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Developing a culturally-tailored stroke prevention walking program for Korean immigrant seniors: A focus group study

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Abstract

Background—Physical inactivity is a major risk factor for stroke. Korean immigrant seniors are one of the most sedentary ethnic groups in the United States.

Objectives—To gain better understanding of (i) Beliefs and knowledge about stroke; (ii) Attitudes about walking for stroke prevention; and (iii) Barriers and facilitators to walking among Korean seniors for the cultural tailoring of a stroke prevention walking program.

Design—An explorative study using focus group data. Twenty-nine Korean immigrant seniors (64–90 years of age) who had been told by a doctor at least once that their blood pressure was elevated participated in 3 focus groups. Each focus group consisted of 8–11 participants.

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Contributions to the manuscript:

Study design: CS; data collection and analysis: SC, IK, DA, CS and manuscript preparation: SC, IK, DA, EC, CLT, CS.

Methods—Focus group audio tapes were transcribed and analyzed using standard content analysis methods.

Results—Participants identified physical and psychological imbalances (e.g., too much work and stress) as the primary causes of stroke. Restoring ‘balance’ was identified as a powerful means of stroke prevention. A subset of participants expressed that prevention may be beyond human control. Overall, participants acknowledged the importance of walking for stroke prevention, but described barriers such as lack of personal motivation and unsafe environment. Many participants believed that providing opportunities for socialization while walking and combining walking with health information sessions would facilitate participation in and maintenance of a walking program.

Conclusions—Korean immigrant seniors believe strongly that imbalance is a primary cause of stroke. Restoring balance as a way to prevent stroke is culturally special among Koreans and provides a conceptual base in culturally tailoring our stroke prevention walking intervention for Korean immigrant seniors.

Implications for practice—A stroke prevention walking program for Korean immigrant seniors may have greater impact by addressing beliefs about stroke causes and prevention such as physical and psychological imbalances and the importance of maintaining emotional wellbeing.

Keywords

Asian Americans; culturally competent health care; focus group; prevention; stroke; walking

INTRODUCTION

Stroke prevalence in Korean seniors in Korea is higher than white seniors (Han *et al.*, 2009) and stroke mortality rate in Korea is among the highest in Asian countries and more than double the rate of Western countries (Ueshima *et al.*, 2008). To date, epidemiological evidence on stroke prevalence specific to Korean immigrant seniors in the U. S. is scarce and of low quality. However, it is reported that this fast growing ethnic minority group of seniors in the U.S. (U.S. Census Bureau 2012) has high prevalence of stroke risk factors such as high blood pressure, high cholesterol, overweight, sedentary lifestyle, and diabetes (Kim *et al.*, 2001; Sohn, 2004; Barns *et al.*, 2008).

While many of these risk factors are difficult to change, physical inactivity is a powerful risk factor for stroke (Goldstein *et al.* 2011). According to the Centers for Disease Control and Prevention (CDC, 2014), approximately 30% of ischemic strokes in the population is attributed to physical inactivity. Regular physical activity is associated with substantially reduced stroke risk (Jefferis *et al.*, 2014; Sattelmair *et al.*, 2010). Despite the empiric data supporting the benefits, 69% of Korean immigrant seniors fail to participate in regular physical activity (CHIS 2009), a much higher proportion than the 36% of Americans in general (CDC 2010). Significant levels of physical inactivity present a tremendous opportunity to reduce stroke risk by increasing physical activity among Korean seniors through a community-based stroke risk factor reduction/walking intervention.

Cultural tailoring is an important characteristic of successful health programs for ethnic minorities. Because health behaviors are influenced by cultural beliefs as well as socioeconomic factors, cultural tailoring should be based on the importance of understanding patients' health experiences within their unique social, cultural, familial, economic and environmental circumstances (Fisher *et al.*, 2007). If health recommendations and programs (such as walking for prevention of stroke) are to be effective, they must be sensitive and relevant to the culture of the people who are expected to carry them out (Chin *et al.*, 2007).

While some data suggest that physical activity is viewed as an important aspect of overall health by Korean seniors (Belza *et al.*, 2004; Lim *et al.*, 2008), significant gaps in our understanding of Korean immigrant seniors' perceptions of stroke and physical activity specifically as a means of prevention exist. Based on studies of Koreans living in Korea, the concept of stroke is quite different from that held by western medicine and is considered primarily as a destruction of harmonious components of body and soul (Kim & Yoon, 1997). Stroke is considered to be caused either by weak internal strength (*Kee*) invaded by strong external 'bad wind' or by excessive internal 'fire,' such as anger, heavy drinking, or dietary problems. Both can violate the harmonious negative-positive balance of the self, which eventually leads to stroke (Ka, 1995). In Korean culture, the maintenance of harmony in body and mind with the social and spiritual environment is deemed central to the promotion of health and prevention of illness (Lim *et al.*, 2007; Lim *et al.*, 2008). A perceived imbalance of *Yin* (cold in the body) and *Yang* (heat) can also be brought about by either excess or deficiency of physical activity. By keeping enough balanced energy in the body, *Kee* (vital internal strength) can be maintained and this *Kee* can help Korean older adults to be physically active, resist illness, and recover from damage caused by diseases (Lim *et al.*, 2007, 2008). It is important to examine whether and how these cultural beliefs might impact beliefs and behaviors around stroke prevention and physical activity in particular.

We describe this first phase of an ongoing project aimed at improving walking for prevention of stroke. As a first step in developing a culturally tailored stroke prevention program with walking levels as the primary point of intervention, we conducted focus groups to understand the perceptions, beliefs, and attitudes about stroke and walking among Korean seniors in the Korean cultural context. We sought input from participants on what they would like to know about stroke and what characteristics would comprise a successful stroke prevention walking program for the Korean immigrant older adult community. Our specific aims for this study were to examine: 1) beliefs about stroke causes and prevention; 2) what participants want to know about stroke; 3) attitudes about walking; and 4) perceived barriers and facilitators to walking among Korean immigrant seniors.

Conceptual framework

We used "Formative Method for Adapting Psychotherapy (FMAP)" framework (Hwang, 2009) to guide development of the focus group phase of the project. Originally developed to facilitate the cultural adaptation of psychotherapy for depressed Chinese Americans, the FMAP framework is a community-based bottom-up approach and involves 5 phases: 1) generating knowledge and collaborating with stake holders, 2) integrating generated

information with theory, empirical, and clinical knowledge, 3) review of culturally adapted clinical intervention by stakeholders and further revision, 4) testing the culturally adapted intervention, and 5) synthesizing stakeholder feedback and finalizing the culturally adapted intervention. In this study, we used the FMAP framework phases 1–2 to generate cultural adaptation ideas of stroke prevention walking intervention with Korean seniors in the community. We conducted focus groups with Korean seniors at risk for stroke to generate Korean culture specific knowledge about stroke and to integrate the generated information with current clinical knowledge to develop culturally-tailored stroke prevention and walking program for Korean immigrant seniors.

METHODS

Study design and sample

According to Wilkinson (1999), focus groups are a ‘naturalistic’ method of exploring ideas and perceptions in that they draw on people’s normal and everyday experiences. Because of their ability to capture the nuances of cultural perceptions and behavior, focus groups have often been used to better understand minority populations in order to develop culturally-tailored health intervention programs (Anderson *et al.*, 2000; Sarkisian *et al.*, 2005). Focus group methodology has also proven successful for identifying perceptions of older adults about many previously unexplored topics (Kang *et al.*, 2014; Lees *et al.*, 2005; Rosenberg *et al.*, 2012).

We used focus groups to explore stroke and physical activity-related beliefs among a sample of 29 community-dwelling Korean older adults. A total of 3 focus groups were conducted. Participants were recruited from a community-based senior center using informational presentations conducted by study staff during regularly scheduled events at the center such as club meetings or lunch service. The following inclusion criteria were used: age 60 years or older, self-identifying as Korean, has been told by a doctor at least once that blood pressure was elevated, able to sit in a 2-hour group setting and participate in a discussion in Korean, has cognitive ability to provide informed consent to participate, and the ability to walk with or without the use of assistive devices (e.g., canes, walkers). The University Human Research Protection Program approved this study.

Focus group guide

A semi-structured focus group guide was developed in collaboration with community partners of the [BLINDED CITY] Community Academic Partnership for Research in Aging. Community partners with expertise in working with Korean seniors reviewed initial focus group questions drafted by the study team and provided feedback on the cultural appropriateness and specificity of the questions in an iterative fashion. Once finalized and collectively approved, the focus group guide was translated into Korean and reviewed by community partners for accuracy. Questions included: What are you most curious about when it comes to stroke? What do you think causes someone to have a stroke? What do you want to know most about the disease? How common is it for you to walk as an exercise? What are some of the reasons why you do and do not walk regularly for exercise? What do you think about walking as a way to help prevent stroke in your community? How

acceptable do you think walking as a way to help prevent stroke is/would be in your community? We defined regular exercise as any exercise for 20 minutes 3 times per week or more. This definition is based on regular exercise guidelines from the Centers for Disease Control for American older adults, which recommends a variety of exercises on 2 or more days a week for 30-minute sessions each (CDC, 2015). We spread out the total time recommended over 3 times per week for more “regular” exercise.

Focus group procedures

Each focus group consisted of 8 to 11 participants and was conducted within a 2 hour time frame. Participants provided informed consent prior to the start of each session and were given a twenty dollar gift card incentive to a local retail store. A native Korean-speaking co-investigator (lead author and nurse scientist) moderated the focus groups in Korean using the semi-structured focus group guide. At least two other study team members were present at each session to take supplementary notes, digitally audio record the session, and assist participants in completing a short demographic/medical history survey.

Analyses

Data analysis was conducted using a version of the framework method (Ritchie & Lewis, 2003; Gale *et al.*, 2013). Focus group audio was transcribed verbatim before being translated into English. Study staff present at the time of the focus groups reviewed transcripts for accuracy. A code list was developed by the research team a priori based on the following key topics of interest informing the design of the intervention: a) stroke cause and prevention, b) stroke knowledge/education needs, c) attitudes about walking, and d) barriers and facilitators of walking. ATLAS.ti software version 7.1.7 (ATLAS.ti Inc 7.1.1, Berlin, Germany) was used for data management and coding. Two trained reviewers independently coded each transcript. The reviewers then compared coded text and reached a consensus on their designation of codes in an iterative fashion. Whenever necessary, discrepancies in coding were adjudicated by a third-party investigator. Modifications to the code list were made by adding, deleting, and/or collapsing codes that were similar in nature before a final round of applying the codes to the entire set of transcripts. Reviewers achieved 80% inter-coder agreement during the final round of coding (the reliability testing was done on 20% of transcript text). Major themes and subthemes emerged after co-investigators reviewed the coding reports.

RESULTS

Characteristics of the 29 focus group participants are shown in Table 1. Participants were on average 78 years old (range 64 and 90 years old) and about two-thirds were female (66%). About half (45%) spoke no English and 38% were only slightly comfortable speaking English. Nearly all participants (97%) reported having high blood pressure and 69% responded yes to participating in regular exercise.

Themes on beliefs about stroke causes

Physical imbalances—Most participants commented that bad diet habits, such as alcohol, fats, fried or salty foods, or eating too much meat/protein product can cause imbalances in body functions, which in turn leads to stroke.

Psychological imbalances—Participants had the strongest consensus around this theme and identified too much work and stress as the primary cause of stroke. ‘Hwa’ which means “too much anger bottled up” in Korean, was frequently mentioned and described as something that results in stroke upon “bursting out.” Most participants also believed that people’s disposition and personality are related to the cause of stroke. They believed that older Korean people, who had to endure, tolerate, and/or suppress emotions and feelings through tragic history (e.g., Japanese annexation, the Korean War) may be more prone to having a stroke, especially those who are short-tempered or compulsive. Participants commented that accumulation of stress is common among Korean immigrants, yet as one participant put it, they “hold it in,” which is “unique and a culturally distinguishing characteristic of Korean people.”

“In other cultures, people go to drink or exercise to release stress but Korean people suppress emotions and feelings and keep them inside.” (Male, 79)

Other risk factors—Most participants identified several known risk factors for stroke including genetic factors, smoking cigarettes, diabetes, high blood pressure, “thick blood,” and high (blood) sugar and cholesterol. High blood pressure, a major risk factor of stroke, was brought up in all three focus groups with general agreement among the participants.

Something that happened to the head—Several participants mentioned that stroke is caused by blocked blood flow inside of the brain and a few participants described physiological mechanisms.

“Stroke happens when the oxygen is not provided properly to the brain when blood circulation stops inside of head ... a clot of blood hampers our body functions.” (Male, 75)

A few participants also mentioned that injuries (e.g., from car accidents) damage the brain and can cause a stroke. Dementia was brought up a few times as a cause of stroke because “they both involve brain.” One participant mentioned that stroke can be caused by head/face exposure to extreme cold temperature such as when using a cold stone as a pillow.

Themes on beliefs about stroke prevention

Diet and exercise—Diet and exercise were the most commonly mentioned stroke prevention measures among the participants. Diet included eating healthful food and avoiding bad food (e.g., fried food, meat). One participant commented that she was told by her doctor that Korean barbecue was “dangerous food.” Participants mentioned that walking is good for stroke and all other health conditions. In addition to diet and exercise, to prevent both stroke and dementia, one participant (Female, 77) mentioned “brain exercise,” for which he said he goes to markets and checks the items and prices, comparing them to each other.

Emotional Wellbeing—Many participants mentioned and/or agreed that maintaining emotional wellbeing is important for stroke prevention. One participant (Male A, 86) said “if you could live a happy life, there would not be a risk of stroke.”

Treating medical problems—Some participants commented that taking medications for high blood pressure and cholesterol are important to prevent stroke, while others believed that controlling headaches by taking some blood out by acupuncture helps prevent stroke.

Beyond our control—A small subset of participants felt that stroke is caused by something beyond our control such as weakening of blood vessels with aging, which is a natural thing and cannot be avoided. One participant (Male B, 86) stated “We should focus on emotional comfort and accept God’s will. Can we choose to live longer?” suggesting that health issues such as stroke are unpreventable and/or inevitable.

Themes on what participants want to know about stroke

Causes—Most participants wanted to know more about the causes of stroke, such as whether stroke can come from the diseases of the ears; foods that contribute to stroke risk; whether diabetes causes stroke; and whether dementia is related to stroke. Participants also wanted to know if stroke is related to the family’s medical history or if there is a genetic cause. They also wanted to learn about how strong the associations between various risk factors and stroke are.

How to prevent stroke—Almost all participants wanted to know what they can do to prevent stroke and were particularly interested in diet and exercise. They wanted to know about what foods if any can help to prevent stroke; exercises appropriate for older people to prevent stroke; if walking really is a good exercise for stroke prevention; any side effects from exercise; the ideal time of the day for exercise; and exercises that promote blood circulation. Participants also wanted to know whether they should/should not rely on folk remedies, such as acupuncture and herbal medications; if there are any medications or supplements that prevent stroke and whether these have any side effects; and whether aspirin really prevents stroke.

Symptoms—Participants wanted to know what signs and symptoms of stroke they need to be mindful of and wondered specifically if diabetes is also a symptom of getting a stroke. A few participants questioned if there is a relationship between facial paralysis and stroke, and whether certain physical states (e.g., headaches, spinning feeling when swinging a golf club) are related to stroke.

Emergency treatment and what to do/-not to do during a stroke—Participants wanted to know how much time they have for emergency treatment, whether stroke requires surgery as treatment, and what measures they ought to take in the event that they had a stroke. In addition to expressing interest in learning what to do if they themselves experience a stroke, a few participants also wanted to know what to do if they witness someone else having a stroke.

“I was not sure what to do during my wife’s stroke, whether to touch her or move her or give her an herbal pill.” (Male, 67)

Themes on attitudes about walking

An ideal exercise for seniors—Participants expressed that walking is safer than other physical activities (e.g., running, cycling, and hiking), not difficult to do, affordable, and thus an ideal exercise for seniors. Some participants added that walking is also enjoyable as a “hobby” and easy to do as part of fun activities (e.g., walking holes on the golf course, walking on the roof garden of a building).

Others commented that exercise will promote longevity but its actual benefit is that it will help people live healthy, and living healthy is what most seniors want more than living longer.

A good exercise to prevent stroke—Almost all participants agreed that prevention of stroke is very important to keep seniors healthy and well, and for that, they have to walk regularly. A couple of participants however commented that if walking is promoted just for stroke, it may be misleading, and people who are not interested in stroke but interested in other health issues such as diabetes may not walk.

Walking is good for both body and mind—Most participants described various physical health benefits of walking from their own experiences ranging from improvements in specific medical problems/symptoms to general health maintenance. These include improvement in digestion, bowel habits, blood pressure, glucose levels, and knee pains, as well as help with keeping legs and knees in good condition and keeping from weight gain. In addition to physical benefits, participants also mentioned psychological/emotional wellbeing from walking. Some participants commented that they enjoy meeting and interacting with new people while walking. Several participants mentioned “feeling good in general” (Female, 82) and “feeling healthy,” (Female, 77) with a few saying having satisfaction that they are doing something for their health (e.g., preventing against stroke, weight loss).

Themes on barriers to walking

Table 2 displays the identified themes and subthemes from participants in a list format with sample quotes. Key themes on barriers to walking were physical, external/environmental, and internal/perceived barriers.

Physical barriers—Most participants stated that many old people cannot walk even though they want to because of their health conditions (arthritis, weaknesses/dizziness, shortness of breath) and concerns for pain (knees/joint problems, leg/back pain).

“These days I am having hard time walking. I cannot breathe well if I walk fast. I have to stop and rest until my breath gets better.” (Female, 85)

External/environmental barriers—Some participants described several external factors that prevent them from engaging in walking. These include logistical issues such as having no good place to go exercise such as a gym, concerns for safety, and long distance to the

park or their favorite walking place from home. Other participants also mentioned having nobody to walk with as a barrier. A few participants said that they walk at night because cold morning air makes it hard for them to breathe. Several participants also expressed reluctance to walking in the morning and winter season because they heard from their friends that cold air is not good for older people.

Internal/Perceived barriers—Participants' comments on barriers to walking were also related to personal reasons/beliefs and perceptions, such as lack of motivation, boredom, belief that exercise causes pain/harm, and fatalism. Two participants expressed their hesitancy about exercise beyond normal daily activities for fear of doing harm to their aging body. When a participant mentioned health and longevity are in the hands of God, not in human efforts, most participants in the focus group agreed verbally and/or by nodding.

Themes on facilitators to walking

This topic generated the most responses by focus group participants. Comments were based on personal experiences and/or conditional situations, as in "If I had ..., I would walk."

Physical facilitators—Some participants who identified pain as the barrier to walking stated that if there were light or gentle exercises available such as easy walking program, they would participate. They commented that physical activity options considering physical limitations of the seniors would be helpful.

External/environmental facilitators—Most participants mentioned that being in a safe environment and/or having someone to exercise/walk with will facilitate walking. Most frequently mentioned facilitators of walking were having someone to walk with and social interactions while walking. Spouses were the most frequently mentioned walking/exercise partner followed by friends.

Internal/Perceived facilitators—Participants' comments under this subtheme were diverse and included seeing positive results from exercise/walking, opportunity for social interaction and information gathering, having an enjoyable, meaningful primary goal for which walking is necessary, and personal motivation to live healthy until death without losing dignity and having to go to nursing home. A few participants mentioned that encouragement from researchers, and a reward or gift would be motivating for seniors to continue to walk and exercise.

DISCUSSION

The goal of our study was to examine perceptions/beliefs of stroke and walking among Korean seniors as a critical step in developing a culturally sensitive stroke prevention walking program for this community. We were particularly interested in gaining insight on beliefs about stroke causes, prevention, and education needs as well as barriers and facilitators of walking among this high risk ethnic group. Among several prominent themes/beliefs on stroke causes and prevention, two main cultural themes stood out as fundamental causes of stroke: physical and psychological imbalances. Accordingly, beliefs about stroke prevention surrounded correcting/restoring the imbalances and maintaining the balances by

diet and exercise, treatment of existing medical problems, and emotional wellbeing. The belief that physical and psychological balance/harmony is a key element in keeping or losing health is consistent with cultural views reported in previous studies of Korean and Chinese populations that were not specific to stroke (Chen, 2001; Lim *et al.*, 2008).

Though the concept of balance has been known to be an important component of well-being for Koreans, we believe ours is the first study to identify imbalance as an important construct that Koreans believe actually causes a discrete illness, in this case stroke. Future studies should identify whether this finding carries over to other illnesses as well. Particularly in Korean culture, 'Hwa,' as mentioned by several participants in this study, can be a major threat to disturbing the balance. 'Hwa' is well described in literature as 'a culturally patterned way of expression for Koreans perceiving and reacting to intolerable and tragic life situations that cause bodily symptoms by interfering with the harmony' (Kim & Lee, 2003; Pang, 1990) and our participants described it similarly as 'temper and disposition of Korean people' 'unique to Korean culture' and believed it contributes to various negative psychological and physical health consequences. It may be that because stroke happens abruptly, giving an impression of an explosion or burst, 'Hwa' (bottled/repressed anger/emotions) may have been commented predominantly in our study as a potential cause of stroke as opposed to 'Kee' (inner strength), which was mentioned equally in Kim and Yoon (1997)'s study of stroke perspectives in Korea. 'Hwa' may be a salient topic that Korean seniors can easily associate with in discussing physical and psychological/emotional imbalances and that can be incorporated in the stroke education and walking program with Korean seniors. For example, the program can address how walking can help relieve stress and anxiety, thus help ease/release 'Hwa,' and restore psychological and emotional balance.

One unexpected theme on stroke prevention that emerged in this study was a belief that stroke prevention is beyond human control. A similar finding has been reported in a study with Korean older adults in an exercise program in which some study participants considered illness as a result of sins committed in a previous life and long and healthy life is one's fate from heaven (Sin et al., 2005). However, our participants did not mention 'sins' and had more positive outlook on accepting 'God's will.' Our participants also had strong belief that exercise is an important part of health promotion and disease prevention that older people should participate in as do young people whereas participants in the Sin et al. study did not regard exercise for health promotion and disease prevention and felt that exercise was for young people. Difference in demographics and study locations may be a potential explanation for variations in how fatalism is viewed among Korean seniors and whether it is specifically rooted in religion. Nevertheless, further exploration is needed to understand how much impact this fatalism has on walking as a potential barrier among Korean immigrants, and whether it can be changed into a positive attitude toward walking through innovative interventions, such as spiritually-based interventions. In the African American population, church-based exercise programs resulted in positive outcomes (Baruth *et al.*, 2008; Duru *et al.*, 2010).

This study identified important topic areas of interest among Korean immigrant seniors that may be useful for stroke prevention education tailored for this specific demographic: causes of stroke, symptoms, emergency treatment, and prevention measures. Education on stroke

emergency responses should convey practical but critical information about what ‘to do’ and ‘not to do’ in a stroke emergency situations as the patient or someone helping the person having a stroke. This information should address traditional Korean remedies/customs and when appropriate, clarify misconceptions, such as giving the patient an herbal medication or taking blood out from a finger, because participants were most curious about whether these remedies are helpful or harmful in a stroke emergency situation.

Consistent with previous studies of minority older adults’ perspectives of exercise that includes Korean and Chinese and Vietnamese seniors (Belza *et al.*, 2004; Wilcox, 2002), the importance of regular daily exercise was a prominent theme within this group and our participants spoke of walking as an ideal exercise for Korean seniors as reflected in many comments about physical and psychological benefits of walking they experienced. Among the barriers to walking identified, most were consistent with those found in previous studies of various ethnic minority seniors, such as pain and other limiting physical conditions, lack of motivation, boredom, and safety concerns (Lees *et al.*, 2005; Wilcox, 2002). Similarities in our findings to other populations suggest that a mainstream walking intervention for seniors may serve as a base upon which our tailored intervention for Korean seniors can be built. Safety in our study was related to being in an unsafe area/environment (e.g., crimes in the neighborhood) rather than injury or accidents such as falling as found in other study (Lees *et al.*, 2005). This reinforces that environmental safety should be assessed before walking is encouraged. Absence or presence of social support was identified as both barrier and facilitator in our study as was in previous studies with other ethnic minorities (Wilcox, 2002; Eyster, 1999).

This study also identified several facilitators for walking among Korean seniors that should be considered in the community walking program development. First, incorporating personally meaningful activities (‘picking up garbage together’ ‘walking the dog and praying while walking’) or making walking a part of enjoyable social activities may be more fruitful for Korean seniors. In other words, a goal should be something else meaningful to the individual and walking should be a byproduct or means of reaching that goal. As one participant said, this combination may provide ‘some kind of forcibility to be motivated to walk.’ Along the same line, linking walking to the prevention of both stroke and dementia (e.g., emphasizing that certain dementia can be caused by a form of stroke) may help engage more Korean seniors in walking exercise program and maintain their walking.

Second, based on ample comments on ‘having someone to walk with’ as a key component of successfully maintaining their walking/exercise habits, the walking program should consider engaging in a person (or group) from the participant’s social support network. The Task Force on Community Preventive Services strongly recommends changing physical activity behavior through building, strengthening, and maintaining social networks that provide supportive relationships for physical activity behavior change such as walking groups and buddy systems (Kahn *et al.*, 2002). Enhancing social support within the Korean community may be an important aspect of intervention aimed at increasing walking in this population.

Third, walking intervention may need to be tailored based on the individual’s capacity to walk, considering age (e.g., young old, old-old), and fitness level, because some participants

wanted to know whether there are ‘easier’ ‘light’ exercise/walking programs for seniors with health issues. Although the literature indicate moderate- to heavy- intensity physical activity is protective against risk for ischemic stroke independent of other stroke risk factors (Willey *et al.*, 2009), one Korean intervention study with moderate exercise with walking still showed significant decrease in blood pressure, a major risk factor for stroke (Kang *et al.*, 2014). In light of several of our participants wanting to participate in light exercise/walking program, varied/tailored pace of walking or diverse physical activities options accompanying the walking program may be more motivating and thus better serve the population than a program focused exclusively on walking.

Fourth, the walking program should consider highlighting active, healthy, independent living in old age as an expected outcome of walking rather than simply living long. Comments from our participants were consistent with previous studies of Korean older adults in Korea, which indicated that contemporary older adults tend to have a stronger desire for autonomy and independence (Jang *et al.*, 2004). Strategies to bolster a sense of autonomy and independence in the walking program may need to be further explored and integrated in the program.

There are limitations to this study. Our study was conducted in an ethnic enclave in a large Korean community and participants were exclusively immigrant Korean seniors (born in Korea with Korean as the primary language). Thus our study findings may not be generalizable to Korean American seniors born in the U.S. and/or living in multiethnic society/geographic areas nationally. In addition, the rate of “regular exercise” in our participants (regular exercise was defined in this study as any exercise for 20 minutes 3 times per week or more) was higher than what has been reported in the literature, which may have influenced their responses to questions related to walking. Without a comparison group we cannot attribute all of our findings to the fact that our subjects are Korean immigrants; it is not surprising that some of our findings, for example the desire to walk with a partner or in a group, are similar to those of other non-Korean groups. In addition, though we used a rigorous methodology to create the coding system and had excellent agreement between coders, there is an unavoidable subjective nature to coding focus group data that can influence data interpretation.

CONCLUSIONS

Korean immigrant seniors believe strongly that imbalance is a primary cause of stroke. Restoring balance as a way to prevent stroke is culturally special among Koreans and provides a conceptual base in culturally tailoring our stroke prevention walking intervention for Korean seniors. Future research should focus on ways to translate the cultural findings to maximize the benefits of the stroke prevention walking program for Korean seniors. To this end, our team is currently using the information generated in this study in tailoring and testing a walking intervention among Korean immigrant seniors.

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SUMMARY STATEMENT**What does this research add to existing knowledge in gerontology?**

- Physical and psychological imbalances (e.g., too much work and stress) are prevalent cultural beliefs about the causes of stroke among Korean immigrant seniors.
- Restoring balance may be an important means of stroke prevention among Korean immigrant seniors.
- A subset of Korean immigrant seniors believe that stroke prevention is beyond human control.

What are the implications of this new knowledge of nursing care with older people?

- Stroke prevention education for Korean immigrant seniors should address physical and psychological imbalances as a culturally important stroke cause.
- Promoting walking as a way to restore balance may be one way to increase Korean immigrant seniors' awareness and participation in the walking program for stroke prevention.

How could the findings be used to influence policy or practice or research or education?

- A stroke prevention walking program for Korean immigrant seniors may have greater impact by addressing beliefs about stroke causes and prevention such as physical and psychological imbalances and the importance of maintaining emotional wellbeing.
- Further exploration should address the minority belief that stroke prevention is beyond human control.

Table 1Focus Group Participant Characteristics (*n*=29)

	n (%)
Age	
60–69	3 (10)
70–79	17 (59)
80–89	7 (24)
90 years old	2 (7)
Female	19 (66)
Education	
8 th grade or less	1 (3)
Some High School	4 (14)
High School	9 (31)
Diploma/GED	
Vocational School or some College	7 (24)
4 year college degree	8 (28)
History of stroke	4 (14)
Have high blood pressure	28 (97)
Have high cholesterol	24 (83)
Speak no English	13 (45)
Participation in regular exercise	20 (69)

Table 2

Summary of Walking Barriers and Facilitators

BARRIERS THEME	FACILITATORS THEME
<p>Physical barriers</p> <ul style="list-style-type: none"> Limiting health conditions (pain, weakness, shortness of breath) "I walk 4–5 times a week but when I have pain it is hard to walk. I used to walk well but it is getting harder now." <p>External/environmental barriers</p> <ul style="list-style-type: none"> Subtheme: No good place for exercise (safety, weather/temperature, long distance to park) "It is not safe to walk around in your neighborhood here. I prefer walking early in the morning and in the evening, but it is scary." "I think morning hours are ideal but some say walking early in the morning is not good for old people. I stopped walking in the winter." Subtheme: No one to walk with "It is a long distance to park from home and I have nobody to walk with; it would be really good to have an exercise buddy or a group." "I love to walk on beach sand but it gets harder to travel long distance and no one can go to walk with me." <p>Internal/perceived barriers</p> <ul style="list-style-type: none"> Subtheme: Lack of motivation "Especially for older people, it is really hard to make plans and set up goals to do something. I live in a senior housing, and it is hard to get people to go places together, we had fun once we did it but they just do not want to do it. We get lazy at the senior housing. Older adults do not want to move." Subtheme: Boredom "It is hard to exercise just for the sake of being healthy. If I go to mountain I feel good because I enjoy it. Exercise should be exciting and fun. Health itself is not good enough to drive older people to exercise." "If you do walking exercise with others it will help. It would not feel like too long a walk. You can easily walk for 40–50 min. If you walk alone, it becomes boring. It would be better for you to suggest doing walking exercise with others, as a group." Subtheme: Belief that exercise may cause harm 	<p>Physical facilitators</p> <ul style="list-style-type: none"> Tailored walking program "I would walk if it does not cause pain in my legs, perhaps light, gentle exercise for people like me... Are there alternate exercises?" <p>External/environmental facilitators</p> <ul style="list-style-type: none"> Subtheme: Good/safe environment "I am fortunate to be able to exercise anytime because I live in a good neighborhood." Subtheme: Suitable place to exercise and socialize "If we were provided a free, safe, suitable place to gather together to exercise, like some calisthenics, and do some talking, that would satisfy older people and it will force them to set up a goal and exercise." "We want to talk because we are lonely." Subtheme: Having someone to exercise with/ walking club "I was able to exercise for decades because I did it with my wife. We hike together." "Three of us have been walking together once a week for more than 5 years." "If I had an exercise buddy to walk with, and have fun while walking, that would be more conducive for older people. Making one's own circle and meeting up every day provides motivation to exercise consistently." <p>Internal/perceived facilitators</p> <ul style="list-style-type: none"> Subtheme: Having a primary goal (fun, enjoyable, meaningful) to achieve for which walking is necessary "I go to a store to walk and to do brain exercise (check the prices and compare the items) to prevent dementia." "I walk the dog and pray while walking. It is like killing three birds with one stone. If I think of it as a responsibility, it would not work well." "I like dancing. I used to walk to go to a Zumba class." "I pick up garbage on the street while walking. If we gather at some places and do it together, that will give us a motivation. We can walk while we pick up some garbage on the street and help make streets clean." Subtheme: Positive reinforcement and/or encouragement "If you can make this program done at a university and have them participate in the

BARRIERS THEME	FACILITATORS THEME
<p>“Exercise and walking should be done differently depending on your age. Too much exercise, beyond normal walking for daily activities, can be dangerous for older adults.”</p> <ul style="list-style-type: none"> • Subtheme: Fatalism <p>“Longevity depends on personal efforts but still mainly it is on God’s will. Can we choose to live longer? Sometimes it won’t happen even if we exercise all the times.”</p>	<p>(stroke) prevention walking program it would be good. That would help older people to come out from their homes and exercise.”</p> <p>“What older people need is something that will motivate and interest them.”</p> <p>“If teachers like you could come to where we exercise once in a while and give good education lessons about health, and that would be a good way to encourage older people to walk and exercise.”</p> <ul style="list-style-type: none"> • Subtheme: Reward/gift <p>“I think some sort of reward or gift would help.”</p> <ul style="list-style-type: none"> • Subtheme: Seeing positive results; Better health and looking good <p>“I care about my look and body shape. Walking keeps me in good health and look.”</p> <p>“I exercise to release my muscle for better blood circulation and see good blood sugar control with walking.”</p> <p>“It helps with maintaining health after surgery combined with stretching. It becomes really good exercise when I see walking is good for my body.”</p> <ul style="list-style-type: none"> • Subtheme: Personal desire to live healthy until death without losing dignity/having to go to nursing home <p>“It is not very important to live just long but how you live; to live healthy and happy, not to be burden on family.”</p> <p>“Yes, live healthy and active independently, not having to go to a nursing home.”</p> <p>“You have to focus on healthy life not to cause a lot of medical expenses to your family and society.”</p>