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Health care providers' adherence to tobacco treatment for waterpipe, cigarette and dual users in Vietnam

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Abstract

Background—Almost half of adult men in Vietnam are current cigarette smokers. Recent surveys also suggest a high prevalence of water pipe use, particularly in rural areas. Yet services to treat tobacco dependence are not readily available. The purpose of this study was to characterize current tobacco use treatment patterns among Vietnamese health care providers and factors influencing adherence to recommended guidelines for tobacco use screening and cessation interventions for water pipe, cigarette and dual users.

Methods—We conducted cross sectional surveys of 929 male current tobacco users immediately after they completed a primary care visit at one of 18 community health centers.

Results—Thirty-four percent of smokers used cigarettes only, 24% water pipe only, and 42% were dual users. Overall 12% of patients reported that a provider asked them if they used tobacco products during the visit. Providers were significantly more likely to screen cigarette smokers compared with water pipe or dual users (16%, 9% and 11% respectively). Similarly, 9% of current cigarette smokers received advice to quit compared to 6% of water pipe and 5% of dual users. No patients reported that their health care provider offered them assistance to quit (e.g., self-help materials, referral).

Conclusion—Despite ratifying the Framework Convention on Tobacco Control, Vietnam has not made progress in implementing policies and systems to ensure smokers are receiving evidence-based treatment. High rates of water pipe and dual use indicate a need for health care provider training and policy changes to facilitate treatment for both cigarette and water pipe use.

Keywords

Water pipe; tobacco use treatment; Vietnam; smoking cessation

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1. BACKGROUND

According to the 2010 Global Adult Tobacco Survey (GATS) 47% of adult men in Vietnam are current cigarette smokers,¹ and 13% use waterpipes.² The World Health Organization (WHO) endorsed guidelines for treating tobacco use provide strong evidence that cessation assistance offered by health care providers can significantly increase smoking abstinence rates.^{3–5} Informed by this evidence, Article 14 of the WHO Framework Convention (FCTC) in tobacco control obligates countries to provide treatment for tobacco dependence.⁶ Since ratifying the FCTC in 2004, Vietnam has made significant progress in implementing FCTC policies and programs including smoke free air laws, and counter advertising campaigns and drafted guidelines for treating tobacco use. However, as in other low-middle-income countries (LMICs), adoption of screening and cessation interventions into routine public health and clinical practice is suboptimal.⁷

A number of surveys have explored tobacco-related provider practice patterns and barriers to implementing evidence-based intervention in developed countries, but in LMICs cessation practices of health care providers are understudied.^{4, 8–10} The Global Adult Tobacco Survey (GATS) does not ask smokers if they have received advice or assistance to quit.¹ Moreover, despite the spread of water pipe use globally, we are not aware of any studies, including the GATS, that assess how providers apply treatment guidelines to patients who are water pipe and dual cigarette and water pipe users.

This paper presents the first analysis of data from patient exit interviews (PEI), brief surveys conducted immediately after a primary care visit that assessed provider adherence to guidelines for tobacco use treatment, including water pipe and dual use.^{11–13} The aim of this paper is to characterize current tobacco use treatment patterns among patients visiting community health centers (CHCs) in Vietnam and factors that may influence provider adherence to recommended guidelines for treating water pipe, cigarette and dual use among health care providers working in these CHCs.

2. METHODS

2.1 Study design

We conducted cross sectional PEIs among 972 current tobacco users who had an appointment with a provider in one of 18 community health centers (CHCs) (approximately 50 surveys per center) in a rural district north of Hanoi. The surveys were part of a baseline assessment of provider practice patterns for a cluster randomized controlled trial which is assessing strategies for improving tobacco use treatment within the public health system in Vietnam.¹⁴ Sites are enrolled and randomized in waves. These data are from baseline surveys from patients with visits at CHCs in wave one and two. Therefore, the data was collected in two time periods, August 2014 and August 2015, corresponding with the start of each of these two waves. Patients were screened in the waiting room to assess eligibility, which included current tobacco use and age ≥ 18. Eligible patients were then asked if they would be willing to complete a PEI immediately after their visit. We obtained written consent before conducting the interviews. PEIs are considered to be the optimal non-observational method for measuring provider delivery of outpatient treatment.^{11–13} This

research was approved by the New York University School of Medicine and Institute for Social Medical Studies Institutional Review Boards.

2.2 Measures

Provider adherence to guideline recommended tobacco use treatment was measured by asking patients if at that visit they were asked about tobacco use, advised to quit, assessed for readiness to quit and offered assistance (e.g., referral and/or prescription). Patients responded either yes or no. The PEI also assessed demographic characteristics and type of tobacco use. Current tobacco users were classified as those who smoked cigarettes only, water pipe only and dual users (cigarettes and water pipe) in the past 7 days.

2.3 Data Analysis

Data were analyzed with the R statistical computing environment.¹⁵ Bivariate analyses (chi-squared) were conducted to assess relationships between patient characteristics and type of tobacco use and between patient characteristics and provider practice patterns. Unique associations between patient and provider characteristics and provider practice patterns were estimated in multivariable logistic regression models. In separate models, provider asking the patient about tobacco use and advising the patient to quit tobacco use were regressed on education level, age, type of smoker, type of provider seen, reason for visit, and any quit attempts in the past year. Frequency of water pipe and cigarette smoking were not included in these models since these were partly redundant with the simpler type of smoker variable. All tests of statistical significance were two-tailed, and $p < 0.05$ was considered significant.

3. RESULTS

3.1 Patient characteristics and tobacco use behavior

We achieved a 97% response rate (i.e., 972/1005 approached to complete the survey agreed). Study participants were almost exclusively male (964/972= 99.2%), which is similar to results from the 2010 GATS (1.8% prevalence among women); therefore, we did not include women (n=8) in the analysis. A small number of male participants less than 25 years of age (n=37) also were not included in analysis, resulting in an analysis sample size of 927 male smokers at least 25 years old (Table 1). Thirty-four percent of smokers used cigarettes only, 25% water pipe only, and 41% were dual users. Those with a higher level of education were more likely to use cigarettes only. Cigarette and water pipe use were highest among those 45–64 years old. A majority (55%) of patients reported that they tried to quit smoking in the last year.

3.2 Health care provider (HCP) practice patterns: Screening and advice to quit

Overall 12% of participants reported being screened for tobacco use, and 6% reported receiving advice to quit (Table 2). Patients who used cigarettes only were more likely to be screened for tobacco use and receive advice to quit, compared with dual and water pipe only users. Patients with a higher level of education and those who saw a physician were more likely to report being asked about tobacco and advised to quit use compared with those with less education and those who reported seeing another type of health care professional (e.g. nurse, physician assistant).

No patients reported that their health care provider gave them written information about how to quit smoking, talked about medication to help quit smoking, referred the patient to a community health worker for help quitting smoking, or referred the patient to any other smoking cessation program. Therefore, we do not include those data in this report.

3.3. Regression analyses

In the multivariable logistic regression analysis, patients smoking water pipe only were less likely to be screened for tobacco use compared with those smoking cigarettes only (Table 3). Having a visit for a new problem and seeing a physician at that visit were both associated with an increased likelihood of being screened for tobacco use.

Table 4 shows that those with a higher education level were more than two times as likely to receive advice to quit compared with those with less than a high school education. Patients who smoked both water pipe and cigarettes were less likely to receive advice to quit than those who smoked cigarettes only. Physicians were more likely than other health care providers to provide advice to quit.

4. DISCUSSION

Current tobacco users reported rates of being asked about tobacco use and advised to quit that were substantially lower than findings from previous surveys. According to the 2010 Vietnam GATS, 35% of male smokers were asked about tobacco use and 30% were advised to quit.^{1,7} Although it is difficult to compare these surveys because of different methodologies (e.g., the GATS was a national survey and the current study focused in rural areas), the current survey may underestimate provider engagement in tobacco use treatment because patients are only asked about provider behavior at the current visit. The GATS asks smokers to reflect on provider behavior during a visit that may have occurred several months prior to the survey. However, using PEIs addresses limitations associated with recall bias. The rural geographic area in which this study was conducted may also, in part, explain low rates of screening and assistance. The 2010 GATS found that rural smokers were less likely to be screened and offered advice to quit than those living in urban areas.⁷

Rates of screening and advice to quit were even lower among water pipe and dual users compared with those who used cigarettes only. Low rates of engagement by providers in cessation advice and screening are largely due to a lack of provider training but exploring additional attitudinal barriers, specifically as they apply to other tobacco products is needed. The even lower rates of engagement in tobacco use treatment among non-physicians emphasizes the need to include the full range of health professionals in training programs. In Vietnam, as in other LMICs, the majority of professionals in community level health centers are not physicians. The lower rates of adherence to recommended interventions for water pipe and dual users may reflect both a lack of knowledge among providers about the health consequences of water pipe use and perhaps a belief that these products are safer than cigarettes.¹⁶ These data build on previous research demonstrating the need for ministries of health to provide a systematic approach to increasing workforce capacity through training and education that includes those providers at the front lines of primary care. The finding that providers may be less likely to address water pipe use suggests a need to include

information about the health consequences of alternative tobacco products in provider training curriculum.

One of the most notable findings was the high rate of water pipe (24%) and dual use (42%). In Vietnam, after cigarette use the most commonly used tobacco product is the waterpipe.¹ Vietnam has instituted an aggressive counter advertising campaign to reduce cigarette use but has not matched this effort with educational outreach related to water pipe use.¹⁷ There is some evidence that water pipe smokers have the perception that this form of tobacco use has less health risks than the use of cigarettes.² As a result they may switch or reduce cigarette use through dual use if this is perceived as a safer option. Unfortunately, there is very little known about risk perceptions among smokers or health care professionals related to water pipe use in Vietnam or other South East Asian Countries. Research is needed to explore cultural norms and knowledge and beliefs about water pipe use to inform educational programs that can effectively preempt the spread of water pipe and dual use.

The study has several limitations including that participants were limited to patients from CHCs in a rural province located north of Hanoi, and the data were self-reported, although immediately after the visit. Despite these limitations, the findings begin to fill gaps in our understanding of how providers are addressing tobacco products other than cigarette use. The GATS currently only asks smokers if providers ask and advise them about using tobacco, but it does not specify what type of tobacco. In countries with high rates of water pipe use, specifying the type of product used would provide important data on trends in provider practice patterns and help guide health system and provider level interventions. Current tobacco use treatment guidelines provide little evidence to support effective interventions for water pipe or dual use, however, that does not preclude providers from offering education and advice.

5. CONCLUSION

There is a large gap in knowledge about how providers are applying recommendations for screening and cessation interventions to patients who use alternative tobacco products; particularly in LMICs where smoking prevalence remains high. The study demonstrates that providers are not only missing opportunities to offer effective cessation treatment to cigarette users but may be even less likely to address the use of alternative tobacco products. The findings provide new data that emphasize the need for provider training that includes education about the harms of water pipe use and how to screen and offer brief advice and counseling that can address tobacco use across the full range of products.

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References

1. Global Adult Tobacco Survey Viet Nam. 2010. http://www.who.int/tobacco/surveillance/en_tfi_gats_vietnam_report.pdf. Accessed 1-24-15

2. Xuan le TT1, Van Minh H, Giang KB, Nga PT, Hai PT, Minh NT, Hsia J. Prevalence of waterpipe tobacco smoking among population aged 15 years or older, Vietnam, 2010. *Prev Chronic Dis.* 2013; 10:E57.doi: 10.5888/pcd10.120100 [PubMed: 23597395]
3. Fiore, M. United States Tobacco Use and Dependence Guideline Panel. Treating tobacco use and dependence: 2008 update. Rockville, Md: U.S Dept of Health and Human Services, Public Health Service; 2008.
4. McRobbie H, Raw M, Chan S. Research priorities for Article 14—demand reduction measures concerning tobacco dependence and cessation. *Nicotine Tob Res.* 2013; 15(4):805–16. [PubMed: 23139406]
5. Strengthening health systems for treating tobacco dependence in primary care. http://www.who.int/tobacco/publications/building_capacity/training_package/treatingtobaccodependence/en/ Accessed 1-18-15
6. World Health Organization (WHO). WHO Framework Convention on Tobacco Control. Geneva, Switzerland: World Health Organization; 2005. Available at <http://www.who.int/fctc/en>
7. Centers for Disease Control and Prevention. Health-Care Provider Screening for Tobacco Smoking and Advice to Quit — 17 Countries, 2008–2011. *MMWR.* 2014; 62(46):920–927.
8. Jamal A, Dube SR, King BA. Tobacco Use Screening and Counseling During Hospital Outpatient Visits Among US Adults, 2005–2010. *Prev Chronic Dis.* 2015; 12:E132. [PubMed: 26292063]
9. Asfar T, al-Ali R, Ward KD, Vander Weg MW, Maziak W. Are Primary Health Care Providers Prepared to Implement an Anti-smoking Program in Syria? *Patient Educ Couns.* 2011; 85(2):201–205. [PubMed: 21168300]
10. Shelley D, Tseng TY, Pham H, Nguyen L, Keithly S, Stillman F, Nguyen N. Factors influencing tobacco use treatment patterns among Vietnamese health care providers working in community health centers. *BMC Public Health.* 2014; 68doi: 10.1186/1471-2458-14-68
11. Conroy MB, Majchrzak NE, Silverman CB, et al. Measuring provider adherence to tobacco treatment guidelines: a comparison of electronic medical record review, patient survey, and provider survey. *Nicotine Tob Res.* 2005; 7(Suppl 1):S35–43. [PubMed: 16036268]
12. Stange KC, Zyzanski SJ, Smith TF, et al. How valid are medical records and patient questionnaires for physician profiling and health services research? A comparison with direct observation of patients visits. *Medical Care.* 1998; 36(6):851–867. [PubMed: 9630127]
13. Pbert L, Adams A, Quirk M, Hebert JR, Ockene JK, Luippold RS. The patient exit interview as an assessment of physician-delivered smoking intervention: a validation study. *Health Psychol Mar.* 1999; 18(2):183–188.
14. Shelley D, VanDevanter N, Cleland CC, Nguyen L, Nguyen N. Implementing tobacco use treatment guidelines in community health centers in Vietnam. *Implement Sci.* 2015; 10:142. [PubMed: 26453554]
15. R Core Team. R: A language and environment for statistical computing. R Foundation for Statistical Computing; Vienna, Austria: 2016. URL <https://www.R-project.org/>
16. Roskin J, Aveyard P. Canadian and English students' beliefs about waterpipe smoking: a qualitative study. *BMC Public Health.* 2009; 9:10.doi: 10.1186/1471-2458-9-10 [PubMed: 19134220]
17. Giang KB, Van Minh H, Nga PQ, Hai PT, Quan NT, Tong VT, et al. Factors Associated With Exposure to Antismoking Information Among Adults in Vietnam, Global Adult Tobacco Survey, 2010. *Prev Chronic Dis.* 2013; doi: 10.5888/pcd10.120348

Table 1

Characteristics of Male Tobacco Users

Patient Characteristics	N (%)	Cigarette smokers N (%)	Water pipe smokers N (%)	Dual users N (%)	p value*
Overall	927 (100)	313 (33.76)	230 (24.81)	384 (41.42)	
Education					<.01
Less than high school	558 (60.19)	140 (44.73)	167 (72.61)	251 (65.36)	
High school and more	369 (39.81)	173 (55.27)	63 (27.39)	133 (34.64)	
Age (years)					<.01
25–44	315 (33.98)	111 (35.46)	45 (19.57)	159 (41.41)	
45–64	493 (53.18)	164 (52.40)	134 (58.26)	195 (50.78)	
65	119 (12.84)	38 (12.14)	51 (22.17)	30 (7.81)	
Health care provider seen this visit					0.29
Physician	378 (40.78)	134 (42.81)	99 (43.04)	145 (37.76)	
Other staff	549 (59.22)	179 (57.19)	131 (56.96)	239 (62.24)	
Reason for visit					0.93
Examination for a new problem	785 (84.68)	266 (84.98)	193 (83.91)	326 (84.9)	
Other reasons	142 (15.32)	47 (15.02)	37 (16.09)	58 (15.10)	
# cigarettes smoked/day					<.01
1–10	437 (47.14)	168 (53.67)		269 (70.05)	
11–20	222 (23.95)	125 (39.94)		97 (25.26)	
21	38 (4.10)	20 (6.39)		18 (4.69)	
# water pipes smoked/day					<.01
1–10	329 (35.49)		144 (62.61)	185 (48.18)	
11–20	165 (17.80)		57 (24.78)	108 (28.13)	
21	120 (12.94)		29 (12.61)	91 (23.70)	
Quit attempt past 12 months					0.05
Yes	508 (54.80)	184 (58.79)	132 (57.39)	192 (50.00)	
No	419 (45.20)	129 (41.21)	98 (42.61)	192 (50.00)	

* Based on chi-square test

Table 2

Associations between patient characteristics and rates of screening and brief advice

Patient Characteristics (N=927)	Patient reported provider asked about smoking status or use of other tobacco products		Patient reported provider advised patient to quit smoking or other tobacco products	
	N (%)	p value*	N (%)	p value*
Overall	115 (12.3)		56 (5.9)	
Education level		0.06		<0.01***
<i>Less than high school</i>	60 (10.75)		20 (3.58)	
<i>High school and more</i>	55 (14.91)		36 (9.76)	
Age		0.07		0.17
<i>25–44</i>	50 (15.87)		24 (7.62)	
<i>45–64</i>	51 (10.34)		23 (4.67)	
<i>65</i>	14 (11.76)		9 (7.56)	
Smoker type		0.01**		0.01**
<i>Cigarettes only</i>	52 (16.61)		29 (9.27)	
<i>Water pipe only</i>	20 (8.70)		13 (5.65)	
<i>Dual use</i>	43 (11.20)		14 (3.65)	
Health care provider seen this visit		<0.01***		<0.01***
<i>Physician</i>	67 (17.72)		36 (9.52)	
<i>Other staff</i>	48 (8.74)		20 (3.64)	
Reason for visit		0.01**		0.83
<i>Exam for a new problem</i>	107 (13.63)		48 (6.11)	
<i>Other reasons</i>	8 (5.76)		8 (5.63)	
# cigarettes smoked/day		0.26		0.98
<i>1–10</i>	58 (13.27)		28 (6.41)	
<i>11–20</i>	32 (14.41)		13 (5.86)	
<i>21</i>	5 (13.16)		2 (5.26)	
# times water pipes smoked/day		0.03**		0.02**
<i>1–10</i>	30 (9.12)		17 (5.17)	
<i>11–20</i>	18 (10.91)		7 (4.24)	
<i>21</i>	15 (12.5)		3 (2.50)	
Quit attempt in past 12 months		0.23		0.14
<i>Yes</i>	69 (13.58)		36 (7.09)	
<i>No</i>	46 (10.98)		20 (4.77)	

Table 3

Multivariate Analysis of the Associations between Patient Characteristics and Rates of Provider Screening for Tobacco Use

	Odds Ratio	SE	p-value	95% CI
Education level				
<i>Less than high school (Ref)</i>				
<i>High school and more</i>	1.24	0.262	0.32	0.81, 1.87
Age				
<i>25–44 (Ref)</i>				
<i>45–64</i>	0.69	0.154	0.10	0.45, 1.07
<i>65</i>	0.83	0.282	0.58	0.41, 1.58
Smoker type				
<i>Cigarettes only (Ref)</i>				
<i>Water pipe only</i>	0.52	0.152	0.03	0.29, 0.91
<i>Dual use</i>	0.68	0.156	0.09	0.43, 1.06
Health care provider seen this visit				
<i>Other staff (Ref)</i>				
<i>Physician</i>	2.27	0.469	<.01	1.51, 3.41
Reason for visit				
<i>Other reasons (Ref)</i>				
<i>Exam for a new problem</i>	2.74	1.052	0.01	1.37, 6.29
Quit attempt in past 12 months				
<i>Yes (Ref)</i>				
<i>No</i>	0.78	0.164	0.23	0.51, 1.17

Table 4

Multivariate Analysis of the Associations between Patient Characteristics and Rates of Provider Advice to Quit Tobacco Use

	Odds Ratio	SE	p-value	95% CI
Education level				
<i>Less than high school (Ref)</i>				
<i>High school and more</i>	2.45	0.740	<.01	1.37, 4.50
Age				
<i>25–44 (Ref)</i>				
<i>45–64</i>	0.66	0.208	0.19	0.35, 1.23
<i>65</i>	1.10	0.481	0.82	0.45, 2.52
Smoker type				
<i>Cigarettes only (Ref)</i>				
<i>Water pipe only</i>	0.75	0.277	0.44	0.36, 1.52
<i>Dual use</i>	0.45	0.156	0.02	0.22, 0.88
Health care provider seen this visit				
<i>Other staff (Ref)</i>				
<i>Physician</i>	2.66	0.781	<.01	1.51, 4.81
Reason for visit				
<i>Other reasons (Ref)</i>				
<i>Exam for a new problem</i>	1.21	0.490	0.63	0.58, 2.87
Quit attempt in past 12 months				
<i>Yes (Ref)</i>				
<i>No</i>	0.66	0.195	0.16	0.36, 1.16