concentrated in low-middle income countries in which healthcare systems are strained to prevent and treat a growing burden of chronic diseases. Many countries of the Global South, like Vietnam, have growing older adult populations that directly experienced war and violent armed conflict over their life course. The same countries are seeing a rapid increase in chronic disease mortality due to conditions in which poor health behaviors such as smoking are implicated. Second, added to potential early life exposures of the wartime that may weigh upon late adulthood health behavior and health status is the fact that Vietnam, among other developing Asian societies, has one of the highest smoking prevalence rates in the world (Jenkins et al., 1997), a factor linked, in part, to transnational tobacco companies' aggressive marketing of their products overseas as well as profitable Vietnamese state-managed tobacco production (Lam, 2013; Morrow and Barraclough, 2003; Wike, 1996). This current public health environment, as experienced by a population that survived and bears the scars of one of the 20th centuries most protracted and deadly wars, leads to the research questions which motivate this paper: how do wartime experiences continue to influence the health of survivors via a health behavior pathway of tobacco use among army veterans and others exposed to war traumas? Do hazard analysis techniques demonstrate that smoking initiation is linked with the timing of military enlistment? And, might worse health conditions in certain groups of veterans be linked to smoking behaviors over the life course?

Data and Methods

We use data from the 2010 Vietnam Health and Aging Pilot Study (VHAPS) to conduct our analyses. The VHAPS explores the health and wellbeing of Vietnamese men and women who entered early adulthood during the Vietnam War (i.e., those born in 1955 or earlier) and are now entering late adulthood (i.e., ages 55 and older in summer, 2010). The study was conducted by one of the authors in one northern Vietnam commune located in the Red River Delta, a region of the country widely affected by U.S. bombing campaigns during the war (Merli, 2000). The survey provides unique information for constructing life-course measures of military service, trauma exposure, and current measures of health, demographic and socioeconomic characteristics. In total 405 respondents age 55 and older were interviewed. As smoking is heavily gendered in Vietnam, most of our analyses will focus on the 188 men in our sample. See (Teerawichitchainan and Korinek, 2012) for details of sampling methodology and response rate.

The VHAPS includes items on the timing and details of military service, current health status and health behaviors, as well as a range of life history and socio-demographic information. For the purposes of this study we will focus upon subjects' past military service (i.e., whether they are veterans of the Vietnam People's Army, served in a militia/paramilitary group during the war, or nonveterans) as it correlates with current smoking, smoking frequency and smoking behavior in the life course (year began smoking, timing of smoking cessation for past smokers). We will use multivariate analytical techniques, including survival analysis, to assess whether military service and particularly stressful experiences during war influence the risks of smoking initiation, as well as the odds and frequency of current smoking. Unique data from the VHAPS, which provides details on the duration, location and trauma encounters of military service, allows additional insights into whether high stress or lengthy, uninterrupted deployments were particularly likely to eventuate in smoking, and smoking that endured at high levels post-conflict and into older adulthood.

Preliminary Results and Analysis Plan

Our descriptive results (see Tables 1 and 2) indicate military service to be related to smoking behavior in this population. Compared to nonveterans and militia participants, military veterans exhibit the highest rates of present and lifetime smoking behavior. Amongst the veteran population, those who participated in veterans associations demonstrate particularly high rates of lifetime smoking (86.4%). Finally, results indicate self-reported lung disease to be correlated with military service, with veterans exhibiting lung disease rates of 16.8%, contrasted with 2.2% prevalence found amongst nonveterans.

Drawing upon detailed military service histories and information on the timing of smoking initiation, and where relevant, cessation, we will estimate a cox proportional hazards model to test for statistical significance in time variant covariates—including military participation—that predict smoking behavior in this population. Results of these analyses will advance understanding of military service and war as they influence public health in post-conflict populations of less developed countries.

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Table 1. Bivariate Statistics: Smoking Behavior and Sociodemographic Characteristics by Military Service Status

	Veterans	Men Militia participation	Nonveterans	Women
Current or Lifetime Smoking				
Never smoked	31.8	30.6	35.6	100
Currently smokes	31.8	27.8	31.1	0.5
Smoked in the Past, Not at Present	36.4	41.6	33.3	.
Other Health Behavior Variables				
Exercise Weekly	61.4	52.8	55.6	
Drinking (Dummy)	66.3	47.2	55.6	
Average Age	63.7	68.7	67.2	
Currently Married	92.1	86.1	84.4	
Total Children Ever Born				
0-1	3	0	4.4	
2	5.9	0	0	
3	13.9	0	4.4	
4+	77.2	100	91.1	
Educational Attainment				
Literacy	95	83.3	88.9	
Highest grade completed	8.6	7.2	7.5	
Main Lifetime Occupation				
Agricultural Based Occupation	64.4	83.3	68.9	
Social Relationship Variables				
Community Weekly	4	0	0	
Friends Weekly	97	77.8	93.3	
Family Weekly	34.7	52.8	40	
SRH				
Health (dummy)	38.6	48.6	37.8	
Chronic Conditions				
Diabetes	3	5.6	0	
Heart Disease	11.9	11.11	17.8	
Stroke	17.8	11.11	11.1	
Lung	16.8	16.67	2.2	
Cancer	0	2.8	0	
Arthritis	40.6	33.3	22.2	
Total Sample	186	186	186	219
N	101	36	45	

Source: Vietnam Health and Aging Pilot Study, 2010

Table Two. Bivariate Associations: Military Service and Smoking Behavior

Table 2. Smoking Behavior by Characteristics of Military Service	Percentage who:			Of past and present smokers within category:		
	Never smoked	Smoked in the past, not the present	Currently smoke	Mean age of initiating smoking	Mean years smoked	Frequency of smoking per day
Women	100	0	0.5			
Men	24.7	42.5	32.8	23.2	34.3	17.1
Among Men:						
Nonveterans	31.8	36.4	31.8	23.5	35.5	17.3
Militia participants	30.6	41.6	27.8	23.8	38.9	20.2
Veterans	18.8	47.5	33.7	23	33.5	17
Non participants in military/militia	35.6	33.3	31.1	24	33	15
Among veterans:						
Those with combat experience	19.4	43.5	37.1	25.9	33.4	16.6
Those fewer than 5 years active duty	16.7	47.2	36.1	19.8	33.9	19.2
Those fewer than 5+ years active duty	20	47.7	32.3	24.8	33.2	15.8
Those whose primary service was in Northern Vietnam	26.2	45.2	28.6	19.6	33	14.7
Those whose primary service was in Central Vietnam	10.2	48.4	41.4	27	30.5	18.3
Those whose primary service was in Southern Vietnam	10	80	10	29.8	32.1	12.8
Those whose primary service was in Lao or Cambodia	23.1	23.1	53.8	18.2	40.2	15.9
Those who have participated in the Veterans Association	15.2	50.6	34.2	24.8	32.7	14.9

Source: Vietnam Health and Aging Pilot Study, 2010