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Spousal Support in Diabetes Self-Management among Korean Immigrant Older Adults

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Abstract

We investigated domains of spousal support among diabetic Korean seniors and their spouses. We conducted two focus groups with diabetic participants and three with their spouses from the greater Los Angeles Korean community asking participants to describe the spousal support given or received for diabetes self-management. Each group was composed of 4–9 participants. Focus groups were audiotaped, transcribed, translated; two independent coders identified domains of spousal support. Content analysis identified six domains: diet, exercise, emotional support, medical regimen, communication with clinicians, and information. Diet was the most frequently described domain across all groups. Gender differences were noted in domains of information, communication, and treatment among diabetic participants. Both diabetic and spouse participants identified individualizing spousal support and recognizing diabetes management as teamwork as important elements of successful spousal support. Spousal support education for Korean seniors might have the greatest impact by incorporating these six domains, addressing gender differences, providing tips on individualizing support, and cultivating teamwork.

Keywords

type 2 diabetes; self-management; spousal support; Korean seniors

Diabetes mellitus (DM) is a chronic illness that affects 27% of seniors – persons aged 65 years or older – in the U.S. (Centers for Disease Control, 2013). Korean American seniors are one of the fastest-growing older adult populations (U.S. Bureau of the Census, 2010; Sohn, 2004; Sohn & Harada, 2004), and the rate of diabetes among this group is

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substantially higher than that of the general older population and other ethnic minority seniors (California Health Interview Survey [CHIS], 2011). The cornerstone of DM care is patient self-management, consisting of health behavior and lifestyle changes and adherence to a prescribed treatment regimen (American Diabetes Association, 2014). Successful self-management prevents diabetes-related complications, but is very challenging for patients (Gallant, Spitze, & Grove, 2010; Xu, Pan, & Liu, 2010). Despite evidence that controlling glucose and other coronary heart disease risk factors (blood pressure and lipids) decrease rates of micro- and macro-vascular complications from diabetes (United Kingdom Prospective Diabetes Study Group, 1998), achieving optimal control remains elusive to most Korean seniors (Author, 2011; Author & Other, 2009; Kim et al., 2009; Kim et al., 2001). An effective self-management intervention to optimize glycemic, blood pressure, and lipids control among Korean seniors has tremendous public health potential to improve health outcomes of this vulnerable population.

Family support, particularly support from spouses, has been associated with better day-to-day diabetes management and outcomes among White, Chinese American, and Korean American seniors with DM (August & Sorkin, 2011; Beverly, Miller, & Wray, 2008a; Chesla, Chun, & Kwan, 2009; Author, 2009; Fisher, Chesla, Chun, Skaff, Mullan, Kanter, & Gardiner, 2004; Iida, Parris Stephens, Rook, Franks, & Salem, 2010; Stephens, Rook, Franks, Khan, & Iida, 2010). These descriptive studies suggest that spousal support components added to self-management education interventions may succeed in improving diabetes self-management among Korean seniors. However, detailed information on spousal support in DM self-management among Korean immigrant seniors, such as what types and formats of spousal support are associated with better self-management, is lacking. In order to develop a culturally tailored spousal support intervention to improve self-management among Korean seniors with DM, a better understanding of the nature of spousal support (e.g., domains of support) in this population is needed.

Spousal support in particular is attractive as a social support target for a self-management intervention among diabetic Korean seniors because traditionally, family is the primary source of support in Korean culture, and Korean seniors have smaller social support networks compared to other ethnic groups (Wong, Yoo, & Stewart, 2007). Korean Americans seniors are one of the most linguistically isolated senior groups (U.S. Bureau of the Census, 2010), and as such are less likely than White Americans to rely on their broader social support networks for help when coping with stress. When they do access social support, it is typically from family members, most commonly the spouse (Author, 2009; Sohn, 2004; Song, Song, Han, Park, Nam, & Kim, 2012). Because of this cultural uniqueness surrounding family support, a successful educational intervention designed to improve DM outcomes in Korean immigrant seniors should consider incorporating strategies for harnessing and bolstering the utility of family support, particularly spousal support.

As an initial step in integrating spousal support into a diabetes self-management intervention for Korean seniors, we conducted focus groups to understand the characteristics of spousal support for diabetes self-management among Korean diabetic seniors and their spouses. Our objectives for this study were to: 1) identify domains of spousal support in DM self-

management; 2) qualitatively compare the domains of spousal support expressed by diabetic patient participants with those of their spouses; 3) explore perceptions of offering and receiving spousal support within this group.

Conceptual Framework

The conceptual framework for this study derived from the literatures on social support and marital status. Psychological and social literatures have documented the consistently strong link between social relationships and health: older adults with family, friends, and neighbors they can count on have better health outcomes with their chronic illnesses than do adults who are socially isolated; and married couples have more protective health behaviors and health outcomes than do unmarried people (Berkman, Glass, Brissette, & Seeman, 2000; Burg & Seeman, 1994; House, Landis, & Umberson, 1988). Social relationships affect health through social support (e.g., emotional, instrumental, appraisal, and informational), social influence (e.g., shared norms around health behaviors), and social engagement (e.g., definition and reinforcement of social roles and participation) (Berkman et al., 2000).

Methods

Design

We used focus groups to identify domains of spousal support for diabetes self-management. This data-generating format has proven successful to identify construct domains of support in other samples of older adults (Lin, Anderson, Haggerty, & Lee, 2007; Sarkisian et al, 2005) and was well-suited to our investigation of previously unexplored topics such as domains and characteristics of spousal support among Korean seniors with diabetes.

Participants

Participants were recruited using purposive sampling methods. With assistance from community providers and leaders, we recruited participants from two internal medicine clinics and a health information center in Orange County, California, home to the third largest Korean community in the U.S. We posted flyers in the recruitment sites and bilingual study personnel gave brief presentations describing the project at each site. In addition, the health information center director promoted the study in the center newsletter. Inclusion criteria for diabetic participants were: 1) a Korean immigrant (born in Korea, currently living in the U.S.) 60 years of age or older; 2) self-identified as having been diagnosed with type 2 diabetes for at least one year; 3) having a spouse who was available and willing to participate in a spouse focus group. In addition, participants needed be able to speak, read, and write in Korean, and have the cognitive capacity to provide informed consent. We chose to conduct the focus groups in Korean rather than English because in our previous work with Korean seniors, all participants chose to use Korean language in conversation and surveys. Exclusion criteria included cognitive and visual impairment (as reported by potential participants and observed by the recruiting research personnel) and inability to complete the study. Participants were given a small honorarium for their participation at the completion of the focus group session. Each participant participated in only one focus group and was given an honorarium at the end of the focus group.

Focus group protocol

An interview guide with the focus group questions was developed based on spousal support focus group prompts used by Beverly et al. (2008a). The questions were framed to address the three aims of the study: 1) What are the domains of spousal support in diabetes self-management among Korean seniors as identified by both diabetic and spouse participants?; 2) What do spouse participants describe as the patients' responses to spousal support provided? What do patient participants describe as their response to spousal support received?; 3) What do diabetic and spouse participants describe as "good" spousal support?

Appropriateness and clarity of the interview guide was tested by distributing the guide for review to four members of a Korean community advisory board (a nurse practitioner working in a diabetes clinic, two patients with type 2 diabetes, and a Korean community health information center director who had experience in working with focus groups with Korean seniors). The interview guide and questions were then revised based on the reviewers' recommendations.

During the focus group session, standardized questions were asked from the general to the specific, but still allowed for flexibility for clarification and probing (Krueger & Casey, 2009). Probing questions help participants more clearly and specifically describe their experiences. Examples of probing questions were "What kinds of things does your spouse do for you to help with your diabetes?" "What kinds of things do you do to help with your spouse's diabetes?" "How does your spouse respond to your help?" "What are the problems you have encountered in trying to help your spouse with diabetes management?" "What kind of knowledge or skills do you think would be most useful to provide "good" support to your diabetic spouse (support that would be helpful to the patient)?"

Data collection procedures

Institutional Review Board (IRB) approval was obtained prior to study procedures from two universities in California. Guided by social support literature indicating differences in social support transactions between men and women, we stratified focus groups by gender. Five focus groups were facilitated by the bilingual principal investigator (PI) who is fluent in Korean (Author) using the revised standardized interview guide: one group of older male diabetic participants (n=8), one of older female diabetic participants (n=8), one of husbands (n=9), and two of wives (n= 4 each). We scheduled a second focus group for wives because four scheduled participants could not come to the first one due to unexpected personal circumstances. We considered Korean traditional socio-cultural gender role/expectations and separated groups of Korean senior diabetic and spouse participants by gender to increase the likelihood that participants would feel comfortable participating in the discussion and freely express their thoughts and opinions. Before the start of each focus group, participants provided written documentation of informed consent, and completed brief demographic questionnaires. The bilingual PI led each focus group using techniques to ensure that no single person dominated the discussion and that each person was heard from. Focus groups were held in a classroom at the Korean community health information center with each session lasting 90 to 120 minutes. All groups were audio taped and transcribed. Each time a participant spoke, the bilingual research assistant made note who spoke according to the

diagram of location of seating on the table, thereby the transcriber (a research assistant) could link all of statements to an individual. Korean audio to Korean written verbatim transcripts were conducted first followed by translation to English by the research assistant. The PI reviewed both the Korean and English transcripts for accuracy in translation and against written notes to verify consistency.

Coding of Transcripts

To identify the domains of spousal support which would be used for the coding template, the PI and the research assistant independently reviewed the five focus group transcripts and made a list of each domain of spousal support described. These domains represented the areas of spousal support in diabetes self-management but also included themes that were broader and incorporated participants' comments about how spousal support is received by patients (responses to spousal support) and what would be considered "good" spousal support. The lists were compared; where the lists disagreed, another bilingual research assistant who had also reviewed the transcripts was called upon to cast a tie-breaking vote. To strengthen the validity of the classification method, a list of codes and quotations were presented to a faculty member at the PI's university and a bilingual Korean nurse diabetes educator, who reviewed the coding by the PI, making comments, discussing, and agreeing with the categorizations. Using these agreed-upon domains as a template, the PI then read through each line of all five transcripts and recorded each comment made pertaining to spousal support. The PI recorded: 1) the primary domain being described by the comment; 2) whether the comment was describing responses to spousal support in this domain; 3) whether the comment was addressing suggestions for "good" spousal support that would work. For example, the comment: *"I tried to get him eat brown rice but he keeps asking me to cook white rice. Not everyone can eat brown rice so you need to find food that works for the patient."* would be coded as: 1) domain "diet support"; 2) response "not listened to"; 3) support should be individualized. Five percent of the transcript lines were randomly identified and independently coded by the second research assistant. The percentage of time that a statement was classified into the same domain by both the PI and the research assistant was 87%.

Analysis

Focus group data were analyzed using techniques described in the previous section. In addition to the domain-level coding, codes were developed for relevant themes, using the research questions as guides. To determine which domains of spousal support were mentioned the most, frequencies of comments made pertaining to domains of spousal support were calculated. We ranked each domain by the frequency of mention by all participants, and separately by diabetic participants and by spouse participants and then by gender. To examine whether similar results were obtained across groups, we examined group-level ranking of all six mentioned domains for diabetic and spouse participants (see Table 2). To be sure that the domains we identified are mentioned by most participants across groups, we calculated the number and percent of participating individuals who addressed each of the six domains mentioned of spousal support (see Table 3). To determine which domains for responses to spousal support were most frequently mentioned by

participants, comments made under each response domain were counted. Comments were counted for both diabetic and spouse participant groups and by gender (see Table 4).

Results

Characteristics of the 33 focus group participants are shown in Table 1. The mean age of participants in the patient focus groups was 68 years; the range was between 60 and 81 years. The mean age of participants in the spouse focus groups was 74 years; the range was between 66 and 83 years. The majority of diabetic participants (75%) and more than 50% of spouse participants had completed 2 years of college or higher. Most participants reported annual household income level below $20,000.

We identified six domains of spousal support addressed by patient and spouse focus group participants. These domains are listed in Table 2, along with verbatim examples of comments corresponding to each domain. Qualitative content analysis of the transcripts using the six domains as a template elicited 111 unique coded participant statements – 20 statements by diabetic participants and 91 statements by spouse participants.

Overall, the most frequently mentioned domain of spousal support was diet management, followed by exercise, emotional support, medical treatment support (tied with emotional support), support in speaking with health care providers (HCP), and information support (by total counts, not shown in table). The most frequently mentioned diet support topic surrounded restriction of eating rice, such as changing type of rice (favorite white or “sticky” rice to brown or “dry” rice) or reducing portion size, and increasing vegetable portions. Participants mentioned that following a prescribed diabetes diet regimen requires major changes in familiar cultural food habits and practices within the patient and family, and for this reason diet was always the primary source of conflict for them in spousal support for diabetes self-management. Complete rankings of domains of spousal support mentioned by patient and spouse participants are shown in Table 2.

Comparing diabetic and spouse participants

Domains of spousal support mentioned most frequently by the diabetic participants were diet management, followed by exercise, communication with HCP, treatment, and information (tied with treatment). Domains of spousal support mentioned most frequently by the spouse participants were diet management, followed by emotional support, exercise (tied with emotional support), medical treatment support, information support, and support in speaking with HCP. Diabetic participants did not address emotional support, whereas it was the second most frequently mentioned domain by spouse participants.

Gender differences

Gender differences were noted in the domains identified and in the ranking. Among patient participants, diet and exercise were the only domains identified by both male and female participants, whereas emotional support was not mentioned by either gender. Women did not identify communication with HCP and treatment support. Men did not mention information support. Although female diabetic participants did not identify communication with HCP as a domain of spousal support that they receive, while commenting on diet, they

mentioned not getting spousal support even when they ask for support. They also indicated that if HCP can talk to their husbands, it would help increase their spousal support since men tend to listen to someone with medical authority rather than to their wives. Among spouse participants, all six domains were mentioned by both husbands and wives although with different frequency/ranking in some domains. Among husbands, diet management support was followed by emotion support, information, exercise, treatment (these last 3 tied), and communication with HCP. Among wives, diet support was followed by exercise, treatment, emotion (tied with treatment), and information, communication with HCP (these last 2 tied).

Frequency of participants' comments for each domain

Table 3 shows the number and percentage of participants who commented on each of the six domains. Overall diabetic participants addressed the six domains less frequently than spouse participants. Diet management domain was addressed by half the diabetic participants and more than two-thirds of spouse participants. Emotional support domain was not addressed by diabetic participants at all. Following diet management, spouses mentioned exercise and emotional support the next most frequently, followed by exercise and communication with HCP.

Suggestions for good spousal support

Table 4 shows responses to spousal support and what would make "good" (helpful) spousal support as identified by the number of comments. One response "support/advice not listened to" was identified with vast majority of comments from wives. In terms of domains in which support is "not listened to", both male and wives identified diet management, but wives also said exercise. Two responses related to suggestions for "good" (helpful) spousal support emerged: 1) support should be individualized, and 2) diabetes self-management requires teamwork. Spouse participants spoke more frequently than diabetic participants about these suggestions. Comments varied about who should be responsible for managing the disease. Some spouse participants stated that their role was to assist and encourage but ultimately it is the patient who has to be responsible, while other spouses mentioned that it was their responsibility as a spouse to learn more about the disease, assist with self-management efforts, and offer ongoing encouragement. Women made more comments than men did in the spouse participant groups, whereas more comments were from men in the diabetic participant group, regarding individualizing support. More comments regarding the belief that diabetes care is teamwork came from spouse participants, particularly from wives, than came from diabetic participants.

Discussion

Using focus groups we identified six domains of spousal support in diabetes self-management among Korean senior patients and their spouses. Though the sample size was small, our finding that most frequently mentioned domain of spousal support (diet management) was mentioned by at least 50% of both male and female patient and spouse participants suggests that this is a consistent domain that can be focused on in developing spousal support content for an intervention aimed at improving self-management of diabetes in this population. This finding also confirms the findings of previous studies that adhering

to the recommended diet regimen is one of the most difficult lifestyle behaviors for diabetic patients, and control over food-related decisions is a prominent topic among those with diabetes and their spouses (Beverly, Miller, & Wray, 2008a; Stephens, Rook, Fanks, Kahn, & Iida, 2010). Consistent with a study with Chinese immigrant seniors with DM and their spouses (Chesla, Chun, & Kwan, 2009), whose culture and staple diet is similar to Korean immigrant seniors, changing culturally meaningful food practices such as giving up a familiar type of rice and restricting rice consumption was the toughest challenge for Korean senior diabetic participants and spouse participants in our study as indicated by the highest number of comments "support/advice not listened to" in the diet management domain. Exercise and emotional support were also frequently mentioned and may also be useful content areas to include in a spousal support intervention for diabetic Korean seniors.

In conducting this study, we obtained useful information on spousal support for diabetes self-management among Korean seniors. First, the importance of spousal support domains may differ among patients and spouses. The most striking difference was that emotional support was the second most frequently mentioned domain among spouse participants, whereas diabetic participants did not comment on emotional support. This outcome may have been driven by Korean-specific cultural beliefs. In traditional Korean culture, while *giving* emotional support may be viewed as acceptable by all parties (and thus commented on frequently by spouses), *receiving* such support may be considered a weakness in one's will power and should be avoided (Fukunaga, Uehara, & Tom, 2011; Kim, Sherman, Ko, & Taylor, 2006; Kim, Sherman, & Taylor, 2008). Overall, spouse participants spoke much more about how they help their diabetic spouses, whereas diabetic participants had little to say about the spousal support they receive. Emotional support may be a more difficult area for patients to recognize or admit the need for than other domains of spousal support.

Second, the importance of spousal support domains may also differ among Korean senior men and women. This finding is consistent with social support literature on gender differences in giving and receiving social support (Taylor, et al., 2004; Taylor, 2007). In one study of Korean older adults with type 2 diabetes conducted in Korea, the description of spousal support differed between men and women (Song, Lee, & Shim, 2009). Similar to our findings, women in this Korean study stated that most of the support from their husbands was related to reminding them what to do ("searching and providing information" in our study), whereas men mentioned specific chores their wives do for them such as meal preparation and monitoring of the diet. In our study, gender differences were most pronounced among diabetic participants. Male diabetic participants did not mention receiving informational support from their wives, and female diabetic participants did not mention receiving support in the domains of communication with HCPs and treatment support. It may be that older Korean wives believe that providing hands-on support, such as meal preparation, is more important for their husbands' diabetes self-management than providing information. Husbands may feel that talking with HCPs and following the treatment regimen may not need spousal support and that these areas are outside the man's role. In addition, female diabetic participants did not comment on their responses to the support they receive, and spoke least about suggestions for good/helpful spousal support. This suggests that female patients may not receive adequate spousal support compared to

male patients and may not expect their spouses to be supportive, whereas male patients do. This could be related to gender role based on traditional Korean culture as well as the social support literature in which women are disproportionately the providers of social support (Taylor et al., 2004; Taylor, 2007). While the literature shows that wives help with diabetic husbands' diet management (such as choosing and preparing meals for DM) whereas husbands do not, in our study, husbands commented as frequently as wives about the importance of providing diet management support to their diabetic wives such as food selection and portion control. Although the reason for this finding cannot be determined from the current study, it may be related to the demographics of our participants, such as their old age and relatively long duration of living in the U.S. Age and culture have been posited as variables that may moderate how social support is perceived or received differently by men and by women (Taylor, 2007).

Third, spousal support that is offered may not be listened to, particularly in lifestyle behavior domains. The finding that "support/advice not listened to" was mostly commented by wives suggests that women frequently feel that their attempts at providing support by giving advice are not effective or appreciated. One possible explanation may be that a certain way of providing advice by wives (e.g. nagging) can be perceived as criticizing one's value or judgment, and husbands may not perceive it as "support." A recent study of predominantly White older adult couples also reported that whereas spousal support was positively associated with diabetes management through physical activity, spousal control (e.g. nagging) was either unrelated or linked to less physical activity (Khan, Stephens, Franks, Rook, & Salem, 2013). In addition, the fact that domains on which this response ("support/advice not listened to") was commented were diet and exercise confirms that the most spousal support is provided for these two lifestyle behaviors and these behaviors are most difficult to change. This finding suggests that the emphasis on spousal support in a health behavior intervention should be on these two content areas.

Finally, individualizing spousal support and emphasizing the importance of teamwork might be an opportunity to make a powerful difference in health behaviors and outcomes among Korean seniors with DM. Both diabetic and spouse participants across genders commented that individualizing spousal support and teamwork are important for spousal support to be helpful for diabetes self-management. This finding is consistent with the finding from a study by Beverly and colleagues (2008b), in which teamwork and being your own advocate (similar to "individualizing" in our study) were prominent themes from all 12 focus groups of patients with diabetes and their spouses. Individualizing may include no support if the patient is doing well with self-management on his or her own. The groups that discussed individualized support most commonly involved wives and male diabetic participants, suggesting that these two groups may have more experience in giving and receiving spousal support than their partners. This may warrant spousal support education focused on husbands of female patients to provide guidance for individualizing spousal support that will benefit diabetes self-management and improve outcomes. For example, since female patient participants have commented on the HCP's potential role in increasing their husbands' support in their diet management, involving HCPs may be considered an individualized spousal support tactic for Korean senior female patients. Further exploration of how best to meet the senior individual's spousal support expectations in the Korean cultural context

while recognizing the importance of teamwork in diabetes self-management will provide insight into developing an effective spousal support intervention for this aging population.

Aging can present new challenges to individuals with diabetes, such as co-morbidities, diminishing physical functioning, and worsening cognition. Seniors with DM may need increased assistance with self-management. Unfortunately, a majority of seniors with DM feel that they are getting limited support and empathy from their health care providers with their diabetes care and feel that the providers are insensitive to their older age and remaining years of life (Beverly, Wray, Chiu, & LaCoe, 2014). A consensus report by the American Diabetes Association and the American Geriatrics Society emphasizes that care partners, such as family members, can play a critical role in managing diabetes in older adults and should be involved in diabetes self-management to increase the likelihood of successful self-care behaviors (Kirkman, et al. 2012; Suhl & Bonsignore, 2006). Our findings on spousal support provide groundwork for a potentially powerful tool (spousal support intervention) to improve DM self-management among aging Korean immigrants.

Limitations

Several limitations to this investigation should be acknowledged. First and foremost, this was a small study using nonrandom sampling. As such, the study was not designed to capture the characteristics of diabetes spousal support of all Korean seniors. Instead, it was to identify the content areas/domains of spousal support that would be incorporated into a diabetes self-management intervention. The observed differences in this study between the diabetic and spouse participants of domains of spousal support and gender differences may be cultural and unique to Korean seniors. However, the small sample size and lack of any other ethnic group comparison in this study limit our ability to further explore this possibility with this sample. All our study participants were Korean-speaking, first-generation Korean immigrants recruited from the Korean ethnic enclave; thus, findings may not represent Korean seniors living in other geographic areas or multicultural communities in the U.S.

Conclusion

Our study examined how Korean seniors with diabetes and their spouses viewed spousal support for the self-management of diabetes. This focus group study identified six domains for spousal support that may be most effective and appropriate in future diabetes self-management interventions. We conclude from this study that patients' views of important areas of support may not agree with those of spouses' and there may be gender differences in the areas of importance in spousal support. Information gained from this study will guide us in developing specific content areas for spousal support in diabetes self-management that could serve as the basis for intervention for education and training of spouses in Korean senior population. For example, spousal support content areas may need to be gender specific for men and women. A pilot test of the spousal support intervention, incorporating information from this investigation, will be important to evaluate the significance and generalizability of the focus group findings.

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Table 1

Characteristics of Focus Group, Patients and Spouses (N=33)

Variables	Patients, N (%) N=16	Spouses, N (%) N=17
Age	68.1 (7.96)	74.4 (3.98)
Men	8 (50.0)	9 (52.9)
Religion		
Christian	14 (87.5)	16 (94.1)
Catholic	1 (6.25)	1 (5.9)
None	1 (6.25)	0 (0)
Years in the United States	29.1 (9.15)	25.9 (9.93)
Highest education		
High School	4 (25.0)	8 (47.1)
2 Years College	2 (12.5)	1 (5.9)
4 Years College	8 (50.0)	7 (41.2)
Graduate School	2 (12.5)	1 (5.9)
Income		
<$20,000	13 (81.25)	14 (82.3)
$20,000–$39,999	1 (6.25)	2 (11.8)
$40,000–$59,999	1 (6.25)	0 (0)
$60,000–$79,999	1 (6.25)	0 (0)
>$80,000	0 (00	1 (5.9)
Years with diabetes	16.8 (23.7)	
Ever had diabetes education	3 (18.8)	
Taking diabetes medication	14 (87.5)	
Taking insulin	3 (18.8)	

Note. Mean (Standard Deviation)

Table 2

Domains of Spousal Support in Diabetes Self-care Mentioned by Focus Group Participants

Domain	Verbatim Example	Rank by frequency			
		Patients		Spouses	
		M	F	M	F
Diet Management	"I don't like cereal rice but she eats it every day. I am very picky with food. I only eat white rice. I'm bad as a husband…So these days, I eat that rough rice and try to be more considerate. Out of the three meals, she cooks the white rice that I like for one meal…of course, we eat together. I am trying these days but it's really difficult for me."	1	1	1	1
Searching and providing information	"He searches and gives me information from the computer search on diabetes diligently"	-	3	3	4
Exercising together	"How I help out is I take her to a gym all the time. We've been going for 15 years. We always go together and do some exercise and swimming."	3	2	3	2
Speaking with health care provider in regards to diabetes care for patient	"So I was talking to his doctor that my husband continues to exercise and regulate diet and the sugar level goes down but the doctor said let's continue and decide [on medication] when it becomes steady. So right now, the problem is weight. He needs to lose weight…. my husband isn't too heavy, but it's hard to lose 15 pounds."	2	-	4	4
Treatment support and prevention of complications	"The problem is hypoglycemia when he's hungry. It comes suddenly and he becomes unconscious. So whenever we go exercise or travel, we always carry snack or banana. His diabetes isn't too extreme but it's not going down so we are just maintaining that."	3	-	3	3
Emotional support	"If she tests the level and the sugar level dropped and she says I tested my fasting sugar level and it's 110 or 90, she really likes it if I praise her…I think it's good to praise her like that and love and care for her. Then, the woman would be encouraged and continue doing so."	-	-	2	3

Note. M = Male; F = Female

Table 3

Number of Focus Group Participants Who Mentioned Each Domain of Spousal Support (N=33)

	Number (%) Patients (N=16)		Number (%) Spouses (N=17)	
Domain:	**M (N=8)**	**F (N=8)**	**M (N=9)**	**F (N=8)**
Diet management	4 (50)	4 (50)	6 (67)	6 (75)
Searching and providing information	0 (0)	1 (13)	3 (33)	2 (25)
Exercising together	1 (13)	2 (25)	3 (33)	4 (50)
Speaking with health care provider in regards to diabetes care for patient	3 (13)	0 (0)	1 (11)	1 (13)
Treatment support and prevention of complications	1 (13)	0 (0)	3 (33)	2 (25)
Emotional support	0 (0)	0 (0)	4 (44)	3 (38)

Note. M = Male; F = Female

Table 4

Responses to spousal support and suggestions for good spousal support

Theme	Verbatim Example	Number of comments			
		Patients		Spouses	
		M	F	M	F
Support/Advice not listened to	"Even though I tell him all the time, men are very stubborn. I told him not to eat sweets but he likes to eat melted sugar. He adds a lot of sugar to his coffee. He doesn't eat what I give. I just let him be, what can I do?"	1	0	1	12
	"I get angry if my husband doesn't listen. So he tries to regulate since I nag all the time"				
Differences in spousal support style/support should be individualized	"I don't do anything special other than cereal rice. Doing it [self-care] himself is better than anyone else doing it for him. He has to have the will and do it himself. If the woman nags, he doesn't want to do it. Men are like that. So I let him do things on his own. His glucose level is under control and it's been going well so far."	6	3	9	13
	"It's up to the patient. Personality. Some people don't want to hear them nag so do worse while some people are more careful after being enlightened."				
Diabetes care is teamwork between husband and wife	"Someone I know, his wife has diabetes and he eats ice cream next to her. When she asks for it, he refuses, but that is not good teamwork. It would be ok if he ate somewhere else."	1	1	3	8
	"You have to do it together because for example, when one doesn't want to walk, the other supports. So even if you are forced to go, it's beneficial."				

Note. M = Male; F = Female