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Unmet Needs for Social Support and Effects on Diabetes Self-care Activities in Korean Americans With Type 2 Diabetes

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Abstract

Objective—The purpose of this study was (1) to characterize the primary sources of social support and the extent of unmet needs for support (defined as the gap between social support needs and the receipt of social support) in a sample of Korean Americans (KAs) with type 2 diabetes and (2) to examine the effect of unmet needs for support on their self-care activities.

Methods—Baseline data obtained from a community-based intervention trial were used for this study of 83 middle-aged KAs with type 2 diabetes. Study design and data analysis were guided by social cognitive theory. The key variables were dictated the order of the variables in multivariate regression analysis.

Results—Our findings indicated that for diabetic KAs, the primary source of social support differed according to gender. Unmet needs for support were significantly associated with self-care activities, but the amount of support needs and of social support received were not. Multivariate analysis also confirmed that unmet needs for social support are a significant strong predictor of inadequate type 2 diabetes self-care activities, after controlling for other covariates. The hierarchical regression model explained about 30% of total variance in self-care activities.

Conclusions—The findings highlight the importance of considering unmet needs for social support when addressing self-care activities in type 2 diabetes patients. Future interventions should focus on filling gaps in social support and tailoring approaches according to key determinants, such as gender or education level, to improve self-care activities in the context of type 2 diabetes care.

Effective self-care is a crucial determinant in improving the health outcomes of people with type 2 diabetes.^{1–4} Diabetes self-care activities include multiple domains, such as adherence to treatment regimens, engaging in regular exercise, and monitoring glucose levels. Individuals' self-care activities often occur in a social setting, and support received from an individual's social network can provide coping strategies on a daily basis, enabling a person with diabetes to adhere to treatment regimens.^{1,5}

Social support has been considered as a major factor influencing health outcomes,^{6,7} and the availability of social support affects an individual's capacity to adapt self-care activities associated with type 2 diabetes.^{1,5} Despite an increasing awareness of the importance of social support in chronic disease management, however, the state of science in the field of social support still lacks theoretical specificity that can be useful to clinicians and

researchers who deal with special populations, such as members of ethnic minority communities.

Because the social support construct is inherently embedded in cultural and situational contexts, efforts to uncover various aspects of social support and the underlying key determinants that interact with the construct in each ethnic group constitute a worthwhile approach to improving translational science in this area. For example, according to a study by Rubin and Peyrot, social support satisfaction is negatively related to individuals' self-care.⁸ Some have suggested that too much support for a particular group may not be desirable, since it prevents patients from being independent; it is also thought that too much support could have a long-term negative impact on self-care activities.^{9,10} Receiving the appropriate amount of support is important for lifelong chronic disease management, such as blood glucose control⁵; thus, determining an optimal level of social support for certain groups may be a more fruitful endeavor than measuring perceived satisfaction or the receipt of social support.

To date, few studies have examined the gap between the needs for and receipt of social support and its influence on self-care activities among patients with diabetes from an ethnic minority community. This gap in the literature is important because an in-depth understanding of the role of social support could yield effective interventions to reduce the health disparities experienced by many patients from ethnic minority communities. In light of this need for relevant research, we have designed a descriptive study of social support in a sample of Korean Americans (KAs) with type 2 diabetes.

The purpose of this study was twofold: (1) to characterize the primary sources of social support and the extent of unmet needs for support (defined as a gap between social support needs and the receipt of social support) of KAs with type 2 diabetes and (2) to examine the effect of unmet needs for support on their self-care activities.

Methods

Theoretical Framework

Social cognitive theory¹¹ was used to guide the study to explain the complex interplay among personal, environmental, and cultural factors and behavior in the context of type 2 diabetes management and self-care. Social support as an environmental factor plays a critical role in self-care activities, while at the individual level, self-efficacy is an important predictor of self-care activities among patients suffering from chronic diseases, including type 2 diabetes.^{9,12,13} Also, cultural factors such as gender role may be related to diabetic self-care within this population. Previous studies have demonstrated that higher self-efficacy, older age, female sex, higher education level, and longer stay in the United States are all positively related to better self-care activities at the personal level.^{14–18} We therefore combined key constructs from social cognitive theory and additional variables gleaned from a literature review to explore the key factors that affect diabetes self-care activities in a KA population and, in particular, the perceived need for and receipt of social support.

Design and Study Sample

The current study was part of a community-based self-help intervention program with a randomized controlled design.¹⁹ Data for this analysis came from the baseline of the intervention study. Sample eligibility criteria were as follows: self-identified KA, aged 30 years or older with uncontrolled diabetes (hemoglobin A1C $\geq 7.5\%$ within the past 6 months), residing in the Baltimore-Washington area, and able to give written consent to participate in this study.

Participants were identified via a variety of sources, including ethnic media, ethnic Korean churches, and Korean grocery stores in the Baltimore-Washington area. A total of 166 potentially eligible participants were screened. Of these, 83 KA participants who had had type 2 diabetes agreed to participate in the study. All study procedures were approved by The Johns Hopkins University Institutional Review Board, and all participants provided written informed consent prior to their interview. Detailed information about the study procedure is provided elsewhere.¹⁹

Measurements

Diabetes self-care activity—Diabetes self-care activity was measured with the Summary of Diabetes Self-Care Activities (SDSCA).¹⁶ The SDSCA assesses the number of days over the past 7 during which participants performed self-care activities specific to diabetes in 5 domains: diet (5 items), exercise (2 items), blood glucose testing (3 items), foot care (5 items), and medication compliance (1 item). Questions included “On how many of the last 7 days have you followed a healthy eating plan?” and “On how many of the last 7 days did you test your blood sugar the number of times recommended by your health care provider?” The scores ranged from 0 to 35, with higher scores representing higher levels of self-care activity. Cronbach α for the SDSCA in this study was 0.68.

Social support—Social support was measured with the social support subscales of the Diabetes Care Profile²⁰; these subscales address 2 facets of support: (1) how much support participants wanted from their family (ie, social support needs) and (2) how much support participants felt they actually received (ie, the receipt of social support). Each facet of the social support subscales had 6 items with 5-point Likert responses. Social support needs were assessed by asking questions such as “How much support do I want from my family and friends?” for 6 diabetes tasks: meal planning, taking medications, checking one's feet, maintaining physical activity, testing blood glucose, and controlling emotions. The scores ranged from 0 to 30, and higher scores indicated a greater degree of support needed from family and friends. Cronbach α for the need for social support was 0.83. Likewise, the receipt of social support was assessed for the 6 diabetes tasks listed above. The questions asked, “How much support have I received from family and friends?” for each item. The scores ranged from 0 to 30, and high scores reflected a higher level of support received from family and friends. Cronbach was 0.80.

A new variable, “unmet needs in social support,” was created by summing the differences in scores between social support needs and the receipt of social support for each of the 6 tasks. A higher score indicated a greater level of unmet needs in social support.

Self-efficacy—Self-efficacy was assessed with a modified form of the Stanford Chronic Disease Self-efficacy Scale, which includes 8 items with 10-point Likert responses.²¹ The items assessed the level of participants' confidence in managing their diabetes in the areas of diet, exercise, and general self-management skills. The items included, “How confident are you that you choose appropriate food (or snack) when you are hungry?” and “How confident are you in keeping to your diet plan when you are eating with others without diabetes?” Scores ranged from 8 to 80, and higher scores indicated a higher level of self-efficacy in managing diabetes. Cronbach α for the scale in this study was 0.73.

Statistical Analyses

Descriptive statistics were used to summarize the sample characteristics and study variables; *t* tests and Pearson correlation coefficients were performed to assess the relationship between sex and social support and to examine the strength of the relationship between diabetes self-care activities and study variables such as support needs, the receipt of support,

unmet needs of social support, self-efficacy, age, sex, education level, the number of family members in the household, duration of disease, and the number of comorbidities. A hierarchical multiple regression was conducted to examine predictors of diabetes self-care activities. Model 1 included personal level factors such as age, sex, educational level, duration of diabetes, the number of family members in the household, and comorbidity. Self-efficacy was added in model 2. In addition to the variables included in model 2, an unmet need for social support as a predictor of diabetes self-care activities was entered in model 3. Statistical significance was determined at $\alpha = 0.05$.

Results

Sample Characteristics

The characteristics of the 83 KAs who participated in this study are summarized in Table 1. The mean age of the participants was 56.5 ± 7.9 years, and 57.8% were men. The majority of the participants were currently married (87.9%), and about half were insured (50.6%) and had a comorbid condition (50%) such as heart disease, kidney disease, or hypertension. About half (49.4%) were college educated, and the mean number of years they had spent in the United States was 20.7 ± 10.4 years. The mean duration of their diabetes was 8.0 ± 6.7 years. The mean scores for the SDSCA and self-efficacy were 16.8 ± 5.9 (range, 0–35) and 47.2 ± 13.2 (range, 8–80), respectively.

Primary Sources of Social Support and Unmet Needs of Support According to Sex

Table 2 presents the primary sources of support and various aspects of social support according to sex. About 75% of the participants were answered “spouse” to the question “Who is the primary supporter for diabetes management?” However, the primary source of support differed significantly according to gender ($P = .024$). A majority of the men (83.3%) received support from their spouse, while only 60% of the women sought support from their spouse. As compared to men, women tended to perceive more support needs and less receipt of support. However, sex differences in the amount of support needs or the receipt of social support were not statistically significant.

The score for support needs was higher than the receipt of support in all 6 domains. In regard to overall unmet needs for support, a sex-related difference was prominent: Women reported more unmet needs in support than did men ($P = .014$). In all 6 domains of diabetes self-care tasks, women tended to report greater unmet needs in social support than did men. In particular, sex difference was significant in the unmet needs of support in testing blood glucose ($P = 0.030$). Although there was no statistically significant sex difference, men and women responded that emotional control was the domain in which they required the most support.

Correlation Among Study Variables

Table 3 summarizes the correlations observed among self-care activities and personal and environmental variables. The DSCA was negatively correlated with unmet needs for social support ($r = -0.282$) and positively associated with age ($r = 0.295$) and self-efficacy ($r = 0.350$), with these results being statistically significant at $P < .001$. Individuals who were older and had a higher level of self-efficacy and fewer unmet needs for social support were more likely to do better in terms of self-care activities. Also, self-efficacy was positively associated with age and duration of having diabetes and negatively associated with unmet needs of social support, with these results being statistically significant. Those with lower self-efficacy, female sex, and a smaller number of family members were more likely to experience unmet needs for support.

Key Determinants That Affect Diabetes Self-care Activities

The results obtained from a hierarchical regression model of DSCA are presented in Table 4. In model 1, personal factors including demographics were entered, and only education level was a significant predictor of self-care activities. When self-efficacy was added in model 2, education level was still a strong predictor of self-care activities, but self-efficacy was not significantly associated with diabetes self-care. When the unmet needs for social support as an environmental factor was entered in model 3, it was negatively and statistically significantly associated with a greater likelihood of having with self-care activities. Unmet needs for social support were negatively associated with diabetes self-care, and this result was statistically significant ($\beta = -0.401$, $P = .001$). In addition, female sex, a higher education level, and longer duration of having diabetes were associated with significantly higher self-care activity scores. Thus, unmet needs for social support, female sex, higher education level, and longer duration of diabetes were significant predictors of self-care activities. The final model was significant and accounted for 29.6% of the variance in self-care activity ($P < .001$).

Conclusions and Implications

Findings reported have revealed a sex difference in both the primary source of social support for these first-generation KAs with type 2 diabetes and the extent of their perceived unmet needs for social support regarding diabetes self-care: While men were more likely to receive support from their spouse, women tended to seek support from other sources as well. The perceived level of unmet needs for support was higher for female participants than for male participants. However, the findings also indicated that emotional support was the most significant domain of unmet needs for support for both men and women in this population.

The relationship that we observed between sexes in terms of providing and receiving social support is consistent with previous research.^{8,22,23} In general, men receive more support from their spouses than do women. Women are often the providers of social support to their family members and friends and often place the needs of others ahead of their own.^{24–26} The magnitude of the sex difference in social support is much more prominent in cultures that have culturally prescribed gender roles and responsibilities. In the present study of KAs, it seems that the higher unmet needs for social support in the case of women are directly related to their culturally prescribed gender role. The vertical patriarchal and family structure in Asian culture emphasizes women's role as one of “self-sacrifice,” and women are expected to exhibit “competence without complaint.”^{26,27} Moreover, women are considered to be the primary nurturer of the well-being of their families, and this prescribed gender role makes them prioritize the needs of other family members over their own.²⁶ These findings suggest that existing gender differences in social support persist in the KA community and can further exacerbate health disparities by adding gender disparity to the other challenges experienced by these immigrant women with type 2 diabetes. In particular, the need for emotional support seems an important domain of unmet needs for KAs with type 2 diabetes.

The literature has indicated that people with an Asian cultural upbringing based on Confucian philosophy, such as Koreans, Chinese, and Japanese, have difficulty in requesting and offering emotional support,^{28,29} since in these cultures, maturity is often measured by how well individuals control their emotions, especially troublesome ones. Moreover, these Asian cultures value group harmony over the individual's own emotion. Although Asian Americans, including KAs, are likely to depend on the family and friends for physical and emotional support, negative expression of individual emotion is often discouraged.^{30–34} This discrepancy between the need for emotional support and cultural expectations among people from Asian cultures presents an additional challenge to clinicians and care providers who

deal with Asian Americans with chronic diseases such as diabetes mellitus. A recent study conducted in Asian American families who have diabetes patients reported acknowledgment by their family members of the high level of emotional fluctuations experienced by the patient,³⁵ yet providing physical support is often considered easier than providing emotional support in Asian families.³⁶

The study has also empirically validated the critical role of unmet needs for social support in self-care activities among KAs with type 2 diabetes. While the role of the receipt of or satisfaction with social support in self-care behaviors has been most frequently used in previous research on diabetes care, this research has shown mixed results.^{37,38} Traditionally, social support has been measured by the receipt of or satisfaction with social support.^{1,39-41} It is possible that the subjective nature of these 2 variables (satisfaction with and receipt of social support) could have presented measurement challenges, such as low reliability or large measurement error, which could have made it difficult for researchers to obtain meaningful empirical results. It appears that this new variable that we introduce here (the discrepancy score between the expressed need and the receipt of need) is a viable alternative way of studying social support, as the variable is much stronger predictor of self-care activities than are the traditional variables of social support (ie, the receipt of and satisfaction with social support).

Another contribution of this research is the attempt to address an important unresolved question in the field of social support: What is the right level of social support for individuals with type 2 diabetes? While some researchers have attempted to assess the amount of support that a patient receives in the context of chronic disease management,⁴² few studies have determined the optimal amount of social support that is required to carry out self-care activities. Some have argued that too much support for certain individuals could lead to dependency, which could result in poor self-care activities.^{5,33} Although we cannot offer a clear answer regarding the optimal amount of social support for people with type 2 diabetes at the population level, estimating the magnitude of unmet need of individuals, as we have done here, seems to be a much more useful approach for clinicians and researchers. In particular, the discrepancy score can be used as the basis for developing pertinent social support interventions that are tailored to individuals' needs.

It should be pointed out that the present study was conducted on a relatively small and homogeneous sample from one ethnic minority group, which could limit the generalizability of the findings in terms of larger populations in the context of chronic disease management. Also, social support was assessed by measuring the patients' perceptions in our study. However, differences may exist in the perceived support in terms of giving and receiving social support between patients and their family or friends. A comparison of perceptions of patients who receive social support and those of the families and friends who are providing the social support could yield important information and should be included in future research. Despite these potential limitations, the findings of this study have several important scientific and clinical implications for the care of people with type 2 diabetes.

To the best of our knowledge, this is the first attempt to explore various aspects of social support and their influence on diabetes self-care activities. Because the findings of this study demonstrated that unmet needs for support are a significant predictor of diabetes self-care activities, this variable should be examined further and utilized as a clinical tool to improve the self-care activities of people with type 2 diabetes. Furthermore, other key predictors, including gender role in the cultural context and education, should be incorporated into the development of effective social support interventions for this target population. Further research with a larger sample size in a diverse population is warranted to cross-validate our findings, as well as to test the applicability of our newly introduced variable, unmet needs

for social support, in advancing translational science in the context of self-care in chronic disease management.

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Table 1

Characteristics of participants (n=83)

Characteristics	n (%)	Mean $\pm$ SD
Demographics		
Age, y (range, 37–71)		56.5 $\pm$ 7.9
US residence, y (range, 3–58)		20.8 $\pm$ 10.4
No. of family (range, 0–8)		1.9 $\pm$ 1.4
Sex: Men	48 (57.8)	
Education level: > some college	41 (49.4)	
Marital status: married	73 (87.9)	
Medical condition		
Having health insurance	41 (50.6)	
Having comorbidity ^a	40 (50.0)	
Duration of diabetes, y (range, 0–30)		8.8 $\pm$ 6.7
Psychological factor: self-efficacy (range, 8–80)		47.15 $\pm$ 13.2
Diabetes self-care activities (range, 0–35)		16.77 $\pm$ 5.9

^aComorbidity: hypertension, heart disease, kidney disease

Table 2

Unmet Needs for Support According to Sex

Social Support	Total	Female	Male	χ^2 or <i>t</i> (<i>P</i>)
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	
Primary supporters: spouse ^a	61 (74.4)	21 (60.0)	40 (83.3)	5.66 (.024)
Support needs (range, 6–30)	19.2 $\pm$ 7.0	20.0 $\pm$ 7.1	18.7 $\pm$ 6.2	0.83 (.407)
Receipt of social support (range, 6–30)	13.1 $\pm$ 5.9	11.8 $\pm$ 5.4	14.1 $\pm$ 5.7	−1.86 (.067)
Unmet needs for support ^b (range, −24 to 24)	6.2 $\pm$ 6.5	8.2 $\pm$ 6.3	4.7 $\pm$ 6.4	2.52 (.014)
Meal planning	1.1 $\pm$ 1.5	1.4 $\pm$ 1.4	0.8 $\pm$ 1.5	−1.88 (.064)
Taking medication	0.7 $\pm$ 1.4	1.0 $\pm$ 1.3	0.5 $\pm$ 1.3	−1.49 (.139)
Checking feet	1.1 $\pm$ 1.6	1.4 $\pm$ 1.8	0.8 $\pm$ 1.4	−1.69 (.096)
Physical activity	1.1 $\pm$ 1.6	1.5 $\pm$ 1.6	0.9 $\pm$ 1.5	−1.78 (.079)
Testing blood glucose	0.9 $\pm$ 1.5	1.3 $\pm$ 1.5	0.6 $\pm$ 1.5	−2.22 (.030)
Emotional control	1.3 $\pm$ 1.6	1.6 $\pm$ 1.6	1.1 $\pm$ 1.5	−1.59 (.116)

^aNo. (%).

^bUnmet needs for support were calculated as the difference between the scores for support needs and for the receipt of social support. Each unmet need: range, −4 to 4.

Table 3

Correlation Among Variables

	1	2	3	4	5	6	7	8	9	10
1. Diabetes self-care activities	—									
2. Support needs	-.126	—								
3. Perceived support	.184	.407**	—							
4. Unmet needs for social support	-.282**	.638**	-.369**	—						
5. Self-efficacy	.350**	-.265**	.047	-.260**	—					
6. Age	.295**	-.266**	-.271**	-.018	.375**	—				
7. Sex: male	-.143	-.084	.213*	-.276**	.048	-.073	—			
8. Education	.158	.125	.270**	-.076	.053	-.045	.437**	—		
9. No. of family	.025	-.040	.309**	-.325**	.112	-.166	.119	.038	—	
10. Duration of disease	.201	.024	-.036	.115	.268**	.362**	-.104	-.164	-.050	—
11. Comorbidity	.183	-.008	-.083	.090	.112	.276**	-.246**	-.017	-.026	.069

* $P < .05$.** $P < .01$.

Table 4

Hierarchical regression models examining the association of unmet needs for support and DSCA (diabetes self-care activities)

Model	β	t	P	Adjusted R^2	$F (P)$
Model 1					
(Constant)		0.098	.922	0.147	3.25 (.007)
Age	0.219	1.880	.064		
Sex	−0.181	−1.491	.140		
Education level	0.311	2.661	.010		
Duration of diabetes	0.199	1.785	.079		
No. of family	0.002	0.015	.988		
Comorbidity	0.097	0.874	.385		
Model 2					
(Constant)		0.001	.999	0.176	3.38 (.004)
Age	0.145	1.190	.238		
Sex	−0.190	−1.594	.115		
Education level	0.285	2.465	.016		
Duration of diabetes	0.184	1.675	.098		
No. family	−0.026	−0.246	.806		
Comorbidity	0.100	0.914	.364		
Self-efficacy	0.210	1.871	.065		
Model 3					
(Constant)		1.141	.258	0.296	5.10 (.000)
Age	0.127	1.132	.262		
Sex	−0.290	−2.553	.013		
Education level	0.300	2.796	.007		
Duration of diabetes	0.282	2.681	.009		
No. of family	−0.102	−1.011	.315		
Comorbidity	0.113	1.112	.270		
Self-efficacy	0.090	0.825	.412		
Unmet needs for support	−0.401	−3.620	.001		