

Social Environmental Influences on Smoking and Cessation: Qualitative Perspectives Among Chinese-Speaking Smokers and Nonsmokers in California

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Abstract This qualitative study examines the social environmental influences on smoking and cessation from the perspectives of Chinese smokers and household nonsmokers in California. Seven focus groups were conducted with 63 participants. Three culturally influenced levels of potential intervention emerged from constant comparative analysis. At the individual level, participants focused more on irritating odor than health harms of exposure and had inaccurate beliefs about harms of smoking and cessation. At the relational level, peers kept smokers connected to pro-smoking norms. There was conflict in the home about smoking and failed cessation, but smokers recognized the benefits of cessation for family harmony and children's health. Physicians encouraged cessation but this tended to be insufficient to prompt action unless a smoker felt ill. At the societal level, participants recognized changes in social acceptability and environmental regulation of smoking upon immigration. Better implementation of smokefree policies, plus culturally nuanced strategies for equipping

both nonsmokers and smokers to become smokefree, are needed.

Keywords Tobacco use · Secondhand smoke · Cessation · Chinese American

Introduction

Although tobacco control efforts have drastically reduced smoking prevalence in the United States in the last five decades, tobacco use remains the leading cause of preventable death and disease in the U.S. and worldwide [1]. Certain population subgroups continue to suffer disproportionately [2, 3]. Chinese Americans are the largest Asian ethnic group, and about two-thirds are foreign born [4]. In California, Chinese men who immigrated from Asia or the Pacific Islands smoke at 22.4 % [5]. A previous survey of Chinese Californians found that Cantonese-speaking men smoke at higher rates than Chinese Californian men (21.7 vs. 14.3 %) [6]. By comparison, the prevalence of smoking among Californian adults at large is 11.4 % [7]. The high smoking rates, especially among recent immigrants, is not surprising given that in China, half to two-thirds of all adult males smoke; on the other hand, women have very low smoking prevalence rates (2.4–3.2 %) [8, 9]. Additionally, nearly three-quarters of nonsmokers in China experience effects from secondhand smoke (SHS) at home [2].

Smoking is heavily influenced by social and environmental influences, including cultural and gender norms [10, 11]. Previous research has documented that both smokers and nonsmokers in China have limited knowledge about the health harms of tobacco use and SHS exposure [12] and hold inaccurate beliefs about the health risks of smoking and the consequences of cessation (e.g., that quitting causes health

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problems) [13]. In Chinese culture, smoking with others is seen as a way to foster relationships between family members, peers, and business associates, particularly for men [11, 14].

In the United States, where widespread smokefree public policies have influenced norms against smoking [15], Chinese immigrant smokers may face societal pressure to refrain from smoking in public and nonsmokers may seek to enforce these smokefree norms in the home. The current study examines perspectives on smoking and cessation behaviors among Cantonese-speaking Chinese American smokers and nonsmokers across different environmental contexts. Chinese American immigrants, who by nature of being exposed to two cultures with different norms on smoking, may help highlight these social and environmental influences in behavior change.

Theoretical Framework

The present study is grounded in the Health Behavior Framework (HBF) [16], which synthesizes several behavioral health models, including the Theory of Planned Behavior [17], Transtheoretical Model of Change [18–20], Health Belief Model [21], Social Cognitive Theory [22], and Social Influence Theory [23]. HBF takes into consideration the context within which health behaviors occur, including the influence of multiple environmental contexts. The model considers individual factors (e.g., knowledge, communication with provider, health beliefs) and relational factors, including provider and health care system factors (e.g., provider characteristics, health care setting) as barriers or facilitators of intended health behaviors. Furthermore, as applied to smoking and cessation behaviors, HBF takes into account the influences of cultural factors and beliefs.

Methods

Study Recruitment and Design

The current study was conducted using a community-based participatory research approach. Community feedback into all aspects of the study were discussed with the San Francisco Chinese Council, a consortium of providers, researchers, and advocates. Participant recruitment and the study implementation was conducted at the Chinatown Public Health Center (CPHC, the community partner), a San Francisco county clinic serving predominantly Cantonese-speaking Chinese immigrants. Human subjects approval was obtained through the institutional review board at UC Davis, and informed consent was obtained from each participant prior to study participation.

Cantonese-speaking men and women, 18 years or older, were recruited through advertisements in the local Chinese

media, community organizations, and the clinic. To ensure diverse perspectives on smoke exposure, current and former smokers and never smokers were recruited for participation in focus groups. Four focus groups included participants who were recruited as pairs within the same household, though the smoker and the household nonsmoker participated in separate focus groups. Three focus groups (one never smoker only group and two current or former smoker only groups) included participants recruited separately from their household partner. Each focus group consisted of 8–10 participants (mean = 9). Each participant received \$40 for participation in the interview. Before the interview, participants completed a brief questionnaire including demographic questions.

Guiding questions for the interviews focused on the contexts supporting smoking and cessation behaviors (for current and former smokers), smoke exposure (for both smokers and nonsmokers), understanding of health harms of smoking and smoke exposure (for both smokers and nonsmokers), and how smoke exposure is related to cessation experiences (for both smokers and nonsmokers). All focus groups were conducted by the third author who is a senior health educator with more than 30 years of experience working with and conducting focus groups in the Chinese community.

Data Analysis

Research staff who are bilingual in Chinese and English first translated the focus group interviews into English, then checked the translated transcripts with the audio recordings for accuracy. Data analysis was guided by the HBF and involved a modified grounded theory approach of constant comparative analysis [24], wherein analytic themes were generated independently, then refined and agreed upon in study team meetings by group discussion. The moderator worked closely with the study team in constructing the guiding questions and reviewing the results of each focus group, so that underdeveloped or unexplored themes could be explored further using more refined interview probes, which were generated during study team meetings. Focus group interviews stopped after the seventh focus group, when no new themes emerged and when the study team had no remaining questions, reaching consensus on the meaning and importance of analytic categories.

Results

Participant Characteristics

We conducted seven focus groups with a total of 63 participants. Our sample included 37 smokers (32 current

smokers who reported smoking in the past 30 days and 5 former smokers who reported having stopped smoking for at least 1 month) and 26 never smokers. In this paper, the term “smokers” will be used to reference both current and former smokers, and “nonsmokers” will be used to reference never smokers. Of the smokers, 97.30 % ($n = 36$) were male. Of the nonsmokers, 92.31 % ($n = 24$) were female. Smokers’ average age was 58 years ($SD = 10.93$). Nonsmokers’ average age was 53.58 years ($SD = 11.08$). Age was missing for two nonsmoking participants and one smoking participant. The average time lived in the United States was 11.49 years ($SD = 11.63$) among smokers and 8.95 years ($SD = 5.95$) among nonsmokers. Time lived in the U.S. was missing for one smoking participant. All participants were immigrants from China (including the Mainland and Hong Kong). Among the 17 nonsmokers who were recruited in household dyads with a smoker, two were the father of a smoker, one was the brother of a smoker, and the remaining 14 were the wife of a smoker.

Overview of Themes

The constant comparative analysis yielded nine themes, which were consistent across smokers and nonsmokers and were summarized with subcategories in Table 1. Table 1 also provides sample illustrative quotes from smokers and nonsmokers in support of each theme.

Focus on Irritating Odor from Smoking and Smoke Exposure

Participants had varying degrees of understanding about the health effects of smoking and SHS exposure, regardless of smoking status. Most participants focused on the irritating odor from smoking and SHS exposure. Negative comments about smoking were almost exclusively focused on the smell of cigarettes and the lingering odor on clothes and in the air.

Focus on Harms of Smoking to Smoker Not Nonsmokers

When smokers or nonsmokers described other negative consequences of smoking, they concentrated mainly on health harms for the smoker but not household members impacted by SHS exposure. At the same time, some participants acknowledged that SHS exposure could negatively impact the health of children in terms of allergies, asthma, or other respiratory discomforts.

Beliefs that Smoking is Healthful and Quitting is Harmful

Rather than accurate information about smoking consequences to motivate cessation, it was often inaccurate

beliefs about smoking and quitting that pervaded the discussions for both smokers and nonsmokers and discouraged cessation. A recurrent theme in responses about how long it takes for SHS to affect one’s health was that it depends on the weakness of the person’s immune system or health. Participants stated that many Chinese smokers believe they will live a long life regardless of how much they smoke, citing Mao Zedong (the founder of the People’s Republic of China) as someone who chain-smoked yet lived past age 80. Comments about how quitting could be harmful were evident in participants’ examples of how relatives got sick or died after a quit attempt.

Beliefs that Quitting Requires Determination and Willpower

Most participants reported that a smoker’s ability to quit smoking depended on their determination. Those who could not quit were perceived as too weak-willed to overcome their addiction, and those who quit were portrayed as simply deciding to quit. One wife of a smoker stated her belief that quitting ultimately takes determination since the addiction is psychological. Her smoking husband stated, “In reality, everyone has the determination for 3 months. However, the determination will decrease after 3 months.” Though he also believed that determination was the key to cessation, he reflected on several occasions how easy it was for him to relapse when he made quit attempts.

Co-workers or Friends Keep Smokers Connected to Pro-smoking Norms

Many of the participants in the sample worked in ethnic businesses such as restaurants and factories. There, among coworkers, smoking was seen as a way to increase social harmony. Nonsmokers and smokers reflected on the workplace as a context that encourages smoking since other ethnic peers smoke. As one smoker stated, “offering you a cigarette demonstrates friendship, is a way of interaction. In the past, if you did not offer a cigarette when you came across a friend, it made you feel guilty.”

Conflict with Household Nonsmoker About Smoking

Smokers and nonsmokers stated that smoking was a source of conflict as household members attempted to negotiate the household environment, marital relationships, and parent–child relationships. No smokers stated that their nonsmoking household members condoned their smoking behaviors and all nonsmokers voiced their displeasure about the smoking behaviors of their household members. Many smokers reported feeling pressure from family

Table 1 Themes and examples from focus groups with smokers and nonsmokers

Social or environmental factor addressed	Theme	Sample quotes from smokers	Sample quotes from nonsmokers
Individual	Focus on irritating odor effects from smoking and smoke exposure	<p>“I haven’t smoked at home these several years, because the place is relatively small, when I smoke inside my room, the smoke diffuses outdoor to other rooms. My children are disgusted about this since they are nonsmokers.”</p> <p>“It is better to smoke in the backyard, because the area is bigger and the smell of the cigarette will not remain.”</p>	<p>“I dislike that smell [of cigarettes]. I am afraid of it. I nag [my husband] frequently, “For goodness sake please don’t smoke! The whole house is filled with the smell of cigarettes.” I am really afraid to smell that kind of odor.”</p> <p>“[My husband] smokes outside, but the smell will diffuse in. If the wind is strong, it will blow into the house. He leaves the door opened when he smokes and the smell is carried along with the wind.”</p>
	Focus on harm to smoker	<p>“Everyone knows it is bad to smoke...we ourselves know it is bad to smoke too.”</p> <p>“Relatives, such as my wife and my daughter, brothers and sisters, they urged me not to smoke. When I smoked in the past, some relatives brought me cigarettes from Hong Kong. Since I had the resource, I couldn’t quit. Eventually they stopped bringing me cigarettes, and said that it was bad for my health.”</p>	<p>“[My husband] is now smoking increasingly intense, which is, when he gets up every morning from bed, he coughs hard and coughs for half an hour. I told him, ‘How about not smoking? You are coughing very hard! How about quit smoking!’ He did not answer. I said, ‘You smoke and will do harm to your lungs.’ Now my son smokes too. I said, ‘Look! You both smoke together! Stuffed the whole house with the smell of cigarette smoke.’”</p>
	Beliefs that smoking is healthful and quitting is harmful	<p>“I have seen a couple of friends who came from China and lived here for a couple of years. They suddenly quit smoking. I asked, “Quitting smoking so suddenly, will not there be problems?” Less than 3 months later, they really got diabetes. Now, they have to use adult diapers and even live in senior centers!” (Pair #1)</p>	<p>“[My husband] said, ‘During SARS infection, a lot of people are infected but smokers are not.’ He said, ‘Smoking prevents being infected.’” (Pair #1)</p> <p>“After quitting, his last attempt, he had another try before coming to America. However, for some unknown reason, his nose bled and scared his mother. She said, ‘Why don’t you smoke a cigarette immediately.’ He smoked and the bleeding was over. Since then, he smoked even more! 3 packs a day!”</p>
	Beliefs that quitting requires determination and willpower	<p>“It is a psychological addiction. Being determined should get you to quit.”</p> <p>“Determination is very important. You don’t look at it, don’t smoke it, don’t buy, and stay away from smokers.”</p> <p>“Only if the person is determined, they should be able to quit easily.”</p>	<p>“My husband said if you are determined to quit smoking, you do not need anything. We got the nicotine patch from the health center and only used a few, my husband quit smoking. He said those who cannot quit are just lying to themselves.”</p> <p>“I have 2 relatives... they said quit and they quit! They said to quit in a week, and they did it. It is simple. Determination!”</p>
Relational: Peer Environment	Co-workers or friends keep smokers connected to pro-smoking norms of their home culture	<p>“After I quit for a year, since we were working, a lot of our coworkers smoked. Almost everyone smoked in there, 9 out of 10 smoked. So in the factory, there was a room with a lot of people, approximately 20–30 people. Everyone was smoking and so I smoked again.” (Pair #10)</p> <p>“When I was trying to quit, however, when I was working, co-worker said to me, ‘Hey! Are you okay? Not smoking? Then what will you do during the 3:15 break? Come on!’ And then they gave you a cigarette. After I smoked, ‘Oops! I smoke again!’ This was the worst!” (Pair #8)</p>	<p>“I think the environment is really important. Maybe promote to co-workers to come and quit smoking together.” (Pair #10)</p> <p>“[My husband] used to smoke. He said, ‘Smoking that cigarette is to make friends.’”</p> <p>“I asked him to quit and he listened briefly for a while, quitting smoking on and off. (His quitting method is just not to smoke?) That is smoked for a while and then stop. As long as someone hands him a cigarette, he will take it and start smoking again.” (Pair #8)</p>

Table 1 continued

Social or environmental factor addressed	Theme	Sample quotes from smokers	Sample quotes from nonsmokers
Relational: home environment	Conflict with household nonsmoker about smoking	“Family members should not blame you, but provide support, speaking reasonably. I want to quit because I want to prepare a good environment for the grandchildren. This method is very good. If you scold me, I will not listen. But if you tell me the reasons behind and encourage me, then I will be convinced....You scold me; men will not listen to you. You scold me? I will rebel more.”	“My husband smokes but I do not like it. As he steps into the doorstep, he secretly smokes. As soon as he stepped in, I could smell the cigarettes smoke on him. I dislike it and I will cough. I said, ‘You have to quit smoking.’ He said, ‘No. I am only smoking three a day. It is not a lot.’ I said, ‘Three is not a lot? Don’t live here. Move out and live somewhere else. I don’t like you smoking.’” (You asked him to move out) “Yes. I said, ‘You move out. I don’t like you smoking.’” (What happens next? Did he move out?) “No. How can he move out? He needs me to cook food for him to eat ... such person as him, very difficult.”
	Smoking cessation improves family harmony and benefits children	“I should prepare a space for the grandchild and next generations, otherwise, they will suffer from second-hand smoking. As a lot of people say, ‘They breathe it in and it’s not good for them.’” “My daughter was just born, that’s why I quit smoking. This is all for the child.”	“And he said, ‘Smoking is not good for me, and not good for my family too.’ Everyone knows that. But he can’t quit.” “The kids are small and we are afraid that the smoke will affect their health.”
Relational: Healthcare environment	Communication with providers insufficient to counter pro-smoking norms and myths	“I have smoked for more than 40 years. I saw doctor around 10 years ago. My doctor did a checkup for me and said, “Don’t smoke anymore! You can’t go on!” Then I starting quitting, kept quitting for a couple years, and then I smoked again. (How serious was it at that time?) Cough, bronchitis, so he said, “You should not smoke!” I said, “Warning, doctor’s warning.” Then I quit. After I quit for a year and a half, I smoked again. After I smoked again, that thing was not going well again. My family said, “Do not smoke anymore!” Then I quit again. However, now when my relatives give me a cigarette, I will smoke again, but not craving for it.”	“Health professionals should give smokers information and let them know that how smoking can harm family members.” “Unless you are sick, then when the doctor explain to you, then it might be helpful. But for my husband, he is fine and is not sick, he eventually continues to smoke.”
Societal	Acceptability of smoking depends on social context	“Now in the States, needless to say, ladies would cover their mouth with their hands as soon as you smoke.” “Some people wave their hands, turn their head away or avoid me.”	“After immigrating to the United States, not as many people smoke, so over time [my husband] has cut back on smoking.” “My son smokes...He smokes a few packs per day while he was in Mainland China, but after he arrived here for 3 or 5 years, everyone encouraged him to quit smoking. Now he is smoking gradually less, he tried to decrease smoking as hard as he could.”

Perspectives within the same household dyad on the same theme are noted by the identical pair number listed in parentheses following a quote

members to refrain from smoking inside the home and responded by smoking outside the home and by cutting back on smoking. Some nonsmoking household members expressed their frustration at smokers’ inability to quit but verbal conflicts about smoking in the house did not

necessarily have the desired effect for nonsmoking household members. Whereas these verbal conflicts were successful in motivating some smokers to reduce or quit smoking, other smokers reacted by smoking outside the home, sometimes in secret.

Family Harmony and Benefit for Children

Though many smokers reported feeling nagged to quit smoking, they understood that refraining from smoking—especially in the home—was one important way to increase relational harmony. Furthermore, some smokers stated their understanding of the value of cessation to protect their family members from SHS exposure. Comments focused on protecting adult nonsmokers from SHS exposure, however, were quite uncommon. Rather, it was more common for smokers and household members of smokers to focus on smoking as an annoying or odoriferous behavior.

Healthcare Environment Insufficient to Counter Pro-smoking Norms and Myths

Several smokers reported seeing medical providers when they were sick (usually related to heavy coughing) and being counseled to quit and improve their health, yet most reported being unable to sustain cessation. Generally, when smokers were acutely ill and were advised to quit smoking by medical providers, they did so. However, once they were no longer sick, and especially if they continued to socialize in environments with pro-smoking norms, smokers returned to smoking and rationalized their behaviors. Notably, few smokers discussed taking or being advised to take medications (e.g., nicotine gum or patches) to aid in cessation.

Acceptability of Smoking Depends on Social Context

Both smokers and nonsmokers were aware that smoking in public was not viewed favorably. Several smokers commented that their smoking was sometimes met with negative nonverbal reactions, such as people covering their noses and mouths. Such reactions made impacts on some smokers; one smoker reported putting out his cigarette, while others reported reducing cigarette consumption. Participants contrasted perceptions of smoking in the United States compared to China. Nonsmokers noted that their smoking household members cut back or quit smoking only after immigrating to the United States and several stated that visiting China often created opportunities to relapse or increase smoking intensity.

Discussion

This qualitative study enhances our understanding of barriers and facilitators of smoking and cessation within different social environments for Chinese immigrant male smokers through examining the perspectives of smokers

and nonsmokers. Although some contexts, such as the household and healthcare contexts, encourage cessation, Chinese immigrant male smokers also are encouraged to smoke because of health beliefs, social norms, and social practices with which they immigrated and which are maintained through ties with ethnic coworkers and friends and through visits back to China.

Limited knowledge about SHS health harms and cultural beliefs about smoking need to be addressed for Chinese populations. Previous qualitative research conducted in China demonstrates that smokers have poor knowledge about health harms, and in fact believe that smoking cessation is harmful and will result in a loss of social connections [13]. Willpower has also been cited as the main determinant for cessation in qualitative studies of Chinese American smokers and other Asians in California [25] and other states [26, 27]; however, willpower alone does not account for the addictive nature of tobacco use and that support with counseling and medication can increase cessation. Our participants demonstrated similar beliefs: focusing on odor rather than health concerns, acknowledging that smokers felt obligated to accept cigarettes to maintain social harmony, and stating willpower was the key to cessation.

Smokers in our study spoke in-depth about their concern for maintaining relational harmony in the household context and protecting children from SHS. A prevailing finding was that smokers were willing and had successfully quit on behalf of their children or grandchildren's health. Concern about SHS affecting the family has also been found among Asian American immigrant men living in Seattle [28]. Previous research demonstrates that Chinese-speaking nonsmokers can be proactive in protecting the household environment from SHS exposure by establishing home bans [7, 29], which supports smoking cessation. Chinese and Vietnamese Americans in California cited familial obligation as a motivator to quit smoking [25]. Thus, health education efforts should consider raising the value of quitting smoking for the benefits of family members, including spouses, children, and grandchildren in effective smoking cessation messages for Chinese.

Household nonsmokers remain an underutilized resource as many are motivated to support their smokers to quit smoking. For example, the California Smokers' Helpline, which offers free telephone counseling and educational materials in Asian languages, reported that Asian-speaking Asians had the largest proportion of proxies (callers calling on behalf of smokers) among all callers: 35 % for Asian-speaking Asians versus 5 % for English-speaking whites [30]. Several interventions, with Chinese and other Asian populations, demonstrate how targeting household nonsmokers can be effective to encourage smokers' cessation. In China, hospital-based

smokefree educational efforts, which taught knowledge and assertive social skills, reduced long-term SHS exposure to pregnant women exposed to SHS [31, 32]. In Hong Kong, a brief education intervention to mothers of sick children had a short-term effect in helping smoking fathers quit or reduce daily cigarette consumption [33]. Initial acceptability and feasibility for a social network family-focused intervention has been demonstrated for Chinese and Vietnamese American male smokers in a recent study [34]. Perception of a family norm toward cessation explained the effectiveness of a culturally tailored smoking cessation intervention for Korean American immigrant smokers that included coaching for family members on assisting smokers [35]. Although the household context is a powerful context for promoting behavioral change, non-smoking household members often lack the tools to effectively support smoking cessation. Therefore, involving household members and teaching them skills to support cessation may be a powerful component of a targeted intervention [36]. Among Asian nonsmoking women, SHS differed by educational status [37]; therefore, women with lower education may particularly need these skills and information.

Smokers and nonsmokers in the current study recognize that smoking is socially unacceptable, yet there are still social contexts, such as the workplace, where smoking is encouraged. Whereas smokers felt pressure from nonsmoking household members to quit, they reported feeling tempted to smoke to get along with others in work. Furthermore, uneven smoking regulations across different environments created barriers to sustained cessation. Many smokers described smoking or being encouraged to smoke at work and some participants work in construction and as such, may not be protected by workplace smoking bans. This suggests that although smoking has been banned in indoor workplaces in California since 1995, workplace smoking bans may not be enforced or need to be strengthened by extending it to outside premises. Even among Asian women nonsmokers, smokefree policies at work may need enforcement to eliminate smoke exposure [37].

Healthcare providers might consider addressing the impact of SHS on the family beyond the individual smoker, who may be motivated by messages about their own health only if the smoker feels ill, and exploring cultural beliefs about the benefits of smoking and the harms of quitting. It is also possible that healthcare providers may not be discussing medications or counseling to quit, since Asian smokers are lighter smokers and providers are less likely to advise about quitting [38]. Healthcare providers should consider how to educate household nonsmokers on the harms of smoking to the lungs of young children and grandchildren in supporting the smoker to quit.

Several important limitations should be noted. This study relies on a small sample size recruited from one metropolitan area in California and recruitment efforts were focused on smokers and nonsmokers living with smokers. Therefore, results may not generalize to smokers living alone and other communities. The vast majority of nonsmokers in the study were the wife of a smoker. Future research should explore perspectives on smoking and cessation among male nonsmokers as well as smoker and nonsmokers from other cultures, and the influence and enforcement of smokefree policies that might facilitate smoking cessation.

New Contributions to the Literature

The current study highlights different ways in which social and environmental contexts influence smoking and cessation behaviors. Results demonstrate that because Chinese American immigrants are frequently confronted with different sets of cultural and social norms, one from their country of origin, one from the U.S., how these norms exert their influence on smoking behavior varies depending on the social and environmental context. Household nonsmokers living with smokers may need assistance in anticipating and supporting the smoker's challenges with cessation to reduce household conflict. Cultural tailoring of smoking cessation interventions such as those that emphasize the importance of cessation for the sake of the next generation should address these social and environmental dynamics particularly in the home.

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Compliance with Ethical Standards

Conflict of Interest Dr. Saw, Dr. Paterniti, Ms. Fung, Dr. Tsoh, Dr. Chen and Dr. Tong declare they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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