

ORIGINAL ARTICLE

'Cost, culture and circumstances': Barriers and enablers of health behaviours in South Asian immigrants of Australia

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Abstract

The health behaviours related to chronic diseases experienced by South Asian immigrants are interrelated with their culture and socioeconomic conditions. South Asian immigrants experience a disproportionate burden of chronic disease compared with non-immigrants Australian-born general population. The primary aim of this study was to gain an in-depth understanding of health behaviours and healthcare access in the South Asian immigrant population of Australia. Five focus group discussions (FGDs) were conducted with South Asian immigrants ($n = 29$; 18 females) aged 27–50 years in Brisbane, Australia. Separate FGDs were conducted for males and females in the English language. Semi-structured guided questions related to the perception, barriers and facilitators of health behaviours. Data were analysed with Nvivo-12 following a thematic analysis. A conceptual model is proposed to provide a summarised understanding of barriers and facilitators of health behaviours in South Asian immigrants. The major reported constraints for participating in physical activity were cultural beliefs, lack of time, work stress and high fees of fitness activities, while parks and peer modelling were mentioned as a strong motivator for walking, cycling and participating in group sports activities. The cultural and religious connections, cost of cigarettes and drink driving penalties were the most mentioned facilitators for a healthy lifestyle. The important factors related to unhealthy eating habits were the traditional cooking methods, social interactions and the high cost of fruits and vegetables. Community perceptions and language barriers were also acknowledged as the main factors for the decrease in accessing health care services. This study illustrates that cultural beliefs, high cost of healthy food and facilities and social circumstances are mainly linked with the health behaviours and healthcare access in South Asian immigrant's lifestyles.

KEYWORDS

Australia, health behaviours, healthcare access, immigrants, South Asians

1 | INTRODUCTION

An international immigrant, as defined by the United Nations, is any person who has changed his or her country of usual residence

irrespective of his citizenship status (Buettner, 2020). However, some countries define immigrants based on the amount of time they spend in the new country, with different requirements for the minimum duration (Buettner, 2020). By 2019, the total number of

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international immigrants was approximately 272 million, with South Asia emerging as the major source of migration to different high-income countries (Buettner, 2020). 'Southern Asian' is an ancestry grouping that mainly includes individuals whose ethnic roots originate from the Indian subcontinent (ABS, 2011). The term 'South Asian' encapsulates populations from Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka (Jepson et al., 2012). Globally, the number of immigrants from South Asia increased from 10.08 million in 1990 to 27.22 million in 2015 (Srivastava, 2017). In keeping with this trend, the number of South Asian immigrants to Australia has doubled over the past decade from 400,450 in 2008 to 967,280 in 2018 (ABS, 2019).

The health risk factors related to chronic diseases experienced by South Asian immigrants are interrelated with their culture and socioeconomic conditions (Jepson et al., 2012). South Asian immigrants showed an unequal rate of chronic diseases compared with the non-immigrants population (Davies et al., 2011). A systematic review of 50 studies reported that South Asian people living in Canada had a higher prevalence of diabetes (1.18% to 2.25%) and hypertension (1.02%–1.22%) compared with the Canadian population (Rana et al., 2014). Furthermore, the age of diabetes onset is 5–10 years earlier, and chronic complications are more pronounced, amongst South Asian immigrant populations, compared with Caucasians (Bellary et al., 2010).

Alcohol risky use, unhealthy diet, physical inactivity and smoking are the four leading risk factors for chronic diseases (Lacombe et al., 2019). Habitual levels of physical activity are lower in South Asian immigrants than in the native populations in high-income countries (Jepson et al., 2012). Smoking and alcohol consumption were less prevalent amongst South Asian immigrants than the non-immigrants in the US (Patel et al., 2019). However, alcohol-related morbidity rates are higher in South Asian immigrants than the non-immigrant peoples in the high-income countries (Kennedy et al., 2015). Fruit and vegetable consumption was less than recommended values in South Asian immigrants, globally (Rana et al., 2014).

Australian studies also showed that South Asians had a higher mean chronic disease risk index than the Australian-born population (Sarich et al., 2015). South Asian immigrants had a higher prevalence of type 2 diabetes (31% versus 57%) than non-immigrants in Australians (Gupta et al., 2015). South Asian immigrants also had lower levels of leisure-time physical activity compared with Australian-born adults (Dassanayake et al., 2009). Most of the previous studies conducted about immigrants' chronic diseases were cross-sectional (Bandyopadhyay et al., 2011; Sarich et al., 2015), while they determined certain risk factors among immigrants groups, they did not analyse the insight of attitudes and beliefs of immigrant populations (Hodge et al., 2004). Furthermore, there is a paucity of research exploring the determinants of health behaviours after immigrating to a new country. This study aimed to explore and acquire an in-depth understanding of health behaviours and healthcare access in the South Asian immigrant population in Australia.

What is known about this topic

- South Asian immigrants constitute a diverse group with different cultural and socioeconomic characteristics.
- Considerable health disparities exist between the South Asian immigrant and non-immigrant population in Australia.
- There is limited research available about the barriers and enablers of health behaviours in South Asian immigrants of Australia.

What this paper adds

- Cultural beliefs and practices, high prices of food and facilities, and personal and environmental circumstances correlate with the risk factors and disease outcomes in South Asian immigrant Populations.
- Community perceptions and language barriers were also identified as a constraint in utilizing healthcare services.
- The conclusions from this study can help inform the design of tailored interventions to overcome the barriers to a healthy lifestyle in South Asian immigrants.

2 | METHODS

This study was conducted in Brisbane, Australia using focus group discussions (FGD) with South Asian immigrants. The University of Queensland, Australia Human Ethics Research Committee granted ethical approval for the research (Reference number: 2019001535). The current study used a semi-structured qualitative study (SSQS) design (Blandford, 2013). To ensure authenticity in participants' responses, open-ended questions were used, whereby participants' responses directed the flow of the conversation (Maxwell, 2012). The 'Four-Dimensions Criteria' (FDC) strategies adopted to assess methodological rigours (Forero et al., 2018) are explained in Table 1.

2.1 | Participant recruitment

Adult immigrants (aged 18 or above) born in any of South Asian countries, who can speak English and lived more than 2 years in Australia were eligible to be included in the study. Second-generation immigrants, asylum seekers and refugees were not included in the study due to differences in their representation in the healthcare system and general immigrant population.

The participants were purposefully selected to represent different South Asian countries. An advertisement and an information sheet with the researcher's contact detail were circulated among potential participants using social media, WhatsApp groups. Emails were sent to immigrant groups through different societies, community centres and friends of friends. Thirty-two adults (18 females and

TABLE 1 Strategies to assess methodological rigours (Forero et al., 2018; Lincoln & Guba, 1986)

Rigour Criteria	Purpose	Strategies applied in our study to achieve rigour
Credibility	To establish confidence that the results (from the perspective of the participants) are true, credible and believable.	Moderator spent an average of 2 h before the start of FGDs to engage with participants. Guided questions tested at two induction meetings and using 1- pilot FGD. Moderator received the required knowledge and research skills to perform the roles. One observer was also collected data in all FGDs. Moderator and observer send all the field notes to the research team for analysis and storage. Regular debriefing sessions with key members of the research team were conducted.
Dependability	To ensure the findings of this qualitative inquiry are repeatable if the inquiry occurred within the same cohort of participants, coders and context.	A detailed draft of the study protocol was prepared throughout the study. A detailed track record of the data collection process was developed. Coding accuracy and inter-coders' reliability of the research team was measured by the supervisors.
Confirmability	To extend the confidence that the results would be confirmed or corroborated by other researchers.	Reflexive journals and weekly investigators meetings were implemented. Several triangulation techniques were applied (e.g.: methodological, data source, investigators and theoretical).
Transferability	To extend the degree to which the results can be generalised or transferred to other contexts or settings.	A combination of different purposive sampling techniques was used. Operational and theoretical data saturation was quantified.

14 males) agreed to participate. Three males refused to participate on the day of the session because of other personal commitments, resulting in 29 participants.

2.2 | Focus group discussions

Five focus group discussions (FGD) were conducted between September 2019 and March 2020 at the University of Queensland, Australia. FGDs have widely been used to obtain insights into people's attitudes, experiences, perceptions, which is not easily informed by other qualitative methods (Halcomb et al., 2007). Focus groups are valuable since they not only investigate participants' beliefs but can provide detailed insight into factors influencing people's behaviours (Wilson & Practice, 2012).

Separate FGDs were conducted for males ($n = 2$) and females ($n = 3$) in line with South Asian cultural norms to make the participants feel more comfortable about expressing their views and opinions. Each FGD was comprised of at least five participants and the duration ranged from 55 min to 85 min. Due to the number of spoken languages among South Asian immigrants, the FGDs were conducted in English as all participants were able to speak and understand English (McFadden & Sundaresan, 2014).

Nine open-ended questions were developed to guide the discussion. Participants were invited to share their perceptions, knowledge, attitudes, perceived barriers and facilitators, and the opportunities for physical activity, smoking, alcohol consumption, dietary behaviours and healthcare access since moving to Australia. The process of constant comparison was used to determine the point at which no new themes emerged, and saturation was achieved (Glaser & Strauss, 2017).

2.3 | Data analysis

Audio recordings of the FGDs were transcribed verbatim by the first author. At the stage of transcription, all participants' names were replaced with pseudonyms to ensure participant anonymity. Data were thematically analysed using the six phases of Braun and Clarke's guidelines for the analysis, using NVivo, Version 12 (Braun & Clarke, 2006). Themes were inductively generated at first, and then, based on the research questions, a deductive approach was taken. A conceptual model was developed after summarising the themes and subthemes. Similar codes were organised into three subthemes, aided by using cross-tabulations comprising major codes and case attributes. We used the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklists for explicit and comprehensive reporting of our research work (Tong et al., 2007).

3 | FINDINGS

The participants' ($n = 29$) age ranged from 27 to 50 years and they were living in Australia for a median of 5 years. Most of the participants ($n = 20$) were full-time employed, six were employed part-time and two were housewives (Table 2).

The main themes emerged as four major health behaviours and healthcare access while subthemes were categorised as facilitators and barriers associated with health behaviours (Table 3). We used these themes and sub-themes and proposed a model representing a summary of themes and sub-themes associated with health behaviours. The three interconnecting components of the model were Culture, Cost and Circumstances (3Cs) (Figure 1).

TABLE 2 Demographic and professional characteristics of the focus group participants (n = 29)

Characteristics	Number of participants	% of total participants
Gender		
Male	11	38
Females	18	62
Age in years		
18-30	6	21
31-50	23	79
Duration of stay in Australia		
≤5 years	14	49
>5 years	15	51
Employment status		
Full-time	20	69
Part-time	6	21
Housewives	2	6
Highest educational qualification		
Certificate	4	34
Bachelor/diploma	15	52
Postgraduate degree	10	10

3.1 | Physical activity

Participants mentioned different personal and circumstantial barriers to becoming more active. Barriers to physical activity included cultural beliefs, lack of time, lack of exercise knowledge, the cost associated with gyms, personal indolence and work stress. Facilitators were physical environment, social networking and peer attitudes towards physical activity.

3.1.1 | Barriers

Most of the participants stated that South Asian cultural norms for women were to remain indoors, attend to domestic chores and prioritise family responsibilities. Some female participants disclosed that their cultural norms prevent them from participating in physical activities.

My mother-in-law always tells me why you need any other exercise than house chores. {Female Pakistani, FG 4}

Culturally inappropriate settings for physical activity were also reported as a common barrier, especially among women. Most female participants were of the view that to use gyms and swimming pools, they need a separate (female only) facility. It is not appropriate for women to reveal their bodies in front of strangers. Some Muslim women need to cover their faces or body shape when in the company

TABLE 3 The themes and sub-themes identified in the qualitative analysis of focus group discussions

Main theme	Sub-theme	Category	
		Barrier	Facilitator
Physical activity	Cost	✓	✓
	Culture	✓	✓
	Circumstances	✓	
	• Lack of time to participate in physical activity	✓	
	• Lack of knowledge to perform physical activity	✓	
	• Lack of dedication to participate in physical activity	✓	
	• Lack of social network to participate in physical activity	✓	
	• Racist bullying discourages physical activity	✓	
	• Physical environment facilities greater physical activity	✓	
	• Peer attitude facilities greater physical activity	✓	
Healthy diet	Cost	✓	✓
	Culture	✓	✓
	Circumstances	✓	
	• Family choices facilitate/impede healthy eating	✓	
	• Different taste of fruits and vegetables impede their intake	✓	
• Peer attitudes facilitate healthy eating	✓		
Smoking	Cost	✓	✓
	Culture	✓	✓
	Circumstances	✓	
	• Social pressure facilitate/impede smoking	✓	
• Stress facilitates smoking	✓		
Alcohol	Cost	✓	✓
	Culture	✓	✓
	Circumstances	✓	✓
	• Easy accessibility to buy alcohol	✓	
	• Religion restrictions on alcohol intake	✓	
	• Social pressure facilities alcohol intake	✓	
• Stress facilities alcohol intake	✓		
• Driving Laws restrict alcohol intake	✓		
Healthcare access	Cost	✓	✓
	Culture	✓	✓
	Circumstances	✓	✓
	• Self-medications	✓	
	• Use of traditional home remedies	✓	
	• Ethnic background of the healthcare provider	✓	
• Peer review	✓		
• Spoken Language	✓		

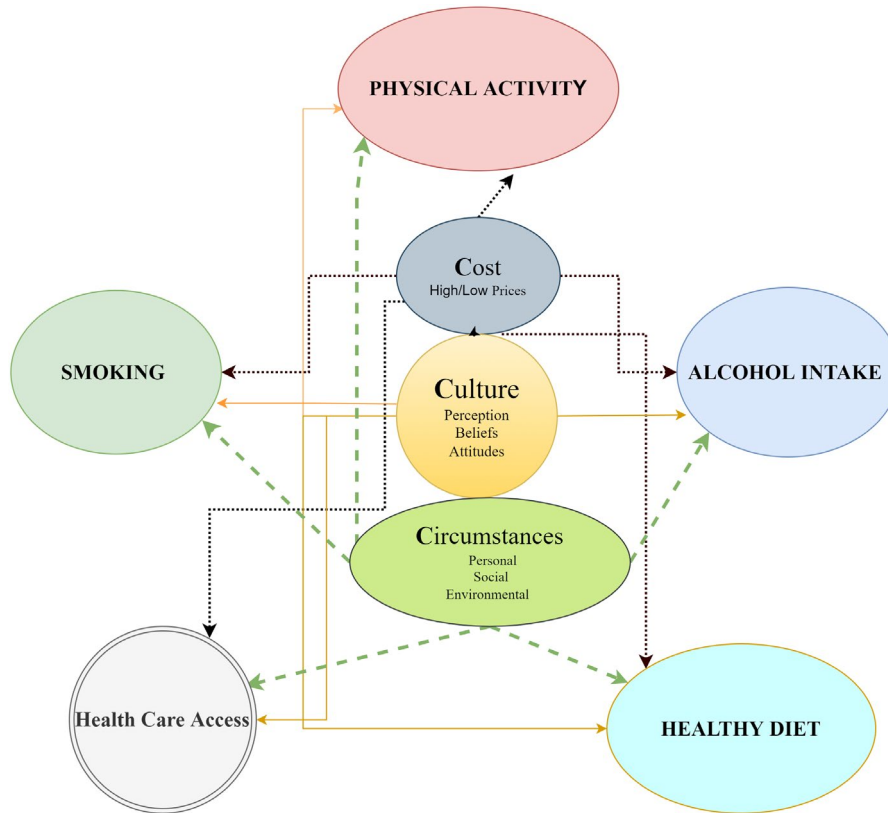


FIGURE 1 3-C FRAMEWORK linking health behaviours in South Asian Immigrants

of males who are not known to them, limiting opportunities to do physical activities in public places.

Know a lot of families here, where husbands do not allow their wives to go to the gym because men over there will see her body. {Male, Bangladeshi, FG 1}

Nearly all participants stated that lack of time for physical activity stemmed from family and work-related responsibilities. Male participants were more concerned about work pressure and stress as a barrier to physical activities. Female participants explained that lack of time for physical activity was due to domestic responsibilities, leaving them with little or no leisure time.

Well, I cannot do exercise after doing all the house chores, cooking bread, and taking care of kids. I want to take a rest and watch T.V. {female, Indian, FG 3}

A few of the participants mentioned a lack of skill to perform the workout as a contributor to limited or no physical activity. They associated inappropriate exercise techniques with minor injuries. These minor injuries and pain after exercise restricted their physical activity levels.

When it comes to real life, we do not have basic or important knowledge about how to do exercise, we just

lay on the mat and pull our legs up and down. {Female, Pakistani, FG 2}

Participants also stated that lack of motivation and dedication was an important personal barrier to exercising. Some participants reported that they joined a gym but stopped attending due to a lack of motivation.

The place I live has two well-equipped gyms but honestly, I never been there just because of lack of motivation. {male, Indian, FG 1}

Another barrier to participating in physical activity was the financial cost associated with attending structured exercise programmes at commercial gyms, fitness centres, including the associated travel and day-care costs. Females also mentioned high fees as well as travel to the gym as reasons for not being active.

If I am willing to go to the gym, it will come out with an extra financial burden. {Male, Indian, FG 5}

Due to the cultural belief that traveling by motorised transport is a symbol of prosperity, most participants avoided walking and cycling for transport. A few them disclosed that traveling in luxury cars to show off their wealth was a part of their culture. Some of the participants believed that owning a luxury vehicle was the most important use of their wealth.

If you are walking or cycling, that is a sign of poverty in our culture {Male, Pakistani, FG 1}

Participants, especially females, also stated that racist bullying was a barrier to walking in the local parks and participating in some group-based sports activities. The bullying behaviours experienced by participants included menacing, insulting and offending. Most of the mentioned negative comments were about their body shape, skin colour, headscarf and accent. Victims felt depressed and stressed and detached themselves from their normal routines.

Some employee behavior is very insulting in many aspects. One of my colleagues insulted me for my obesity and skin color and afterward, they sent me to take 'behavioral classes to know the Australian culture. That is why I cannot do much exercise. {Female, Bangladeshi, FG 3}

3.1.2 | Facilitators

The physical environment and sociocultural factors were strong motivators for walking, cycling and participating in group sports activities. Participants described pollution-free environments, parks, walking paths and active people on roads as strong facilitators for different physical activities. They mentioned that their Australian colleagues were very helpful in initiating physical activities which were not very common in their hometown.

Also, the clean air and good environment motivate me to walk around. Another thing, I must say that the people here are very encouraging about a physical activity like many people use to do bicycling, walking, and jogging. {Male, Indian, FG 1}

Social interaction and enjoyment were other factors mentioned by participants enabling physical activity. Both males and females preferred physical activities with one or more friends from an equivalent culture or linguistic group instead of exercising on their own. Team sports and gyms were mentioned as opportunities for social interaction for males. On the other hand, females highlighted walking groups, dance classes, yoga sessions and exercise programmes as opportunities for social interaction.

We need a group of people preferably from the same language and community to enjoy physical activity. {Female, Pakistani, FG 3}

3.2 | Healthy diet

Most of the participants did not know of the recommendations for a healthy diet from the Australian Dietary Guidelines (ADG)

or any other guideline, although they were aware of the benefits of eating fresh fruits and vegetables. Traditionally, South Asians used a large amount of oil/ghee when preparing vegetables and meat curries. Bread made with extra oil/ghee (Paratha) was considered a popular breakfast in South Asian culture. Participants revealed a cultural preference for eating deep-fried food instead of grilled items. The participants mentioned social and family networks as motivators factors for making healthy eating choices.

3.2.1 | Barriers

All participants agreed that there was a crucial link between food and pleasure in their culture. Food is fundamental to all types of gatherings among South Asian immigrants. Food preparation is also highly influenced by cultural norms and practices, for example, they preferred oily curries with meat and over-cooked vegetables instead of lower-fat options and salads.

Our taste is already developed of using oil in our food. We love oily curries with meat and fried items. {male, Bangladeshi, FG 1}

All male and a few female participants stated that the difference in the taste of fruits and vegetables from their hometown was a reason for the higher consumption of meat instead of vegetables.

I was not very fond of fruits even in my hometown but here additionally just because of the taste I do not eat them. {Male, Pakistani, FG 5}

The high cost of fruits and vegetables was an important barrier to eating healthy food. Participants usually compared the price of food in Australia with their hometown or with other countries. They found consuming carbohydrate-rich foods, which are more budget-friendly. A few respondents acknowledged that they had healthy dietary habits in their hometown, but it was hard to sustain in Australia due to the high cost of healthier foods.

The cost of food-stuff with the same weight is extremely high as compared to our hometown. If you live as a small family, you cannot buy a huge amount of fruits and vegetables from discounted markets. {Male, Indian, FG 5}

3.2.2 | Facilitators

Participants acknowledged that their work colleagues influenced their eating habits. Most of the male respondents mentioned that they started following the routine of their colleagues with

regards to eating vegetables and fruits in lunch which they had never done in their hometown. Some of the female participants also stated that they had learned from their peers, cooking with olive oil and measuring caloric intake. Family food choices were also indirectly affected by family friend's motivation towards healthy choices.

I think it is depending on exposure, my food style could not change unless my husband got a job with some Aussie boss. He is 57, he used to run 10 kilometers every Sunday, and he became our role model, after some time my husband also used to eat healthy food and used to adopt a healthy lifestyle. {Female, Pakistani, FG 4}

3.3 | Smoking

Female participants explained that smoking was generally related to male identity in South Asian culture. Most of the male participants viewed smoking as a tool for social connection with friends and colleagues. In contrast, female participants often regarded smoking in women as an implicit prohibition and non-acceptance in their communities. The high cost of cigarettes was mentioned as the main barrier to smoking.

3.3.1 | Barriers

There was a strong agreement among male participants that lack of finances was a motivator to prevent or decrease smoking. As a response to the high cost of factory-made cigarettes, smokers switched to cheaper hand-rolled cigarettes made with loose tobacco. Most of the participants mentioned that 'Roll-your-own cigarettes' were the most common choice of immigrant students.

The only hurdle is the high cost which is why people decrease the number of cigarettes or starting roll on. {Male, Pakistani, FG 5}

3.3.2 | Facilitators

Many participants mentioned that stressful lives after migration prompted them to start or continue smoking. Participants explained that due to spiritual restrictions, they preferred smoking instead of consuming alcohol when socialising because smoking is not prohibited by their religion.

When we attend different parties rather than drinking alcohol, which is prohibited in our religion, we prefer cigarette smoking. {Male, Bangladeshi, FG 5}

3.4 | Alcohol

The social context was an important determinant for starting to consume alcohol after migration more commonly in males. Secret drinking practices occurred to avoid cultural and religious constraints. Religion, culture and drink-driving penalties were revealed as the main barriers to alcohol consumption.

3.4.1 | Barriers

The frequency and pattern of alcohol use among South Asian immigrants were largely associated with their cultural and religious beliefs. Religious teachings require abstinence from alcohol as part of a righteous life in most of the South Asian ethnic groups. In some religious groups (like Islam, Jainism, Buddhism and Sikhism) alcohol is banned, while in other groups (like Christianity, Baha'i Faith and Hinduism) it is partially acceptable. Participants also mentioned that drink driving penalties act as a potential barrier to their alcohol intake in social gatherings.

We have to drive back home and behave like a responsible person, that's why we avoid alcohol in most of the parties. {Male, Indian, FG 1}

3.4.2 | Facilitators

Peer pressure and work-related stress appeared as important factors for the introduction and continuation of alcohol consumption. Peers influence and direct offers to drink were characterised as facilitators of alcohol use among most of the male participants. Particularly immigrants experiencing social anxiety started drinking to become more acceptable by their peers. Participants also mentioned that alcohol was frequently used as a coping mechanism during times when people were dealing with stress and loneliness. The easy access to alcohol in Australia compared with their home country, because of the social unacceptance, is one among most of the main facilitators for alcohol consumption.

Mostly because of easy accessibility with no restriction, it's easy to drink here. {Male, Indian, FG 1}

3.5 | Access to Healthcare services

Participants rated communication skills and cultural sensitivity of healthcare providers as measures of competence. Some participants expressed dissatisfaction over the approach for prescribing antibiotics by physicians in Australia. According to them, in their home countries, antibiotics were prescribed at a very early stage of diagnosis adding to the quick recovery of the patients. Beliefs in home remedies and self-medication were also identified as a constraint in utilising healthcare services.

3.5.1 | Barriers

Home remedies were widely used as the first-line treatment before visiting a doctor. Most of the respondents preferred treatments that they trusted and often perceived western medication as unnatural to the body. Participants also expressed more use of home remedies after migration to save money and time associated with visiting a doctor.

I do home remedies first because it is in our blood.
{Male, Indian, FG 1}

South Asian immigrants' cultural beliefs about health screening were another barrier to accessing healthcare services. Participants explained that most of the people in their community perceived health screening as a source of bad news. Conversely, some female participants believed that people should go for screening if they have some symptoms. A scarcity of knowledge and awareness about the screening of diseases was also identified as a barrier.

Although screening test is free of cost in Australia, we don't want to have it because we don't want to hear the bad news. {Male, Pakistani, FG 5}

3.5.2 | Facilitators

Good reviews by friends and cultural backgrounds of the physician were reported as the main consideration when selecting the family physician. Participants expressed apprehension regarding their ability to communicate their health concerns in their native language and to interpret medical advice provided by physicians in their native language. Consequently, our participants reported that they preferred to visit a general practitioner who can speak or understand their native language.

If I ever have a choice between Aussie doctor and Pakistani or Indian, I would like to prefer an Indian or Pakistani doctor because they know our language and body. {Male, Indian, FG 5}

3.6 | Conceptual model (3C)

We have prepared a conceptual model (Figure 1) based on the results of this study. This model is informed by the key principles that health behaviours are shaped and influenced by the social and environmental factors surrounding individuals (Chung et al., 2018). This model demonstrates that risk factors need to be understood and addressed within the culture, cost and circumstances (3C) context of South Asian immigrants. Several factors were related to participants' sociocultural context acted as barriers to healthy choices and healthcare access. The cultural beliefs and practices, high prices of

food and facilities, and personal and environmental circumstances correlate with the risk factors and disease outcomes. Physical inactivity and an unhealthy diet were associated with a substantial economic burden. Smoking and the harmful use of alcohol have a strong relationship with ethnic background and social atmosphere. Additionally, variables such as language, living conditions, education, income, social norms, social status, migration and acculturation can have a significant impact on disease prevalence. This model has the potential to provide a summarised understanding of barriers and facilitators of health behaviours for future interventions.

4 | DISCUSSION

The purpose of this study was to explore the perceived barriers and facilitators of health behaviours in South Asian immigrants living in Australia. Culture, cost and social circumstances were the main factors affecting South Asian immigrant's health behaviours. Most participants reported a superficial understanding of risk factors related to chronic diseases.

South Asian immigrants living in Australia view physical activity in a broadly similar way to the South Asian immigrants living in other countries (Jepson et al., 2012; Salma et al., 2020). Most of the mentioned barriers for physical activity among South Asian immigrants were also similar to other immigrant groups in Australia (Franco et al., 2015). For example, cost, socialisation and lack of time or dedication were also mentioned as main barriers by Chinese immigrants of Australia (Cerin et al., 2019). Cultural and religious expectations related to gender interactions and dress codes also limited the spaces in which women could engage in physical activity (Salma et al., 2020). Strategies for encouraging South Asians to participate in a range of physical activities required special attention on their sociocultural requirements. Activities that can provide opportunities for socialisation, as well as exercise, can provide better outcomes.

Racist bullying was also disclosed as a stressful barrier to physical activity in our study. Racism can manifest as individual or group acts and attitudes or institutional processes that lead to disparities (Karlsen & Nazroo, 2004). The verbal and nonverbal racist acts have negative impacts on immigrant's mental health. A growing body of evidence indicates that experiences of racist bullying can lead to adverse changes in health behaviours (Godlee, 2020). Racism can marginalise, exclude and affect migrants in participating in official and physical activities (Williams & Mohammed, 2013). Longitudinal research is needed to identify ways in which multiple aspects of racism relate to each other and combine, additively and interactively, with other psychosocial risks and resources to affect health.

Gender, stress, social pressure and connection with culture and religion were linked to smoking and drinking behaviours. Previous studies identified that in immigrant groups, gender differences and pre-immigration use of alcohol counted as the main predictors for alcohol and tobacco consumption (Loury & Kulbok, 2007). However, we noticed that economic factors and social integration played a more significant role in defining immigrants smoking and drinking patterns

in destination countries. In many parts of the World, people drink together to enhance sociability and to foster or express unity (Cook et al., 2012). Similarly, we also noted that several South Asian immigrants started drinking to build social connections with their peers. Future research might explore how drinking-related values and norms affect immigrants drinking behaviours. Traditions and family customs played an important role in nurturing and cultivating norms about smoking and alcohol use in all South Asian groups. In South Asian culture, young people's smoking and alcohol consumption in the presence of their elders was considered 'disrespectful'. (Bush et al., 2003) Also the religious teachings promote self-restraint from the use of alcohol (Banerjee et al., 2014). The family traditions and the fear of not being able to fulfill their responsibilities towards family members acted as key driving barriers for alcohol and tobacco consumptions (Banerjee et al., 2019). Supportive communication with family members and strong family ties were considered as a successful outcome for alcohol and tobacco with drawl in different south Asian studies (Banerjee et al., 2014, 2019; Jagannathan & Juvva, 2016).

Our study demonstrates that traditionally prepared food is a major part of South Asian immigrants' enjoyment of social gatherings. Culturally popular dishes alleviated immigrants' feelings of homesickness. Homesickness is defined as the distress or impairment caused by an actual or anticipated separation from home (Thurber & Walton, 2012). Immigrants felt that being able to meet people from their community, socialise, speak the language and have access to native cuisine were helpful to lessen homesickness (Hack-Polay, 2012). Preference for traditional cooking and ways of eating, which may or may not include healthy ingredients, were also documented in other South Asian immigrant studies (Bandyopadhyay et al., 2011). Traditional food is the recreation of the abstract meaning of home through concrete activities, such as cooking the typical oily curries and rice, which can alleviate the sense of isolation caused by the displacement.

The price of fruits and vegetables also influenced eating choices. Another study observed that the low price of unhealthy staples compared with fresh vegetables and fruits largely affect Mexican, Somali, Cambodian and Sudanese immigrants' eating habits (Tiedje et al., 2014). Still, there is limited data assessing the effect of food prices on healthy eating choices in South Asian immigrant populations. Some previous studies reported that acculturation (the process of adopting the cultural norms and practices of the host society) among immigrants was associated with adapting less healthy eating patterns (Alidu & Grunfeld, 2018). However, our finding suggested that acculturation among South Asian immigrants played a major role in the adaptation of healthy choices. Further research is needed to understand the beliefs, attitudes and behaviours that already exist within communities to promote healthier lifestyles.

Our study discovered that cultural attitudes and beliefs shape healthcare access in South Asian immigrants. Important barriers to healthcare access like lack of accessible information and lack of support and community resources are consistent with previous research (Cerin et al., 2019). The development of health education materials in the native languages of the immigrant population can help to tackle

the problems of restricted access to health-related information (Aroni & Gupta, 2018). Cultural belief systems relating to the screening of diseases need to be addressed in future health education and promotion initiatives (Brooks et al., 2019). Healthcare professionals should find ways to negotiate between immigrant's cultural beliefs and medical concepts about the screening of diseases. Healthcare professionals must correct their wrong concepts with proper justifications and common examples (Aroni & Gupta, 2018). The availability of female healthcare providers for female patients to address the barriers relating to gender and modesty considerations is also highly recommended (Salma et al., 2020). Furthermore, self-medication practices must be examined with regards to how people apply social and informational resources, perceptions of medicine functioning and concerns about medicine's side effects in determining their use (Abate & Chandalia, 2001).

Understanding high-risk behaviours are one of the key strategies to address the rise in chronic diseases. This study presents a three-factor conceptual model, comprised of cost, culture and circumstances (3C). This model maps the relationship between reported enablers and barriers associated with health behaviours and overall health outcomes. The proposed model reflects results from this study and prior studies of immigrant groups. Most of the findings are consistent with previous studies in which South Asian immigrants, regardless of their age, gender and geographic regions, experienced barriers to healthy choices and healthcare utilisation in the host countries (Daniel & Wilbur, 2011). Culturally oriented, and socially adjustable health, diet and exercise education can help, motivate and encourage immigrants for changing their unhealthy choices. Strategies and policies for encouraging South Asians to adopt healthy behaviours can be more helpful if they are designed according to their sociocultural opportunities and norms.

The findings and framework of this study are inspired by socioecological models and seek to create change on various levels, for example by decreasing the environmental barriers for individuals as well as modifying the social norms within a community. The overall effect of different barriers magnifies the need for a systemic conceptualisation of the context and its parts. 3C framework can provide a roadmap for further conceptual development of multi-level culturally situated interventions as vehicles for long-range and maximum-support community impact.

4.1 | Limitations and strength

The complexities of researching ethnic groups are documented with challenges around recruitment and understanding cultural values (Jepson et al., 2012). Having a South Asian researcher who was linked to networks ensured that we were able to access a wide range of participants from all South Asian countries. This study only gathered data from first-generation immigrants, and we were unable to compare the differences between first- and second-generation immigrants. The FGDs were conducted in English because it was not possible to conduct FGDs in native languages of South Asian immigrant participants who use one of 100 languages other than English.

Thus, we acknowledge that the FGD participants may represent only English-speaking segment of the South Asian immigrants, living in Australia. This study finding is therefore not generalisable to all South Asian immigrants in Australia. The main strength of this study was to provide in-depth information on major barriers and facilitators of health behaviours and healthcare access among South Asian immigrants. This study has male and female participation from all countries of the South Asian region, which can provide generalised results.

4.2 | Implications of the study

This study underscores the importance of providing clear, cost-effective and culturally sensitive education regarding the risks of chronic diseases. Initiating culturally and linguistically appropriate health promotion programmes for individuals and families can effectively address different barriers to a healthy lifestyle. Cultural competency and intercultural communication training of healthcare providers can also be imperative for understanding barriers to healthy behavioural choices. Community centres can be used to not only develop preventive health messages but to also help guide newly diagnosed patients about where and how to seek treatment and support to prevent complications. Interventions around health behaviours will also need to develop strategies to challenge misinformation, particularly around cultural traditions to motivate healthy choices.

Our proposed framework may serve a heuristic function for further theoretical clarification and pragmatic guidance for future interventions in other developed countries. Our proposed 3C framework highlights the importance of cost and environment-related health behaviours issues among the immigrant population in destination countries. This framework can help to understand how culture is expressed in the identified health behaviours issues and their treatment. Lastly, this framework can be helpful to provide optimal care pragmatic guidance for the south Asian high-risk immigrant cohorts.

5 | CONCLUSION

This study demonstrates that cultural beliefs, high costs and social circumstances are linked with health behaviours in South Asian immigrants. Risk factors need to be understood and addressed within the cultural and socioeconomical context of immigrants for better modification of health behaviours. The findings from this study can inform the design and implementation of tailored interventions for the promotion of a healthy lifestyle in South Asian immigrants and reduce the health burden on immigrants and therefore the receiving country.

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CONFLICTS OF INTEREST

The authors report no conflicts of interest.

AUTHOR CONTRIBUTIONS

Study concept and design: MN, AK, and TK. Recruitment of Participants: MN, AK, and TK. Data collection and conduction of group discussions: MN. Data cleaning and analysis: MN, AK, and TK. Preparation of manuscript: MN. Review of Manuscript: MN, AK, and TK.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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REFERENCES

- Abate, N., & Chandalia, M. (2001). Ethnicity and type 2 diabetes: Focus on Asian Indians. *Journal of Diabetes and Its Complications*, 15(6), 320–327. [https://doi.org/10.1016/S1056-8727\(01\)00161-1](https://doi.org/10.1016/S1056-8727(01)00161-1)
- ABS. (2011). Australian Standard Classification of Cultural and Ethnic Groups (ASCCEG), 2011. ABS Canberra.
- ABS. (2019). Migration, Australia, 2017–18. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/3412.0Main%20Features22017-18?opendocument&tabname=Summary&prodno=3412.0&issue=2017-18&num=&view=>
- Alidu, L., & Grunfeld, E. A. (2018). A systematic review of acculturation, obesity and health behaviours among migrants to high-income countries. *Psychology & Health*, 33(6), 724–745. <https://doi.org/10.1080/08870446.2017.1398327>
- Aroni, R., & Gupta, S. (2018). Perceptions of competence and trust in the interactions between clinicians and patients in type 2 diabetes and cardiovascular disease management among South Asians and Anglo-Australians in Australia. Paper presented at the European Journal of Public Health.
- Bandyopadhyay, M., Small, R., Davey, M.-A., Oats, J. J. N., Forster, D. A., & Aylward, A. (2011). Lived experience of gestational diabetes mellitus among immigrant South Asian women in Australia. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 51(4), 360–364. <https://doi.org/10.1111/j.1479-828X.2011.01322.x>
- Banerjee, S. C., Camacho-Rivera, M., Haque, N., Flynn, L., Thomas, J., Smith, P., & Ostroff, J. S. (2019). Understanding cognitive and emotional illness representations of South Asian head and neck cancer survivors: A qualitative study. *Ethnicity & Health*, 27(1), 1–18.
- Banerjee, S. C., Ostroff, J. S., D'Agostino, T. A., Bari, S., Khera, M., Acharya, S., & Gany, F. (2014). Disengagement beliefs in South Asian immigrant smokeless tobacco users: A qualitative study. *Addiction Research & Theory*, 22(3), 229–238. <https://doi.org/10.3109/16066359.2013.825718>
- Bellary, S., Paul O'Hare, J., Raymond, N. T., Mughal, S., Hanif, W. M., Jones, A., Kumar, S., & Barnett, A. H. (2010). Premature cardiovascular events and mortality in south Asians with type 2 diabetes in the United Kingdom Asian diabetes study—Effect of ethnicity on risk. *Current Medical Research and Opinion*, 26(8), 1873–1879. <https://doi.org/10.1185/03007995.2010.490468>
- Blandford, A. E. (2013). *Semi-structured qualitative studies*. Interaction Design Foundation.
- Braun, V., & Clarke V. (2006). *Thematic_Analysis_Revised_-Final*, 3, 77–101.

- Brooks, L. A., Manias, E., & Bloomer, M. J. (2019). Culturally sensitive communication in healthcare: A concept analysis. *Collegian, 26*(3), 383–391. <https://doi.org/10.1016/j.colegn.2018.09.007>
- Buettner, T. (2020). World population prospects—A long view. *Economie et Statistique/Economics and Statistics 520–521*, aq9–27.
- Bush, J., White, M., Kai, J., Rankin, J., & Bhopal, R. (2003). Understanding influences on smoking in Bangladeshi and Pakistani adults: Community based, qualitative study. *BMJ (Clinical Research Ed.), 326*(7396), 962. <https://doi.org/10.1136/bmj.326.7396.962>
- Cerin, E., Nathan, A., Choi, W. K., Ngan, W., Yin, S., Thornton, L., & Barnett, A. (2019). Built and social environmental factors influencing healthy behaviours in older Chinese immigrants to Australia: A qualitative study. *International Journal of Behavioral Nutrition and Physical Activity, 16*(1), 116. <https://doi.org/10.1186/s12966-019-0885-3>
- Chung, J., Seo, J. Y., & Lee, J. (2018). Using the socioecological model to explore factors affecting health-seeking behaviours of older Korean immigrants. *International Journal of Older People Nursing, 13*(2), e12179. <https://doi.org/10.1111/opn.12179>
- Cook, W. K. M., Mulia, N., & Karriker-Jaffe, K. (2012). Ethnic drinking cultures and alcohol use among Asian American adults: Findings from a national survey. *Alcohol and Alcoholism, 47*(3), 340–348. <https://doi.org/10.1093/alcalc/ags017>
- Daniel, M., & Wilbur, J. (2011). Physical activity among South Asian Indian immigrants: An integrative review. *Public Health Nursing, 28*(5), 389–401. <https://doi.org/10.1111/j.1525-1446.2010.00932.x>
- Dassanayake, J., Dharmage, S. C., Gurrin, L., Sundararajan, V., & Payne, W. R. (2009). Are immigrants at risk of heart disease in Australia? A systematic review. *Australian Health Review, 33*(3), 479–491. <https://doi.org/10.1071/AH090479>
- Davies, A., Blake, C., & Dhavan, P. (2011). Social determinants and risk factors for non-communicable diseases (NCDs) in South Asian migrant populations in Europe. *Intercultural Studies in the Social Sciences and Humanities, 8*(4), 461–473. <https://doi.org/10.1007/s10308-011-0291-1>
- Forero, R., Nahidi, S., De Costa, J., Mohsin, M., Fitzgerald, G., Gibson, N., McCarthy, S., & Aboagye-Sarfo, P. (2018). Application of four-dimension criteria to assess rigour of qualitative research in emergency medicine. *BMC Health Services Research, 18*(1), 1–11. <https://doi.org/10.1186/s12913-018-2915-2>
- Franco, M. R., Tong, A., Howard, K., Sherrington, C., Ferreira, P. H., Pinto, R. Z., & Ferreira, M. L. (2015). Older people's perspectives on participation in physical activity: A systematic review and thematic synthesis of qualitative literature. *British Journal of Sports Medicine, 49*(19), 1268–1276. <https://doi.org/10.1136/bjspo-2014-094015>
- Glaser, B. G., & Strauss, A. L. (2017). *Discovery of grounded theory: Strategies for qualitative research*. Routledge.
- Godlee, F. (2020). *Racism: The other pandemic*. British Medical Journal Publishing Group.
- Gupta, S., Aroni, R., Lockwood, S., Jayasuriya, I., & Teede, H. (2015). South Asians and Anglo Australians with heart disease in Australia. *Australian Health Review, 39*(5), 568–576. <https://doi.org/10.1071/AH14254>
- Hack-Polay, D. (2012). When home isn't home: A study of homesickness and coping strategies among migrant workers and expatriates. *International Journal of Psychological Studies, 4*(3), 62–72. <https://doi.org/10.5539/ijps.v4n3p62>
- Halcomb, E. J., Gholizadeh, L., DiGiacomo, M., Phillips, J., & Davidson, P. M. (2007). Literature review: Considerations in undertaking focus group research with culturally and linguistically diverse groups. *Journal of Clinical Nursing, 16*(6), 1000–1011. <https://doi.org/10.1111/j.1365-2702.2006.01760.x>
- Hodge, A. M., English, D. R., O'Dea, K., & Giles, G. G. (2004). Increased diabetes incidence in Greek and Italian migrants to Australia: How much can be explained by known risk factors? (Epidemiology/Health Services/Psychosocial Research). *Diabetes Care, 27*(10), 2330. <https://doi.org/10.2337/diacare.27.10.2330>
- Jagannathan, A., & Juvva, S. (2016). Emotions and coping of patients with head and neck cancers after diagnosis: A qualitative content analysis. *Journal of Postgraduate Medicine, 62*(3), 143. <https://doi.org/10.4103/0022-3859.184273>
- Jepson, R., Harris, F. M., Bowes, A., Robertson, R., Avan, G., & Sheikh, A. (2012). Physical activity in South Asians: An in-depth qualitative study to explore motivations and facilitators. *PLoS One, 7*(10), e45333. <https://doi.org/10.1371/journal.pone.0045333>
- Karlsen, S., & Nazroo, J. Y. (2004). Fear of racism and health. *Journal of Epidemiology and Community Health, 58*(12), 1017–1018. <https://doi.org/10.1136/jech.2004.020479>
- Kennedy, S., Kidd, M. P., McDonald, J. T., & Biddle, N. (2015). The Healthy Immigrant Effect: Patterns and evidence from four countries. *Journal of International Migration and Integration, 16*(2), 317–332. <https://doi.org/10.1007/s12134-014-0340-x>
- Lacombe, J., Armstrong, M. E., Wright, F. L., & Foster, C. (2019). The impact of physical activity and an additional behavioural risk factor on cardiovascular disease, cancer and all-cause mortality: A systematic review. *BMC Public Health, 19*(1), 900. <https://doi.org/10.1186/s12889-019-7030-8>
- Lincoln, Y. S., & Guba, E. G. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Program Evaluation, 1986*(30), 73–84. <https://doi.org/10.1002/ev.1427>
- Loury, S., & Kulbok, P. (2007). Correlates of alcohol and tobacco use among Mexican immigrants in rural North Carolina. *Family and Community Health, 30*(3), 247–256. <https://doi.org/10.1097/01.FCH.0000277767.00526.f1>
- Maxwell, J. A. (2012). *Qualitative research design: An interactive approach*. Sage publications.
- McFadden, T., & Sundaesan, S. (2014). Finiteness in South Asian languages: An introduction. *Natural Language & Linguistic Theory, 32*(1), 1–27. <https://doi.org/10.1007/s11049-013-9215-7>
- Patel, M., Boutin-Foster, C., & Phillips, E. (2019). Understanding of cardiovascular disease risk factors among Bangladeshi immigrants in New York City. *Ethnicity & Health, 24*(4), 432–442. <https://doi.org/10.1080/13557858.2017.1346191>
- Rana, A., de Souza, R. J., Kandasamy, S., Lear, S. A., & Anand, S. S. (2014). Cardiovascular risk among South Asians living in Canada: A systematic review and meta-analysis. *CMAJ Open, 2*(3), E183–E191. <https://doi.org/10.9778/cmajo.20130064>
- Salma, J., Jones, A., Ali, S. A., Salami, B., & Yamamoto, S. (2020). A qualitative exploration of immigrant Muslim older adults' experiences and perceptions of physical activity. *Journal of Aging and Physical Activity, 28*(5), 765–773. <https://doi.org/10.1123/japa.2019-0297>
- Sarich, P. E. A., Ding, D., Sitas, F., & Weber, M. F. (2015). Co-occurrence of chronic disease lifestyle risk factors in middle-aged and older immigrants: A cross-sectional analysis of 264,102 Australians. *Preventive Medicine, 81*, 209. <https://doi.org/10.1016/j.ypmed.2015.09.004>
- Srivastava, R. (2017). Internal and International Migration in South Asia UNESCO. Retrieved from https://unesdoc.unesco.org/in/rest/annotationSVC/DownloadWatermarkedAttachment/attach_import_c6d70fc4-01a8-4927-8183-73e60aa4b769?_=249459eng.pdf
- Thurber, C. A., & Walton, E. A. (2012). Homesickness and adjustment in university students. *Journal of American College Health, 60*(5), 415–419. <https://doi.org/10.1080/07448481.2012.673520>
- Tiedje, K., Wieland, M. L., Meiers, S. J., Mohamed, A. A., Fornea, C. M., Ridgeway, J. L., Asiedu, G. B., Boyum, G., Weis, J. A., Nigon, J. A., Patten, C. A., & Sia, I. G. (2014). A focus group study of healthy eating knowledge, practices, and barriers among adult and adolescent immigrants and refugees in the United States. *International Journal of Behavioral Nutrition and Physical Activity, 11*(1), 63. <https://doi.org/10.1186/1479-5868-11-63>

- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, 19(6), 349–357. <https://doi.org/10.1093/intqhc/mzm042>
- Williams, D. R., & Mohammed, S. A. (2013). Racism and health I: Pathways and scientific evidence. *American Behavioral Scientist*, 57(8), 1152–1173. <https://doi.org/10.1177/0002764213487340>
- Wilson, V. J. E. B. L., & Practice, I. (2012). Research methods: Focus groups. *Evidence Based Library and Information Practice*, 7(1), 129–131. <https://doi.org/10.18438/B8K32T>

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