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Providing Support to Relatives and Friends Managing Both Chronic Physical Illness and Depression: the Views of a National Sample of U.S. Adults

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Abstract

Objective—To describe how comorbid depression in chronically ill adults affects the willingness of their family and friends to provide them with illness management support.

Methods—We identified a national sample of U.S. adults (n=1027), all of whom had a close relative or friend with a chronic physical illness. We examined whether respondents were less willing to help their relatives/friends with disease management when they reported that these relatives/friends were also diagnosed with depression.

Results—In multivariate models, the odds of respondents being willing to provide disease-management support doubled when the relative/friend was depressed (adjusted odds ratio (AOR) = 1.99; 95% C.I.=1.31, 3.02). Respondents were willing to perform an equal number of illness support tasks for relatives/friends with and without depression. However, respondents reported 30% more difficulties discussing health issues (incidence rate ratio (IRR)=1.30; 95% C.I.=1.11,1.53), and 44% more barriers to providing support (IRR=1.44; 95% C.I.=1.18, 1.75) to depressed relatives/friends.

Conclusion—U.S. adults are more willing to provide disease-management support for chronically ill relatives/friends with depression. However, helping depressed relatives/friends is also more challenging.

Practice implications—By providing resources for potential supporters, health providers could mobilize an important source of disease-management support for patients with chronic illness and depression.

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Keywords

chronic illness; caregiving; diabetes; depression; social support; social network; heart disease; arthritis; behavior change; self-management; health promotion

Introduction

For many individuals, the burden of living with a chronic illness is made more onerous by comorbid depression. Worldwide, 10 to 20% of adults with a chronic disease also have depression; this proportion increases to nearly a quarter among those with two or more chronic diseases [1]. Besides its detrimental impact on quality of life, depression increases the risk of negative medical outcomes among chronically ill adults. Depression among chronically ill adults is associated with increased disability [2], health care costs [3], and mortality [4]. Compared to their counterparts without depression, depressed individuals with diabetes have worse glycemic control [5], depressed individuals with cardiovascular disease have a greater incidence of acute coronary syndromes [6], and depressed individuals with arthritis experience more pain [7].

The effect of depression on disease self-management

The link between depression and chronic physical illness is reciprocal, involving both physiological and behavioral pathways [8]. One commonly-cited behavioral pathway leading from depression to adverse health outcomes is poor adherence to disease self-management routines [9]. Depression saps the motivation, concentration and energy required to consistently carry out self-management tasks such as medication-taking, self-monitoring, and engaging in physical activity [10]. This phenomenon has been documented across a variety of chronic conditions, but has been especially well-studied among adults with diabetes [5,11,12]. In addition, managing depression itself is a competing demand on patients' time and energy, making it more difficult to focus on managing other conditions [13]. For all of these reasons, chronically ill adults with comorbid depression often need additional support from others to optimize their self-management and prevent medical complications.

Mobilizing support for chronically ill adults with comorbid depression

Randomized controlled trials have demonstrated that enhanced depression care for patients with chronic medical illness and comorbid depression can bring about reductions in depressive symptoms [14]; and improvements in disease-related outcomes as well [15-18]. Unfortunately, complex care management services shown to be effective for depressed chronically ill patients are often poorly reimbursed and beyond the resources of many health care teams. Moreover, most chronic disease management is carried out by patients themselves with the assistance of informal caregivers [19]. The majority of U.S. adults with chronic diseases have family members with whom they are in regular contact [20] and these social network members can serve as a primary source of disease-management support, assisting in self-care and actively participating in medical visits [21,22].

Given the self-care challenges faced by chronically ill adults with comorbid depression, the role of social network members may be even more crucial than for chronically ill adults who are not depressed. At the same time, the theoretical literature suggests that depressed people may be, in essence, harder to help. A social-cognitive model of interpersonal processes in depression has been developed that shows how "depressive displays" on the part of an individual can lead to negative responses among others, including relationship dissatisfaction and rejection [23]. Adults with depression often withdraw socially from

family members and friends who might provide them with support, or may turn to them for excessive reassurance or to elicit negative feedback [10,24]. Social network members can become fatigued from efforts to support someone who is psychologically distressed [8] and withdrawal of support from family and friends may contribute to non-adherence among chronically ill adults [25]. Conversely, engaging the social network may facilitate effective management of both the physical disease and depression [10]. Little is known, however, about the specific challenges faced by disease-management supporters of chronically physically ill adults with comorbid depression. If interventions are to be developed that mobilize the support networks of these vulnerable individuals, it is critical to understand the perspectives of those network members who will be called upon to help.

Study hypotheses

The goal of this study was to determine whether social network members have more difficulty providing self-management support to chronically ill individuals when those individuals are also reported to have a diagnosis of depression. We analyzed survey data from a nationally-representative sample of U.S. adults. Respondents reported information about their potential involvement in the disease management of chronically ill relatives/friends. Based on the work cited above that describes the deleterious effects of depression on interpersonal relationships, we hypothesized that respondents would be less willing to provide disease-management support to chronically ill relatives/friends whom they reported as depressed, compared to those without depression. Similarly, we hypothesized that respondents would be willing to perform fewer supportive tasks, perceive more barriers to providing support, and experience more difficulties discussing health issues when their chronically ill relative/friend was depressed.

Method

Sample Recruitment

A web-based survey was administered to a nationally-representative sample of 1,722 White, African-American, and Latino U.S. adults age 18 years and older (53% response rate). Compared to non-responders, respondents were more likely to be older, have higher incomes, and be White or Latino. Survey participants were recruited by Knowledge Networks (KN), a research firm that maintains a representative survey panel of U.S. adults by providing internet access at no cost. KN does extensive outreach to maintain socioeconomically vulnerable members of its survey panels, and participants are representative of the U.S. general population in terms of age, gender, race/ethnicity, employment status, marital status, income, education, and region [26]. The KN panel has been used in prior research by the U.S. Centers for Disease Control [27]. The study was approved by the University of Michigan Institutional Review Board.

Survey flow and identification of the current study's sample were as follows (Figure 1):

- Step 1** Respondents listed their social network members and identified each as a spouse, parent, grandparent, adult child, or other relative/friend.
- Step 2** Persons with whom the respondent was in touch less than once per month, who lived in an institution, or who needed assistance with activities of daily living were excluded.
- Step 3** Respondents identified which of the remaining persons had been “diagnosed by a doctor” with diabetes, heart disease, chronic lung disease, arthritis, and depression. Relatives/friends who, to the respondents’ knowledge, had not been diagnosed with any of these diseases were dropped; the analyses

presented below also excluded persons who had depression but no other chronic illness.

- Step 4** For each of the remaining relatives/friends, respondents were asked, “Imagine you could help this person better manage their health problems by talking with them about their health for 15 minutes once a week. How likely would you be to help them in this way?” (1=not at all likely to 10=extremely likely). The item specifies “15 minutes per week”, because disease-management support interventions have been developed that require this minimal time commitment [28,29] and because we sought to identify the broadest possible group of potential supporters. In pilot work, a version of this item asking about willingness to provide support for 1 hour/week yielded very similar responses.

We identified the subset of respondents who reported at least a “6” on this scale (70% of total sample). For each of those respondents, up to two relatives/friends (1 living in the respondent’s household and 1 outside the household) were selected to be the focus of detailed questions about current and potential health-related support from the respondent. When a respondent reported more than one relative/friend in either group (in-home or out-of-home), detailed questions were asked about the relative/friend whom the respondent reported the greatest willingness to help. By limiting detailed questions to “willing” respondents, we were able to gather the perspectives of individuals who would be more likely to take part in interventions mobilizing family support for disease management.

Measures

Our main predictor of interest was whether or not, to the respondent’s knowledge, the chronically ill relative/friend had been diagnosed with depression. We examined the potential influence of depression on the following 4 outcomes. These measures were newly developed for this survey because no prior validated measures were available. Each outcome measure underwent extensive expert review and pilot-testing.

- A.** Willingness to help chronically ill relative/friends manage health problems for at least 15 minutes a week. As described above, a binary outcome was created from the original 10 point scale (6 or above vs. less). Analyses of this outcome were based on the entire sample.
- B.** *Difficulties in discussing health.* Respondents reported how frequently (“never”, “rarely”, “sometimes”, “most times”, “every time”) they encountered each of 13 potential communication difficulties in their conversations about health with their chronically ill relative/friend (e.g., “s/he seems to exaggerate health problems”). We counted the difficulties experienced at least “some of the time.” Analyses of this and subsequent outcomes were based on the 70% of all respondents who rated their willingness to provide support for 15 minutes/week as a 6 or higher.
- C.** Willingness to perform specific disease-management support tasks: Respondents were asked to rate their likelihood (“very likely”, “somewhat likely”, “somewhat unlikely”, “very unlikely”) of assisting each relative/friend with 15 support tasks (e.g., help track health information on paper, accompany the person to medical appointments). We counted the number of tasks respondents were “likely” or “very likely” to assist with.
- D.** *Barriers to providing disease-management support.* We counted the number of 11 potential barriers that respondents reported were “somewhat of a problem” or “a major problem” (vs. “a minor problem” or “not a problem”) in providing disease-

management support to their relative/friend (e.g., “I don’t know how to convince the person to make behavior changes”).

Covariates: The following potential confounding variables were also included in multivariate models: emotional closeness to the relative/friend (1=not at all close to 10=extremely close), whether the relative/friend was a spouse, respondents’ gender and age, and total number of relative/friend physical health conditions (1-4).

Analysis Plan

Descriptive analysis—We described the characteristics of the 1027 survey respondents who reported at least one family member or friend with a chronic medical illness (a total of 2404 relatives/friends), and the subset of 718 “willing” respondents who answered detailed questions about 1-2 chronically ill relatives/friends (849 relatives/friends).

Multivariate analysis—The purpose of the multivariate analysis was to identify differences in respondents’ views toward providing disease self-management support for chronically ill relatives/friends with and without comorbid depression, controlling for potential confounding variables. Because most respondents provided information about more than one chronically ill relative/friend, all models adjusted for potential within-respondent clustering.

A multivariate model was developed for each of the four outcomes described above. Standard logistic regression was used for the binary outcome “willingness to provide disease self-management support” (Model A). As noted, this model utilized data from all respondents with a chronically ill relative/friend. The three count-based outcomes (number of difficulties in discussing health issues, disease-management support tasks, and barriers to providing support; Models B-D) were based on data from the 70% of all respondents who reported greater willingness to provide support for 1-2 chronically ill relatives/friends. Initial examination of the count-based outcomes showed that each had an overdispersed distribution in which the mean exceeded the variance. [30,31] These models were analyzed using negative binomial regression models. To provide more interpretable results, we calculated the predicted count for each outcome separately for relatives/friends that had and had not been diagnosed with depression according to the respondent. For each set of predicted counts, covariates were held at their mean level. Stata version 11.1 [32] was used for all analyses.

Results

Characteristics of Respondents and Chronically Ill Relatives/friends

A majority of the 1027 respondents in the overall sample were women (57%) and White (58%), with 21% each African American and Latino respondents (Table 1, column 1). The mean age of respondents was 49 years, and most were college-educated (60%). The characteristics of the 718 respondents reporting a willingness to provide at least 15 minutes per week of self-management support were very similar to the overall sample (Table 1, column 2).

Among the 2404 chronically ill family and friends identified by respondents in the overall sample, arthritis was the most common of the four physical health conditions (48% of relatives/friends), followed by diabetes (39%), heart disease (25%), and lung disease (15%) (Table 2). Respondents in the overall sample reported that 11% of their relatives/friends (12% in the “willing” subsample) had been diagnosed by a physician with depression in addition to their chronic physical conditions.

Multivariate analysis

Controlling for covariates, the odds of respondents *being willing to provide support* were doubled when the respondent reported that the relative/friend had been diagnosed with depression (Table 3, Model A) (adjusted odds ratio (AOR)=1.99, 95% C.I. = 1.31, 3.02). These odds were also greater when the respondent felt closer to the relative/friend (AOR=3.55; 95% C.I.=2.70, 4.67) and when the relative/friend was the respondent's spouse (AOR=1.61; 95% C.I.=1.06, 2.45). The odds of being willing to provide support decreased with increasing respondent age (AOR=.98; 95% C.I. =.97, .99). (AORs for covariates are not shown in Table.)

Respondents reported more *difficulties discussing health issues* with their relative/friend when they reported that the relative/friend had a diagnosis of depression (Table 3, Model B) (incidence rate ratio (IRR)=1.30; 95% C.I. =1.11, 1.53). The predicted number of difficulties discussing health issues was 4.4 for depressed vs. 3.4 for non-depressed relatives/friends. Independent of depression, respondents reported more difficulties discussing health issues when their relative/friend had a greater number of physical illnesses (IRR=1.21; 95% C.I.=1.09, 1.34) or was a spouse (IRR=1.28; 95% C.I.=1.10, 1.48). Younger respondents (IRR= 0.99; 95% C.I. = .987, .996) and respondents who felt emotionally closer to their chronically ill relative/friend (IRR=0.82; 95% C.I.=0.71, 0.94) reported fewer difficulties.

In Model C (Table 3), a relative's/friend's comorbid depression was not significantly associated with the number of disease-management support tasks in which respondents were willing to engage (Table 3, Model C). However, being a spouse (IRR=1.37, 95% C.I.= 1.26,1.49) and being emotionally closer (IRR=1.30; 95% C.I.=1.16, 1.45) were associated with being willing to undertake a greater number of tasks, and increasing respondent age was associated with willingness to perform fewer tasks (IRR=0.99, 95% C.I.=.988,.994).

Respondents reported a greater number of *barriers to providing disease-management support* to depressed vs. non-depressed chronically ill relatives/friends (IRR=1.44; 95% C.I.=1.18, 1.75) (Table 4, Model D). The predicted count of barriers for depressed relatives/friends was 3.2, compared to 2.2 for non-depressed relatives/friends. Respondents reported significantly fewer barriers when they were emotionally closer to their relative/friend (IRR=0.73; 95% C.I.=0.62, 0.87).

Additional Exploratory Analysis

In multivariate analysis reported above, respondents reported a greater number of barriers and difficulties discussing health issues when their relative/friend was reported to have a depression diagnosis (Models B and D). To better understand which items within these two "count" outcomes were most strongly affected by relatives'/friends' depression, we conducted post-hoc logistic regression analyses with each individual scale item as the dependent variable. Items were dichotomized as described above (1=item endorsed; 0=not endorsed). Reported depression diagnosis was the predictor of interest in each model, controlling for the same covariates as in Models A-D and adjusting for clustering by respondent. The Holm-Bonferroni method [33] was used to correct for multiple comparisons.

The AORs for endorsing each scale item when the relative/friend was depressed vs. non-depressed are shown in Table 4. For *difficulties when discussing health issues* (Model B), respondents were significantly more likely to endorse that "It's depressing to me" and "I feel overwhelmed" when referring to a depressed relative/friend. For *barriers to providing support* (Model D), two items revealed significant or borderline-significant effects for relative/friend depression: "I don't know how to convince my [relative/friend] to make

important behavior changes (like eating healthier food or exercising more)”, and “Helping other family or friends takes all my time and energy.”

Discussion and Conclusion

Discussion

We examined the views of a national sample of U.S. adults toward providing disease-management support to chronically ill relatives/friends with and without a reported diagnosis of depression. Contrary to our hypothesis, respondents were more willing to provide disease-management support when their chronically ill relatives/friends were depressed. Specifically, comorbid depression among chronically ill relatives/friends doubled the odds of respondents being willing to support their self-care. At the same time, within the subgroup of respondents who were willing to provide at least a minimal level of disease-management support (70% of the overall sample), certain aspects of providing disease-management support were more problematic when the ill relative/friend was also depressed. Specifically, respondents perceived more difficulties when talking about health with depressed relatives/friends, and more barriers to providing support to this group. We found no differences in the number of specific supportive tasks respondents were willing to do for depressed, compared to non-depressed, relatives/friends.

People with depression often have social difficulties [24], while the family members and friends who try to help them may experience fatigue and frustration [8,10]. We expected that the greater likelihood of a strained relationship when a relative/friend was depressed would lead to a reduced desire on the part of respondents to provide disease-management assistance. However, we found that the opposite was true. Notably, this association was not explained by greater emotional closeness to relatives identified as depressed.

The most plausible explanation for this finding is that depressed chronically ill relatives/friends demonstrate a greater need for assistance, eliciting a correspondingly greater desire to help—or feeling of obligation--on the part of their family members. There are several reasons why relatives with comorbid depression may demonstrate greater need. First, depressed individuals may seek out excessive reassurance from others [24]. Second, struggles to successfully perform disease-management tasks may be particularly pronounced among depressed persons. Third, relatives/friends with comorbid depression are likely to have greater functional limitations than the non-depressed group, as these limitations are strongly associated with depression among chronically ill adults [34].

In spite of a heightened willingness to help, findings supported our hypothesis that respondents perceive greater challenges in providing disease-management support to depressed chronically ill individuals. Respondents reported about 30% more difficulties in discussing health issues with depressed relatives/friends. In particular, when talking to depressed compared to non-depressed chronically ill relatives/friends, the odds of respondents feeling depressed themselves were 51% greater, and the odds of feeling overwhelmed 47% greater. Other studies also suggest that depressive symptoms among family members increase their caregiver’s risk of depression [35], and that remission of depression can decrease the burden on the depressed person’s close family members [36].

Respondents reported more potential barriers to helping depressed chronically ill relatives/friends. For example, the odds of not knowing how to convince a relative/friend to make important behavior changes were 95% greater when that person was depressed. Health behavior change might be especially difficult to encourage in a relative with comorbid depression, given the adverse effects of depression on patient motivation, energy, self-care, and communication. An earlier study showed that patients with heart failure or diabetes who

had more depressive symptoms were more likely to report a high level of family-related barriers to performing self-management behaviors [21]. In tandem, these findings suggest that when comorbid depression is present, there is a decreased likelihood of positive, productive interactions between patients and family members regarding health behaviors.

Comorbid depression did not affect the number of disease-management support tasks (e.g., prescription refill reminders or going along on medical appointments) that respondents were willing to perform. This finding is consistent with previous research showing a null or positive effect of comorbid depression on the frequency of family members performing specific supportive tasks. For example, Rosland et al [21] found that chronically-ill patients with and without significant depressive symptoms were similar with respect to the involvement of their family members in self-care. A meta-analysis showed that people with a psychiatric condition, including depression, are more likely to have a friend or family member accompany them to medical visits [37].

Limitations

The above findings should be considered in light of several limitations. First, it is not known how accurately respondents reported the disease status of their relatives. In the case of depression, it is likely that some respondents were not aware that their chronically ill relatives/friends had a depression diagnosis. Depressed patients may not divulge their diagnosis to family members due to stigma, and family members may not have the skills to detect depression. Some respondents may also have identified a person as having depression when that person does not actually meet clinical criteria for depression; indeed, a prior review concluded that while there is good agreement between proxy and subject assessments of chronic physical conditions, there is a tendency for proxies to overreport depressive symptoms and illness [38]. Such misclassification would bias results of the analyses reported here toward the null, and may mean that the actual effect of comorbid depression on disease-management support variables is larger than we observed. Also, we were not able to control for all potential confounders in the relationship between comorbid depression and potential support from respondents; for example we did not have information on other comorbidities, illness duration, or physical functioning.

Conclusion

This study suggests a strong potential for the involvement of social network members in helping adults with chronic illness and comorbid depression to manage their health. We found that comorbid depression in chronically ill individuals does not dissuade their family members from wanting to help; indeed, it may even enhance their willingness to provide disease-management support. Several recent reviews describe the theoretical underpinnings and outcomes of chronic-disease interventions that also include family members [39-41]. Many of these interventions were designed for patients with significant functional or cognitive impairments; however, interventions that involve family members of functionally autonomous patients, such as the relatives of the respondents in the current study, have become increasingly common [41]. We are unaware of any program that targets family members of functionally independent adults with a chronic physical illness plus comorbid depression.

Practice implications

When considering the translation of study findings into practical applications--such as designing interventions--it is important to keep in mind that our results represent the viewpoints of potential disease management supporters rather than the perspectives of support recipients themselves. Interactions with family regarding disease management can

be perceived negatively by patients; e.g., as nagging, criticizing, or being overprotective [42,43]. Such negative perceptions may be even more likely when the person with the chronic illness is depressed, and that impact may not be represented in the current survey.

The subset of respondents who answered survey items about barriers to providing self-management support had already indicated their willingness to provide at least 15 minutes of support weekly. Therefore, knowledge of their concerns may be useful for program design. Two findings with implications for intervention design are especially noteworthy. First, programs should incorporate strategies to allay the feelings of burden family members experienced when talking with their depressed relative/friend about health. For example, elements could be borrowed from interventions that attempt to train family members of chronic disease patients in communication techniques [41] or from interventions for caregivers of dementia patients that offer skills training in managing difficult behaviors [44,45]. Second, interventions should focus on strategies that family members can use to encourage behavior change in the context of depression, as this was problematic for respondents. For example, two approaches described in the literature are 1) encouraging family members to set goals to support patient behavior change; and 2) training family members to provide “autonomy support”, which acknowledges the primacy of the patient’s own goals when it comes to disease self-care [41]. Given the beneficial effects of exercise on depression as well as physical illness, programs encouraging physical activity may be particularly appropriate for adults with a chronic illness and comorbid depression [16]. Adding a family support component may enhance the outcomes of such programs, while giving family members specific tools to encourage a key behavior change.

Last, there may be room for an expanded supportive role for family members in the complex, collaborative care management services that target chronically ill, depressed patients [46]. The emphasis on “self-management support” in the Chronic Care Model [47] offers the potential for the role of family members and friends to be recognized more explicitly. Given the challenges that both chronic physical illness and depression present to the well-being of patients and their families, it is possible that the benefits of such programs would extend beyond improved disease- and depression-management of the patient to enhanced well-being of his/her social network.

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Figure 1.
“Survey flow and derivation of samples for study outcomes.”

Table 1
Characteristics of study participants

	Respondents with a chronically ill relative/friend (n=1,027)	Respondents who answered detailed questions (n=718)
	% (n) or mean (SD)	% (n) or mean (SD)
Female	57% (583)	57% (406)
Race/ethnicity		
White	58% (596)	57% (412)
African American	21% (221)	22% (158)
Latino	21% (210)	21% (148)
Age in years (range 18-91)	49% (16.8)	50% (16.4)
Education		
Less than high school	11% (116)	11% (78)
High school	28% (288)	28% (202)
College or higher	61% (623)	61% (438)

Table 2
Characteristics of respondents' chronically ill relatives/friends

	All chronically ill relatives/friends (n=2404) % (n)	Subset of relatives/friends who were the subject of detailed survey items (n=849) % (n)
Chronic illnesses		
Diabetes	38.9% (934)	42.4% (360)
Heart disease	25.0% (602)	23.8% (202)
Arthritis	47.9% (1151)	44.8% (380)
Lung disease	15.2% (365)	16.5% (140)
Any physical illness (1) plus depression	10.7% (257)	12.1% (103)
Relationship to respondent		
Spouse	9.8% (235)	21.0% (178)
Parent/parent-in-law	28.6% (688)	32.4% (275)
Sibling	20.2% (486)	22.5% (191)
Adult child	5.5% (132)	5.2% (44)
Grandparent/grandparent-in-law	6.3% (151)	5.2% (44)
Other relationship	29.6 (712)	13.8% (117)

Note that the "all chronically ill relatives" analytic sample excludes 1) records with a missing value for the item indicating overall willingness to help with disease-management (n=22) and those who answered this item but did not have a chronically ill relative/friend (n=5). It also excludes 438 relatives who had depression but no physical illness. The "detailed survey items" subset also excludes those with missing data on any of the outcomes (n=14).

Table 3
Effect of chronically ill relatives/friends' comorbid depression on respondents' willingness to provide self-care support

Outcome	IRR or AOR: Relative/friend has comorbid depression vs. no comorbid depression (95% C.I.)	Predicted counts (depressed group)	Predicted counts (non- depressed group)
Model A: Overall willingness to provide support ¹	1.99 (1.31, 3.02)	--	--
Model B: Count of difficulties when talking about health with relative/friend ² (range 0-13)	1.30 (1.11, 1.53)	4.4	3.4
Model C: Count of support tasks willing to engage in ² (range 0-15)	0.95 (0.84, 1.07)	8.2	8.6
Model D: Count of barriers to providing support ² (range 0-11)	1.44 (1.18, 1.75)	3.2	2.2

Notes: All models control for number of relative/friend illnesses, spouse vs. non-spouse status, emotional closeness to relative/friend, respondent age, and respondent gender. All models adjust for within-respondent clustering.

IRR=incidence rate ratio. AOR=adjusted odds ratio.

¹ Analysis was based on all 2,404 chronically ill relatives reported by the respondent.

² Analyses were based on the subset of 849 chronically-ill relatives who were the subject of more detailed survey items.

Table 4
Adjusted odds ratios (AORs) of endorsing specific difficulties/barriers when chronically ill relative/friend has co-morbid depression vs. does not have comorbid- depression

Outcome	AOR
Difficulties when talking about health with relative/friend (Model B)	
It's depressing to me	2.51 [*]
I feel overwhelmed	2.47 [*]
I'm frustrated because he/she always brings up the same problems	1.76
I feel guilty that I'm not helping more	1.80
I feel assured he/she is doing well ^a	1.58
He/she seems to exaggerate his/her health problems.	1.54
I get confused about what's really going on with his/her health	1.47
I feel like I don't know enough about his/her condition to really be helpful	1.35
He/she tries to change the subject	1.35
He/she doesn't seem to want the advice that I give	1.22
We end up arguing about what he/she should do for his/her health	1.19
He/she tells me more than I feel comfortable with.	1.09
I worry that I'm getting too involved	—
Barriers to providing support (Model D)	
Helping other family or friends takes all of my time and energy	2.56 [*]
I don't know how to convince my [relative/friend] to make important behavior changes (like eating healthier food or exercising more)	1.95 ^b
My [relative/friend] doesn't seem to need any help with his/her health problems.	1.74
Taking care of my own health takes all of my time and energy	1.73
My job and other commitments take all of my time and energy	1.69
My [relative/friend] has another friend or relative that already helps him/her with health problems	1.60
I'm not sure that my [relative/friend] always tells me the truth about how he/she is doing	1.54
It's hard for me to know what my [relative/friend]'s health care providers are telling him/her to do	1.44
I don't know what questions to ask my [relative/friend] about his/her health	1.37
I don't know enough about the diseases or conditions that my [relative/friend] has	1.20
Other people close to my [relative/friend] make it difficult for me to help more	—

Notes: All models control for number of relative/friend illnesses, spouse vs. non-spouse status, respondent age, and respondent gender. All models adjust for within-respondent clustering.

Models exclude relatives with depression only.

A dash (—) indicates that there were too few “events” (<100) for the model to achieve a stable estimate.

^a Reverse-scored.

^b Borderline significant (p=.003; adjusted Holm-Bonferroni alpha criterion=p<.003).

* Indicates a significant effect for depression. Significance level adjusted for multiple comparisons and determined by Holm-Bonferroni method.