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Chinese Livery Drivers' Perspectives on Adapting a Community Health Worker Intervention to Facilitate Lung Cancer Screening

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Abstract

Chinese immigrant livery drivers with a smoking history are at high risk for lung cancer. A culturally adapted community health worker (CHW) program may be an effective approach to increase lung cancer screening (LCS) uptake in this underserved group. Five focus groups were conducted with 39 Chinese immigrant male livery drivers with a smoking history in New York City to assess their needs, priorities, and preferences regarding the proposed intervention. Transcripts were qualitatively analyzed using Atlas. ti. Focus group participants were uncertain about whether smoking was associated with cancer, unfamiliar with LCS, and reported numerous barriers to LCS uptake. Most believed a CHW program to facilitate LCS would be acceptable and feasible, if tailored to meet their needs. Our results have implications for improving access to early detection of lung cancer and preventive care (e.g., culturally appropriate smoking cessation and health education programs) for Chinese livery drivers.

Keywords

Lung cancer screening; community health workers; livery drivers; Chinese immigrants; smoking

There are over 750,000 licensed taxi and for-hire vehicle (FHV) drivers in in the U.S.,[1] and over 185,000 in New York City (NYC).[2] The number of taxi and FHV drivers in the U.S. is projected to increase by 20% between 2018 to 2028, much faster than the average projected growth rate (4%) for all occupations.[1,2] New York City's driver workforce is 91.5% immigrant[2] and, in parallel with Chinese immigration to the U.S., increasingly

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from China.[2] The Chinese immigrant population has grown sevenfold since 1980 and in 2018 China surpassed Mexico as the top sending country of foreign-born immigrants to the U.S.[3] The FHV sector, which includes app-based car services (e.g., Uber and Lyft) as well as liveries (i.e., FHVs designed to carry fewer than six passengers) in which most NYC Chinese drivers are employed, has grown 59% from 2016 to 2018. In 2016, simplified Chinese was added as a language option for the Taxi and Limousine Commission (TLC) driver license exam,[2,3] reflecting the growing number of Chinese drivers in NYC.

Research demonstrates professional drivers are at greater risk for poor health outcomes compared with the general population, ranging from work-related COVID-19 transmission[4] to cardiovascular disease[5,6] and lung cancer.[7,8] Many drivers work long hours (10–12 hours/day shifts, approximately six days/week)[9] in heavy traffic confined to their vehicles, and thus have increased exposure to traffic-related air pollution including ambient particulate matter (PM), which has been linked to lung cancer.[10–12] A meta-analysis investigating the association between traffic-related air pollution and lung cancer found significantly higher risk in lung cancer incidence and mortality among professional drivers.[13]

Chinese immigrant drivers who smoke or recently quit smoking carry compounded risk for poor health outcomes and particularly for lung cancer due to the additive hazards of air pollution exposure and tobacco use.[13] A needs assessment survey of male Chinese immigrant livery drivers in NYC found that 73% were current or former smokers (49% current, 24% former)[9] compared with 42.5% of Chinese men in the U.S. overall (23.5% current, 19% former).[14] Recent Chinese immigrants to the U.S. may retain socially normative health behaviors from China,[15] where 47.2% were current smokers in 2013.[16] Reflective of their higher rates of smoking, foreign-born Asian men have a 35% higher rate of non-small cell lung cancer on average than U.S.-born Asian men.[17]

The five-year relative survival rate for lung cancer patients is only 17%,[18] largely because most diagnoses are made in advanced stages.[19] Low-dose computed tomography (LDCT) screening allows for earlier diagnosis, thereby improving outcomes; results from the National Lung Screening Trial showed a 20% reduction in mortality from lung cancer with LDCT screening.[20] The U.S. Preventive Services Taskforce (USPSTF) lung cancer screening (LCS) guidelines were updated in March 2021 to recommend annual screening for lung cancer with LDCT in adults aged 50–80 (from 55–80) years who have a 20 (from 30) pack-year smoking history and currently smoke or have quit within the past 15 years.[21] When the present study was being conducted in 2018, the original guidelines were still in place.[22] The original USPSTF recommendations were issued in 2013, yet uptake has remained low. In the general population, under 5% of eligible patients received LDCT in 2017.[23] To our knowledge, there is no published data on LCS rates among drivers as an occupational group, Chinese immigrants, or Asian Americans more broadly, but foreign-born Asian Americans are significantly less likely to report screening for other cancers (i.e., cervical, breast, and colorectal) than U.S.-born Whites, even after adjusting for education, income, access to care, and illness burden.[24]

Community health workers (CHWs) are lay, frontline public health workers who usually share ethnicity, language, values, and/or life experiences with their peers and facilitate

health care system navigation.[25] Numerous studies show that CHW programs have improved cancer screening rates in underserved low-income and minority populations,[26] yet CHWs remain underused.[27] Our team developed a CHW intervention to increase primary care uptake among male NYC taxi drivers through the provision of navigation case management and telephone-based peer support (Taxi HAILL [Health Access Interventions for Linkages and Longevity]). In the present study, we conducted a qualitative community needs assessment to adapt Taxi HAILL to facilitate LCS and meet the unique needs of the growing Chinese immigrant livery driver population who face cultural and linguistic barriers to health care[28] in the context of a hazardous and stressful occupational environment.[29]

This cultural adaptation is guided by Rogers' Diffusion of Innovations (DOI) theory[30] and Domenech Rodriguez and Weiling's Cultural Adaptation Process Model (CAPM).[31] Diffusion of Innovations theory outlines five factors that increase public health innovations' rate of adoption and success among members of a social group: *relative advantage* (whether the intervention represents an improvement upon the status quo), *compatibility* (whether the intervention is consistent with the population's existing values, experiences, and needs), *complexity* (whether the intervention is simple or complex to use), *trialability* (whether the intervention can be experimented with on a limited basis), and *observability* (whether the intervention's results are visible to others in the community).[30] Widespread community uptake of preventive innovations is challenging to facilitate given the relatively long interval between intervention adoption (lung cancer screening) and reward (early detection of lung cancer and reduced mortality risk).[32] Thus, the present study assessed Chinese drivers' needs and preferences regarding the proposed CHW intervention using focus group methodology, in accordance with Rogers' recommendations to use peer networks to evaluate and eventually shift normative attitudes toward preventive interventions.[32] The CAPM involves three phases: 1) initial work between intervention developers and community stakeholders to assess needs and priorities to inform intervention adaptation (current study phase); 2) initial adaptation, including pilot-testing of the adapted intervention; 3) further, ongoing refinement of the adapted intervention.[31]

Methods

Participants and procedures.

Participant inclusion criteria were non-U.S. born, of Chinese descent, livery drivers, age 21–80 years (we selected age criteria broader than the age eligibility criteria for LCS in order to ascertain younger livery drivers' knowledge and beliefs regarding LCS for preventive and educational reasons), Mandarin and/or English-speaking, and either a current smoker or quit in the last 15 years. Participants were recruited by community-based convenience sampling in the New York metropolitan area from livery bases serving the Chinese community and Chinese community-based organizations. Recruitment flyers and a telephone screening questionnaire were used. Study staff provided participants with a Chinese-language document describing the purpose of the study, elicited and answered questions from participants, and obtained spoken (as opposed to written) informed consent from participants to address potential concerns of undocumented participants.[33] All data

collection procedures were approved by the Institutional Review Board at Memorial Sloan Kettering Cancer Center.

Five in-person focus groups were held at Chinese-serving livery bases and community organizations in 2018. Guest et al., in a study assessing saturation using 40 focus groups, demonstrated that two to three focus groups were sufficient to identify 80% of themes and three to six groups for 90% of themes.[34] Focus groups were conducted by the PI (JL), a bilingual group facilitator with experience leading focus groups with Chinese immigrant communities, and a bilingual Mandarin-speaking note-taker who recorded observations of discussion content as well as nonverbal behavior such as physical gestures and group dynamics. A semi-structured focus group guide was used (Box 1). Focus groups ranged in duration from 75 to 90 minutes.

Data analysis.

Focus group interviews were audio recorded, transcribed, translated into English, and analyzed in 2019 using Atlas.ti, a computer program widely used for qualitative data analysis.[35] The study team used an inductive approach, meaning interview data were used to generate rather than provide evidence for hypotheses. The PI (JL) and second author (FL) conducted the analysis using inductive analysis techniques from grounded theory.[36] Specifically, in the first (exploratory) phase of the analysis, JL and FL independently analyzed the focus group transcripts through a process of open coding in which no preconceived themes were imposed on the data. These authors then met to discuss and reach consensus on key points and developed an initial draft of a coding guide. In these meetings, summary categories were developed by studying the transcripts and considering their meanings and associations with developing themes. Once the coding scheme was established, interview transcripts were independently re- read and re-coded (JL, FL). Coded transcripts were then compared and reviewed in consensus meetings in which JL and FL discussed the results, resolved disagreements on coding, and agreed upon key themes. This iterative process permitted reviewers to closely examine significant issues raised in the interviews and to identify specific themes, subthemes, and subtopics. Reviewers also agreed on selected quotations to illustrate themes. Codes were quantified by enumerating the frequency of themes within each focus group, as well as the presence or absence of each code for each participant. For codes that reflected agreement/disagreement with an opinion or statement expressed to the focus groups, verbal disagreements by participants were considered disagreements, while verbal expressions of agreement, head nods, or silence were counted as agreement or assent.

Results

Table 1 presents demographic details of study participants (N = 39). Inductive analysis generated a total of 65 codes (subtopics) within eight key themes (Box 2).

Smoking.

Across all groups, participants spoke extensively about their experiences with smoking. Drivers had mixed opinions regarding smoking, with many expressing doubt about the

negative health consequences of smoking while also endorsing a desire to quit smoking. One participant shared his belief that smoking is good for the blood "because my blood is dependent on nicotine." Some expressed uncertainty about the link between smoking and cancer (n=9): "There are a lot of [smokers] who don't have cancer … Smoking doesn't necessarily lead to cancer." Similarly, some (n=7) believed that smoking will not harm based on anecdotes of long-term smokers who remained healthy, citing Chinese politicians and actors as examples. A few participants (n=2) believed that quitting smoking could lead to illness or death: "They smoke and smoke as usual, and suddenly quit, then before long, they're gone."

Sociocultural factors contributing to smoking habits were also discussed. Some (n=4) described China's greater cultural acceptance of smoking versus the U.S.: "Among friends [in China], when we stayed up, everyone had a pack of cigarettes. You give [some cigarettes] to him, he gives [some cigarettes] to you. Once I came here, I stopped smoking." Others (n=7) described smoking as a coping mechanism for immigrationrelated stress: "Since coming to America I haven't had any hobbies, [I] smoke a little to stop boredom, driving is tiresome."

Smoking cessation was a prominent subtheme. All participants spoke about their struggles with addiction: "Your lungs are rotten. But you can't control yourself, you're addicted, you're unable to quit." A few (n=2) raised the possibility of a longer lifespan and earning more money to support themselves and their families as an incentive to quit smoking: "If you smoke, you can't make [a lot of] money, [because] it hurts your health. If you want to make more money, then you have to smoke less."

Drivers' knowledge of lung cancer screening.

Nearly all participants (n=29) had limited knowledge about LCS, with some (n=9) not having heard of LCS at all and others (n=7) confusing low-dose computed tomography (LDCT) with chest X-ray, a conventional CT scan, or a biopsy. All were unaware that insurance covers the cost for annual LCS with LDCT for those who qualify under the U.S. Preventive Services Task Force (UPSTF) guidelines.[22]

Drivers' prior knowledge/experience with CHWs.

Participants also exhibited limited prior knowledge and/or experience with CHWs. Most (n=33) had not heard of CHWs at all, while the few participants who had (n=5) were uncertain about their role: "I'm not too sure [what a CHW does] … just go to the community to help, includ[ing] … [helping] the sick, [doing] community service, they will do it all."

Acceptability of a CHW program (in the context of diffusion theory).

Participants discussed the acceptability of a CHW program in their community. Some participants (n=10) expressed the opinion that the proposed program would be an improvement (from not having a CHW program) (*relative advantage*): "We didn't know about [CHWs] before … But through this [program], we would know where exactly to go [for LCS]." In addition, participants (n=10) spoke about the importance of CHWs to help drivers obtain LCS for early detection and prevention. Some (n=12) expressed the view

that the proposed intervention would meet their needs (*compatibility*): “It’s for your own health … Once [the CHW] sets up the time for the test, we’ll be there”, though others (n=4) disagreed (“A [healthy person] won’t go find you [a CHW].”) They described a preference for communicating with CHWs by phone. Nearly all (n=38) expressed agreement or assent that the proposed program was easy to understand and use (*complexity*): “It’s not complicated. It’s like having an advisor. You can go to him for any health-related questions, and he’ll point you in the right direction.” All agreed or assented that the program would have greater appeal if it was first tried on a limited basis (*trialability*). Participants (n=24) offered suggestions to ensure the results of the intervention would be visible to others (*observability*), including advertising on Chinese radio, newspapers, and television; publicizing the program using flyers, posters, banners, social media (especially WeChat) and via word of mouth; and coordinating with livery-base management.

CHW role in screening process.

Participants in all groups discussed the role of CHWs in the LCS process. They described the central role of CHWs as providing education on the harms of smoking and how to access cessation services, the risks and benefits of LCS, and the need for LCS: “The key is to raise awareness. When [drivers] know that [LCS] is important and want to go, then mission accomplished.”

With regard to the CHW role in facilitating LCS, all stated they would require guidance in the referral process (i.e., facilitating referrals from primary care providers for LCS as some insurance companies require). Relatedly, most participants (n=29) felt CHWs should provide advice on how to navigate complex health care systems. Nearly all (n=37) expressed a preference that CHWs link them to providers at hospitals and clinics with interpreter services or, if clinic-based interpretation is unavailable, act as interpreters themselves.

Qualities of an ideal CHW.

All participants described the qualities of an ideal CHW in the proposed program. Some (n=8) preferred a CHW who shared similar relevant personal experiences, e.g., a former smoker, someone who had undergone LCS, and/or a former taxi driver “so he can empathize.” Others (n=13) disagreed, stating that other qualities, such as personal traits of patience, kindness, and enthusiasm, were more important: “The main thing is that we can communicate [with the CHWs], [that the] service [they provide] is good, and [that they] are kind.” The importance of professionalism (i.e., having medical knowledge and knowledge of the medical system) was also discussed: “This person needs to have [medical] knowledge because his job is [that of a health] educator. If he doesn’t understand [the LCS process], then he can’t explain [it] clearly to other people.” Nearly all participants (n=38) preferred that the CHW have a Chinese cultural background and speak Mandarin Chinese, though some raised the issue of drivers speaking other Chinese languages and dialects, in which case participants wanted the CHW to help with finding interpretation services.

Barriers to a CHW program.

Participants in all groups identified potential barriers to the proposed intervention. Systemic barriers concerned insurance coverage and financial limitations, with many participants

stating that they would not obtain LCS if it were not fully covered by insurance. Linguistic barriers primarily concerned the need to provide interpretation services for speakers of Chinese languages and dialects other than Mandarin, such as Fujianese. Occupational barriers included the opportunity cost of missed work and the limited time drivers have to interact with CHWs: “I tell you, us Chinese people, we are running around for survival, when would we have time to do this [LCS] in the [driver] community?”

Barriers related to smoking and screening beliefs included fear of radiation cancer risk from screening, a lack of belief that smoking causes cancer, the idea that diagnosing elderly individuals with lung cancer through screening may be viewed as creating an unnecessary burden on society, fear of a positive result from LCS, and a lack of belief in preventive care. Some (n=6) stated that they would not seek medical care unless they felt unwell: “Let’s just say [the driver] feels fine. If you tell me to go do this [LCS], I would not go, because I don’t feel sick.”

Adaptations to a CHW program to facilitate lung cancer screening for the Chinese community.

Participants described the need for adaptations to the proposed CHW intervention in order to increase support and participation from the Chinese driver community. Participants (n=10) emphasized that the program must minimize work interruption (“If it drags [the CHW program takes too much time], then drivers are not going to wait”), with some (n=15) suggesting that the CHW meet drivers at the livery base in person and/or facilitate appointments by phone. Participants (n=9) also discussed the need for education on issues specific to drivers that put them at increased risk for lung cancer (e.g., exposure to PM) and other occupational health risks (e.g., sedentary lifestyle and occupational stress).

Adaptations to address cultural factors were also discussed, including encouraging screening utilization via drivers’ families (n=2) (“You send a letter, his family also reads it. If he doesn’t want to go, his family members will encourage him to go”) and addressing culturally rooted cancer beliefs (n=3), particularly the idea that a cancer patient is a burden on society.[37]

Participants (n=12) suggested CHWs provide education on the harmful effects of smoking, the link between smoking and cancer, the need for screening and preventive care, and smoking cessation: “I really really want to quit smoking [and am] hoping to learn some good ways to quit … I know smoking … causes coughing, shortness of breath, emphysema. But is smoking directly related to lung cancer? I don’t know, because we don’t have [knowledge] in this area.”

Discussion

This study describes the perspectives of male Chinese immigrant livery drivers who currently smoke or have quit within the past 15 years, elicited to inform a cultural adaptation of a CHW program to facilitate LCS in this high-risk population.

Study results underscore areas of particular importance to Chinese livery drivers with a smoking history. The adapted program should prioritize the addressing of drivers' uncertainty regarding the link between smoking and lung cancer and the provision of accurate information about the health risks conferred by smoking and how to access preventive care, including smoking cessation interventions. The adapted intervention should also help drivers identify culturally appropriate activities to reduce stress and forms of social enjoyment that do not involve smoking, such as Chinese-language smoking cessation support groups and sports and recreational activities.

Nearly all participants were unfamiliar with LCS and many cited insurance coverage as a barrier to seeking LCS without being aware that insurance covers the cost of LCS with LDCT for those who qualify under UPSTF guidelines. Our recent survey of health behaviors among Chinese livery drivers in NYC found 82.5% of the sample had health insurance and a PCP,[9] suggesting eligible drivers may be well placed to use LCS. Community health workers in the adapted program should educate PCPs about the USPSTF guidelines on LCS, encourage PCPs to facilitate LCS, and educate drivers on how to ask their PCPs about LCS (previous studies have shown PCPs lacked awareness of USPSTF guidelines on LCS).[38,39] Community health workers should provide accurate information about the relative benefits and risks of LCS with LDCT, e.g., by educating drivers about the 20% reduction in lung cancer mortality with LDCT compared with chest x-ray,[40] as well as discussing risks. Low-dose CT has a higher radiation dose than chest x-ray (though the risk is still very low: one estimate is one cancer death per 2,500 persons screened).[41]

The study's limitations include bias inherent in convenience sampling; the discussion could have represented the views of only a few who agreed to participate because they were receptive to the topic. In addition, based on the study's inclusion criteria, not all participants were necessarily eligible for lung cancer screening based on their age or pack-year smoking history. Participants who are eligible for lung cancer screening may have different views about this program.

Our study presents valuable information on the perspective of an understudied group and adds to the limited literature addressing the informational and support needs of this population.[9] Taken together with earlier findings on barriers to screening among Asian immigrant populations,[42,43] our results suggest that a tailored CHW program for Chinese immigrant livery drivers has the potential to increase access to and uptake of LCS and smoking cessation programs. Moreover, drivers readily identified the relative advantage, compatibility, and trialability of such a program, as well as suggestions for increasing observability, indicating readiness for adoption in the Chinese livery driver community.[30,32,42,43] In keeping with focus group participants' stated priorities, the program should provide occupationally and culturally tailored health information (e.g., on the link between smoking and lung cancer and the importance of LCS and preventive care) and proactively address drivers' preferences to increase the intervention's acceptability and visibility (e.g., hire CHWs who share the same cultural background, advertise on relevant platforms such as through livery bases and WeChat). As more attention is paid to disseminating effective cancer screening interventions and reducing inequalities in uptake,[44] we hope that this theory-driven cultural adaptation of a CHW intervention to facilitate LCS

will lead to a scalable model for the Chinese immigrant livery driver community as well as other vulnerable and underserved groups.

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Box 1.

FRAMEWORK FOR FOCUS GROUP DISCUSSIONS

Topic	Issues explored	Example probes
Introduction to CHW intervention to facilitate LCS	Drivers' knowledge and beliefs concerning smoking's relation to lung cancer, LCS, and CHWs	How do you think smoking is related, or not related, to lung cancer? What have you heard about LCS? Have you heard of a Community Health Worker (CHW)? What do you think CHWs do?
	CHWs and their role in helping drivers obtain LCS	Do you think CHWs have any role in helping people get LCS?
Exploring perceptions of the five key attributes in Diffusion of Innovations Theory	Relative advantage	Is there any current program that you are aware of that is similar to the CHW program we are discussing? If not, do you think having such a program would be helpful? If yes, do you think the CHW program we are discussing is better than the current program?
	Compatibility	Do you think the CHW program fits in with your needs and health priorities?
	Complexity	Does it seem easy to understand how this CHW program would work in your community?
	Trialability	Would you be willing to try out the CHW program to see how it could help you?
	Observability	How do you think we could make this program more visible to others both on an individual level and to the community?
Preferences for CHW recruitment, training, and responsibilities	Recruitment and hiring	What characteristics do you think this individual should have? How do you think we should try to recruit CHWs?
	Training	What kind of training do you think CHWs will need to facilitate LCS for drivers?
	Care	What specific support do you think drivers will need to get LCS?
Exploring facilitators and barriers to intervention success	Drivers' perceptions of facilitators and barriers to implementing a CHW program	Is there anything related to your culture, family background, social or economic, or work situation that would either facilitate or discourage broader implementation of this CHW program? What ideas can you think of that may help sustain the CHW program? What barriers would negatively impact acceptance of the CHW program?

Box 2.

KEY THEMES, SUBTHEMES, AND SUBTOPICS

Theme	Subtheme	Subtopic
Smoking	Smoking Beliefs	Belief that smoking is good for the blood Belief that quitting smoking will lead to illness/ death Uncertainty about link between smoking & cancer Belief that air pollution risk is greater than smoking risk Belief that smoking will not harm based on anecdotes of long-term smokers who remained healthy Belief about certain individuals' physical make-up being able to "handle" smoking
	Sociocultural Factors	Cultural acceptability of smoking in China vs. U.S. Smoking as coping mechanism for stress Smoking as a form of social engagement
	Smoking Cessation	Addiction/difficulty quitting Working for longer if healthy/earning more as incentive to quit smoking Positive result from lung cancer screening as motivation to quit smoking
Drivers' knowledge of lung cancer screening		Limited knowledge about lung cancer screening Lack of knowledge about insurance coverage for lung cancer screening
Drivers' Prior Knowledge/Experience with CHWs		Limited prior knowledge/prior experience with CHWs
Acceptability of a CHW Program (Diffusion Theory)	Relative Advantage	Need for CHW program for the Chinese driver population Need for drivers to participate in lung cancer screening
	Trialability	Desirability of an initial time-limited pilot program
	Compatibility	Communication preferences Logistics of meeting CHWs
	Complexity	Complexity/simplicity of implementing CHW program
	Observability	Chinese radio Livery base management Hospitals/clinics Chinese newspaper Flyers/posters/banners Chinese television Social media/WeChat Word of mouth
CHW Role in Lung Cancer Screening Process		Guide primary care and lung cancer screening referral process Schedule doctor's appointments Provide education about need for screening Provide education about lung cancer screening, risks, benefits, etc. Provide education about harms of smoking and smoking cessation, how to access cessation services Navigate insurance/healthcare system Provide interpretation/translation services
Qualities of an Ideal CHW	Experience	Former smoker Previously had lung cancer screening Former taxi driver
	Professionalism	Medical knowledge Knowledge of healthcare and insurance systems
	Language & Culture	Chinese cultural background Speaks Chinese

Theme	Subtheme	Subtopic
Qualities of an Ideal CHW	Personal Traits	Patience Kindness Enthusiasm
Barriers to CHW Program	Systemic Barriers	Insurance/SES barriers
	Language Barriers	Multiple Chinese dialects
	Barriers related to beliefs about smoking and screening	Fear of cancer risk from radiation from screening Lack of belief that smoking causes cancer Fear of positive result Lack of belief in preventive care Diagnosing elderly individuals with lung cancer through screening may be viewed as creating an unnecessary burden on society
	Occupational Barriers	Livery drivers very busy/opportunity cost of missed work Limited time for CHWs to interact with drivers
Adaptations to a CHW Program to facilitate lung cancer screening for the Chinese Community	Occupational Factors	Delivery of CHW program to minimize work interruption Delivery of CHW program in a seamless manner with occupational environment Education about and how to address increased health risks related to occupation as livery drivers
	Education on smoking and preventive care	Need for education on harmful effects of smoking Need for education on link between smoking and cancer Need for education/information on smoking cessation Need for education on screening/preventive care
	Cultural Factors	Role of family in encouraging screening utilization Address culturally-rooted cancer beliefs Identify culturally-appropriate coping mechanisms and forms of social enjoyment that do not involve smoking

Table 1.

SOCIODEMOGRAPHIC CHARACTERISTICS OF FOCUS GROUP PARTICIPANTS (*N* = 39)

Characteristic	Total *N* (%) or mean (*SD*) [range]
Age (*SD*)	56 (7.6) [41–71]
Sex (%)	
Male	39 (100%)
Female	0 (0%)
Country of birth (%)	
China	39 (100%)
Length of residence (years) in the U.S. (*SD*)	11 (7.0) [1–26]
Marital status (%)	
Single	3 (8%)
Married	36 (92%)
Educational attainment (%)	
Primary school	2 (5%)
High school	27 (69%)
Some college	5 (13%)
College	5 (13%)
Spoken English fluency (%)	
Fluent (“very well”)	0 (0%)
Proficient (“well”)	0 (0%)
Limited (“not well”)	32 (82%)
None (“not at all”)	7 (18%)
English language comprehension (%)	
Excellent (“very well”)	1 (3%)
Proficient (“well”)	1 (3%)
Limited (“not well”)	6 (15%)
None (“not at all”)	31 (80%)