Published in final edited form as:
Chronic Illn. 2010 March ; 6(1): 22–33. doi:10.1177/1742395309354608.

Family Influences on Self-Management Among Functionally Independent Adults with Diabetes or Heart Failure: Do Family Members Hinder As Much As They Help?

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Abstract

Objectives—Among functionally independent patients with diabetes or heart failure, we examined family member support and family-related barriers to self-care. We then identified patient characteristics associated with family support and family barriers and how each was associated with self-management adherence.

Methods—Cross-sectional survey of 439 patients with diabetes or heart failure (74% response rate).

Results—75% of respondents reported supportive family involvement in self-care, however 25% reported frequent family-related barriers to self-care. Women reported family support less often (64% vs. 77%) and family barriers to self-care more often (30% vs. 21%) than men. 78% of respondents reported involved family members nagged or criticized them about illness care. In multivariate models, low health literacy, partnered status, and higher family function were associated with higher family support levels, while female gender, older age, higher education, and more depression symptoms were associated with family barriers to self-care. Family barriers were associated with lower disease care self-efficacy ($p<.0.01$), and both barriers and family support were associated with patients' self-management adherence (both $p<0.05$).

Discussion—Family members are highly involved in the self-care of these higher-functioning patients. Interventions should help patients with chronic illness overcome family barriers to self-care and help families use positive and effective support techniques.

Keywords

social support; family relationships; diabetes; heart failure; self-management

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Introduction

Patients managing chronic diseases such as diabetes or heart failure struggle with complex regimens, including frequently changed medication schedules, regular self-monitoring, dietary restrictions, and physical activity goals. Evidence is mounting that positive support from family and friends can improve patient health behaviors and outcomes.[1-3] Accordingly, interest is increasing in interventions that can maximize the impact family members can have on patients' self-care.

However, significant gaps exist in our understanding of the ways in which family members are currently involved in self-management support. Most studies examining family involvement in chronic illness care have focused on patients who are older or have severe physical or cognitive impairments. Yet, the prevalence of chronic illness is growing most rapidly among people who are younger and functionally independent.[4] The extent and type of involvement of family members with the care of these patients is largely unknown. We also lack information about the determinants of family involvement in care, such as patients' sex, socioeconomic status or burden of comorbid illness. For example, there is some evidence that social support is more important to women's outcomes than men's,[5, 6] but it is unclear whether women actually receive more family support. Information about the patterns of family involvement in chronic illness care is necessary to focus family interventions on the patients most likely to benefit from family help.

Patients with chronic illness do not always experience family involvement positively. Qualitative studies indicate that when family members try to support patients, those patients can feel criticized, nagged, or guilty about receiving help.[7, 8] Moreover, there is some evidence that attempts at support by family members can actually lead to worse patient outcomes if they are poorly executed.[9, 10] The way support is expressed could be particularly important for functionally able adults, since their family members are more likely to be involved in motivating and facilitating healthy behavior,[11, 12] rather than directly undertaking illness care tasks on the patient's behalf. Women, in particular, may be less satisfied with the support they receive,[13] although evidence for or against this hypothesis is scarce.

In addition to family member attempts to support patients, qualitative studies suggest that family members can also pose barriers to self-care.[14, 15] For example, family members may refuse to eat the type of food the patient would like to eat, may cause the patient to be embarrassed about their self-care, or may place competing demands on the patient's time. These family barriers to self-care could particularly affect younger, more functionally able patients, who are often trying to juggle multiple active family roles themselves (e.g., parent, child, and spouse).[16, 17] However, we know very little about the frequency with which patients experience family barriers to care, whether the amount of family barriers differs depending on patient self-management needs, or whether family barriers actually result in poorer self-management.

In order to address these gaps in knowledge, we surveyed functionally independent patients with either diabetes or heart failure to determine 1) how often family members attempted to support patient's self-care activities, 2) how often patients felt their involved family members used undesirable support techniques, 3) how often family were perceived as causing barriers to patient self-care, 4) which patient characteristics were associated with higher levels of family support or barriers, and 5) whether perceived family barriers to care were associated with lower self-efficacy and self-management adherence. Finally, given the importance of gender roles in both giving and receiving self-care support, we examined differences between women and men in each area.

Methods

Sample

We conducted a mail survey of patients 18 years old or older, identified through the disease registries of a large university-based healthcare system in the United States. Patients with diabetes and heart failure are included in the registries when their diagnosis is confirmed through billing, medication, laboratory, and other testing results. Patients are removed from active registry status if their physician determines they have limited life expectancy or significant cognitive impairment. In a subsequent study phase not discussed here, patients participating in this study and their primary care physicians were surveyed about primary care management of chronic disease. Therefore patients without a primary care physician and those with an endocrinologist listed as their primary care physician were excluded from this study. Eligible patients were sampled from strata using the most appropriate disease severity measurements available in the registries data. Five hundred diabetes patients were randomly sampled from two strata based on glycemic control (last HbA1C>=7% and last HbA1C <7%), and 500 heart failure patients were randomly sampled from four strata based on last measured ejection fraction (EF) (last EF < 40%, last EF 40-55%, last EF 55-80% with previous EF <40%, and last EF 55-80% with normal systolic function). Respondents were deemed ineligible if they indicated in survey answers that they were not aware of being diagnosed with diabetes or heart failure, were currently receiving cancer treatment, were diagnosed with a memory disorder, needed help with activities of daily living, or lived in a professional care facility full time. This study was approved by the University of Michigan Health System Human Subjects Committee.

Measures

Surveys for diabetes and heart failure patients were parallel, referring to ‘diabetes’ or ‘heart failure’ as appropriate. See tables for exact question wording, response options/score ranges, and score calculation methods.

Health Status—Self-rated health was measured using a standard 5 point scale (excellent/very good/good/fair/poor). Patients were then grouped into 3 health status categories: excellent/very good, good, or fair/poor. Respondents indicated whether they currently had any of 13 chronic comorbid conditions, and were grouped into those reporting 0-1, 2-3, or >=4 diagnoses. Depressive symptoms were measured with the Patient Health Questionnaire-2. Respondents scoring 3 or more were considered to have a high level of depression symptoms, as this cutoff is the most sensitive and specific for detecting major depressive disorder.[18] Low health literacy was indicated by answering ‘sometimes’ or more to the question, “I have problems learning about medical conditions because of difficulty understanding written information.”[19]

Family Structure and Function—Respondents who were married or “living with someone in a couple” were considered partnered. Respondents also indicated the number of children under 18 years old they had cared for regularly in the last 12 months. Family function was measured with the Family APGAR, which measures satisfaction with family relationships.[20] Example items are “I am satisfied with the way my family talks over things with me” and “I am satisfied with the way my family and I share time together”.

Family Support for Self-Management—Respondents were asked how often they receive support from family members or friends in each of five self-management domains: healthy eating, exercise, self-testing, medications, and general information/decisions. In order to stimulate recall of family attempts to support self-management within each domain, respondents were first asked how often family support them in specific ways hypothesized to be common among this patient population. For example, for healthy eating, respondents were asked how often family members or friends help them understand nutrition labels or decide what to eat at a restaurant. Respondents then reported how often family members try to help them with each domain overall and responded by choosing from never, rarely, some days, many days, or almost every day. A family support for self-management scale was created from the mean of the support level for each of five overall domain support questions (Cronbach's alpha = 0.82).

Family Barriers to Self-Management Adherence—Respondents also indicated how often they missed a planned self-management activity in each of these five domains because of the influence of family. Those who indicated a family-related lapse of adherence 'many months' or more in the last year were considered to have a family barrier for that self-management domain. Due to the relatively low prevalence of barriers, we created a dichotomous summary measure: those who had a family barrier within any one of the five domains were considered to have a high level of family barriers, and all others were considered to have a low level of family barriers.

Involved Family Member Behaviors and Patient Reactions to Family Involvement—Respondents were asked, "Who is the person that gets most involved with your diabetes/heart failure care?" This person was labeled their main diabetes/heart failure contact. They were then asked, "When your main diabetes/heart failure contact is involved with your diabetes/heart failure care, how often does he or she….", followed by specific behaviors such as nagging or criticizing. We then asked, "When your main diabetes/heart failure contact is involved in your diabetes/heart failure care, how often do you have these feelings:…", followed by specific feelings such as feeling glad or frustrated. Those who did not have a main illness contact (14% of respondents) were asked to skip these questions.

Illness Care Self-Efficacy and Self-Management Adherence—Self-efficacy for illness care was measured using an established scale[21] (alpha = 0.93 in this dataset). Self-management adherence was measured using five items from the Survey of Diabetes Self-Care Activities[22] (alpha = 0.50 in this dataset).

Analysis

We used t-tests and chi square tests to identify differences between men and women in each descriptive analysis. We used multivariate linear and logistic regressions to determine which respondent characteristics were associated with higher levels of family support and the presence of family barriers. Independent variables were chosen based on patient characteristics hypothesized to be relevant and included patients' demographics, family structure, health status, depressive symptoms, and health literacy level. We used four multivariate linear regression models to examine the independent relationships between family involvement (both family support and family barriers) and patients' self-care (measured by their illness management self-efficacy and self-management adherence), controlling for patient covariates. In auxiliary analyses we explored potential interactions between patient gender and level of family support or family barriers. While each independent variable had < 5% missing data, only 85% of the respondents had the full set of variables needed for these analyses. We used multiple imputation to create 10 replicates of the dataset that replaced missing information with imputed values. Regression results were comparable between non-imputed estimates and those calculated from the average estimates over the 10 imputed datasets, so results from imputed data are reported. Descriptive results are based on non-imputed data only.

Results

Of 590 returned surveys, 438 were received from eligible participants, yielding a Council of the American Research Organization (CASRO) eligible response rate[23] of 74%. Twelve additional respondents did not indicate their sex and were excluded from analyses.

The median age of respondents was 63 years, and there were more women age 75 and over (27% of women) than men (19% of men; Table 1). Approximately half of respondents were men (52%), and few reported Hispanic ethnicity or non-Caucasian race. More than a third (35%) of respondents had a high school education or less, and 21% reported low health literacy. Many more male respondents were partnered (82%) than women (50%); while slightly more women reported currently caring for young children (27% vs. 22% of men). Thirty-one percent of respondents reported four or more comorbid conditions, and 37% reported being in fair or poor health.

As shown in Table 2, 77% of men and 64% of women reported receiving family support at least sometimes in one or more of the five self-management domains. When divided by primary diagnosis, 74% of HF patients and 68% of diabetes patients reported some supportive family involvement in self-care (data not shown). Family members most frequently assisted respondents with healthy eating and least frequently with self-testing. Twenty-one percent of men and 30% of women reported periodic lapses in self-management adherence attributed to family barriers, with consumption of unhealthy food the most common lapse attributed to family barriers. Overall, women reported significantly less family support (64% of women vs. 77% of men, $p < 0.001$) and significantly more family barriers (30% of women vs. 21% of men, $p <0.05$) for self-care. Among individual self-management behaviors, women had significantly less family support and more family barriers with healthy eating and exercise compared to men.

When asked to identify the single person most involved in their illness care, 65% of those who had such a person identified a spouse, 24% identified an adult child, and the rest identified a sibling, other family member, or friend. 78% of respondents said this ‘main contact’ either regularly nagged or criticized them about their illness care. Men reported significantly more illness-related nagging, criticism, and arguing from their contact, while significantly more women reported their contact ignored them or acted annoyed with them in illness-related situations (Table 3). When asked about the consequences of their contact’s involvement, the majority of respondents felt glad (79%) or more confident about their care (61%), as compared to frustrated, guilty, or more confused (all less than 25%).

In multivariate analyses, low health literacy, married/partnered status, and higher family function were independently associated with higher levels of family support for self-management, while sex and age were not independently associated with family support (Table 4). In contrast, younger respondents, female respondents, those with some college education, and those with more depression symptoms were more likely to report family barriers.

Finally, when adjusted for respondents’ sociodemographic and health status, family barriers were independently associated with lower illness-management self-efficacy, while the level of family support was not associated with self-efficacy (Table 5). However in models of self-management behavior, family support was independently associated with better self-management adherence, and family barriers were independently associated with worse adherence. There were no significant interactions between sex and family support or family barriers in these models.

Discussion

Summary

Most respondents, regardless of their age or health status, reported that family members regularly sought to help them with their chronic disease self-management. Family attempts at support were more common among patients with low health literacy. Approximately a quarter of respondents perceived significant family barriers to their self-management, especially those who were female, younger, and more educated. Although some family attempts to support were perceived in negative ways (such as nagging and criticizing), most patients were still glad their family members were involved with their care. Yet, a substantial minority of patients (approximately 20%) reported negative reactions to family involvement, including frustration or confusion about care.

Interpretation and Prior Literature

We found that family members are involved with the care of functionally able patients with chronic illness at levels similar studies of diabetes patients 60 years old or older.[24, 25] And in a recent study of heart failure patients (mean age=63 years),[26] 60% reported family involvement in their care. The higher rate of involvement we found (74%) for heart failure patients of a similar age may reflect differences between samples or our more extensive family support instrument. Further development and testing of family involvement and support scales specifically tailored to family roles in this chronically ill yet functionally independent patient population is warranted.

While both family support and family barriers were associated with self-management adherence, only perceived family barriers were associated with patients' self-efficacy level. These findings may reflect that family acting in support roles often directly assist in self-management behaviors (through giving a patient a pill, for example), while barriers must be overcome by the patient who then needs to take the self-management action his or herself, requiring a higher level of self-efficacy. It could also reflect prior findings that family attempts to provide disease-specific support can have mixed effects on self-efficacy, perhaps through the "nagging factor".[27, 28] Interventions might help families have a more positive impact on patients through teaching support techniques that also increase patient self-efficacy, such as autonomy supportive communication.[29]

Like prior studies, we found significant differences in the support experiences of male and female patients. Women's reactions to family involvement with care were marked by more frustration, guilt, and confusion. As suggested in qualitative studies with women with diabetes, these negative reactions to receiving support may reflect some women's self-identification as the main family care provider, and the change in this self-image required to receive help.[30, 31] There were also differences in the type of negative behaviors perceived from the supporter: men reported more actively negative behaviors (i.e. nagging and criticism), while more women reported behaviors that could be interpreted as passive (i.e. others ignoring them or acting annoyed when they have symptoms). These results are consistent with qualitative study findings[32, 33] that men receive more active types of involvement from their spouses and that their female supporters report using nagging techniques more often. Helping men and women change the amount and type of support they receive to reflect their needs and wishes may be crucial, as men are often more dependent on family members for instrumental care of disease (such as preparing healthy meals),[32] while perceptions of social support and relationship quality can impact women's outcomes more than men's.[5, 6, 34, 35]

Limitations

Our sample was drawn from one hospital-based health system, serving a relatively educated, middle-class population of Caucasians in the U.S. Although we found no racial/ethnic differences in family support or barriers, our sample had too little racial/ethnic variation to draw conclusions based on race. There is some evidence that race, ethnicity, and culture affect family roles in chronic illness,[36, 37] so future studies asking similar research questions among patients with varying race/ethnicities are warranted. For similar reasons, family involvement and family barriers to chronic illness care may differ among patients in other countries.

Because our family barrier measure asked patients about lapses in self-care it may have confounded our measure of self-management behavior, although family barriers referred to any lapses in a period of several months, while self-management behavior referred to the last 7 days only. Our measure of family barriers may not have captured negative family influences that made self-management more difficult but did not result in non-adherence, thus potentially underestimating the prevalence of negative family influences.

Implications for research and practice

These data suggest that clinicians should be alert to family barriers to self-care as well as available family support, even in families that seem to have good overall function, and especially among younger and female patients. Further observational studies of family barriers to self-care among non-Caucasian patients could reveal whether the patterns of family barriers or the importance of family barriers for diabetes outcomes vary with race or cultural background.

While most interventions addressing family roles in chronic illness have focused on increasing family support, it may be just as important to help patients address family barriers. Future research interventions could aim to teach patients ways to negotiate barriers posed by others in an effort to avoid negative family effects on patient self-efficacy for self-care. Future interventions could also focus on increasing family use of support techniques that avoid nagging, criticism, control, or avoidance, and help patients accept desired support without guilt.

Our study is the first to report that chronically ill adults with worse health literacy have increased family involvement in their self-care. If confirmed in other studies, new family support interventions could focus on specific ways that family can help these patients with their unique self-management challenges.

In conclusion, we found that family members are frequently involved in the self-care of functionally independent patients with heart failure or diabetes, but that family members often express this support in ways perceived negatively by patients, and are seen to interfere in self-care for a substantial minority. Future interventions should help patients with chronic illness overcome family barriers to self-care, and help families support these patients in ways that patients will perceive as positive and that will effectively improve patient outcomes.

Acknowledgments

This study was supported by the Robert Wood Johnson Clinical Scholars Program, the Michigan Diabetes Research and Training Center (NIH # DK020572) and the Michigan Institute for Clinical and Health Research (NIH #UL1RR024986). John Piette is a VA HSR&D Research Career Scientist. The views expressed in this paper are those of the authors and do not necessarily represent the views of the Department of Veterans Affairs. We are grateful to Alice Beckman, Jessica Forestier, Aleksandra Jankovic, Susan Lopez, Melissa Mashni, Amanda Pudenz, the UMHS Chronic Disease Registries staff, and the AAVA/UM QUICCC staff for their assistance with this project.

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Table 1

Respondent Characteristics

	Men (N=223)		Women (N=203)		P-value
	N	**(%)**	**N**	**(%)**	
Age 25-49	32	(14)	30	(15)	0.17
50-64	87	(39)	75	(37)	
65-74	60	(27)	41	(20)	
>=75	42	(19)	54	(27)	
Hispanic/Non-Caucasian[a]	31	(14)	30	(15)	0.80
Some College or More[b]	152	(68)	127	(63)	0.18
Low health Literacy[c]	49	(22)	37	(18)	0.41
Currently care for 1 or more children[d]	48	(22)	55	(27)	0.12
Married or Partnered[e]	182	(82)	102	(50)	<0.001
High satisfaction with family function[f]	92	(41)	78	(38)	0.44
High level depression symptoms[g]	39	(17)	40	(20)	0.51
Comorbid conditions [h]					
0-1	80	(36)	41	(20)	<0.01
2-3	81	(36)	91	(45)	
4 or more	60	(27)	68	(33)	
Self-reported health status[i]					
Excellent/Very Good	58	(26)	34	(17)	0.04
Good	78	(35)	89	(44)	
Fair/Poor	78	(35)	72	(35)	
	Mean	**SD**	**Mean**	**SD**	
Illness Care Self-Efficacy[J]	3.99	0.77	3.89	0.87	0.10
Self-Management Adherence[k]	4.13	1.37	4.27	1.45	0.85

[a] Respondents indicating a Hispanic ethnic background or a race other than Caucasian were designated as Hispanic/Non-Caucasian.

[b] Education was coded as “some college” (those who had completed some college or technical school, or had a college degree) versus “less than college” (those who had a high school diploma, GED, or less years of education)

[c] Those answering “sometimes” or more to the statement, “I have problems learning about medical conditions because of difficulty understanding written information”

[d] Based on number of children under 18 years of age, caring for in the last year

[e] Those who reported they were “married” or “living with someone in a couple”

[f] Score greater than x on Family APGAR[20] (possible range x-x)

[g] Score greater than x on Patient Health Questionnaire-2[18]

[h] Count of illnesses/symptoms suffered in the last two years among: high blood pressure/hypertension, blocked arteries in legs, blocked arteries in heart/angina/chest pain, stroke, kidney disease, eye disease, nerve damage/neuropathy, liver disease, arthritis, migraine headaches, osteoporosis, stomach or duodenal ulcers, chronic pain pain/sciatics, cancer, asthma/copd/emphysema/bronchitis, lupus, thyroid disease, HIV/AIDS. Diabetes was also an option for those answering the heart failure survey.

[i] Question: “In general, would you say your health is....”[38]

[J] Possible range 1-5, with higher scores indicating higher self-efficacy

[k] Mean # days per week adherence to any of five self-management behaviors, as applicable to the patient’s regimen: healthy eating plan, exercise sessions, self-testing glucose or blood pressure, checking feet or weight, and taking diabetes/heart failure medications. For example, if a patient was not prescribed medications for diabetes, adherence to diabetes medications was not included in the mean. Possible range 0-7, with 7 indicating perfect adherence every day in the last week for all applicable self-management behaviors.

Table 2

Frequency of Family Support and Family Barriers to Patient Self-Management

	Sometimes or More, %			
	Total (N=439)	**Men (N=223)**	**Women (N=203)**	**P-value**
Support for Self-Management from Family				
Healthy Eating	64	69	58	0.017
Exercise	33	41	25	<0.001
Information and Decisions	38	45	31	0.003
Medication	33	34	31	0.587
Testing	23	27	19	0.119
Support sometimes or more for at least one of above	71	77	64	0.004
Overall Level of Family Support for Self-Management [a]	2.38 (SD 0.94)	2.52 (SD 0.96)	2.22 (SD 0.89)	<0.001
	Many months/every month/every week, %			
Lapses in Self-Management Attributed to Family				
Ate unhealthy food	17	14	22	0.049
Skipped planned exercise	10	7	12	0.046
Received incorrect information about illness-management	5	4	7	0.246
Skipped a medication dose	3	1	5	0.049
Skipped planned testing	4	3	5	0.219
High Family Barriers to Self-Management [b]	25	21	30	0.025

Note: Proportions in this table are based on non-missing responses

[a] Possible range 1-5, with 5 indicating family attempt to support patient almost every day in each applicable domain, 4 indicating family attempt to support patient most days on average, 3 some days, 2 rarely, and 1 never

[b] High family barriers indicated by a barrier many months or more in at least one self-management domain

Table 3

Main Family Contact Illness - Related Behaviors and Consequences of Involvement

	% Sometimes or more			
	Total (N=439)	**Men (N=223)**	**Women (N=203)**	**P-value**
Negative Illness-Related Behaviors of Main Family Contact				
Nag you to do things to manage your diabetes/heart failure	48	56	39	0.002
Criticize what you are doing to manage your diabetes/heart failure	35	47	20	<0.001
Argue with you about how to manage your diabetes/heart failure	23	29	16	0.004
Ignore you when you talk about your diabetes/heart failure	11	8	15	0.040
Act annoyed with you when you have diabetes/heart failure symptoms	7	6	8	0.474
Perceived Consequences of Main Family Contact Involvement in Illness Care				
Glad that [contact] is interested in your health	79	83	75	0.084
More confident that you can manage your diabetes/heart failure	61	63	59	0.413
Frustrated with the way [contact] tried to help with your diabetes/heart failure	20	16	23	0.122
Guilty about time or effort [contact] is spending to help you	21	17	26	0.039
More confused about what to do to manage your diabetes/heart failure	16	13	18	0.251
Worried that you are getting too much help with your diabetes/heart failure	7	6	7	0.603

Note: Proportions in this table are based on non-missing responses

Table 4

Patient Characteristics Associated with Level of Perceived Family Support and Family Barriers to Self-Management

	Model 1 Dependent Variable: Overall Level of Family Support for Self-Management [a]		**Model 2 Dependent Variable: High Family Barriers to Self-Management [a]**	
	Beta coefficient [CI]		**OR [CI]**	
Age 25-49 (reference)				
50-64	−0.03	[−0.28, 0.23]	1	[0.51, 1.96]
65-74	−0.10	[−0.39, 0.19]	0.40*	[0.17, 0.91]
>=75	0.15	[−0.17, 0.47]	0.51	[0.20, 1.31]
Male	0.12	[−0.06, 0.30]	0.49**	[0.29, 0.83]
Non-Hispanic Caucasian (reference)				
Hispanic or Non-Caucasian	0.09	[−0.17, 0.35]	0.67	[0.32, 1.40]
No College (reference)				
Some College or More	0.04	[−0.15, 0.22]	3.03***	[1.66, 5.53]
Adequate health literacy (reference)				
Low health literacy	0 41***	[0.19, 0.62]	1.83	[0.93, 3.58]
Currently care for 1 or more children	−0.14	[−0.35, 0.06]	1.64	[0.94, 2.86]
Married or Partnered	0.50***	[0.30, 0.70]	1.51	[0.84, 2.70]
High Satisfaction With Family Function	0 48***	[0.30, 0.67]	0.77	[0.45, 1.32]
High Level Depression Symptoms	0.08	[−0.16, 0.32]	1.87*	[1.00, 3.51]
0-1 Comorbid Conditions(reference)				
2-3 Comorbid Conditions	−0.05	[−0.26, 0.17]	0.75	[0.40, 1.39]
4 or more Comorbid Conditions	0.18	[−0.06, 0.43]	0.73	[0.36, 1.47]
Excellent/Very Good Health Status (reference)				
Good health status	−0.14	[−0.37, 0.10]	0.84	[0.43, 1.66]
Fair/Poor Health Status	−0.08	[−0.33, 0.17]	1.26	[0.61, 2.62]

[a] See Table 2 footnotes for dependent variable source and range

[*] p<0.05

[**] p< 0.01

[***] p<0.0001

Table 5

Associations between Family Support or Barriers to Self-Management and Self-Efficacy or Self-Management Adherence

	Dependent Variable: Self-Efficacy Score Beta coefficient [CI]				Dependent Variable: Self-Management Adherence Index Beta coefficient [CI]			
Independent Variable of Interest:								
Overall Level of Family Support for Self-Management	0.05	[−0.03, 0.13]			0.33***	[0.19, 0.48]		
High Family Barriers to Self-Management			−0.30**	[−0.48, −0.12]			−0.36*	[−0.68, −0.03]
Covariates:								
Age 25-49 (reference)								
50-64	−0.06	[−0.29, 0.17]	−0.07	[−0.29, 0.15]	0.17	[−0.22, 0.57]	0.16	[−0.25, 0.57]
65-74	0.18	[−0.08, 0.44]	0.12	[−0.13, 0.36]	0.47*	[0.04, 0.91]	0.42	[−0.04, 0.87]
>=75	−0.15	[−0.42, 0.12]	−0.19	[−0.45, 0.08]	0.47*	[0.00, 0.94]	0.53*	[0.04, 1.01]
Male	0.08	[−0.08, 0.25]	0.07	[−0.09, 0.22]	−0.24	[−0.51, 0.04]	−0.14	[−0.41, 0.14]
Non-Hispanic Caucasian (reference)								
Hispanic or Non-Caucasian	−0.10	[−0.32, 0.13]	−0.15	[−0.37, 0.07]	0.02	[−0.38, 0.43]	0.06	[−0.36, 0.48]
No College (reference)								
Some College	0.02	[−0.14, 0.18]	0.03	[−0.13, 0.20]	0.06	[−0.22, 0.35]	0.12	[−0.18, 0.42]
High Level Depression Symptoms	−0.31**	[−0.51, −0.10]	−0.27**	[−0.48, −0.07]	−0.40*	[−0.76, −0.04]	−0.39*	[−0.76, −0.02]
0-1 Comorbid Conditions (reference)								
2-3 Comorbid Conditions	0.27**	[0.08, 0.47]	0.26*	[0.06, 0.45]	−0.06	[−0.40, 0.29]	−0.02	[−0.37, 0.34]
4 or more Comorbid Conditions	0.27*	[0.04, 0.49]	0.24*	[0.02, 0.46]	−0.05	[−0.44, 0.34]	0.02	[−0.38, 0.42]
Excellent/Very Good Health Status (reference)								
Good health status	−0.12	[−0.33, 0.09]	−0.15	[−0.35, 0.06]	0.17	[−0.20, 0.54]	0.11	[−0.26, 0.49]
Fair/Poor Health Status	−0.44***	[−0.67, −0.22]	−0.47***	[−0.69, −0.25]	−0.09	[−0.49, 0.30]	−0.10	[−0.50, 0.30]