

## Issues in Lung Cancer Screening Among Asian American Immigrants

Mo-Kyung Sin<sup>1</sup> · Vicky Taylor<sup>2</sup> · Shin-Ping Tu<sup>3</sup>

Published online: 6 June 2015

© Springer Science+Business Media New York 2015

Lung cancer is the second most common cancer in both men and women in the United States (US), accounting for approximately 27 % of all cancer deaths [1]. It is estimated about 221,200 new cases of lung cancer are diagnosed, and 158,040 estimated lung cancer deaths (86,380 male; 71,660 female) in 2015 alone [1]. According to the 2007–2011 cancer incidence data from 18 Surveillance Epidemiology and End Results (SEER) areas, incidence rate for the lung and bronchus cancer in Asian/Pacific Islander men accounted for 49.4/100,000 (vs. 28.1/100,000 in women) [2].

Cigarette smoking is an independent risk factor for lung cancer and active smoking was found to be responsible for almost 90 % of lung cancer cases [3]. Cigarette smoking kills more than 480,000 Americans each year [4] and smoking-related illness in the US costs more than \$289 billion a year [4]. In many Asian countries, such as Korea and Vietnam, smoking is an accepted social behavior for men and often seen as necessary for social and business interactions. Smoking is therefore highly prevalent among Asian men [5]. The National Survey on Drug Use and Health conducted between 2002 and 2005 reported the highest smoking behavior in Korean American men (37.4 %), followed by Vietnamese men (32.5 %), and Filipino men (25.5 %) compared with 29.7 % among non-

Latino Caucasians [6]. According to the 2011–2012 California Health Interview Survey, Vietnamese and Korean men had a high prevalence of current smoking rate (24.9 %, 23.3 %) compared with 16 % among non-Latino Caucasian men. In addition, Korean men had the highest prevalence of former smoking (34.9 %) compared with 32.2 % among non-Latino Caucasian men. Because of the high smoking rate, lung cancer is the most common cancer among Vietnamese American men and the third most common cancer among Korean American men, according to California Cancer Registry data from 2004 to 2008 [2]. Whereas, lung cancer is the first leading cause of death among Korean men in Korea (11,819 deaths/45,356 cancer deaths from all sites) [7].

Cultural pressure, social norms, and gender were found to be the major sociocultural factors influencing smoking behavior among Asian men [8, 9]. Confucianism is an ethical and philosophical system influencing many Asian countries such as Korea and Vietnam.

Confucianism posits that men are the authority figures and this authority and macho-style mentality encourages men to choose smoking as a coping mechanism to relieve stress [10]. One of the central tenets of Confucian philosophy is collectivism, which is a highly valued trait in both Korean and Vietnam culture [8, 11]. Collectivism fosters strong committed relationships among family members and peers. For example, many young Korean men learn to smoke while engaged in their 2 years of mandatory military service in Korea [5]. In Vietnamese culture, smoking is an ingrained social behavior used to promote good will and kinship among men [9]. A cross-sectional self-report survey conducted among 26 randomly selected Asian American organizations from the seven counties in the Delaware Valley reported that Asian American men were more likely to be current smokers if they had a current

---

✉ Mo-Kyung Sin  
sinm@seattleu.edu

<sup>1</sup> Seattle University College of Nursing, 901 12th Ave, P.O. Box 222000, Seattle, WA 98122-1090, USA

<sup>2</sup> Division of Public Health Sciences, Fred Hutchinson Cancer Research, Seattle, WA, USA

<sup>3</sup> Division of General Internal Medicine, Virginia Commonwealth University, Richmond, VA, USA

smoking father/brother and/or current smoking friends [12]. Although anti-smoking is an emerging social norm in the US, many Asian American men still smoke, especially if they immigrated to the US in adulthood [8], as reported in the 2011–2012 California Health Interview Survey. Culturally relevant interventions to shift Asian American men's social norms related to smoking are in need.

The US Preventive Services Task Force (USPSTF) recently released a recommendation to screen people for lung cancer using low-dose computed tomography (CT) of the chest for individuals with a 30 pack per year or more history of smoking, who are ages 55–79 years, and who have smoked within the past 15 years [13]. Low-dose CT can detect much smaller [2–3 mm] nodules not visible on chest radiographs. The Early Lung Cancer Action Project validated the efficacy of detecting early stage lung cancer, and predicted a high estimation of a 10-year survival rate in 80 % of people with a diagnosis of lung cancer in a multi-institutional setting [14]. It is estimated that screening with low dose CT can save more than 8000 premature lung cancer deaths annually with an additional annual cost of \$240,000 per death [15]. Although long-term outcomes from radiation exposure associated with low dose CT has not been studied, it is presumed to be much lower than that of regular chest X-rays [16].

Use of this screening would be ideal for high risk Asian immigrant men, but they tend to be exposed to this kind of new screening and intervention techniques later due to lack of knowledge of the American health care system, language barriers, and cultural influence on health management behavior [17–19]. Confucian-influenced Asians often view illness as being caused by disharmony among the natural forces (e.g., yin and yang, ki) as well as one's fate, therefore, the concept of preventive health management is not widely embraced or even perceived [10, 20].

While the evidence-based effective lung cancer screening is available, health disparities in the cancer screening uptake among Asian Americans might be an issue. Considering the fastest growing Asian Americans in the US (currently numbering more than 17 million persons and an increase of 43 % between 2000 and 2010) [21] and the high risk factors for lung cancer among them, culturally relevant programs and studies that tackle cultural and social norms related to cancer risk behaviors and early screening in this vulnerable population are necessary.

## References

- American Cancer Society. Cancer facts and figures; 2015 [cited April 21, 2015]. Available from: <http://www.cancer.org/research/cancerfactsstatistics/cancerfactsfigures2014/index>.
- California Cancer Registry. California cancer factors and figures; 2014 [cited April 21, 2015]. Available from: [http://www.ccrca.org/pdf/Reports/ACS\\_2014.pdf](http://www.ccrca.org/pdf/Reports/ACS_2014.pdf).
- Alberg AJ, Samet JM. Epidemiology of lung cancer. *Chest*. 2003;123(1 Suppl):21S–49S.
- U.S. Department of Health Services. The Health consequences of smoking—50 years of progress: a report of the surgeon general; 2014 [cited April 21, 2015]. Available from: <http://www.surgeongeneral.gov/library/reports/50-years-of-progress/index.html>.
- Kim S. Smoking prevalence and the association between smoking and sociodemographic factors using the Korea National Health and Nutrition Examination Survey Data 2008 to 2010. *Tobacco Use Insights*. 2012;5:17–26.
- Caraballo RS, et al. Adult tobacco use among racial and ethnic groups living in the United States 2002–2005. *Prev Chronic Dis*. 2008;5(3):1–6.
- Jung KW, et al. Prediction of cancer incidence and mortality in Korea. *Cancer Res Treat*. 2012;44(1):25–31.
- Kim SS, Son H, Nam KA. The sociocultural context of Korean American men's smoking behavior. *West J Nurs Res*. 2005;27(5):604–23.
- Fellows KL, Rubin DL. Identities for sale: how the tobacco industry construed Asians, Asian Americans, and Pacific Islanders. *J Intercult Commun Res*. 2006;35(3):265–92.
- Kim O, Kim JH, Jung JH. Stress and cigarette smoking in Korean men with diabetes. *Addict Behav*. 2006;31(5):901–6.
- Nguyen AB, Clark TT. The role of acculturation and collectivism in cancer screening for Vietnamese American Women. *Health Care Women Int*. 2013;35(10):1162–80.
- Ma GX, et al. Social influences and smoking behavior among four Asian American subgroups. *Calif J Health Promot*. 2003;1(3):123–34.
- U.S. Preventive Services Task Force. Lung cancer: screening [cited April 21, 2015]. Available from: <http://www.uspreventiveservicestaskforce.org/uspstf13/lungcan/lungcandraftrec.htm>.
- New York Early Lung Cancer Action Project. CT Screening for lung cancer: diagnoses resulting from the New York Early Lung Cancer Action Project. *Radiology*. 2007;243(1):239–49.
- Goulart BH, et al. Lung cancer screening with low-dose computed tomography: costs, national expenditures, and cost-effectiveness. *J Natl Compr Cancer Netw*. 2012;10(2):267–75.
- National Cancer Institute. NIH-funded study shows 20 percent reduction in lung cancer mortality with low-dose CT compared to chest X-ray; 2011 [cited April 21, 2015]. Available from: <http://www.cancer.gov/newscenter/newsfromnci/2011/NLSTprimaryNEJM>.
- Center for Disease Control and Prevention. About minority health; 2007 [cited April 21, 2015]. Available from: <http://www.cdc.gov/omhd/AMH/AMH.htm>.
- Oh KM, Kreps GL, Jun J, Ramsey L. Cancer information seeking and awareness of cancer information sources among Korean Americans. *J Cancer Educ*. 2011;26(2):355–64.
- Xu Y, et al. Cancer risk factors of Vietnamese Americans in rural south Alabama. *J Nurs Scholarsh*. 2005;37(3):237–44.
- Juckett G, Nguyen C, Shahbodaghi SD. Caring for Asian immigrants: tips on culture that can enhance patient care. *J Fam Pract* 2014;63(1):E1–9.
- U.S. Census Bureau. Overview of race and Hispanic origin; 2010 [cited November 2, 2014]. Available from: [www.census.gov/prod/cen2010/briefs/c2010br-02.pdf](http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf).