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Depression and Its Correlates Among Older Adults Accessing Aging Services

Thomas M. Richardson, Ph.D., M.B.A., Bruce Friedman, Ph.D., Carol Podgorski, Ph.D., Kerry Knox, Ph.D., Susan Fisher, Ph.D., Hua He, Ph.D., and Yeates Conwell, M.D.

Department of Psychiatry, School of Medicine and Dentistry (TMR, BF, CP, KK, YC) and Department of Community and Preventive Medicine (BF, SF), University of Rochester, Rochester, NY; Department of Veterans Affairs, Center of Excellence at Canandaigua, (KK) NY; and Department of Biostatistics and Computational Biology, University of Rochester School of Medicine and Dentistry (HH), Rochester, NY

Abstract

Objectives—To define the prevalence and correlates of depression among older adults receiving assessments by nonmedical community-based care managers at the point of entry to care and thus prior to provision of aging services. Our long-term goal is to inform development of collaborative care models for late life depression that incorporate Aging Services Providers.

Methods—Aging Services Provider Network (ASPN) clients receiving in-home assessments were administered the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition module for affective disorders and measures of depression symptom severity, alcohol use, physical health, functional status, social support, stressful life events, and religiosity. Engagement in mental healthcare was documented.

Results—Subjects (N = 378) were primarily white (84%) and women (69%) with household incomes under \$1,750/month (62%). Half lived alone (48%). Their mean age was 77 years. Thirty-one percent had clinically significant depressive symptoms and 27% met criteria for a current major depressive episode, of which 61% were being treated with medication and 25% by a mental health provider. Nearly half (47%) had experienced one or more episodes of major depression during their lives. Disability, number of medical conditions, number and severity of recent stressful life events, low social support, and low religiosity were independently associated with current major depression.

Conclusion—Depressive illness was common among this sample of ASPN clients. Because ASPN care managers have expertise in managing many of the problems correlated with depression, they may play a significant role in identifying, preventing, and collaborating in the treatment of depressive illnesses among community-dwelling older adults.

Keywords

Aged; depression; depressive disorder; depressive disorder; major depressive symptoms; health services for the aged; mental health services; social services; social work; social work; psychiatric

Send correspondence and reprint requests to Yeates Conwell, M.D., University of Rochester School of Medicine and Dentistry, 300 Crittenden Blvd., Rochester, NY 14642. yeates_conwell@urmc.rochester.edu.

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Affective illness is common among older adults and is associated with worse health outcomes,¹ greater healthcare utilization and costs,² and increased risk of death from suicide and other causes.^{3,4} Improving outcomes of late life depression depends on accurate detection of affected older adults, early intervention, and effective treatment.

Because many older adults do not recognize the need for or are reluctant to use mental health care services, emphasis has been placed on primary care as the preferred site for detection and treatment of older patients with affective illness. Yet numerous barriers prevent adequate care for mood disorders in primary care settings,^{5,6} including the social morbidities that are so common in this population and with which primary care physicians are typically ill-equipped to deal. In addition to a past history of depression and physical ill-health, disability, stressful life events, and social isolation may precipitate or exacerbate a depressive episode⁷ and undermine the effectiveness of antidepressant treatment.^{8,9} Primary care physicians often lack detailed knowledge and understanding of their patients' social context and access to the community-based services that may be brought to bear.

The Aging Services Provider Network (ASPN) is an underutilized resource for management of affective illnesses among older adults.¹⁰ The ASPN consists of diverse agencies dedicated nationwide to delivering nonmedical services to community-dwelling older adults for the purpose of maintaining or enhancing their well-being and independence. Nonmedical services include those funded through the Older Americans Act, the Area Agencies on Aging, and their affiliated providers, as well as local departments of human services.¹¹ Available services include, but are not limited to, information and referral, advocacy, transportation, congregate or home delivered meals, and care management. In 2008, the ASPN served approximately 10 million older adults nationwide.

The few studies examining the psychiatric status of ASPN clients have yielded varying results. Sirey and colleagues¹² found that 12.4% of older adults receiving home delivered meals through an ASPN agency had clinically significant depressive symptoms, whereas Gum et al¹³ reported very nearly the same prevalence of depressive illness (11.9%) among homebound elders at risk for institutionalization who were receiving in-home services. However, Charlson and colleagues¹⁴ found that one-third of homebound elders receiving social services had clinically significant levels of depression.

We are aware of only one study that has examined rates or characteristics of depression among older adult ASPN consumers at the point of entry to care. Morrow-Howell and colleagues¹⁵ screened new clients to a community long-term care agency for depression, finding that 6.5% had probable major depression or dysthymia, whereas another 19% had subsyndromal depressive symptoms.¹⁵ Over two-thirds remained intermittently or continuously depressed over the next year. The authors concluded that through universal screening in community-based long-term care and referral for treatment for those with more severe and persistent syndromes, the ASPN can help substantial numbers of older adults receive better care for depression.

The aims of the present study were to supplement and extend these results by examining (1) the frequency and (2) the correlates of depressive illness among community-dwelling older adults undergoing assessment of service need by care managers. In particular, we examined factors known to be associated with affective disorder in other medical and community settings, and the likelihood that ASPN clients reported receiving treatment for their mood disorders. Our longer-term objective is to use these analyses to better understand the opportunities that ASPN care managers may have to reduce symptoms of, and risk for, late-life depressive illness.

METHODS

Service Setting

Eldersource is the primary entry point to the ASPN in the Monroe County, NY region. It is one of over 1,800 agencies throughout the United States certified by the Council on Accreditation,¹⁶ an optional accreditation for aging and social service agencies that promotes adherence to quality standards. Eldersource serves seniors and caregivers with a wide range of needs, from information and referral to ongoing nonmedical case management. The majority of clients have functional, financial, housing, and legal issues. Those whose needs go beyond simple provision of information are linked with care managers (CMs) for comprehensive in-home assessments.

Eldersource does not provide home healthcare, although, referral to a home healthcare agency may be one outcome of the care management assessment. Although clients need not be disabled to access ASPN services, impairment in functioning is the norm. The care management service is provided without cost to clients through donations and support from local government, philanthropic organizations, Older Americans Act funds, and service contracts.

Sample

All English-speaking clients aged 60 years or more receiving an initial home assessment between September 2005 and August 2007 were eligible to participate in an in-person research interview. CMs briefly introduced their clients to the study; interested clients were then referred to study personnel who arranged a visit to the subject's home, obtained written informed consent, and conducted the research interview.

During the study period, CMs conducted intake assessments on 1,090 clients of which they referred 643 (59.0%) for study. Data on why CMs did not refer some clients were not systematically recorded; anecdotally, however, common reasons included no further interest in Eldersource services, CMs chose not to pursue the research option with the client, or agency resources dedicated to recruitment were inadequate. For example, occasional turnover in CM staff resulted in larger caseloads for remaining staffers and a lag in the rate of referrals at points during the study. At other times when staffing was full, recruitment surged. Of the 643 referred clients, research personnel did not attempt to call 63 because study resources could not keep pace with CM referrals. We were unable to reach 47 clients and 24 had moved or were ineligible based on language or age criteria. Of the remaining 509 eligible subjects, 131 (25.7%) declined participation and 378 provided written informed consent. The study was approved by the University of Rochester research subjects review board.

Measures

Depression—The Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*¹⁷ was used to determine the presence or absence of current and past major depressive episodes (MDE). Three masters trained interviewers administered the Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* following training to inter-rater reliability of greater than 0.80 for diagnosis. A final determination of MDE was made by consensus of the interviewers and a geriatric psychiatrist (YC) using all available information. Lacking medical records and other objective measures of health status, we did not attempt to distinguish major affective disorder from MDE secondary to other causes.¹⁸ The Patient Health Questionnaire-9 was interviewer administered and yields a depression symptom severity score that may range from 0 to 27.¹⁹

Disability and physical health status—Disability status was assessed by self-report of ability to perform activities of daily living²⁰ and instrumental activities of daily living (IADLs).²¹ Physical health status was assessed using a checklist of self-reported medical conditions.²² We assessed self-rated health and pain using questions from the Short Form-12:²³ “In general would you say your health is: excellent, very good, good, fair or poor?” and “During the past four weeks, how much of the time did pain interfere with your normal work, including both outside the home and housework?”

Social support—The 10-item Lubben Social Network Scale (LSNS)²⁴ provided an objective assessment of social support received. The scale score ranges from 0 to 50 with higher scores indicating greater social support. We used the 12-item Multidimensional Scale of Perceived Social Support²⁵ as a measure of the subject’s perceived social support from family and friends. Multidimensional Scale of Perceived Social Support scores may range from 12 to 84 with higher values indicating more perceived support.

Stressful life events—The Louisville Older Persons Events Scale²⁶ was modified to document the occurrence of 41 negative life events within the 90 days preceding the CM’s in-home assessment. Three additional questions gauged the subjective impact of the worst event—the “amount of change” as a result of the event, “how bad the event was,” and “how much the event has been on your mind.” With a range of 0–9, higher scores signified greater impact.

Associated mental disorders—The three-question Alcohol Use Disorders Identification Test²⁷ assessed for problem alcohol drinking and the Six-Item Screener²⁸ evaluated cognitive functioning. The Alcohol Use Disorders Identification Test and Six-Item Screener scores were used as ordinal variables. A higher score on the Alcohol Use Disorders Identification Test represents greater alcohol use and on the Six-Item Screener (0–6) a score of 6 represents no cognitive impairment.

Sociodemographic and other variables—Age, gender, race, education level, household income, marital status, and living arrangement were also recorded. Religiosity was assessed by asking, “How strong would you say your faith or religious affiliation is: very strong (4), strong (3), average (2), less than average (1), or weak (0)?”

Mental health treatment—Subjects were asked: “Are you currently under the care of a mental health professional such as a psychiatrist/psychologist/therapist or mental health social worker?” and “Are you currently taking prescription medications for any mental health problems such as depression, anxiety, or stress?”

Statistical Analysis

We calculated point estimates and 95% confidence intervals for the proportion with lifetime and current MDE, and whether the illness was a single episode or recurrent. As well, we determined the proportions with mental health contacts and psychotropic treatment exposure. With regard to correlates of MDE, the primary dependent variable in analyses was current diagnosis and the primary independent variables represented the domains of disability, social support, stressful life events, associated mental disorder, and other variables previously shown to confer risk for depression in other clinical or community samples of older adults.

We used binary logistic regression to assess the direction and magnitude of the association of each independent variable with depression. Unadjusted odds ratios and 95% confidence intervals for associations of independent variables with depression are reported. For

comparisons of means, we checked the distribution of all continuous variables and, where the normality assumption was rejected, we used the Mann-Whitney-Wilcoxon test for analyses.

Finally, we conducted multivariate logistic regression analysis to determine variables independently associated with depression status. Demographic variables and those with a two-sided $p < 0.20$ in the binary logistic regression analyses were entered into a full multivariate logistic regression model. We report adjusted odds ratios derived in a final model by the backward elimination method. We considered variables that retained statistical significance at a two-sided $p < 0.05$ to be independent predictors (correlates) of depression. All data were analyzed using SAS statistical software version 9.1 (SAS Institute, Inc. Cary, NC).

RESULTS

Sample Characteristics

The sample ($N = 378$) was primarily white ($n = 319$ [84.4%]), non-Hispanic ($n = 371$ [98.4%]), and women ($n = 259$ [68.5%]) with household incomes under \$1,750/month ($<150\%$ of the New York State poverty level for a family of 2; $n = 234$ [61.9%]). Their mean age ($\pm$ SD) was 76.5 (9.2) years. Most were unmarried ($n = 229$ [60.6%]) and had 12 or more years of education ($n = 265$ [70.1%]). Using Eldersource administrative data, we found no statistically significant differences in race, gender, income, or marital status between the study sample and other clients who received care management intake assessments during the study period. Eldersource clients who did not participate were significantly older (81.0 years) than study subjects (Wald χ^2 19.41, $df = 1$, $p < 0.001$).

Depression

Nearly one-third ($n = 117$ [31.0%]) of subjects scored 10 or more on the Patient Health Questionnaire-9 (Table 1), indicating clinically significant depressive symptoms over the 2 weeks prior to the CM's visit. A total of 101 subjects (26.7%) met criteria for current MDE, of whom 74.5% also endorsed a prior episode (recurrent major depression) whereas 25.5% ($n = 25$) were experiencing their first episode. Nearly half of the entire sample (176 subjects [46.8%]) had experienced one or more episodes of major depression during their lives.

Correlates of Major Depression

Over one-third of the sample ($n = 130$ [34.5%]) reported currently taking prescription medication for "depression, anxiety, or stress" and 52 (13.8%) reported being currently under the care of a mental health provider. Of the 101 subjects with current MDE, 61.4% reported taking medication and 24.8% reported seeing a mental health provider. Among the 277 subjects without current MDE, 24.6% were prescribed psychotropic medications and 9.8% were seeing a mental health provider. Of the 130 persons, 68 (52.3%) taking medication did not have a current MDE.

In bivariate analyses (Table 2) clients with current MDE had significantly more IADL deficits and medical conditions, lower objective social support (LSNS score), greater number and impact of stressful life events, more pain, poorer self-rated health, and less religious involvement than those without current MDE.

Results of the multivariate logistic regression are presented in Table 3. The number of IADLs, medical conditions, and life events, and the subjective impact of a recent life event were all positively associated with the likelihood of current MDE, whereas objective social support (LSNS) and religiosity were inversely related to depression.

DISCUSSION

We found a point prevalence of 26.7% for major depression among older adults receiving assessments for care management from a community-based aging services provider at the point of entry to care and thus prior to linkage with services. Thirty-one percent of subjects scored 10 or more on the Patient Health Questionnaire-9, a cut-point typically used to designate clinically significant depressive symptoms. Summary figures for any depressive disorder are comparable to some prior studies^{14,15} but higher than others using comparable measures,^{12,13} likely reflecting methodological differences, the heterogeneity of ASPN provider agencies and the populations they serve, and the point in the enrollment/assessment process that the research assessment was conducted. Our evaluations were conducted at intake to social services care management, and therefore included only older adults facing significant stressors, both acute and chronic, in their lives.

Also of note, three-quarters of those with a current MDE reported one or more previous episodes of illness, and an additional 19.8% who did not meet MDE criteria at intake reported a past history as well. In total, therefore, the lifetime prevalence of MDE in the sample was 46.8%, far higher than the estimated lifetime prevalence of 10% for mood disorder in community-dwelling older adults.²⁹ Over one-third of the sample was prescribed a medication for depression, anxiety, or stress, including over 60% of those with MDE. At the same time, however, over half of those taking a psychotropic medication had no current MDE, suggesting either that medications were being prescribed nonspecifically for distress or that prior treatment had been effective for some in resolving their mood disorders. Unfortunately, unavailability of information on the class and dose of medication prescribed, the timing of its use relative to depressive episodes, and the subjects' adherence to prescribed therapy precludes further examination of these issues.

There are several possible explanations for the pattern of depressive illness observed here. First, older adults who utilize Eldersource services may comprise a group particularly prone to affective illness because of their heavy burden of social stressors, physical illness, and functional impairments. Second, they may represent a population of elders who frame their distress as social rather than psychological or medical in nature, and who, therefore, present preferentially for care to ASPN agencies rather than to mental health or primary care providers. Third, late life depression may make older adults more prone to social morbidities (secondary, for example, to withdrawal that is symptomatic of the illness) and thus, the need for ASPN intervention. Fourth, while our overall participation rate was comparable with other community based studies,³⁰ only a portion of care management clients was referred to the study by their CMs. It is possible, therefore, that elderly clients with depression were over-represented in our sample. However, they were comparable in gender, race, income, and marital status to the nonenrolled Eldersource clients, and younger age of study subjects is unlikely to account for higher rates of depression, as other studies have not consistently found an association between age and rates of major depression in the older adult population. Further study of the natural history of affective illness in ASPN agency clients, including its phenomenology, is needed.

With regard to the correlates of depression in ASPN clients, our findings generally support previous studies conducted with community and clinical samples. In multivariate analyses, objective (but not perceived) social support remained in the model. For each point lower on the LSNS, a subject had 4.3% increased chance of being depressed. A difference in 10 points represented over 40% increased risk, suggesting clinical significance. Because aging service providers are equipped to address elders' social network deficits, for example, by utilizing activity-based programs and mobilizing peer and family support, they are well-qualified to assist in management of late life depression.

Both the frequency of life events and the subjective “impact” of a significant negative event were associated with MDE. CMs who provide in-home services to their clients are also well-positioned to identify stressors, place them in context, and bring resources to bear that mitigate their impact.

Difficulty in performing IADLs was also positively associated with depression.³¹ Assessment of functional capacity is routine practice for ASPN CMs to assist their clients in obtaining the most appropriate and needed services, such as transportation assistance, meals, financial management, and home health aides.

Consistent with previous research, self-rated health,³² medical illness burden,³³ and pain³⁴ were associated with the presence of a current MDE as well. Because of attitudinal and economic barriers, older adults are often reluctant to seek mental health services, preferring instead to obtain help for depression from their primary care providers.⁶ Yet rates of detection and adequate treatment of depression in primary care settings are low.⁵ Although collaborative care models that bring mental health resources, nurse care managers, and expertise to the primary care setting show promise of improving outcomes of depression treatment in later life,^{35–37} the social service setting may have an important role to play.¹⁰

Finally, the strength of one’s faith or religious affiliation was inversely associated with depression. Use of religion as a means to cope with stress has been associated with lower rates of incident depression in older men, and a lower rate of religious involvement was significantly associated with suicide in later life.^{38,39} Although aging services agencies are typically secular organizations, their ability to support independent community functioning may have the indirect benefit of facilitating the elder’s engagement in a faith community, thereby, reducing depression-related morbidity and mortality.

Limitations of the Study

Sampling issues are important to consider in interpreting these results. It is possible that the subjects had higher rates of psychological distress than those who chose not to participate. However, the two groups were similar demographically, and the most common reasons for nonparticipation were that the client had no further interest in Eldersource services or elected not to enroll as a research subject. Depressive symptoms of withdrawal, anergia, and hopelessness are likely to correlate with the decision not to participate. It is equally plausible, therefore, that affective disorder is underrepresented in the study sample.

Eldersource does not utilize a priori criteria with which to determine eligibility for care management services. Neither was randomization to care management visits feasible. Furthermore, sampling was restricted to those who spoke English well enough to participate in the interview, and the great majority of participants were white, non-Hispanic. Our findings, therefore, may not generalize to other agencies that have different operating procedures and serve a more diverse clientele.

The diagnosis of current MDE required that the subject have 2 weeks or more of persistent symptoms sufficient to meet *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* criteria for the disorder. However, because the assessments were conducted at one time point early in the subjects’ interactions with the agency, we do not know the extent to which their depressions responded to the CMs’ ministrations, and if they did, over what time period. Would quick resolution of an elderly client’s depression indicate that the disorder was of less clinical significance? Or would it suggest that the social intervention was a robust treatment for the client’s depression? Longitudinal studies of depressed ASPN clients receiving CM “care as usual” are needed to explore such important questions further.¹⁵

Finally, we used $p < 0.05$ as an indicator of statistical significance rather than adjust statistically for multiple comparisons. Such adjustments can inflate the risk of Type II errors and have a number of other limitations,⁴⁰ and at this early stage of research in aging service settings, we believe this less conservative approach is appropriate. Certainly, however, there is a risk of spurious findings and the results should be cautiously interpreted in that light.

CONCLUSIONS

Many seniors receiving services from ASPN agencies present at the point of entry to care with clinically significant depression, often a recurrent episode of illness. Many of the risk factors associated with major depression in ASPN clients are social in nature, potentially modifiable, and within the expertise of aging services CMs. These findings indicate the need to understand better the barriers to effective management of depression among older adults who reside in the community, in particular the role of social factors in the pathogenesis and course of illness. We must better understand the pathways that lead depressed seniors to the ASPN agency's door, whether this population is distinct from those in the community whose depression escapes detection altogether, and how they differ from those who receive diagnosis and treatment by primary care physicians and in specialty mental healthcare settings.

That knowledge will in turn indicate how ASPN providers might best contribute to improving outcomes of depression in community-residing older adults. Some depressed elders may be responsive to social service interventions alone; others may require medical or psychiatric intervention, the effectiveness of which may be augmented by the provision of skilled social services. Optimal management of late life depression may require a new model of care in which ASPN agencies collaborate with primary and mental healthcare providers as an integrated team.

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TABLE 1

Depression Status (N = 378)

n		
Sample Demographic Characteristics		
Age, mean ± SD (years)	378	76.5 ± 9.2
Race		
White	319	84.4%
Nonwhite	59	15.6%
Gender		
Women	259	68.5%
Men	119	31.5%
Marital status	229	60.6%
Married		
Not married	149	39.4%
High school education	265	70.1%
SCID Criteria for Depression		
	n	% (95% CI)
Lifetime history of MDE	176	46.81 (41.76–51.85)
Current MDE	101	26.72 (22.32–31.48)
First Episode	25	24.75 (16.70–34.33) ^a
Recurrent Episode	73	72.28 (62.48–80.72) ^a
Patient Health Questionnaire (PHQ-9) Scores		
0–4 (None)	125	33.16 (28.41–37.91)
5–9 (Mild)	135	35.81 (30.97–40.65)
10–14 (Moderate)	68	18.04 (14.16–21.92)
15+ (Severe)	49	13.00 (9.61–16.39)
10+ (Clinically Significant)	117	31.03 (26.36–35.70)
Mean Score (SD)	7.76	(5.67)

^aFor rate among those with current MDE, n = 98. Information on first versus recurrent episode is missing for three subjects.

TABLE 2

Comparison of Subjects With Current MDE and Nondepressed Subjects

	Current MDE		Nondepressed		χ^2 (or Z-Score)	p Value
	n	%	n	%		
Subjects	101	26.72	277	73.28		
Race/ethnicity						
White	90	89.11	229	82.67	2.328	0.150
Nonwhite	11	10.89	48	17.33		
Gender						
Women	71	70.30	188	67.87	0.202	0.708
Men	30	29.70	89	32.13		
Marital						
Married	37	36.63	112	40.43	0.447	0.553
Not married	64	63.37	165	59.57		
Education						
<Grade 12	30	29.70	83	29.96	0.002	1.000
Grade 12	71	70.30	194	70.04		
Income						
<\$1750/month	67	66.34	167	60.29	1.148	0.338
\$1750/month	34	33.66	110	39.71		
Referral						
Self	36	38.71	107	41.00	0.149	0.714
Others	57	61.29	154	59.00		
	Mean ($\pm$ SD)		Mean ($\pm$ SD)			
Age, years	75.38 (8.10)		76.92 (9.52)		-1.314	0.190
Disability and physical health						
Number of ADLs	1.68 (1.75)		1.59 (1.89)		0.904	0.366
Number of IADLs	3.37 (2.73)		2.45 (2.66)		2.878	0.004
Number of medical conditions	6.07 (2.39)		4.65 (2.34)		4.957	<0.001
Social support						

	Current MDE		Nondepressed		χ^2 (or Z-Score)	p Value
	n	%	n	%		
LSNS ^b	24.46 (8.79)		28.07 (9.89)		-3.232	0.001
MSPSS ^c	55.87 (15.75)		60.39 (13.59)		-2.242	0.026
Life events (modified LOPES)						
Number of events	3.63 (2.08)		2.74 (1.95)		3.725	0.001
Subjective impact score	7.05 (2.53)		5.10 (3.13)		5.698	<0.001
Associated mental health						
Cognition (six-item screen) ^d	0.70 (1.03) (n = 57)		0.80 (1.40) (n = 179)		0.249	0.803
Alcohol use (AUDIT-C)	1.21 (1.77)		0.98 (1.62)		1.261	0.208
Other covariates						
Pain	1.96 (1.44)		1.33 (1.33)		3.781	<0.001
Self-rated health	1.40 (1.01)		1.95 (1.07)		-4.356	<0.001
Religion	2.25 (1.52)		2.70 (1.38)		-2.576	0.010

^aThe degree of freedom for the χ^2 tests is 1.

^bLSNS = Lubben Social Network Scale.

^cMSPSS = Multidimensional Scale of Perceived Social Support.

^dAdministration of the Six-Item Screen began part-way through the study, with a total sample for this measure of 236.

TABLE 3

Multivariate Logistic Regression Analyses

Parameter	Estimate	Standard Error	Pr > χ^2 ^a	Odds Ratio	95% Wald Confidence Limits
No. of IADLS	0.104	0.052	0.043	1.11	1.00–1.23
No. of medical conditions	0.251	0.059	<0.001	1.28	1.14–1.44
Lubben Social Network Scale (LSNS)	–0.044	0.015	0.003	0.96	0.93–0.98
Modified LOPES: No. of events	0.140	0.072	0.051	1.15	1.00–1.32
Modified LOPES: Subjective impact score	0.246	0.057	<0.001	1.28	1.14–1.43
Religion	–0.252	0.095	0.008	0.78	0.64–0.94

Notes: Model included: age, gender, race, marital status, income, education, number of IADLS, number of medical conditions, LSNS Score, MSPSS Score, LOPES No. of events, LOPES subjective impact score, pain, self related health, religion. Those not listed in the table were removed by the backward elimination method.

^aThe Wald χ^2 test with $df = 1$.