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Contributors to Depressive Symptoms among Korean Immigrants with Type 2 Diabete

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Abstract

Background—Patients with diabetes have a higher prevalence of depression than the general population. Korean immigrants with type 2 diabetes are understudied.

Objectives—To identify the prevalence and correlates of depressive symptoms in Korean immigrants.

Method—In this cross-sectional descriptive study, a community sample of 164 Korean immigrant adults with type 2 diabetes were assessed for depressive symptoms using the Center for Epidemiological Studies-Depression scale. Predictors of depression were grouped into three categories: demographic (age, gender, education, English proficiency); clinical (duration of diabetes, comorbidities, insulin use); and psychosocial (general health, diabetes-related quality-of-life, family support).

Results—Approximately 56% of participants had CES-D scores ≥ 16. Higher levels of depression were associated with greater impact of diabetes on QOL (b = 5.68, p = .001), worse overall health (b = -0.09, p = .012), and less family support (b = -4.02, p = .042). The relationship between depression and diabetes impact on quality-of-life was stronger for men than women (b = 6.67, p = .020).

Discussion—Depressive symptoms are common among Korean immigrants with type 2 diabetes. Assessing diabetes-related quality-of-life, general health, and family support may be of value in better understanding depressive symptoms among this population. Among Korean immigrant men with type 2 diabetes, specific attention should be paid to diabetes-related quality-of-life.

Keywords

depressive symptoms; Korean immigrants; gender differences; type 2 diabetes; quality-of-life

Depression is more prevalent in people with diabetes than people without diabetes (Anderson, Freedland, Clouse, & Lustman, 2001). In addition, recent studies have shown that symptoms of depression, not clinical depression, are also common among patients with

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diabetes, with the rate ranging from 18% to 35% (Anderson, Lustman, Clouse, De Groot, & Freedland, 2000). In one study, more than 70% of those patients who scored above the cut-point for depressive symptoms (≥16) on the Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977) were not clinically depressed and many were experiencing diabetes distress (worry about their diabetes and management), not depression (Fisher et al., 2007).

Depression symptom severity has been shown to be associated with poor self-care, lower treatment regimen adherence, functional impairment, and higher health care costs among individuals with diabetes (Ciechanowski, Katon, & Russo, 2000; Gonzalez et al., 2007). Elevated symptoms of depression are related also to increased risk of complications and early mortality in patients with diabetes, even when these elevations are quite modest (Black, Markides, & Ray, 2003). The relative explanatory value of clinical depression compared to depressive symptom severity with regard to diabetes self-management and outcomes has not been delineated clearly. However, symptoms of depression, such as depressed mood, diminished interest, loss of energy, and concentration difficulties, that are elevated (*subclinical depression*) but do not meet severity criteria for clinical depression may be more common among patients with diabetes and more closely related to diabetes self-care and glycemic control than clinical depression (Fisher et al., 2008; Fisher et al., 2007; Gonzalez et al., 2007).

Asian Americans have a higher prevalence of diabetes than Caucasians (Centers for Disease Control and Prevention [CDC], 2011). Korean immigrants, the 4th largest Asian subgroup (Barnes, Adams, & Powell-Griner, 2008), suffer one of the highest prevalence rates of diabetes among Asian subgroups (Choi, Chow, Chung, & Wong, 2011), and glucose and cardiovascular risk management in this group is suboptimal (Choi, Rankin, Stewart, & Oka, 2008; Kim et al., 2009). Furthermore, Korean immigrants in the community have shown notably higher depression symptom scores on the CES-D than that of Caucasians, Hispanics, African Americans, and other Asian Americans (Hurh & Kim, 1990; Kuo, 1984).

Despite these risk factors, depressive symptoms among diabetic Korean immigrants have not been investigated well. The purpose of this study was to examine: (a) the prevalence of depressive symptoms among Korean immigrants with type 2 diabetes; (b) demographic, clinical, and psychosocial factors contributing to depressive symptoms; and (c) whether or not these relationships with depressive symptoms vary as a function of age or gender.

Conceptual Framework

Whereas depressive symptoms have been examined as predictors for glycemic control or diabetes regimen adherence, they have been examined rarely as outcome variables, particularly in Asian immigrant population with diabetes. In a population-based study with a predominantly Caucasian sample, several demographic and clinical factors associated with depression-- age, gender, education, ethnicity, duration of diabetes, number of diabetes complications--were identified among individuals with diabetes (Katon et al., 2004). In addition, psychosocial factors such as social support (Li et al., 2009; Zhang, Chen, & Chen, 2008), general health perception (Lange & Piette, 2005; Li et al., 2009), and quality of life (Ali et al., 2010; Fisher, Chesla, Mullan, Skaff, & Kanter, 2001; Misra & Lager, 2009) were found to be related to depression. Age and gender have served as significant moderators in past studies of both depression and diabetes (Nichols & Brown, 2003; Zhao, Chen, Lin, & Sigal, 2006) and have been examined in studies of depression among people with type 2 diabetes (Katon et al., 2004). Based on these findings, a conceptual framework for the current study was developed to guide the study (Figure 1). In this study, independent variables are grouped into three factors (demographic, clinical, and psychological) and have

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a direct relationship to depressive symptoms. Age and gender are moderators influencing the relationship between the independent variables and depressive symptoms.

Method

Study Design, Setting, and Participants

This study was a cross-sectional survey conducted from April 2010 through March 2011 using a structured questionnaire. Participants were recruited from a health information and education center in a Korean community using flyers in both English and Korean. Eligible participants were Korean men and women who were: (a) diagnosed with type 2 diabetes for at least 1 year, (b) between the ages of 21-80 years, and (c) able to read and write in English or Korean. The inclusionary criterion for age (21-80 years) was chosen after consulting with the director of the community health center and a practicing physician in the community. These individuals noted rising rates of type 2 diabetes in Korean immigrants. The purpose of choosing participants aged 21-80 years and older was to allow recruitment of a representative sample of Korean immigrants with type 2 diabetes. Interested persons contacted the bilingual research assistant or the lead researcher by phone, at which time they were screened for eligibility and obtained further information about the study.

If the person wished to participate in the study and met the above selection criteria, a date and time was arranged to meet with the research assistant at the community center for completion of the questionnaire. All measures were translated and back-translated between English and Korean by the bilingual lead author and healthcare professionals following methods suggested by Brislin (1970). Participants were given the option to complete the survey in their preferred language version (English or Korean), and all selected the Korean version. The questionnaire took 30-40 minutes to complete, after which participants were compensated with a $10 gift certificate for their participation in the study. This study protocol was approved by the university institutional review board.

Power Analysis

The sample size for this study was estimated by examining power calculations; the assumed effect size was 0.30 and the desired power was 80%, and a minimum sample size of 150 was necessary to detect the significance of the unique contribution of any one of the nine independent variables in the multiple regression that was to be used to address Aim 2. This sample size also was found to provide adequate power to detect the significance of the interaction proposed in Aim 3.

Measurements

Dependent variable—Depression symptoms were measured using the CES-D (Radloff, 1977). The CES-D consists of 20 symptom items tapping the major dimensions of depression specified in a wide range of standardized and validated indices of depression. Examples of the items on the CES-D include: “I felt that I could not shake the blues, even with help with my family or friends,” “I thought my life had been a failure,” “I felt fearful,” “I felt lonely,” “I felt sad,” and “I could not get going.” For each symptom item, responses were scored on a 4-point Likert scale: 0 (never or rarely) to 3 (all the time or almost always). High scores (both item and total scores) indicate more depressive symptoms ($\alpha = 0.88$). A score of 16 or higher has been used extensively as the cut-off point for high depressive symptoms on this scale, including in a community sample of Korean immigrants in the United States (Shin, Han, & Kim, 2007). The CES-D has been shown to be more reflective of general emotional and diabetes-specific distress than clinical depression (Fisher et al., 2007).

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Independent variables—Demographic and clinical indicators included patient age, gender, education (high school diploma equivalent or above versus less than a high school diploma), income, duration of diabetes, use of diabetes medication, and insulin injections. Participants were also asked to list other medications to create an indicator of comorbid diagnosis of the respective disorder (i.e., high blood pressure, high cholesterol, depression; range 0-3). English language proficiency was measured using the four-item English language proficiency scale. This scale is based on the Interagency Language Roundtable scale (Clark & Clifford, 1988), a set of descriptions of abilities to communicate in a language. Sample questions include "How well do you speak English?" "How well do you understand spoken English?" and "How well do you read English?" Higher scores (range 4-20) on the scale indicate better English language proficiency ($\alpha = 0.98$).

Quality-of-life was assessed using the Diabetes Quality of Life (DQOL), which was created originally for the Diabetes Control and Complication Trial (Jacobson, Barofsky, Cleary, & Rand, 1988), and items were adapted culturally for Chinese patients (Cheng, Tsui, Hanley, & Zinman, 1999). The English version of the Chinese-adapted DQOL, which was translated into Korean for this study, is a multiple-choice assessment in which patients are asked to rate the common issues of having diabetes in terms of their current functioning. It consists of three primary scales: satisfaction, impact, and diabetes-related worry, with a total of 42 items. Questions are posed from three perspectives: the impact generated by diabetes, patient satisfaction with living with diabetes, and worry about anticipated effects of diabetes. Responses to questions were coded 1-5, with higher scores indicating a greater negative impact of diabetes on quality-of-life ($\alpha = 0.91$). The Chinese-adapted scale incorporates Asian cultural values (e.g., deletion of items asking about one's sex life) and is more culturally appropriate in measuring DQOL in Korean immigrants than the original DQOL scale.

Family support was measured using the Diabetes Family Behavior Checklist-II (DFBC; Glasgow & Toobert, 1988). The scale was developed to assess supportive and nonsupportive family behaviors specific to diabetes on a five-point Likert-type scale in the following areas: medication compliance, glucose testing, exercise, and diet. Scores on the items were averaged to provide a single-item measure of family support, with higher scores indicating greater family support ($\alpha = 0.90$).

General health was measured by the question, "In general, would you say your health is: excellent, very good, good, fair, or poor?" This single-item measure came from the Medical Outcomes Study 36-Item Short Form Survey (SF-36) developed by Ware and Sherbourne (1992) and has been shown to be a powerful predictor of later health outcomes by the developers. The variable was treated as a Likert scale, with responses weighted in intervals of 25, ranging 0-100 (e.g., poor = 0, fair = 25) to provide more easily interpretable mean and regression coefficients. Higher scores indicate greater general health. All measures have been used in previous studies with various ethnicities including Korean and other Asian immigrant populations.

Data Analyses

To examine the prevalence of depressive symptoms among Korean American immigrants with type 2 diabetes (Aim 1), overall levels of depression on the CES-D were examined. For predictors of depression (Aim 2), bivariate associations between depression and each independent variable were examined. Next, a hierarchical linear regression was calculated with three levels. The first level included important demographic control characteristics (gender, age, education, English proficiency). At the second level, clinical variables were entered (years having diabetes, comorbidities, and insulin use). At the third level, psychosocial predictors (general health, DQOL, and DFBC mean) were entered. To address

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whether these significant associations varied as a function of age or gender (Aim 3), separate product-term interactions were run. All statistical analyses were conducted using STATA software (Version 11.2, College Station, TX), and the significance tests were two-tailed with $\alpha = .05$.

Results

In total, 164 participants volunteered and completed the survey ($n_{male} = 74$, $n_{female} = 90$). Although younger individuals were allowed, the sample was predominantly older ($M =$ 68.18 years; range = 40-80). The majority (66%) of participants earned less than $20,000 per year. The majority of the sample (93%) was on an oral medication for diabetes and 23% were using insulin; 73% were on medication for high blood pressure and 59% for high cholesterol. Nine participants (6%) had a prescription for an antidepressant, though this was not associated with scores on the CES-D. As shown in Table 1, participants on average had been diagnosed with diabetes for more than a decade and rated their health between *fair* and *good*. Average scores on the CES-D were fairly high, with 56.1% of the sample above the typical clinical cutoff of 16. The only significant differences between men and women were that men reported higher English proficiency [$t(162) = -3.19$, $p = .002$] and were more likely to have a high school diploma [$t(162) = -3.92$, $p < .001$].

Bivariate associations between CES-D depression and independent variables showed several significant correlates (Table 2). Higher levels of depression were associated with lower English proficiency, more years spent with diabetes, use of insulin, worse general health, and greater impact of diabetes on quality of life.

The results of the hierarchical linear regression predicting depression symptom levels are shown in Table 3. After controlling for other important variables, there was no association between depression levels and gender, age, education, English proficiency, years with diabetes, number of comorbidities, or insulin use (Models 1 and 2). Controlling for demographic and clinical variables, higher levels of depression were associated with lower self-reported general health ($b = -0.09$, $p = .012$), greater DQOL ($b = 5.68$, $p = .001$) and lower levels of DFBC ($b = -4.02$, $p = .042$; Model 3). Examination of product-term interactions revealed one significant moderator: gender (Figure 2). The association between DQOL and CES-D was stronger for men compared with women ($b = 6.68$, $p = .020$).

Discussion

The proportion of patients with clinically significant depressive symptoms (CES-D 16 or above) in the present sample (56.1%) is notably higher than what has been found in previous studies of multiethnic individuals with type 2 diabetes (17.2%-31.6%) using the CES-D (Fisher et al., 2001; Fisher et al., 2007). In one study (Fisher et al., 2007), 18.1% of Asian patients with type 2 diabetes had CES-D scores ≥16.

The prevalence finding is also higher than what has been reported for nondiabetic Korean community samples. Using the same measure of depression, Shin et al. (2007) found clinically significant levels of depressive symptoms among 38% of their sample. In addition, the mean CES-D score in the current sample (18.57) was higher than scores in previous studies with a nondiabetic population of Korean immigrants (Hurh & Kim, 1990; Kuo, 1984).

A possible explanation for this high prevalence of clinically significant depressive symptoms in the sample of diabetic Korean immigrants is that diabetes care and self-management, which is costly and complex, may place an added strain on Korean immigrants, a population already reported to have higher rates of depression than Caucasian

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and other Asian immigrant populations due to limited resources and greater sociocultural barriers (Shin et al., 2007). The limited resources and greater sociocultural barriers of the sample are worth noting, with 66% earning less than $20,000 per year and a low overall English language proficiency level. Supporting the possible explanation for the high prevalence of depressive symptoms in the sample, previous research with a Latino population with type 2 diabetes has shown financial stress to predict higher scores on the CES-D (Fisher et al., 2001).

The remarkable difference in the prevalence of clinically significant depressive symptoms between the current study and previous studies may be related to age. The average age in the current study sample was 68 years, whereas the average ages ranged from 48-55 years in previous studies compared (Fisher et al., 2001; Fisher et al., 2007). The findings in the literature regarding age and prevalence of depression are inconclusive and vary across ethnicities. However, most prior research on diabetic populations has shown higher risk of depression for younger to middle-aged adults (Fisher et al., 2008; Katon et al., 2004), so the finding is somewhat counterintuitive given that, despite the sample being older on average than previous samples, this study showed a higher prevalence of depressive symptoms. Perhaps, among Korean immigrants, older patients with type 2 diabetes experience more depressive symptoms than younger patients, likely due to compounding effect of limited resources and language barriers in the face of disease management burden with declining physical, mental, and social functioning with age. In support of this explanation, a study with a nondiabetic population showed that Koreans in the age group 60 years and over had higher average CES-D scores than in the younger age group, but Chinese, Filipino, and Japanese immigrants in the age group 60 years and over had lower average CES-D scores than their younger age group counterparts (Kuo, 1984). Age may play a different role for depressive symptoms for Korean immigrants than for other ethnic groups.

At a bivariate level, English proficiency, duration of diabetes, use of insulin, general health, and diabetes impact on QOL was found to predict depressive symptoms. However, only the psychosocial variables (general health, diabetes impact on QOL, and family support) maintained significance when controlling for the influence of demographic and clinical variables. Among a Korean immigrant population with diabetes, patients' subjective assessments of health, impact, and support may be more salient contributing factors to depressive symptoms than clinical variables. The lack of relative importance of clinical factors mirrors the findings of Fisher et al. (2001) on a Caucasian and Latino sample.

The findings are consistent with previous studies demonstrating negative relationships between depression and health-related QOL among individuals with diabetes across ethnicities (Ali et al., 2010; Fisher et al., 2001; Misra & Lager, 2009). The more QOL is impacted by diabetes, the more depressive symptoms are reported in individuals with type 2 diabetes. Similarly, the finding that poorer general health predicted higher levels of depression follows a previous study with a large multiethnic sample including White, Black, Hispanic, and American Indian/Alaska Native (Lange & Piette, 2005; Li et al., 2009). The significant association between high family support and low depressive symptoms found in this study is also consistent with previous studies that showed benefits of social support on depressive symptoms among individuals with type 2 diabetes (Li et al., 2009; Zhang et al., 2008). Age was associated only marginally with depressive symptoms ($p = .08$) at the bivariate level, and older individuals reported higher depressive symptoms. However, given that the overwhelming majority of studies have found younger age is associated with higher depressive symptoms (Fisher et al., 2008; Katon et al., 2004) and none of these studies were focused on Korean immigrants with type 2 diabetes, further investigation in this area is needed with a larger sample of Korean immigrants with type 2 diabetes.

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The most interesting finding was significant gender differences in the strength of the relationship between diabetes QOL and depressive symptoms: the relationship between diabetes QOL and depressive symptoms was stronger for men than for women. Among those with diabetes, studies so far have also shown that women are at greater risk of depression (Katon et al., 2004) and have a greater impact by diabetes on their QOL than men (Misra & Lager, 2009). However, no mean-level differences were found between genders for either depressive symptoms or impact of diabetes on QOL. The inconsistent gender findings may be related to the use of a diabetes-specific QOL measure for an Asian population rather than the general health-related QOL (e.g., SF-36). There may be certain diabetes-specific QOL domains that are more salient for Korean immigrant men than women, making the association between diabetes-related QOL and depression stronger among men than among women. Further investigation is needed to identify those specific diabetes-related QOL domains that are important for each gender to improve understanding of the gender differences observed in this study.

There were a few limitations to this study. First, as a cross-sectional study, it was only possible to identify associations but not to establish causality. A longitudinal study in the future would be able to elucidate the directionality of the relationship between depressive symptoms and the correlates found in this study and whether depressive symptoms operate as an antecedent or a consequent to these correlates among diabetic Koreans. Second, the relatively small sample size, especially when split by gender, may have limited the ability to identify certain associations. Also, the proportion of patients reporting depressive symptoms in this study was higher than the average population with diabetes (Anderson et al., 2001), thus findings from this study may not be generalized beyond this study sample. Finally, glycemic control (hemoglobin A1C) was not measured in this community sample due to limited funding. Whereas a similar study showed that A1C was not a significant predictor of depressive symptoms (Fisher et al., 2001), the relationship between A1C and depressive symptoms may be different in Korean immigrants.

The study has several strengths as well. The CES-D scores were treated as a continuous variable, so the significant relationships between identified predictors and depressive symptoms can be applied to diabetic Koreans with all levels of depressive symptoms, rather than only individuals in certain categories of depressive symptoms (e.g., mild, moderate, severe). Although a convenience sample, the study participants came from a community setting, which increases generalizability of present study findings within Korean immigrant population. Also, a diabetes-specific QOL was used, which allowed researchers to interpret findings in the context of diabetes and to attribute results to the impact of diabetes with more confidence. Finally, the estimation of the level of depressive symptoms in a sample of Korean immigrants with type 2 diabetes generated a population-specific knowledge for this understudied, high-risk Asian subgroup.

Conclusion

Psychosocial factors such as diabetes-related QOL, perceived general health, and family support are important among Korean immigrants with diabetes in predicting their depressive symptoms. Clinicians working with Korean immigrants having type 2 diabetes should be cognizant of the high prevalence of depressive symptoms among this group and pay particular attention to the patients' diabetes related QOL, perceived general health, and family support when assessing the patient for depressive symptoms. Particularly, diabetes-related QOL matters more in Korean men with diabetes than women in predicting depressive symptoms. Future studies of depression symptoms among Korean immigrants with type 2 diabetes should consider the impact of diabetes on QOL, and how this may be especially problematic among men.

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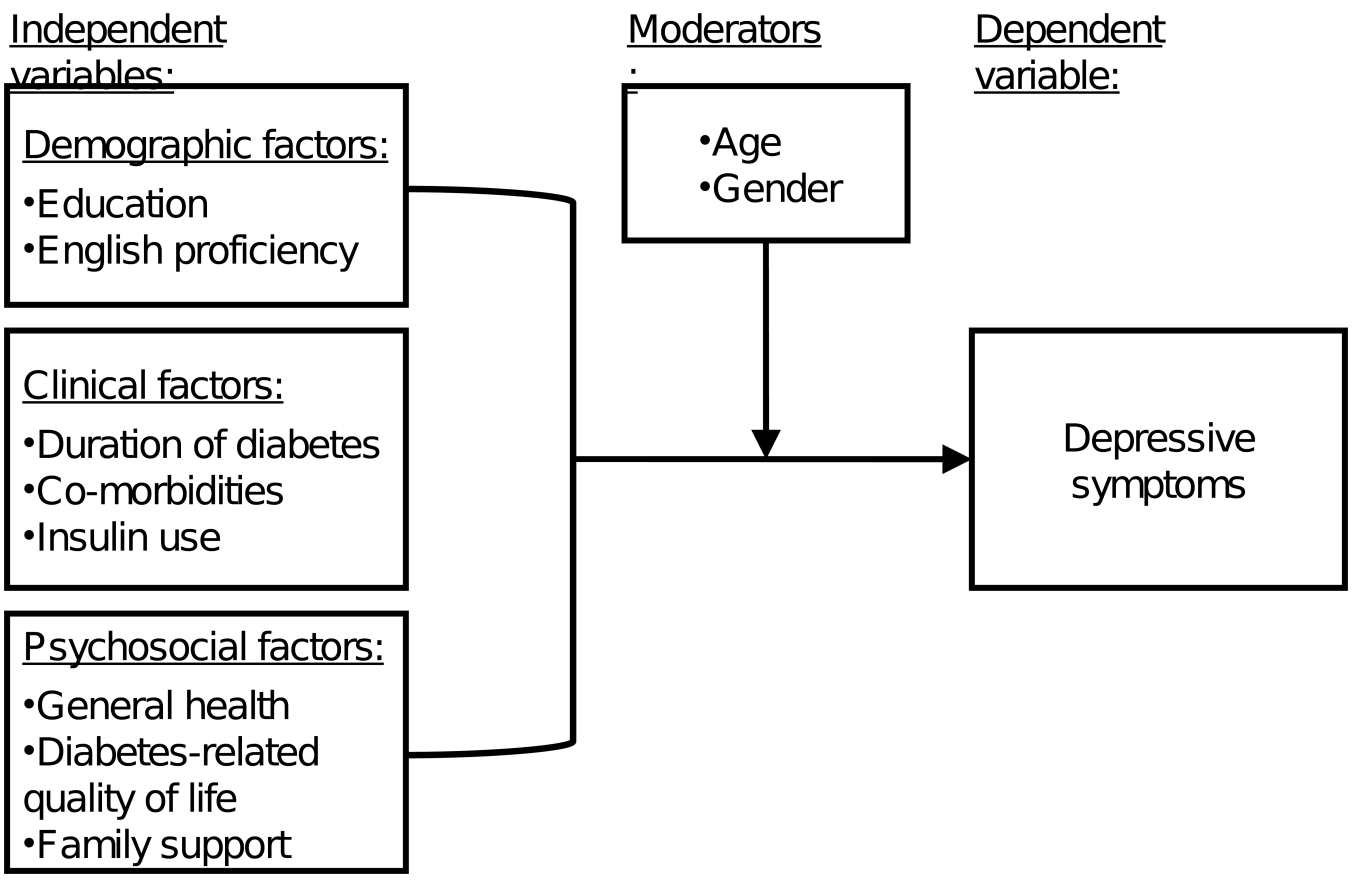

Figure 1.
Conceptual framework of depressive symptoms predicted by demographic, clinical, and psychological factors Also represented is the potential moderating relationship of age and gender.

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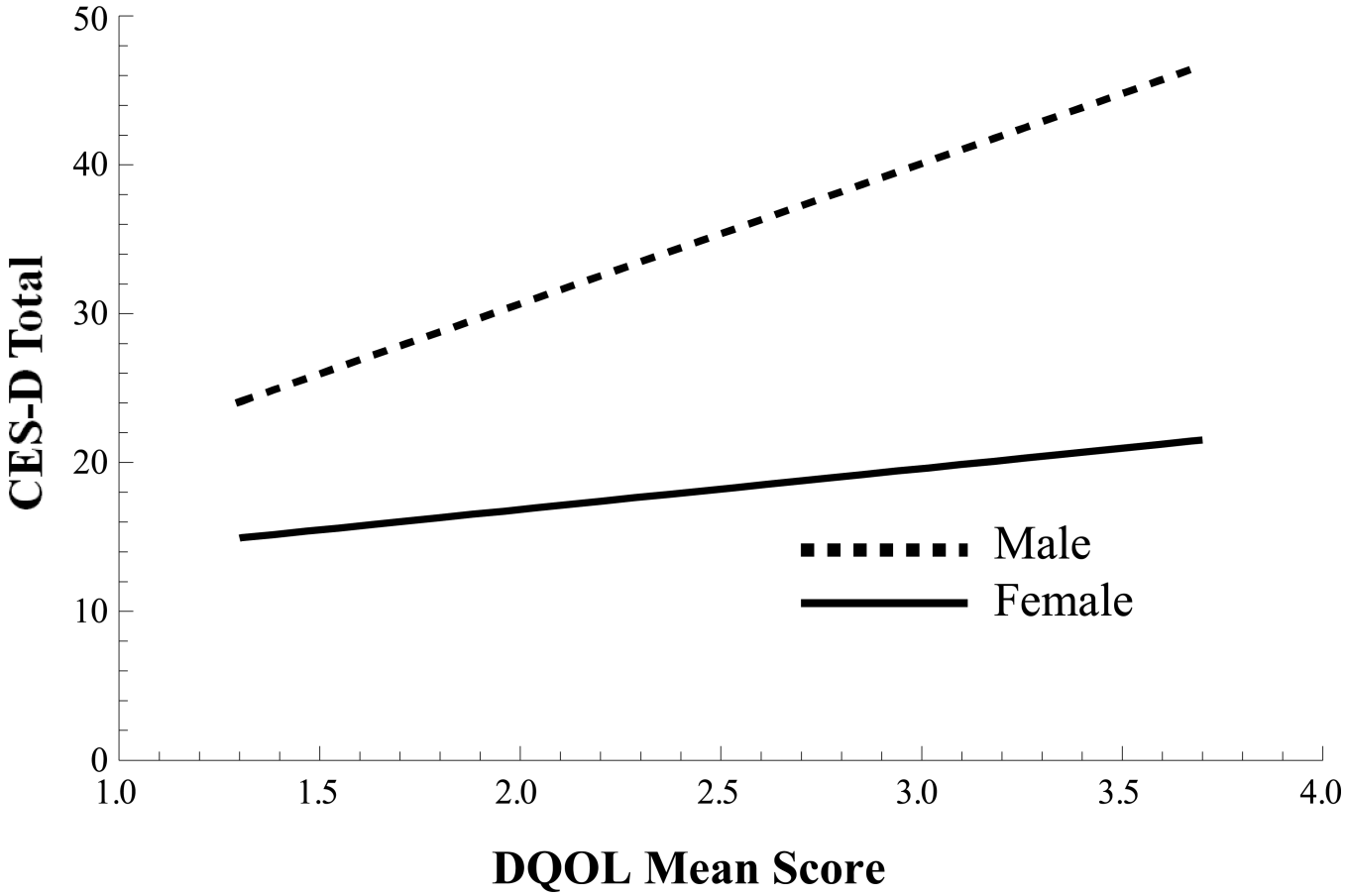

Figure 2.
Relationship between depressive symptoms and DQOL moderated by gender CES-D = Center for Epidemiologic Studies Depression Scale. DQOL = Diabetes Quality of Life.

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Table 1

Characteristics of Total Sample, Males and Females

	Overall *M* (*SD*) (*n* = 164)	Male *M* (*SD*) (*n* = 74)	Female *M* (*SD*) (*n* = 90)	95% CI
		Demographic Variables		
Age	68.18 (9.30)	67.81 (9.62)	68.49 (9.06)	[-2.21, 3.57]
Education[a]	0.50 (0.42)	0.66 (0.48)	0.37 (0.48)***	[-0.44, -0.14]
English Proficiency	8.25 (3.77)	9.26 (3.98)	7.72 (3.40)**	[-2.97, -0.70]
		Clinical Variables		
Years with Diabetes	10.80 (9.86)	11.14 (9.61)	10.53 (10.11)	[-3.67, 2.46]
Comorbidities	1.20 (0.92)	1.12 (0.92)	1.27 (0.92)	[-0.14, 0.43]
Insulin Use[a]	0.23 (0.42)	0.23 (0.42)	0.24 (0.43)	[-0.12, 0.13]
		Psychosocial Variables		
General Health	35.52 (25.38)	37.84 (27.52)	33.61 (23.45)	[-12.09, 3.63]
DQOL[b]	2.35 (0.53)	2.33 (0.54)	2.37 (0.53)	[-0.12, 0.21]
DFBC mean	2.97 (0.38)	2.97 (0.35)	2.96 (0.41)	[-0.14, 0.10]
CES-D	18.57 (10.37)	18.19 (10.38)	18.89 (10.41)	[-2.52, 3.92]

Notes. Significance tests represents differences between Male and Female. Education was categorized as follows: 0 = Less than a High School Diploma, 1 = ≥ High School Diploma. *Comorbidities* represents the number of comorbid disorders as indicated via prescription for medication (high blood pressure, high cholesterol, or depression). General Health ranges from 0 to 100.

DFBC = Diabetes Family Behavior Checklist, DQOL = Diabetes Quality of Life, CES-D = Center for Epidemiologic Studies Depression Scale, CI = Confidence interval of the mean difference

*$p < .05$

[a]Values represent proportions.

[b]High scores denote a greater impact of diabetes on quality of life.

**$p < .01$

***$p < .001$

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Table 2

Pairwise Correlations with CES-D

	r (CES-D)	p
Demographic Variables		
Male[a]	-.034	.669
Age	.137	.080
Education[a]	-.140	.073
English Proficiency	-.193	.013
Clinical Variables		
Years with Diabetes	.191	.014
Comorbidities	.095	.222
Insulin Use[a]	.220	.005
Psychosocial Variables		
General Health	-.396	< .001
DQOL[b]	.438	< .001
DFBC mean	-.153	.053

Notes. CES-D = Center for Epidemiologic Studies Depression Scale. Education was categorized as follows: 0 = Less than a High School Diploma, 1 = ≥ High School Diploma. *Comorbidities* represents the number of comorbid disorders as indicated via prescription for medication (high blood pressure, high cholesterol, or depression). General Health ranges from 0 to 100.

DFBC = Diabetes Family Behavior Checklist, DQOL = Diabetes Quality of Life

[a]Dichotomous variables.

[b]High scores denote a greater impact of diabetes on quality of life.

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Table 3

Hierarchical Regression Models Predicting Depression

	Model 1 *b* (*SE*)	Model 2 *b* (*SE*)	Model 3 *b* (*SE*)	Model 4 *b* (*SE*)
Demographic Variables				
Male	0.39 (1.69)	0.19 (1.68)	0.59 (1.54)	0.48 (1.52)
Age	0.10 (0.09)	0.08 (0.09)	0.11 (0.09)	0.15 (0.09)
Education	-0.93 (1.96)	-0.17 (1.98)	-1.20 (1.84)	-1.36 (1.82)
English Proficiency	-0.41 (0.26)	-0.33 (0.26)	-0.03 (0.25)	0.07 (0.25)
Clinical Variables				
Years with Diabetes		0.11 (0.09)	0.04 (0.08)	0.02 (0.09)
Comorbidities		0.69 (0.90)	0.86 (0.83)	0.78 (0.82)
Insulin Use		3.33 (2.16)	1.04 (2.14)	1.52 (2.12)
Psychosocial Variables				
General Health			-0.09 (0.03)	-0.08 (0.03)
DQOL[a]			5.68 (1.72)	2.75 (2.10)
DFBC mean			-4.02 (1.96)	-4.85 (1.96)
Male X DQOL				6.67 (2.84)
R^2	0.05	0.09	0.28	0.30
Adjusted R^2	0.02	0.05	0.23	0.25