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Understanding Cultural Issues in the Diabetes Self-Management Behaviors of Korean Immigrants

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What is This?

Understanding Cultural Issues in the Diabetes Self-Management Behaviors of Korean Immigrants

Purpose

The purpose of this study was to explore potential factors affecting the self-management behaviors of Korean immigrants with type 2 diabetes mellitus (KIT2Ds).

Methods

A qualitative descriptive design guided this study. Semistructured interviews lasting 45 to 60 minutes were conducted with 20 KIT2Ds in the participants' preferred language; in all cases, this was Korean. Each interview was audiotaped, transcribed, and analyzed using conventional content analysis. Data analysis was performed in two steps. The data written in Korean were initially analyzed by 3 bilingual researchers. A qualitative researcher then participated in the analysis to refine the findings for presentation to an English-speaking audience while staying true to the data and preserving the nuanced Korean meanings.

Results

The mean age of the sample was 64. 5 ± 11.6 years (9 men and 11 women). The mean years of staying in the United States and age at diabetes mellitus diagnosis were 23.6 ± 9.7 years and 52.5 ± 12.3 years, respectively. Three major ideas were identified: (1) issues on treatment regimen related to medications and diet, (2) resources that helped or hindered ability to manage diabetes, and (3) the physician-patient relationship.

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Conclusions

Important cultural nuances need to be addressed to better prepare KIT2Ds to manage their diabetes more effectively. A culture-specific program should extend beyond a diabetes self-management education delivered in Korean language. Rather, content and education methods need to consider acculturation effects on diabetes management behaviors.

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The United Stated is referred to as a "melting pot" because the population consists of many migrants from various countries. Over the past 20 years, the United States has experienced a large wave of immigration from Asia.[1] For instance, in the state of Georgia alone, there was a 337% rate of growth of Korean Americans from 1990 to 2010.[2] These Asian Americans inevitably go through acculturation.

Lifestyle, disease prevalence, disease perception, and health-seeking behaviors are changed during migrants' acculturation process, and their health care needs are different from individuals residing in their original countries and from US-native individuals.[3,4] Investigators have found, for example, that Asian Americans were less physically active and experienced dietary changes (ie, Americanization of the Asian diet) during acculturation, which increased their risk for developing type 2 diabetes (T2D).[5-7] Consequently, diabetes prevalence is much higher among Asians Americans compared to Asians living in their countries of origin.[8,9]

Findings from a US national survey showed that diabetes prevalence among Asian Americans is more than 60% higher than among non-Hispanic whites, even after controlling for body mass index.[10,11] Poor diabetes management, however, is frequently reported in this population.[10,12,13] Because diabetes is a chronic, progressive disease, self-care behaviors to achieve optimal glycemic control are crucial to prevent and delay diabetes complications.[14] Diabetes self-management education (DSME) is recommended as a way to improve knowledge, skills, and competence for diabetes patients.[14,15] Asian Americans, however, often do not take full advantages of DSME due to language and cultural barriers.[2,13,16,17] Culture-specific DSME for Asian Americans, including Korean Americans, has been identified as an important need.[13,18,19]

T2D is the fourth-most common disease among Korean Americans,[20,21] and improving diabetes self-management behaviors are required. Very limited information, however, is available to design an effective and efficient DSME program for Koreans Americans. As a first step in expanding knowledge to design culturally appropriate DSME for Asian Americans, in this study we explored views about diabetes management among Korean immigrants, the fastest-growing group of Asian immigrants in the United States.[20,22] Ultimately, our goal is to design scientifically based, culturally specific diabetes programs to reduce the health disparities of Asian Americans.

Methods

Design

A qualitative descriptive design guided this study.[23] Such a design allows researchers to remain closer to their data; it also requires less abstract, less interpretive representations of the results. This design has few preestablished theoretical or philosophical tenets, making it useful for describing a phenomenon about which little is known. Thus, this approach was well suited to describing the self-management behaviors from the perspective of Korean immigrants with T2D (KIT2Ds).

Setting and Participants

After Institutional Review Board approval from Emory University, where the principal investigator was affiliated, participants were recruited from the metropolitan Atlanta area in 2011. Recruitment procedures involved posting flyers on ethnic e-community bulletin boards as well as at community locations, such as clinics, churches, and stores. In addition, potential participants were referred by ethnic physicians, community lay leaders, and study participants. The inclusion criteria required participants to be first-generation Korean Americans (ie, Korean immigrants) who were at least *18 years old*, diagnosed with T2D, and able to read, write, and speak in Korean or English. Individuals were excluded if they were diagnosed with other diseases requiring physician-supervised dietary and exercise regimens, had a hearing or speaking impairment despite using aids, or were pregnant.

Table 1

Major Interview Questions[a]

> 1. Tell me what "health" means to you?
> 2. Tell me what "type 2 diabetes," "diabetes treatment," and "diabetes self-care" mean to you?
> 3. Tell me what you do to manage your diabetes on a typical day.
> 4. Please tell me about your relationship with doctors or health care professional.
>
> [a]Probes were used as appropriate with each question.

A total of 25 individuals contacted study staff about possible participation. Of these, 5 had issues that precluded their participation in the study (eg, 3 lived outside the state and were unable to visit for a face-to-face interview; another showed reservations about being interviewed; and the last was undergoing dialysis). Thus, 20 individuals were scheduled for a face-to-face interview at a mutually agreed-on time and place (eg, informant's home or business place, principal investigator's office, or a community place).

Data Collection

Prior to the interviews, copies of the consent form and questionnaires (sociodemographics, medical history, and family diabetes history) were sent by mail to the participants for their review. The materials were written in both English and Korean to allow the participants to choose the reading language they preferred; in all cases, this was Korean. Before the interview, the participant and a bilingual interviewer reviewed the consent form to obtain informed consent. Then, semistructured interviews lasting 45 to 60 minutes were conducted in the participant's preferred language; in all cases, this was Korean.

The principal investigator or a trained bilingual nursing master's student conducted in-depth interviews based on an interview guide developed from literature review and reviews of Drs Dunbar and Yang (see Table 1). The interviewers had prior experience in conducting semistructured interviews, including interviews with Korean immigrants. Also, they had an intimate understanding of the culture and the language. Debriefing sessions in the research team were completed after each interview, with information

from the debriefing used to refine the next interview while not digressing from the major interview questions.

Although the investigators did not expect to interview participants as couples, 6 of the 9 male participants' wives accompanied their husbands to the interviews. The men wanted their wives present during the interviews. This request was honored. Although the men were interviewed, they frequently turned to their wives for information. For example, when asked about diet and medications, the men would turn to their wives for the answer.

For 2 additional couples, both the husband and the wife had diabetes, making all 4 of these individuals eligible for the study. The husband and wife in one of these couples were interviewed separately because they did not live together; the husband had informed his wife about our study. In the other couple, the wife was present while the husband was interviewed, but the husband was not present when the wife was interviewed. Thus, data were collected from 7 male informants whose wives were present during the interview, 2 male informants without wives, and 11 female informants.

Information on age, sex, years of education, current income, and health insurance was collected using a self-reported sociodemographic questionnaire. The level of acculturation was assessed on the basis of a proxy measure that included items on the length of residence in the United States, education completed in the United States, and language proficiency (speaking, writing, and reading of Korean and English). Language proficiency was evaluated using an investigator-developed 11-point scale ranging from 0 (not proficient) to 10 (very proficient) on which participants self-rated both their English and Korean proficiency. Diabetes-related information was collected, including the length of time since being diagnosed with T2D, length of time taking oral diabetes medications or insulin, and any diabetes complications.

Upon completing the interviews, all participants received a $20 gift card and an education leaflet written in Korean that included information on diabetes self-management and community resources. Also, a debriefing was done with participants after the interview, as a validity check to verify the correctness of ideas identified during the interview.

Data Analysis

The data were analyzed according to conventional content analysis as described by Hsieh and Shannon.[24] Conventional qualitative content analysis focuses on text

data and is used when the aim of a study is to describe the topic under consideration—in this case, the self-management behaviors of KIT2Ds. When using conventional content analysis, the codes are derived from the data, not preexisting structures. Codes are initial labels applied to the data, which are then used to organize data into cohesive categories. By avoiding the use of preconceived codes and categories to guide the analysis, findings from this study better reflect the key concepts about T2D as experienced by these Korean immigrants.

Immediately after each interview, digitally recorded interviews were transcribed verbatim by the research staff; 1 author proofread each transcript to check accuracy. Early in the analysis, the bilingual members of the team identified that participants often used idiomatic expressions that were very hard to translate from one language to the other regardless of proficiency in both languages.[25] After careful consideration and input from an experienced qualitative researcher (Dr Jennings), it was decided that line-by-line translation from Korean to English was not suitable for this analysis. The data in Korean language were therefore initially analyzed by 3 bilingual researchers.[25] The qualitative researcher then participated in the analysis to refine the findings for presentation to an English-speaking audience while staying true to the data and preserving the nuanced Korean meanings.

Results

All participants were first-generation Korean immigrants with T2D. The mean age of all participants was 64.5 ± 11.6 years (range, 37-77 years). The average years of residence in the United States and education were 23.6 ± 9.7 and 12 ± 4.2 years, respectively. Three quarters of the participants (n = 15) did not receive any education in the United States. With regard to the language skills, the majority of the participants expressed high confidence to speak (9.9 ± 0.6), read (9.8 ± 1.1), and write (9.4 ± 1.6) Korean. By contrast, they reported low confidence to speak (3.3 ± 2.9), read (3.5 ± 3.1), and write (3.4 ± 3.0) English. Of the 13 participants (65%) who had health insurance, 10 were Medicare beneficiaries. The average age of T2D diagnosis was 52.5 ± 12.3 years.

The participants in this study expressed views about being a Korean immigrant in the United States and managing T2D that clustered around 3 major ideas in response to the interview questions (see Table 1): (1) issues on treatment regimen related to medications and diet, (2) resources that helped or hindered their ability to manage diabetes, and (3) the physician-patient relationship.

Treatment Regimen

In Asian cultures, optimizing natural energy flow through balancing yin and yang is important to maintain health.[13,26] Aging, artificial agents, or disease characteristics influence yin-and-yang balance. Natural agents (eg, "good" food, oriental medicine consisting of herbs) are important to Asians as a means of restoring yin-and-yang balance and achieving good health.[13,26] Adherence to treatment regimens among KIT2Ds was affected by this belief.

Managing medication "my way". Koreans perceive health as having no symptoms, no diagnosed disease, no prescribed medicine, and no need to see a physician regularly. As noted by a 55-year-old woman, "I rarely experience diabetes symptoms so I am in a dilemma about whether I should keep taking my [prescribed] medication." Part of the dilemma around this decision making came from concerns about taking prescribed Western medications made from chemical substances that generate an imbalance of yin and yang. Such an imbalance is perceived to eventually result in an unhealthy condition. This concern was heightened when long-term medications (eg, diabetes medication) were needed. Thus, a common practice among KIT2Ds was to take no prescribed medications when their diabetes was asymptomatic. Use of medications was based on a self-assessment of how the KIT2Ds were feeling each day rather than taking prescribed medications regularly.

Another approach to medication management among KIT2Ds was to take the medications according to self-devised plans independent of physician orders. For example, KIT2Ds reported taking diabetes medications prescribed for other people. This practice was exemplified by a 62-year-old man who reported that he "occasionally took [his] mother's diabetes medication" after he was diagnosed with diabetes. These behaviors may result from the perception that seeing a doctor or taking prescribed medication connotes being unhealthy. These behaviors may also reflect poor knowledge about diabetes (eg, long-term organ damage starts from asymptomatic diabetes or even prediabetes).

Concern about hypoglycemia was a strong factor in self-directed medication-taking behavior. Of the 20 informants, 5 had experienced symptoms related to hyperglycemia at least once, whereas 19 had experienced

hypoglycemia previously. The experience of high and low blood sugar was remembered in distinctly different ways. Hyperglycemia was recalled as a condition that did not have dire consequences—it was experienced as fatigue, blurred vision, and slow healing of cuts and sores. By contrast, hypoglycemia was remembered as a near-death experience. To avoid or reduce hypoglycemic episodes, therefore, the participants modified their medication doses and schedules to avoid or reduce hypoglycemia. A 70-year-old woman with neuropathy and retinopathy expressed pride in being called "doctor" by the clinic nurses because of how she took independent action to adjust her medication. The woman believed that she had to make these adjustments: "How does a doctor know about my daily diet or whether I skipped a meal?"

The strategies that KIT2Ds used to manage their diabetes medication affected their medication-taking behaviors related to other prescribed medications. For instance, a common practice was explained by a 76-year-old woman who had no diabetes complications but took hypertension and high cholesterol medications. She took an all-or-nothing approach to her medication management, opting to forego all her medications when she did not take her diabetes medication. In her view, "if my sugar level decreases, my blood pressure will also decrease. Isn't that right?"

Independently determined medication management strategies also governed how KIT2Ds used insulin. Because insulin was viewed as a medication that would be required for the rest of one's life, Korean Americans considered having to use insulin as a sign of the final stage of diabetes. Having to take insulin initially worked as a trigger for participants to follow their entire diabetes regimen, including diet and exercise. Once the KIT2Ds actually started taking insulin, however, they were less consistent with following their overall diabetes management plan. They enjoyed the benefits of insulin and used the insulin to manage their diabetes, often stopping other treatment strategies (ie, healthy eating, exercise) and putting themselves in a vulnerable position for uncontrolled diabetes. An example of this management strategy was voiced by a 76-year-old man on insulin therapy who said, "I am no longer holding back on my cravings for ice-cream or chocolate. As long as I take insulin after [I eat them] I will be OK."

Struggling to follow dietary recommendations. Although eating healthy and being active are both important to diabetes management, KIT2Ds reported more struggles to follow recommended dietary practices.

These struggles originated from maintaining traditional Korean views of food, having absence of culturally sensitive diabetic dietary guidelines, following dietary recommendations in social gatherings, conforming to traditional role expectations, and finding American foods that met their taste preferences.

Traditionally, in Korea there are foods for people who are wealthy—these are "good" foods, such as meat, poultry, and white steamed rice—and foods for people who are poor—these are "bad" foods, such as vegetables and multigrain rice (eg, barley rice). Koreans believe that sick persons should have "good" food to restore their health condition, and the quantity of "good" food is of little concern. An old Korean proverb illustrates the meaning of food to KIT2Ds: "There is no disease to be cured by medications if it is not cured by food."

These beliefs about "good" and "bad" food are not consistent with the dietary guidelines proposed by the American Diabetes Association (ADA).[27] According to the association, no food should be avoided for people with diabetes, although the emphasis is on small portions. The ADA does recommend diets that are fiber rich (14 g per 1000 kcal and ≥ 5 cups of fruits and vegetables), low calorie, and low fat (saturated fat < 7% of total calories). Participants, however, expressed that "the joy of living was gone after I knew [that I had diabetes] since I can't enjoy all the delicious ["good"] food anymore."

The traditional views of food also made it difficult for many KIT2Ds to follow their dietary regimens in social gatherings where other Koreans were present. "Good" food was often served to please guests, and eating until feeling full was an expected behavior to show gratitude for the invitation. This belief was particularly strong in older KIT2Ds, who felt sorry and humiliated when they had to follow a diabetes diet in the presence of other people, because it brought additional attention to them from others. In the Korean culture, maintaining group harmony is an important obligation as a group member. Requiring special attention disrupts the group harmony. Therefore, the KIT2Ds succumbed to social pressure, ate a larger-than-advised portion of "good" food, or tried to avoid social gatherings. Avoiding social gatherings, however, isolated individuals with diabetes from their Korean friends, yet participants voiced this as a strategy to avoid situations involving meals, because they could not "eat whatever delicious food [the other guests] eat."

Even with eating at home, there were challenges related to accommodating diabetes dietary recommendations.

However, these challenges were perceived differently by men and women based on role expectations in Korean family dynamics. Korean men were expected to take care of issues outside the family (eg, making a living), and Korean women were expected to take care of the family. Sacrifice is regarded as part of the maternal role; therefore, "caring for family is a priority" that took precedence over the well-being of Korean women. These role expectations influenced how dietary recommendations were followed. For Korean men (ie, husbands) with T2D, following dietary regimens at home was not a problem, because "my wife prepares it for me." Although the foods were not those preferred by the family, wives of men with T2D tried to use foods recommended by the ADA when preparing family meals. They cooked with healthier foods, such as beans and barley, steamed brown rice, vegetables, and fish, instead of meats/poultry; they also used no sugar and less salt. By contrast, Korean women (ie, wives) with T2D faced greater challenges in following a desirable dietary plan. These women expressed feelings of guilt when they served meals based on ADA recommendations because their families were not pleased with these meals. When women experienced tension and conflict between old and new dietary habits, they followed the path of sacrificing for the family and gave into the temptation to follow original recipes preferred by the family.

Another struggle to follow dietary recommendations was that KIT2Ds often faced challenges finding American foods that met their food preferences and interests. This challenge was especially common for people working outside their ethnic community. Lack of knowledge about healthy and acceptable American food choices had a profound effect on KIT2Ds because of the traditional belief that food and eating are basic components of maintaining physical and psychological health. The participants voiced a number of unpleasant emotions related to not knowing which American foods to choose. These included feeling isolated, frustrated, miserable, and sorrowful. A 67-year-old male participant whose diabetes was well managed said that it took him a "long time" to figure out what to eat when he was on business trips. He feels like "a girl watching her weight" as he eats "chicken breast marinated with jalapeno and vinegar." He believed that he could manage his diabetes better if a "diabetes expert" talked to him about the "American food items" that would be suitable for him.

A final aspect of struggling to follow dietary recommendations is that KI2TDs were left to make sense of 2 sets of dietary recommendations, neither of which worked well for them in their immigrant status. The ADA offers dietary recommendations that might work for Americans with diabetes, and the Korean Diabetes Association offers dietary recommendations for Koreans with diabetes. Neither guidelines consider acculturated dietary patterns, substitutes of food selections, and different measurement units (eg, ounce vs gram). In addition, there are discrepancies between the 2 dietary guidelines regarding carbohydrate and fat intake as well as portion size, making it difficult for KIT2Ds to understand and follow the dietary regimens.[6]

Resources to Manage Diabetes

Participants expressed how certain resources either helped or hindered them in managing their diabetes. Of importance to these individuals were time and community resources, health insurance, and transportation.

Time and community resources. Younger KIT2Ds cited lack of time as a big barrier for them to be physically active. This issue was based on their family structure as immigrants and how this family structure affected their commitment to work. The majority of the younger Koreans ran small family businesses, often requiring them to work long hours (eg, 7 AM to 10 PM) 6 days per week. Because extended family did not live nearby, the younger Koreans were left to raise their children and take care of their family businesses without help from family members. The main source of support identified by the younger Koreans was from church activities; that support was confined to Sundays. Consequently, it was difficult for younger KIT2Ds to follow recommendations for being active; there was insufficient time to manage daily commitments related to work and their children and also follow an exercise program.

Once children were grown or the workers retired, time became a more abundant resource, allowing individuals more opportunities to remain physically active. Participants commented about exercising regularly once the "barrier" of operating a family business was removed. Unlike in Korea, Korean immigrant seniors had access to many free/low-cost community resources in the United States, such as ethnic senior day care centers, senior health centers, the YMCA, and Medicare and/or Medicaid programs (ie, assistance with medical expenses). These resources made immigrating to the United States worthwhile for the older KAT2Ds.

Health insurance. The US health insurance system is quite different from the nationalized health insurance plan in Korea. When Koreans initially immigrate to the United States, most are relatively young, feel healthy enough not to require health care, struggle to deal with day-to-day living, and are uninformed about the US health care system. In particular, they are unaware of how important it is to have health insurance to assist with the cost of managing disease.

When Korean immigrants are diagnosed with a chronic disorder such as diabetes, they often have inadequate health insurance coverage due to their type of work (eg, small business, temporary position) and relatively small income, or they cannot buy health insurance because of a preexisting condition. Several oral medications (eg, metformin) were available at no additional cost as long as KIT2Ds had a prescription, which was often obtained at a low cost from volunteer doctors. However, relatively new and advanced oral medications (eg, pioglitazone) and insulin were not affordable for uninsured/underinsured KIT2Ds.

Most health insurance challenges were expressed by participants who had poorly controlled diabetes rather than those with controlled diabetes. These participants often required advanced pharmacological therapy (eg, insulin) and more frequent blood monitoring, in addition to managing other diseases. These individuals, however, held off on following recommended insulin therapy until they became Medicare beneficiaries. The eligibility for Medicare was a turning point that changed the behaviors and mind-sets of KIT2Ds because the treatment options expanded greatly without a large cost. A 70-year-old woman who also had cardiovascular disease commented that she learned that she "was a diabetic 20 years ago" but ignored it for various reasons, including "money." Once "Medicare started paying for [her] pills," she took her medication regularly.

Another consequence of having Medicare coverage was how these KIT2Ds viewed insulin. Once the cost of the medication was no longer an issue, people requested a prescription for insulin even when their physicians indicated that it was not needed. The thinking behind this was the belief, as expressed by a 76-year-old man who experienced frequent hypoglycemia, that "insulin works much better in managing blood sugar." This belief was derived from discussions with a friend who took insulin and ate anything without reservation, like the case described in the treatment regimen section.

Transportation. Limited access to transportation was a big issue with KIT2Ds. Older women experienced more challenges than their male counterparts because many of them never learned how to drive. As female KIT2Ds aged and male family members were no longer able to drive them, transportation became a serious issue that contributed to health disparities because it created "a barrier to see a doctor." A 70-year-old woman with neuropathy and retinopathy changed physicians from a specialist to a generalist, choosing to go to a clinic that offered transportation. More often, such an option was not possible, leaving people without the means to get to a health care provider.

Physician-Patient Relationships

In Confucian-based cultures such as Korea, social hierarchy and "social face" (ie, social respect) are important when people interact with one another. Although age is a strong determinant of social hierarchy, age takes second place to someone in a higher social position. Physicians, for instance, are given a great deal of social respect because they are well educated and have professional knowledge. This hierarchy and social face, however, are maintained only if the person behaves with dignity. Social face could be diminished if the person (eg, a physician) is evaluated by another (eg, a patient) as lacking the appropriate attributes and behaviors to receive the respect.

Although a physician-patient relationship was desired for successful management of T2D, most expressed disappointment with their physicians (all providers for this group were physicians). KIT2Ds expressed a desire for a relationship with a physician where they could (1) voice their concerns and questions, (2) learn in-depth information about diabetes, (3) acquire practical skills for diabetes care, and (4) receive appropriate emotional support as well as sympathy and understanding of the challenges involved with juggling the facets of diabetes self-management. However, issues related to social hierarchy, social face, and lack of in-depth knowledge in diabetes care affected the physician-patient relationship.

Desire to become a partner. The physician's high social position created a context for the relationship with patients in which physicians directed the content of the relationship; the relationship was reinforced by the cultural norm that patients would not "talk back." This cultural dynamic interfered with attributes that the KIT2Ds wanted in

physicians, including being treated like a person and becoming true partners in managing their diabetes. Often, physicians were viewed as medication prescribers. The perceived lack of connecting on a more personal level widened the distance between the patients and the physicians, and patients regarded physician comments as inconsiderate or unsympathetic because the advice was not personalized and it failed to take into account the KIT2Ds' individual concerns or situations. A 37-year-old insulin-dependent woman with neuropathy expressed that her physician's recommendations left her feeling like he did not "care about your hassles or challenges."

Given the unequal relationship and unmet needs for diabetes education, some participants preferred to see American physicians despite the language and cultural barrier. There was a perceived belief that even American generalist physicians had superior skills compared to their Korean counterparts. However, the true reason to see American doctors was that KIT2Ds wanted to be a partner to manage their diabetes: American physicians were perceived as being more sympathetic and ready to explain patients' health condition than Korean doctors. A 68-year-old man voiced, "I would better manage my diabetes if doctors provide detailed information."

Desire to be seen by a specialist. The majority of Korean physicians are primary care providers, not diabetes specialists. Like persons with chronic disorders, KIT2Ds felt that they knew more about their disease (ie, diabetes) than general practice physicians. A 70-year-old woman with neuropathy and retinopathy described herself as "half-doctor (specialist)." She, however, had inaccurate information about diabetes care and still looked for practical, realistic, specific medical advice, which she rarely obtained from the ethnic doctors.

Similar complaints were replicated by another informant. A participant was advised to not eat noodles or rice. When she reasked the physician about the food restriction, he replied that he did not know much because he rarely ate Korean food. Thus, she self-studied to find out appropriate food items and developed mistrust with the physician. This physician response may be explained in 2 ways, though. First, the primary care provider may have been unfamiliar with dietary guidelines for diabetic patients and resources for the referral (eg, certified diabetes nutritionist). This possible lack of knowledge could trigger a cultural need related to professionals maintaining their "social face and the social hierarchy." The physician may have been uncomfortable

admitting any lack of knowledge to a patient. Second, the degree of acculturation may differ for physicians and patients, which affects food preferences, alternative food choices, and communication style. Physicians may be more acculturated due to their education, English proficiency, or age. And physicians may not fully understand the patient's questions (or struggles) concerning diet or alternative choices for ethnic foods. Since a physician and a patient speak the same language, Korean, they both may be unaware of this communication gap. Consequently, the patients were disappointed in their physicians' recommendations and decided not to follow them on the basis of a lack of trust in the physicians.

This distance also contributed to patients using prescribed medications based on their trial-and-error experiences rather than taking doctor's advice to avoid hypo- or hyperglycemic episodes. When KIT2Ds needed medical advice, they turned to their personal network of friends and family or traditional Oriental medicine. Mass media, such as ethnic newspapers, ethnic television, or Korean books, were frequently cited sources for obtaining diabetes information that patients wished were available from their physicians.

Discussion

Through interviews with 20 KIT2Ds, 3 factors influencing their diabetes self-management behaviors were identified: (1) the treatment regimen—both medication management and dietary recommendations, (2) resources to manage diabetes, and (3) physician-patient relationships. Although these issues might appear to be similar to those expressed by anyone with diabetes, there were important cultural nuances that need to be addressed to better prepare KIT2Ds to manage their diabetes more effectively. For instance, balancing yin and yang is important to maintaining health in Asian cultures. Yin medications and foods are key factors in reestablishing the imbalance created by diabetes, a yang disease.[13,26] During the interviews, many KIT2Ds voiced that they had taken Oriental medicine or foods until they experienced actual/serious diabetes signs and symptoms. Understanding a conflict between cultural beliefs and prescriptions and providing practical and emotional support to solve the conflicts are essential to successfully helping KIT2Ds achieve optimal glycemic control.

Likewise, the role of sex in following dietary recommendations has a strong cultural influence that warrants attention by health care providers. Most female informants

expressed guilt when preparing family meals based on the dietary guidelines of the ADA, although the food would be good for not only her but also her entire family. This guilty feeling was gone when the women were aware that their family members (eg, husband) also needed dietary changes due to aging or diabetes heredity. After the awareness, the women became active adherents of dietary regimens. Also, wives played an important role in managing diabetes in the Korean culture. During the interviews, there were frequent indications of how prominent women are in helping to manage T2D for their husbands. Therefore, couple and family interventions would be a good approach to motive KIT2Ds to follow dietary regimens.

Cultural beliefs about social hierarchy and social face (ie, social respect) influence how Korean Americans and physicians interact. These beliefs could have a negative influence in building physician-patient relationships. However, these cultural beliefs could generate a positive impact on treatment regimen adherence among KIT2Ds, if physicians obtain respect and trust from patients. There is a cultural agreement that physicians hold a higher position to lead "correct" directions and that patients should follow physician's advice. The remaining research question is how to build a trustworthy relationship between physicians (ie, health care providers) and patients.

The findings from this study are similar to those in studies with other Asian Immigrants, such as Chinese immigrants with T2D, despite differences in language and ethnic backgrounds. Common findings from both ethnicities include health-seeking behavior (yin-and-yang balance vs control),[18] the value placed on food (good vs bad food, family or social gatherings), the need for culture-specific dietary guidelines (food substitutes) and measurements (portion size),[11,17,18] resources (time, insufficient health insurance, transportation),[17] and unequal relationships with physicians.[17-19] Although these similarities were not expected, they were not surprising when the investigators considered features of the 2 ethnic groups, such as their philosophy (Confucianism), health beliefs (yin-and-yang balance, value on foods), and dietary patterns (rice-based meals).[11,18,28] Korean and Chinese immigrants eat rice-based meals although their dietary patterns change during acculturation[5,7]; they have traditional concepts of good and bad food to restore their energy balance; and they expect a certain eating behavior in social gatherings. Moreover, the measurement units in their home countries (metric system) are different from those in the United States (British system), which creates confusion to follow the dietary regimen.[6]

In addition, migration history and acculturation factors (favoritism of the receiving society based on appearance and language, immigration age) also contribute to generate the similarities between Chinese and Korean immigrants with diabetes.[29] First-generation Chinese and Korean Americans became immigrants to find a better life in the United States. However, while living in the United States, they perceived discrimination from the dominant society members, due to appearance and language barriers (foreign accents, inability to speak English). Thus, they wish to be assimilated into the receiving society to minimize discrimination, although the majority of them still reside in ethnic communities where their heritage culture is pervasive. Accordingly, they are living in 2 cultures and involuntarily experience more cultural conflicts than people who choose other acculturation strategies (separation, integration, or marginalization).[29] This challenge leaves them feeling more distressed, and they experience much higher prevalence of diabetes and poor diabetes self-management behavior.[11,29,30]

Strengths and Limitations

Researcher bias may be an issue to extend our findings to a wider population. However, multiple bilingual researchers were involved in the data analysis to correctly and carefully interpret the data. In addition, we obtained a Korean American researcher's views as peer review.

The cross-cultural qualitative study design may provide a study limitation despite our meticulous efforts—namely, a 2-step data analysis. Initial data analysis using scripts in Korean were conducted by 3 bilingual researchers. Then, 1 qualitative expert actively participated in the analysis to refine the findings for presentation to an English-speaking audience. We acknowledge that, despite being a strength, this approach may also be a limitation of the study, which does not follow a conventional approach (eg, line-by-line translation of the full scripts). However, this approach allowed us to maintain cultural nuances and connotations embedded in Korean scripts. To ensure content equivalence, multiple discussions were held among team members until agreement was reached for the findings and interpretations.

Implications for Practice

Despite the growing scientific evidence about Asian immigrants with diabetes,[12,13,17,19,21] this study offers

unique perspectives on rethinking concepts of diabetes management and acculturation. Although researchers have addressed the possible similarities among Asian immigrants with diabetes coming from the Confucian society (eg, Chinese, Korean, Japanese),[19] little evidence was available to identify similarities and differences in diabetes self-management behaviors among Asian immigrants so far. Studies currently available emphasized the need for a culture-specific diabetes education program for each Asian ethnicity, since they viewed Asian immigrants as an original ethnicity rather than as "immigrants" requesting acculturation process. Thus, the findings of this study could be incorporated to design culture-specific DSME and to test the effectiveness of the program among Asian immigrants in the future.

Culture-specific DSME needs to be developed and tested among Asian Americans. The program should be far beyond DSME delivered in an ethnic language. Rather, contents, education strategies, and modality need to be innovative to consider cultural beliefs, acculturation effects on diabetes management behaviors, vulnerability, and resources.

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