Wiley
Health & Social Care in the Community
Volume 2024, Article ID 2120099, 13 pages
https://doi.org/10.1155/2024/2120099

WILEY

Research Article

The Role of Acculturation in Self-Care Behaviours among Chinese Immigrants Living with Cardiovascular Disease: A Qualitative Study

Ling Zeng,[1] **Xiaoyue Xu**,[1,2] **and Lin Perry**[1]

[1]*School of Nursing and Midwifery, Faculty of Health, University of Technology Sydney, 15 Broadway, Ultimo, 2007, NSW, Australia*
[2]*School of Population Health, Faculty of Medicine, University of New South Wales, Samuels Building, F25, Samuel Terry Ave, Kensington, 2033, NSW, Australia*

Correspondence should be addressed to Ling Zeng; ling.zeng-1@student.uts.edu.au

Received 8 March 2024; Revised 20 May 2024; Accepted 23 August 2024

Academic Editor: Helen Skouteris

Aims. To understand what domains of acculturation are experienced by Chinese immigrants with cardiovascular disease (CVD) in Australia and how these domains of acculturation influence their CVD self-care behaviours. *Design*. A qualitative descriptive design. *Methods*. Individual phone interviews were conducted among Chinese immigrants with CVD in Sydney, recruited from Chinese Community associations and social media. Inductive and deductive thematic analysis was employed, guided by the Middle-Range Theory of Self-Care of Chronic Illness and the conceptual model of acculturation. *Results*. Twenty participants, mean age 69.9 years, were interviewed. The domains of acculturation in relation to CVD self-care behaviours encompassed cultural practices, cultural values, healthcare system navigation, and new living environment. Retaining their Chinese culture and integrating into Australian culture regarding dietary practices, social networks, traditional values and family relationships served as both enablers and barriers of self-care maintenance through factors such as heart-healthy diets, physical activity, stress management and medication adherence. Many participants denied encountering difficulties to utilize primary care services, but language barriers deterred them from accessing acute services and heart-health information from mainstream sources. Some preserved beliefs and practices in Traditional Chinese Medicine may complicate their self-care maintenance (medication adherence) and self-care management (responding to acute angina episodes). *Conclusion*. The influence of acculturation on CVD self-care behaviours among Chinese immigrants is multifaceted and individualized. Clinicians and community health workers should assess patients' acculturation experiences to enable culturally sensitive practices. The lack of culturally and linguistically appropriate heart health information in the community should be addressed urgently to mitigate the cardiac health disparity. Collaboration with Chinese community associations offers an opportunity for co-design and dissemination of information about Australian healthcare systems and heart health education to upskill CVD self-care practices and mitigate the health inequities experienced by Chinese immigrants.

1. Introduction

Cardiovascular disease (CVD) has been the leading cause of death globally for many years, and approximately 19.8 million deaths globally were attributed to CVD in 2022 alone [1, 2]. It creates enormous and growing burdens which disproportionally affect immigrant groups compared to host populations [3].

People from China comprise one of the largest and fastest-growing immigrant populations globally, and the most popular countries where Western cultures are dominant to which they have migrated are the United States, Canada, Australia, New Zealand, and the United Kingdom [4]. In recent years, many Chinese have relocated to these countries at relatively older ages through sponsorship of their adult children who migrated first. It has been widely

reported that Chinese immigrants experience disadvantageous CVD profiles, with the risks of obesity and diabetes increasing in parallel with increasing residence duration [5]. A systematic review involving 258,474 participants found greater prevalence and mortality from coronary heart disease in Chinese immigrants compared to their counterparts in China [6]. At the same time, another review and meta-analysis of data from eight cohort studies found greater short-term cardiac mortality in Chinese immigrants than in the host populations [7].

Self-care is an evidence-based practice for reducing cardiac mortality and hospital readmission and increasing quality of life [8, 9]. Based on the Middle-Range Theory of Self-Care of Chronic Illness [10], the concept of self-care compromises three key processes. Self-care maintenance refers to behaviours performed to stabilize an illness process or preserve health status, such as healthy lifestyle adaptation and medication adherence. Self-care monitoring is defined as activities taken in order to be vigilant, observing body changes such as measuring blood pressure. Self-care management entails patients' evaluation of their treatment or their response to changed body signs and symptoms. Multiple factors are known to influence self-care, including characteristics recognised as social and cultural determinants of health (for example, education level, economic status, and ethnicity), challenging patients' ability to practice CVD self-care [8, 9]. Further, the complexities of self-care practice are compounded for immigrant populations who work between two cultures, negotiating across the health beliefs and healthcare systems of both their country and culture of origin and that of their host countries.

Acculturation, a complex and multidimensional change process, occurs when two different cultures interact, resulting in various adaption forms in tandem with cultural and psychological changes [11]. To conceptualize acculturation Schwartz and colleagues [12] proposed an expanded model that could generate a comprehensive understanding of the journey of the acculturation experience. The resultant changes are explored in three domains: cultural practices (language use, media preferences, social interaction, and cultural foods), cultural values (cultural beliefs), and cultural identification (attachment to cultural group) in relation to the original culture and the host culture, respectively. Acculturation plays a significant role in immigrants' health, including the progress of CVD [13]. Robust evidence has indicated that levels of acculturation are closely related to CVD profile and disease management among immigrants [14, 15].

A clear understanding of the influence of acculturation is required to accurately describe self-care behaviours among first-generation Chinese immigrants living with CVD and to develop targeted interventions to minimize the CVD health inequities experienced by Chinese immigrants. However, a recent systematic review [16] has shown that studies of acculturation experiences in relation to CVD self-care behaviours in Chinese immigrants are scarce. Few studies distinguish Chinese first-generation immigrants from second or mixed generations, whose self-care practices may vary significantly depending on the level of acculturation [17]. Moreover, in many papers, acculturation was examined using proxy acculturation measures such as length of residence or age at migration. This has restricted understanding of the comprehensive mechanisms of the cultural adaptation process and its influence on Chinese immigrants' CVD self-care behaviours. To address this gap, this study aimed to address two questions: (1) What domains of acculturation are experienced by first-generation Chinese immigrants with CVD in Australia? (2) How do these domains of acculturation influence their CVD self-care behaviours?

2. Methods

2.1. Design. Underpinned by philosophical assumptions of naturalism/constructivism, which generates an understanding of a phenomenon by analysing the meanings that participants ascribe to it and describe to investigators [18], a qualitative descriptive approach was an appropriate choice for this early exploratory work, capable of generating rich description of an understudied phenomenon [18, 19]. The study was reported in line with the Consolidated Criteria for Reporting Qualitative Research [20].

2.2. Study Setting and Recruitment. Participants were recruited if they met all the following inclusion criteria:

(i) First-generation adult Chinese immigrants to Australia, born in Mainland China, Hong Kong, Macao, or Taiwan
(ii) Australian permanent residents or citizens
(iii) Self-reported or medically-diagnosed with CVD, including coronary heart disease, stroke, or heart failure
(iv) Speaking English or Mandarin
(v) Providing informed consent, excluding those with history or evidence of impaired cognition.

A combination of purposive and snowball sampling was employed to recruit participants via three primary sources: social media, Chinese Community associations, and medical centres in Sydney, Australia, between September 2021 and June 2022. Electronic recruitment flyers were distributed through social media platforms such as WeChat, the Sydney Today mobile app, and 2ac Australian Chinese Radio. The first author initially approached gatekeepers of Chinese community associations for support to disseminate electronic flyers via their social medias. After COVID restrictions were lifted in May 2022, this author circulated paper flyers in person while attending Chinese community associations' outdoor activities. Paper-based flyers were made available in reception areas at a medical centre. Initial participants were asked to pass details of the research and recommend participation to their family or friends living with CVD.

Potential participants who expressed interest in this research were invited to contact the first author via the phone number or e-mail address provided. She screened potential participants, provided a verbal explanation of the

research, and sent electronic participants information sheets to eligible participants. The dates and times for the phone interviews were agreed with participants.

2.3. Data Collection. The first author interviewed participants in their preferred language (Mandarin) and aimed to create a warm and nonjudgemental environment for the interview. Participants consented to audio-recording the interviews and the author took field notes during the process.

A semistructured interview guide was drafted, informed by the Middle-Range Theory of Self-care of Chronic Illness [8, 10] and the conceptual model of acculturation [12]. This was discussed and revised among the author group and piloted with volunteers whose data were not included in the study analysis. The interview started with collecting participants' demographic and clinical data, followed by open-ended questions with probes concerning their CVD self-care behaviours, acculturation experiences and how these unique experiences influenced their self-care behaviours (Supplementary Table 1). Recruitment and interviews continued until data saturation was achieved; that is, until no new information emerged during interviews [18]. No repeat interviews were carried out.

2.4. Data Analysis. The audio files were transcribed verbatim in Mandarin by the first author [21]. Following Twinn's [22] method to improve the consistency and reliability of data translation in cross-language interview studies [23], transcripts were independently translated into English by professional translators, and then validated by bilingual researchers in this author group. English-translated transcripts were imported into NVivo 12 software for data analysis.

The first author immersed herself in the data set through repeatedly listening to the audio recordings for transcription, translation, validation, and coding analysis. Deductive and inductive thematic analysis was employed [24], with a predetermined list of codes developed based on the Middle-Range Theory of Self-Care of Chronic Illness with the related self-care inventory proposed by Riegel et al. [25], and Schwartz et al.'s [12] conceptual model of acculturation. Additional codes were generated by reading the transcript line-by-line and coding for topic content. Coding and findings were progressively checked and discussed within the author team.

2.5. Ethical Considerations. This study was approved by the Human Research Ethics Committee at University of Technology Sydney with registration number ETH21-6096. Informed consent was obtained from all individual participants included in the study.

2.6. Rigor and Flexibility. Grounded in trustworthiness criteria proposed by Lincoln and Guba [26], credibility was ensured by author team's ongoing engagement in data collection and analysis. Peer-debriefing meetings were held regularly to check on the research process. Thick description of study participants and the context of the research were provided to establish transferability. In terms of dependability and confirmability, data transcription, translation, and analysis were conducted independently and checked by team members. Any discrepancies during these processes were addressed among the research team. An audit trail was recorded during the whole process. The researchers explored their attitudes toward the topic and findings to avoid personal bias and further create confirmability. The first author, who collected and coded the data, is a registered nurse and a bilingual researcher certified by the National Translation Accreditation Authority. She identifies as from the same cultural background as these participants. She understood some local dialects and cultural health beliefs and practices, which facilitated the conduct of the interviews. The author had no contact with any participants before the research project and holds no-judgemental attitudes toward the interview and data analysis process.

3. Results

3.1. Participant Characteristics. Telephone interviews (mean duration: 63.6 minutes, ranging 35.9 to 135.2 minutes) were conducted with 20 Chinese Australian participants. There was no drop-out from recruitment. The mean age of 19 participants was 69.9 years. The majority of participants were female (60%); most had migrated to Australia at a relatively older age (mean 55 years), following their retirement in China, and had lived in Australia for mean 14.4 years. All had limited English proficiency and half were privately medically insured. The majority (90%) were married and lived with a partner or extended family (Table 1). Most participants reported a diagnosis of coronary heart disease while three had experienced stroke. Some (30%) were diagnosed in China before moving to Australia. Many (60%) had been living with CVD for more than three years and for most (80%) their CVD was predominantly managed conservatively with prescribed medical treatments (Table 2).

3.2. Acculturation Experiences in Relation to Self-Care Behaviours. Acculturation experiences influencing CVD self-care behaviours were organised into four major themes: cultural practice and self-care, cultural values and self-care, healthcare system utilization and self-care, and new living environment and self-care. Within each theme, subthemes specified each domain of acculturation (Table 3). Theme 4 is a relatively small domain of acculturation experiences in relation to CVD self-care. Due to limited interview data in this dominant, the theme is not expanded with subthemes.

3.2.1. Theme One: Cultural Practices and Self-Care. Participants' self-care behaviours, especially self-care maintenance, were intertwined with cultural practices, predominantly dietary practices, social networks, language, and media preferences.

(1) Dietary Practices. Dietary patterns comprised a significant component of acculturation experience. How these immigrants adapted to a new culture was influential for their dietary behaviours. Participants' dietary acculturation

Table 1: Participants' demographic characteristics ($n = 20$).

Characteristics	Mean (SD) (*N*)	Range (%)
Age (years)	69.6 (4.7)	61–79 40–45*
Age at migration (years)	55.0 (12.4)	32–73 30–35*
Length of Australia residence (years)	14.4 (11.8)	2–42
Sex		
Male	8	40
Female	12	60
Language spoken at home		
Mandarin	17	85
Cantonese or dialect	2	10
English	1	5
English proficiency		
Poor	9	45
Basic	9	45
Good	2	10
Education level		
<High school	2	10
High school	6	30
Some college/technical school	5	25
Bachelor	7	35
Marital status		
Married	18	90
Divorced	1	5
Widowed	1	5
Living status		
Alone	1	5
With partner	11	55
With partner and young children	4	20
With extended family	4	20
Employment status		
Part-time	1	5
Full-time	1	5
Unemployed	1	5
Retired	17	85
Private insurance cover	10	50

*One participant only reported her age in this range.

Table 2: Participants' CVD related clinical characteristics ($n = 20$).

Characteristic	*N*	%
CVD diagnosis		
Coronary heart disease	17	85
Stroke	3	15
Diagnosed following:		
Health check	9	45
Presenting symptoms	11	55
Duration of CVD diagnosis (years)		
≤1	1	5
>1 and ≤3	7	35
>3 and ≤10	10	50
>10	2	10
Place of CVD diagnosis		
Mainland China	6	30
Australia	14	70
CVD risk factors		
Hypertension	6	30
Hyperlipidaemia	14	70
Hyperglycaemia	1	5
Family history	6	30
Smoking	3	15
Depression	1	5
Other	3	15
Initial treatment		
Lifestyle intervention	1	5
Conservative medication therapy	16	80
Thrombolysis	2	10
Coronary artery bypass graft operation	1	5
Recurrent hospital admission		
No	16	80
Yes	4	20
Number of chronic conditions		
None	3	15
1	11	55
2	4	20
3+	2	10

CVD: cardiovascular disease.

experiences were categorized as retaining cultural dietary habits and/or integrating into Australian dietary culture. Both dietary acculturation experiences served to facilitate or deter adherence to a heart-healthy diet: an essential component of CVD self-care maintenance.

(1) Retaining Cultural Dietary Habits. There was consensus that participants preferred Chinese cuisine, irrespective of their duration of residency. They reported that they were accustomed to Chinese foods and that it was hard to change their taste preferences and cooking style. For example, heavily salted and spiced dishes were prominent in some parts of China, and participants from these locations found difficulty adapting to low-salt dietary recommendations. Cantonese participants held cultural dietary beliefs about the nutritious value of meat stew and its benefits for health and disease recovery, despite that one participant reported that it increased her cholesterol level. In Chinese culture, food functions not only to preserve life and health but also for the joy of living, perceived as conveyed by their customary diets. Consequently, some participants were unconcerned about heart-healthy diets, which deterred adherence to dietary recommendations.

"But sometimes I can't change my dietary habit. First, people who come from Wuhan prefer salty and spicy food. I lose my appetite if the food is not salty and spicy" (P9, male, 73yrs, residence 10yrs, CHD10 yrs).

Nevertheless, cultural dietary habits did not always deter adherence to recommended diets. Participants from some parts of China preserved culturally determined light eating patterns, such as using less salt and oil for cooking, simplifying adherence to heart-healthy diets.

(2) Integrating into Australian Dietary Culture. Despite maintaining Chinese cuisine, most participants had, to some extent at least, integrated into Australian food culture. Breakfast was the first meal to change

Table 3: Participants' acculturation experiences in relation to CVD self-care behaviours.

Themes	Subthemes	Acculturation experiences	Self-care influenced
Cultural practice and self-care	Dietary practice	(i) Retaining cultural dietary habits	Self-care maintenance enablers and barriers
		(ii) Integrating into Australian dietary culture	Self-care maintenance enablers and barriers
	Social networks	(i) Coping with the separation from overseas social networks	Self-care maintenance enablers and barriers
		(ii) Establishing new community ties	Self-care maintenance enablers
	Language use and media preference	(i) Accessing healthcare systems	Overall self-care barriers
		(ii) Seeking heart health information	Overall self-care barriers
Cultural values and self-care	Traditional values	(i) Retaining traditional values	Self-care maintenance and management enablers and barriers
		(ii) Adjusting to Australian values	Self-care maintenance enablers
	Family relationships	(i) Retaining traditional family ties	Self-care maintenance, monitoring and management enablers and barriers
		(ii) Adjusting individualism	Overall self-care enablers
Healthcare systems utilization and self-care	Medical service navigation		Overall self-care enablers and barriers
	Patient and doctor interactions		Overall self-care enablers
	Traditional Chinese medicine		Self-care maintenance and management barriers
	Financial issues including health insurance		Overall self-care enablers and self-care management barriers
New living environment and self-care		Good air quality, weather temperature, food safety	Overall self-care enablers

postmigration, with most partially or entirely adopting a Western-style breakfast (such as milk, cereals, and bread). Collectively, participants increased their consumption of vegetables, fruits, seafood, dairy products, eggs, and wholegrains following migration, attributing this to their local availability, affordable prices, and food safety in Australia. Some reported being accustomed to eating salads and tasting local vegetables as they believed these foods were healthy. This dietary acculturation facilitated their adaptation to heart-healthy dietary recommendations.

"There must be some changes (in my diet). For example, I did not eat carrots that much when I was in China. After coming here, I started to eat more carrots. Broccoli is another example… Avocado is available here, not in China" (P3, female, 63yrs, residence 8yrs, CHD 14yrs).

Conversely, a few participants adopted some local dietary behaviours that did not align to recommendations, such as "fast food" (e.g., pizza and burgers), bakery goods (cakes and pastries), and lollies (sweets). One participant who previously loved eating fish changed to eat more red meat as it was much cheaper in Australia.

(2) Social Networks. Social networks, a second domain of acculturation experience, can reflect the extent to which immigrant participants have adapted to a new cultural community, including coping with the separation from overseas social networks and establishing new community ties. Networks mainly influenced participants' self-care maintenance of their CVD in relation to dietary practices, physical activity, stress management, and medication adherence.

(1) Coping with Separation from Overseas Social Networks. Separation from previous social networks in China was both a driver and constraint to engaging in self-care. Some participants talked of how, in China, complicated social relationships and collectivist social norms could put a lot of strain on people to prioritise others over their own needs. Some felt greater peace of mind after moving to Australia and living a simpler social life, which was seen as beneficial for stress management. Engaging with fewer social activities and meal gatherings in Australia made it easier to take medication on time and follow a heart-healthy diet.

"Whether it is my (heart) condition or any other disease, patients need good rest to help with their recovery or disease management… I had many friends and relatives there (in China). They needed my help with all sorts of things, which kept me busy…So, I had more stress. Too much stress and socialising are not good for my health" (P17, female, 68yrs, residence 5yrs, CHD 6yrs).

Following their migration, some participants still actively maintained overseas social networks which they used to seek heart health information and emotional support. However, such recommendations could include encouragement to take TCM or health supplements to manage their heart condition, which could negatively affect their prescribed medication regimes.

(2) Establishing New Community Ties. Many participants moved to neighbourhoods that were ethnic enclaves, actively sought Chinese community centres, and joined Chinese group activities. These new social networks provided a means to share their experiences of acculturative stress and mitigated their feelings of social isolation, which assisted them to better manage their stress. Membership of Chinese community centres supported participants in CVD self-care, for example, by taking part in regular group exercises such as dancing, Tai Chi, and table tennis, and peer support for adherence to exercise recommendations. Some reported that attending health talks in the community centre and exchanging health information with friends there motivated them to adopt a healthy diet and improved their self-efficacy to manage their heart disease.

"I have found a … art group…They are all Chinese so that we can have a chat and do activities together, such as singing, dancing and playing instruments. I am happy with that" (P16, male, 76yrs, residence 3yrs, CHD 7yrs).

(3) Language and Media Preferences. The first settlement challenge reported by almost all participants was a language barrier. It shaped their ways of accessing healthcare and seeking heart health information in Australia, which are essential aspects of CVD self-care maintenance.

(1) Accessing Healthcare Systems. Almost all participants denied that language was a barrier in seeking primary and cardiologist services because they proactively sought Chinese-speaking physicians. When they encountered an English-speaking physician, their adult children interpreted for them, or they used a health service interpreter. By contrast, inability to converse in English was a significant deterrent to accessing ambulance and hospital services, which reduced participants' self-efficacy for managing acute cardiac events.

"We do not speak English. . . What if I need an ambulance due to my heart condition or when something else goes wrong? That kind of situation worry me. If I were in China, because I speak the language, I could call an ambulance right away, or go to the hospital" (P3, female, 63yrs, residence 8yrs, CHD 14yrs).

(2) Seeking Heart Health Information. Language barriers also blocked participants' access to heart health resources and information from mainstream healthcare services and media. Many participants lacked heart health knowledge to support their self-care *decision-making and skills*. They searched for health information in Chinese via Chinese media (websites, social media, apps, and books) and ethnic social networks. However, the health information they accessed was not necessarily scientifically verified and could be "folk medicine"; some advice clashed with Western treatment recommendations and could be detrimental to their treatment adherence and overall self-care behaviour.

3.2.2. Theme Two: Cultural Values and Self-Care. Traditional values and family relationships were strong influences on participants' CVD self-care behaviours in self-care maintenance, self-care monitoring, and self-care management.

(1) Traditional Values

(1) Retaining Traditional Values. Most participants had retained traditional values postmigration and many referred to or indicated that these were based in religious or philosophical principles, such as Buddhist, Taoist or Confucian thought, which they had grown up with. Half the participants endorsed Buddhist values that encourage people to let go of worry and live in the present; these values enabled participants to manage their daily stress and shaped their illness perspectives. For example, after being diagnosed with heart disease, these participants quickly accepted this and actively engaged in treatment and CVD self-care rather than worrying about the disease. High importance was placed on keeping a peaceful mind in Taoist philosophy, which was embraced by some participants to achieve emotional stability for promoting their heart health.

"Anyway when the disease comes. . .I just accept it and adapt to it. . .I just followed the doctors and did whatever they suggested. If I had spare time, I sometimes sought heart-related health information. . .I didn't feel stressed when I knew I had a stroke " (P10, female, 64yrs, residence 32yrs, stroke 8yrs).

Confucianism beliefs see the experience of pain as a part of life that a person should endure unless it becomes unbearable. However, this value could conflict with self-care management recommendations for heart symptoms. One participant reported enduring palpitations at work without taking any action to manage the symptom. Also, the characteristics of reserved emotion in Chinese culture prevented participants from accessing psychological support services to manage their stress.

"Actually, I wanted to see a psychologist very early on. However, you know, Chinese people are reserved by nature. That is our tradition. We do not like to talk about our feelings with others" (P3, female, 63yrs, residence 8yrs, CHD 14yrs).

(2) Adjusting to Australian Values. Although many participants initially denied any changes regarding cultural values, further exploration revealed that some participants had incorporated some Australian individualistic perspectives into their postmigration lives. Participants reported being able to prioritise their individual health needs by restricting and simplifying their social responsibilities and slowing the pace of their lives in Australia. They praised Australia's relaxed lifestyle, which contributed to their emotional well-being and enabled better self-care of their heart condition.

"It is not like China where I had to be concerned about everything that I needed to deal with. I was exhausted but had no choice, because it was my responsibility to handle it. Here is much simpler. . .not stressed out. I should take care of myself and try to relax" (P4, female, 65yrs, residence 6yrs, CHD 4yrs).

(1) Family Relationships

(1) Retaining Traditional Family Ties. Collectivism lies at the centre of family relationships in Chinese culture. Traditional family values, retained by most participants, were a powerful influence on their heart disease self-care behaviours. In keeping with the collectivistic culture they had grown up in, participants prioritized family over individual needs, which could make self-care of their heart disease difficult. For example, one female participant was dedicated to caring for her husband who lived with chronic disease, and explained that this meant she had no time for regular exercise. For many participants, their ability to follow dietary recommendations depended on the dietary habits of their family members. Where participants were responsible for preparing the family food, some had to prioritise their family taste preferences.

"It is challenging for you to ask all of them to follow a low-fat, low-salt diet to meet your nutritional needs. It is just not realistic. All of them love meat, including my

grandchildren. I actually have to consider their preferences when I cook" (P16, male, 76yrs, residence 3yrs, CHD 7yrs).

Filial piety is a value deeply rooted in Chinese collectivistic culture. Receiving filial piety from adult children was a protective factor for participants' emotional well-being. Some adult children with solid values of filial piety were actively involved in their parents' heart disease management, including supervising their recommended diet and exercise, obtaining medications, making disease-related decisions in response to symptoms, and providing language interpretation to access health services. However, some adult children were only weakly adherent to filial piety. Family conflict could arise from intergenerational discrepancies in filial piety-centred family values, resulting in emotional distress and social isolation in some participants, further undermining their emotional well-being.

We would like to live together, and I can ask him if I need help. I do not speak English and know nothing about this country. . .So, it makes sense that I hope to live with my son. Right? . . .. (But they live separately) Of course, I was really not happy (sobbing) (P3, female, 63yrs, residence 8yrs, CHD 14yrs).

Most participants stressed that individuals assumed responsibility for managing their heart disease, which echoed the collectivist value of not burdening the family. This encouraged participants to take an active role in their self-care behaviours. Nonetheless, although participants internalised responsibility for managing their heart disease, many family members were also actively involved in this, predominantly in supporting heart-healthy diets, adhering to medications, avoiding strenuous activities, and making decisions on symptom management.

She (wife) may ask me: "Have you taken your medications today? Have you had it or not?" Or she may say: No, it has too much cholesterol. Don't eat that." Things like this" (P2, male, 68yrs, residence 33yrs, CHD 4yrs).

(2) Adjusting to Australian Individualism. Following migration, some participants reported that their high expectations of filial piety in their children were in transition. To reconcile or avoid family conflicts, these participants slowly adjusted to the individualistic cultural values espoused by their adult children and learned to live independently. Achieving this change mitigated their emotional distress and motivated them to engage in heart disease self-care.

"If I had lived with him and his family all the time, I do not think my health could have handled it. It is just too much. I actually enjoy living on my own. Nobody tells me what I should do. . . Now, I do not always put their interests first. My generation makes sacrifices all the time" (P15, female, 69yrs, residence 13yrs, CHD 2yrs).

3.2.3. Theme Three: Healthcare Systems Utilization and Self-Care. Being able to access and make use of healthcare services in their adopted country was an integral aspect of these Chinese immigrants' acculturation experience and shaped their overall self-care practices for heart disease. Participants' recollections of adapting to the new healthcare system in Australia were categorized as: navigating medical services, patient and provider interactions, traditional Chinese Medicine (TCM), and financial issues including health insurance.

(1) Navigating Medical Services. Many participants felt they had adapted to their new healthcare system. They actively sought access to primary care medical services to manage their cardiac medications and symptoms, and attended cardiologist clinics. However, some participants experienced difficulties using medical services due to unfamiliarity with the healthcare system. They largely relied on general practitioners to access allied health services.

Several participants compared their experience of the Chinese healthcare system, where they could book to see a cardiac specialist directly, to the referral system and long waiting times in Australia, which were significant barriers to accessing specialist and hospital services that could result in unmet health needs. For example, one participant self-adjusted his cardiac medication as he was told he was not eligible for a specialist referral for medication consultation. In another example, the need to take up a general practitioner's time just to obtain a referral deterred one participant from seeking a specialist consultation for her worsening heart condition.

"I felt awful, especially after midnight. . .I need to see my GP and get a referral before making my appointment with a cardiologist. However, I personally felt that I did not want to bother my GP, so I decided to skip my appointment. I did not see my GP for my heart condition" (P17, female, 68yrs, residence 5yrs, CHD 6yrs).

Consequently, some participants turned to TCM practitioners in Australia or returned to China, for cardiac medical services, which could discourage adherence to Australian prescribed treatments and limit self-care engagement.

By contrast, some participants had high praise for Australian health services, referring to the high quality of patient-centred care culture, triage system in the emergency department (ED) and culturally appropriate care, to which they attributed their overall self-care engagement. For example, heart disease was prioritised in ED in Australia, which cleared barriers to participants seeking medical services in response to their acute heart condition. One participant attributed his well-controlled blood sugar to his dietitian's culturally customised dietary recommendations.

*"What he said was: Stay away from rice, flour and sugar. . . Take staple food as an example. We used to have white rice every day. Now, we eat whole grains. We mix rice with coarse grains" (*P13*, male, 75yrs, residence 16yrs, CHD 2yrs).*

(2) Patient and Provider Interactions. Interactions with healthcare providers (HCPs) were critical to Chinese immigrants' healthcare experience and exerted important influence on their cardiac self-care maintenance and monitoring. Many participants reported positive experiences interacting with HCPs. This was linked to the authority and prestige of HCPs in Chinese culture. The professional ethics of HCPs were highly valued by many participants, and this valuing facilitated development and continuance of therapeutic relationships and treatment adherence, including for medications and follow-up appointments.

> *"My rule of thumb is, listen to doctors. Don't you think so? Try your best and then follow medical advice. And that is it (laughing)"* (P13*, male, 75yrs, residence 16yrs, CHD 2yrs).*

Some participants reported higher satisfaction with interactions with HCPS in Australia than in China, which they linked to the focus on patient empowerment and shared decision-making. This enabled them to take the initiative in monitoring their heart disease and managing its symptoms, prioritising adherence to prescribed medication regimes and attendance at regular follow-up appointments. For example, some participants closely monitored their blood pressure and consulted their HCPs for medication adjustment.

> *"My blood pressure is not well controlled with this medication. I talked to my doctor . . . (they) changed my hypertensive medication to a new one" (P10, female, 64yrs, residence 32 yrs, stroke 8yrs).*

(3) Traditional Chinese Medicine. Traditional Chinese Medicine (TCM), rooted in Chinese culture, could also have an important influence on self-care maintenance. Although they took prescribed Western medications, half the participants embraced TCM beliefs and practices. In TCM, emotions and physical health are intimately interrelated. Participants believed that maintaining a positive attitude was beneficial for their heart disease recovery, and they attached great importance to maintaining emotional well-being.

> *"You are in a good mood when you go outside and have fun. It is hard to get depression in Australia. Without depression, doesn't your heart feel comfortable?" (P8, male, 71yrs, residence 3yrs, CHD 6 yrs).*

By contrast, some TCM beliefs served as barriers to participants engaging in self-care maintenance and management. For example, some participants endorsed the TCM belief that bed rest is essential for patients with heart disease to recover, which contradicted exercise recommendations. One way to accommodate these contrasting recommendations was through Tai Chi. An accepted part of TCM, Tai Chi was a culturally acceptable physical activity that could provide participants a route to establish exercise routines.

Another element of TCM involved herbal medicines. Regarding them as efficacious and harmless, over one-third reported taking herbal medications to manage their heart disease, and one-quarter used them as first-line medications for relieving angina. These experiences and perceptions regarding herbal medicines could hinder adherence to Western medication regimes and complicate their cardiac self-management. Firstly, the CVD treatment processes and clinical practice guideline recommendations in Australia are different from China, where integrating TCM and western medication in treating CVD may be common practice. This inconsistency can generate misunderstanding and distrust between clinicians who follow CVD practice guidelines in Australia and Chinese patients retaining beliefs and practices in TCM, further compromising therapeutic relationship and adherence.

> *"He (Australian doctor) asked me to take the aspirin or something. . .I . . .did not take it. Because. . .my wife heard from some traditional Chinese medicine doctors who said I did not have to take it. My wife suggested me to take some traditional Chinese patent medicines." (P11 male, 61yrs, CHD 3yrs)*

Secondly, some participants self-prescribing TCM did not disclose this to their Australian clinicians. Without professional instruction, the potential medication interaction or contradictions between Western medication and TCM could complicate their medication regimes. One participant taking TCM for managing her cardiac symptoms presented with side-effects.

> *"I feel I should do (see my general practitioner) that after trying the Chinese herbs. It does. . .have some side effects, as I have started to have stomach pain after taking it for a while. . .It hurts my stomach, because it is strong medicine. Even my skin has become dry and chapped." (P17, female 68 yrs, CHD 6yrs)*

Thirdly, participants in this study used TCM to self-manage their acute angina episode, which is not in line with their nitro-glycerine prescription from their Australian clinicians. There is consequently a risk that use of TCM can mask patients' cardiac symptoms and delay initiation of effective and timely treatment of their angina or heart attack, which could be life-threatening.

> *"Nitroglycerin does not work for me. I carry a different medication that I brought from China, called fast-acting heart rescue pills. It is traditional Chinese medicine. But because it works so well, I really trust it" (P16, male, 76yrs, residence 3 yrs, CHD 7yrs).*

(4) Financial Issues including Health Insurances. Many participants were aware of the central role of the Australian Medicare national insurance system in funding cardiac care, especially those who had experienced hospitalisation. Medicare subsidies relieved their economic and mental stresses to a large extent which promoted their engagement in acute medical treatments and overall self-care behaviours.

3.2.4. Theme Four: New Living Environment and Self-Care. Nearly half the participants praised the Australian environment compared to China, citing its good air quality, nice weather, comfortable temperature, and food safety. They believed these improvements in their living environment contributed to their emotional well-being and favoured their overall heart disease self-care.

> *"I feel living in Australia is a better choice for me in terms of my heart disease. Because the air quality in Australia is quite good" (P10, female, 64yrs, residence 32yrs, stroke 8yrs).*

4. Discussion

To our knowledge, this is the first study to comprehensively explore and identify the domains of acculturation experiences influencing self-care behaviours among first-generation Chinese immigrants living with CVD in Australia. The influence of acculturation on CVD self-care behaviours was shown to be complex, individualized, and multifaceted. The specific domains of acculturation experiences, encompassing cultural practices, cultural values, healthcare systems utilization, and new living environment, mainly affected cardiac self-care maintenance. Both retaining their Chinese culture and integrating with Australian culture in dietary practices, social networks, traditional values, and family relationships served as enablers and barriers of self-care maintenance behaviours such as adherence to medications, heart healthy diets, physical activity, and stress management. Language barriers could prevent cardiac Chinese immigrants from accessing acute care services and obtaining heart health information from mainstream sources. Although many participants denied the presence of access barriers to primary care services and some praised the healthcare system in Australia, some preserved beliefs and practices in Traditional Chinese Medicine may complicate their medication adherence and self-care management, particularly in response to acute angina.

Although retaining their Chinese dietary habits, integration of some Western foods into meals was prevalent among these Chinese immigrants. This was well-supported by prior studies conducted in the US, Spain, Australia, and Canada, showing that Chinese immigrants shifted to western-style breakfasts (milk, cereal, and breads) and increased consumption of red meat and sugar over the course of acculturation [27–29]. Postmigration diet practices in our study both enabled and deterred adherence to heart-healthy diets in this population, depending on their individualized acculturation experience. Accordingly, it is essential for clinicians to assess Chinese immigrants' dietary acculturation experiences before offering generic recommendations. To improve adherence to dietary regimens, heart-healthy Chinese eating habits could be reinforced by clinical practitioners. Efforts need also be undertaken to encourage selective adoption of healthy Western foods.

Consistent with previous findings on social relations among Chinese immigrants in the US, Spain, and Australia, our study showed that this population affirmatively maintained strong ties with ethnic communities and relied heavily on Chinese community associations for coping with acculturation stress and obtaining settlement resources [28, 30, 31]. Rather than attending gyms, many participants in this study preferred group-based exercises such as dancing and Tai Chi. This could be partially attributed to Chinese community associations regularly organizing such group-based physical activities. Moreover, these community associations supported participants to adopt heart-healthy lifestyles by providing health talks on nutrition, which these participants appreciated. Thus, for the future, partnerships between healthcare providers and Chinese community associations offer an opportunity to develop and deliver culturally and linguistically appropriate community-based heart health education programs for Chinese immigrants to improve their cardiac self-care behaviours.

Language was a major barrier for Chinese immigrants to access acute health services, but less so for primary and specialist care. This was confirmed in a systematic review [32] and can be explained by participants self-selecting Mandarin-speaking general practitioners and cardiologists but having no choice of acute care health professionals. Language barriers also prevented Chinese immigrants from accessing heart health information from mainstream sources. This was strongly supported in other studies flagging the lack of culturally and linguistically appropriate heart health information for Chinese immigrants living with CVD [4, 16]. Participants' use of Chinese community associations offers the opportunity to partner for co-design and delivery of culturally sensitive heart health education programs.

Traditional values and family relationships, particularly filial piety, were important influences. Other studies have shown older Chinese immigrants to be vulnerable to depressive symptoms, attributed to acculturation stress [33, 34]. In our study, family conflicts stemming from unmet filial piety expectations from adult children undermined older Chinese immigrants' mental well-being and resulted in social isolation. This was also seen in previous studies [35, 36]. Although some cultural philosophies endorsed by Chinese immigrants were beneficial to self-management of stress, the typically reserved emotional habitus of Chinese cultures can deter professional help-seeking for mental support and has been blamed for low utilization of mental health services. Clinicians should be aware of the potential impact of such issues and consider assessment of Chinese immigrants' mental health, with referral for culturally sensitive psychological support, as appropriate.

Chinese immigrants in this study accessed primary care services, particularly general practitioners, for their CVD management. This is inconsistent with other studies showing low utilization of primary care services among this population [31, 37]. This can perhaps be explained by this population living in ethnic-enclave neighbourhoods where Mandarin-speaking health practitioners are available. However, study participants were unfamiliar with ways to access allied health services, resulted in low use of dietitians and cardiac rehabilitation. This presents an opportunity to investigate avenues to improve access to these specialist services, to support cardiac self-care management.

Although Chinese immigrants were broadly adherent to physician-prescribed cardiac medications, many used TCM as adjuvant or first-line medication, such as using heart rescue pills to manage acute angina. This finding differs to a previous study, where TCM was solely taken as a second choice for treating CVD [38]. Several considerations may explain this. In our study, 30% of participants received their CVD diagnosis and initial treatment in China, which may have familiarised them and established a habit of TCM. Further, some participants were told by their Chinese social networks to take TCM to self-manage their angina episode. The use of TCM can complicate and mask angina symptoms, delaying help-seeking to manage their angina. Clinicians should assess the use of TCM in this population, particularly for those initially diagnosed with CVD in China. Health education on first response management of acute cardiac events is urgently needed for Chinese immigrant populations.

Study limitations include that participants were recruited solely from the Sydney area and responses may not represent the experiences of Chinese immigrants living elsewhere. Participants were recruited from social media, Chinese community associations and medical centres in Chinese-enclaved areas, which may exclude marginalised older Chinese immigrants who had low digital literacy or lived remotely. The inclusion criterion that required participants to speak English or Mandarin excluded immigrants who only spoke Cantonese. Social desirability and self-selection bias may have affected the interview data, and recall bias may have influenced accounts of their CVD diagnosis and self-care behaviours. Finally, transcripts were not shared with participants for member-checking as they had been translated into English.

5. Conclusions

The role of acculturation in relation to CVD self-care behaviours among Chinese immigrants is multifaceted and individualized. For clinicians and community health workers, to avoid stereotypical responses and enable culturally appropriate and responsive practice, it is necessary to evaluate their patients' acculturation experiences regarding cultural practices and values, and adaptation to new healthcare systems. Their cardiac medical history and use of TCM should be assessed by health practitioners to improve Chinese immigrants' medication adherence and safety. Family relationship plays an essential role in the CVD self-care of Chinese immigrants and family members should be involved in patients' treatment plans and heart-healthy lifestyle education. For health organizations and policy makers, lack of culturally and linguistically appropriate heart health information in the community compromises Chinese immigrants cardiac self-care behaviours, and should be addressed urgently via policy development and local service delivery. Collaboration with Chinese community associations offers an opportunity for co-design and dissemination of information about Australian healthcare systems and heart health education to upskill CVD self-care practices and mitigate the health inequities experienced by Chinese immigrants in Australia.

Data Availability

The data utilized in this study is high sensitive. The de-identified data can be available from contacting the corresponding author if the reviewers request.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Authors' Contributions

The author team agreed on the final version of manuscript submission. Ling ZENG was responsible for study conception, study design, data collection, data analysis, data interpretation, and drafted the manuscript. Xiaoyue XU and Lin Perry were responsible for study conception, study design, data analysis, data interpretation, and manuscript revision and edit.

Acknowledgments

The author team acknowledged Chinese immigrants' participation in this study and the great support received from Chinese Community Associations in Sydney for study recruitment. The corresponding author, Ling Zeng, has recieved Research Training Programme Scholarship from the Australian Federal Government. Open access was publishing facilitated by University of Technology Sydney, as part of the Wiley-University of Technology Sydney agreement via the Council of Australian University Librarians.

Supplementary Materials

Supplementary Table 1: interview guide. (*Supplementary Materials*)

References

[1] G. A. Mensah, V. Fuster, and G. A. Roth, "A heart-healthy and stroke-free world: using data to inform global action," *Journal of the American College of Cardiology*, vol. 82, no. 25, pp. 2343–2349, 2023.

[2] Who, *Cardiovascular Diseases (CVDs)*, World Health Organization.

[3] C. Agyemang and B. J. van den Born, "Cardiovascular health and disease in migrant populations: a call to action," *Nature Reviews Cardiology*, vol. 19, no. 1, pp. 1-2, 2022.

[4] J. Li, N. Lowres, K. Jin, L. Zhang, L. Neubeck, and R. Gallagher, "Quality and cultural sensitivity of linguistically appropriate cardiovascular disease information for Chinese immigrants: a review of online resources from heart foundations," *Journal of Cardiovascular Nursing*, vol. 33, no. 3, pp. 269–280, 2018.

[5] K. Jin, J. Gullick, L. Neubeck, F. Koo, and D. Ding, "Acculturation is associated with higher prevalence of cardiovascular disease risk-factors among Chinese immigrants in Australia: evidence from a large population-based cohort," *European Journal of Preventive Cardiology*, vol. 24, no. 18, pp. 2000–2008, 2017.

[6] Z. Gong and D. Zhao, "Cardiovascular diseases and risk factors among Chinese immigrants," *Internal and Emergency Medicine*, vol. 11, no. 3, pp. 307–318, 2016.
[7] K. Jin, D. Ding, J. Gullick, F. Koo, and L. Neubeck, "A Chinese immigrant paradox? Low coronary heart disease incidence but higher short-term mortality in western-dwelling Chinese immigrants: a systematic review and meta-analysis," *Journal of the American Heart Association*, vol. 4, no. 12, 2015.
[8] B. Riegel, "Self-care for the prevention and management of cardiovascular disease and stroke: a scientific statement for healthcare professionals from the American heart association," *Journal of the American Heart Association*, vol. 6, no. 9, 2017.
[9] S. S. Virani, "2023 AHA/ACC/ACCP/ASPC/NLA/PCNA guideline for the management of patients with chronic coronary disease: a report of the American heart association/American college of cardiology joint committee on clinical practice guidelines," *Circulation*, vol. 148, no. 9, pp. e9–e119, 2023.
[10] B. Riegel, T. Jaarsma, and A. Strömberg, "A middle-range theory of self-care of chronic illness," *Advances in Nursing Science*, vol. 35, no. 3, pp. 194–204, 2012.
[11] J. W. Berry, *Acculturation: A Personal Journey Across Cultures*, Cambridge University Press, Cambridge, NY, USA, 2019.
[12] S. J. Schwartz, J. B. Unger, B. L. Zamboanga, and J. Szapocznik, "Rethinking the concept of acculturation: implications for theory and research," *American Psychologist*, vol. 65, no. 4, pp. 237–251, 2010.
[13] W. A. Dafoe and C. C. Wong, "Acculturation and evolving cardiovascular disease: an unhealthy dyad," *European Journal of Preventive Cardiology*, vol. 25, no. 4, pp. 432–436, 2018.
[14] P. A. M. Modesti, I. Marzotti, M. Calabrese, M. Boddi, and A. Pellegrino, "Acculturation and cardiovascular disease risk-factor changes among Chinese immigrants in Italy: gender differences," *Journal of Hypertension*, vol. 40, no. Suppl 1, p. e131, 2022.
[15] K. Eh, M. McGill, J. Wong, and I. Krass, "Cultural issues and other factors that affect self-management of Type 2 Diabetes Mellitus (T2D) by Chinese immigrants in Australia," *Diabetes Research and Clinical Practice*, vol. 119, pp. 97–105, 2016.
[16] L. Zeng, L. Perry, and X. Xu, "Self-care behaviours and related cultural factors among Chinese immigrants with cardiovascular disease in western countries: an integrative review," *Journal of Clinical Nursing*, vol. 32, no. 9-10, pp. 1599–1614, 2023.
[17] K. R. Bainey, W. Alemayehu, A. K. Gupta, S. L. Bowker, R. C. Welsh, and P. Kaul, "Ethnic and sex differences in ambulance activation among hospitalized patients with acute coronary syndromes: insights from the Alberta contemporary acute coronary syndrome patients invasive treatment strategies (COAPT) study," *International Journal of Cardiology*, vol. 272, pp. 33–39, 2018.
[18] C. Bradshaw, S. Atkinson, and O. Doody, "Employing a qualitative description approach in health care research," *Global qualitative nursing research*, vol. 4, Article ID 2333393617742282, 2017.
[19] M. A. Neergaard, F. Olesen, R. S. Andersen, and J. Sondergaard, "Qualitative description - the poor cousin of health research?" *BMC Medical Research Methodology*, vol. 9, no. 1, p. 52, 2009.
[20] A. Tong, P. Sainsbury, and J. Craig, "Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups," *International Journal for Quality in Health Care*, vol. 19, no. 6, pp. 349–357, 2007.
[21] L. Clark, A. S. Birkhead, C. Fernandez, and M. J. Egger, "A transcription and translation protocol for sensitive cross-cultural team research," *Qualitative Health Research*, vol. 27, no. 12, pp. 1751–1764, 2017.
[22] S. Twinn, "An exploratory study examining the influence of translation on the validity and reliability of qualitative data in nursing research," *Journal of Advanced Nursing*, vol. 26, no. 2, pp. 418–423, 1997.
[23] R. Al-Amer, L. Ramjan, P. Glew, M. Darwish, and Y. Salamonson, "Translation of interviews from a source language to a target language: examining issues in cross-cultural health care research," *Journal of Clinical Nursing*, vol. 24, no. 9-10, pp. 1151–1162, 2015.
[24] V. Clarke and V. Braun, "Thematic analysis," *The Journal of Positive Psychology*, vol. 12, no. 3, pp. 297-298, 2017.
[25] B. Riegel, T. Jaarsma, C. S. Lee, and A. Strömberg, "Integrating symptoms into the middle-range theory of self-care of chronic illness," *Advances in Nursing Science*, vol. 42, no. 3, pp. 206–215, 2019.
[26] Y. S. Lincoln and E. G. Guba, *Naturalistic Inquiry*, Sage Publications, Beverly Hills, Calif, 1985.
[27] P. Zou, "Dietary characteristics and influencing factors on Chinese immigrants in Canada and the United States: a scoping review," *Nutrients*, vol. 14, no. 10, Article ID 2166, 2022.
[28] B. Badanta, "Acculturation, health behaviors, and social relations among Chinese immigrants living in Spain," *International Journal of Environmental Research and Public Health*, vol. 18, no. 14, Article ID 7639, 2021.
[29] S. D. Lee, N. J. Kellow, C. E. Huggins, and T. S. T. Choi, "How and why diets change post-migration: a qualitative exploration of dietary acculturation among recent Chinese immigrants in Australia," *Nutrients*, vol. 14, no. 17, Article ID 3573, 2022.
[30] K. M. Chun, C. A. Chesla, and C. M. L. Kwan, "So We Adapt Step by Step: acculturation experiences affecting diabetes management and perceived health for Chinese American immigrants," *Social Science & Medicine*, vol. 72, no. 2, pp. 256–264, 1982.
[31] L. D. Xiao, Q. Tu, J. Bickford, and E. Muir-Cochrane, "The experiences of older Chinese migrants with chronic diseases during COVID-19 pandemic in Australia," *Health and Social Care in the Community*, vol. 2023, pp. 1–10, 2023.
[32] L. Zhang, R. Gallagher, D. Ding, and L. Neubeck, "Self-management following a cardiac event in people of Chinese ethnicity living in western countries: a scoping review," *Journal of Immigrant and Minority Health*, vol. 20, no. 3, pp. 744–754, 2018.
[33] C. Y. Fang, E. A. Handorf, A. D. Rao, P. T. Siu, and M. Tseng, "Acculturative stress and depressive symptoms among Chinese immigrants: the role of gender and social support," *Journal of Racial and Ethnic Health Disparities*, vol. 8, no. 5, pp. 1130–1138, 2021.
[34] L. Xu, F. Tang, Y. Chen, and X. Dong, "Acculturation and depressive symptoms among older Chinese immigrants in the United States: the roles of positive and negative social interactions," *Aging & Mental Health*, vol. 27, no. 3, pp. 604–611, 2023.
[35] M. Guo, E. Byram, and X. Dong, "Filial expectation among Chinese immigrants in the United States of America: a cohort comparison," *Ageing and Society*, vol. 40, no. 10, pp. 2266–2286, 2020.
[36] M. Guo, A. Lemke, and X. Dong, "Sources of intergenerational conflict in Chinese immigrant families in the

United States," *Journal of Family Issues*, vol. 43, no. 9, pp. 2275–2294, 2022.

[37] B. Badanta-Romero, G. Lucchetti, and S. Barrientos-Trigo, "Access to healthcare among Chinese immigrants living in Seville, Spain," *Gaceta Sanitaria*, vol. 35, no. 2, pp. 145–152, 2021.

[38] K. Jin, L. Neubeck, F. Koo, D. Ding, and J. Gullick, "Understanding prevention and management of coronary heart disease among Chinese immigrants and their family carers: a socioecological approach," *Journal of Transcultural Nursing*, vol. 31, no. 3, pp. 257–266, 2020.