Social Support and Self-Reported Health Status of Older Adults in the United States

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Objectives. We determined whether a representative national probability sample of US community-dwelling older adults who reported less social support also reported poorer general health status, which is a robust predictor of prospective mortality among elders.

Methods. We analyzed 2 subsamples generated via random sampling with replacement from the full analytic sample of adults aged 60 years and older in the 1999–2002 National Health and Nutrition Examination Survey (n = 3476). We built multinomial logit models with the first analytic subsample (n = 1732). Then we tested the final models on the second subsample (n = 1744) to assess the differences in odds of reporting poor, fair, or good versus very good or excellent health. We fit the cross-validated final models to the full analytic sample.

Results. After we controlled for age, race, gender, and educational attainment, older persons across all analytic samples who reported that they needed more support also reported having poorer health compared with better health 2 times more often than did older persons who were satisfied with the support available to them (odds ratio [OR] = 2.4; 95% confidence interval [CI] = 1.7, 3.4; $P < .001$).

Conclusions. In the United States, older persons' satisfaction with the emotional support available to them is associated with better self-reported health status. (*Am J Public Health.* 2009;99:1872–1878. doi:10.2105/AJPH.2008.146894)

Social isolation and lack of social support are likely acute and chronic stressors affecting biological and behavioral mediators, such as increasing allostatic overload or unhealthy behaviors.[1–6] Such mediating pathways are postulated to have long-term negative effects on health, causing increases in disease susceptibility and risk of mortality across many leading causes of death among elders.[6–8] The role of social disconnection is particularly salient among populations with greater susceptibility to morbidity and mortality, such as older adults. The lack of social support for this population incurs real societal costs, such as longer hospital or nursing home stays when older persons lack caregivers who can help them recover at home.[9–11]

There have been few attempts to quantify the "risk and resilience profile," which is the prevalence of social isolation and inadequate social support, among seniors across the United States. Although research over the past 25 years has demonstrated an important influence of social networks on health states and on the courses of diseases and mortality among older persons,[12–15] these studies are largely limited to clinical samples of medical patients, not nationally representative, community samples, or international populations. Although some studies have examined community-dwelling older persons,[4,16,17] few have provided contemporary, nationally representative estimates of the associations among social networks, social support, and the general health status of all community-dwelling older men and women in the United States.[18,19]

The National Health and Nutrition Examination Survey (NHANES) offers a unique opportunity to generate a population-level description of the social health of older persons in the United States and to examine whether scales validated in these local-level epidemiological studies of social support are useful predictors of health status among national cross-sectional datasets. We used NHANES data to examine the relationship between global health status and the quality and quantity of supportive social relations. Global health status, as measured by self-assessment, is a robust predictor of mortality and chronic morbidity.[20–24]

Social support stems from social interactions and networks of relationships that are intended to strengthen the well-being of their members. A full discussion of the behavioral and physiological mechanisms by which social relations may affect the health of older persons is beyond the scope of this article, but inadequate social support and perceived or real social isolation are stressors thought to have effects on immune, metabolic, and cardiovascular systems as well as health-related behaviors. Sociodemographic variables might also be operating through these same possible causal pathways. Previous research also suggests that social support and social integration may provide health and survival benefits to older adults by strengthening coping and recovery when ill or via biological mechanisms that protect against illness.[5,25–27]

Both the structure and the quality of social connections, which are thought to contribute to health, have been explored in previous research.[28] For instance, social networks can be uniquely subdefined by social roles or categories (e.g., children, friends, family), and each role or category may yield different functional resources and effects on health.[29] Functional resources that may affect health include the provision and perceived adequacy of (1) emotional support, such as feeling understood by a confidant or close to another person; (2) instrumental support, such as the provision of financial assistance; or (3) informational support, such as providing feedback to help one accomplish one's goals.[30] The emotional function of social relations may have a stronger relationship with general health status, depending on the structure, size, or identity of the social relation in question (e.g., the presence of offspring in one's life).[15] Cross-sectional and prospective data suggest that social disconnection—as assessed by the absence of social relations or social support, or by perceived dissatisfaction with one's social support, rather than the identity of the network members per se—predicts mortality.[31,15]

The NHANES social-support questionnaire was adapted from the Berkman-Syme Social Network Index used in large-scale community epidemiological studies.[16,17] We used NHANES data to reexamine 2 related but distinct dimensions of social relations: (1) the structure of social relations, i.e., the degree to which people are embedded socially as indicated by the number, sources, identity, density, or diversity of social contacts[28]; and (2) the quality and function of social contacts (e.g., providing intimacy, practical help, frequency of contact, and availability and adequacy of these positive social contacts).[30,4,6] We also examined a composite of structure and support to determine whether the interaction was similar to single dimensions associated with health in past studies. We investigated the national estimates of social support among US community-dwelling older persons. We also investigated whether older persons who report less emotional support and greater social isolation experience poorer self-assessed health, a robust predictor of prospective mortality.

METHODS

We conducted a secondary cross-validation analysis of persons aged 60 years and older who participated in any of the 1999–2002 NHANES surveys.[32,33] These surveys gathered data on cross-sectional, stratified, multistage probability samples of civilian, noninstitutionalized persons living in the United States (N=3706). NHANES included self-reported social-support indicators and self-assessed health status in its home-interview protocol. These datasets oversampled low-income persons, individuals aged 60 years and older, African Americans, and Mexican Americans. In-home interviews gathered questionnaire data on a variety of health and risk factors. (Additional details on the NHANES surveys are available at http://www.cdc/gov/nchs/nhanes.htm.)

We created an analytic sample (n=3476) from the complete NHANES sample (N=3706). We excluded any cases that were missing data for any variable of interest, and we conducted sensitivity analyses to verify that this listwise deletion procedure did not systematically bias the sample or modify our conclusions. We also generated 2 additional analytic subsamples through random assignment with replacement, to cross-validate the full model generated in the first analytic subsamples (n=1732 and n=1744, respectively).[34] We observed an overall consistency in the 2 sets of results from each analytic subsample, so we present final models for only the full analytic sample (n=3476). Results for each subsample are available upon request.

Dependent and Independent Variables

The dependent variable was health status, measured by a single-item self-report indicator: "Would you say your health in general is . . . ?" Five response categories were combined into 3 equally sized categories: poor, fair, or good and very good or excellent.

In all multinomial analyses, we controlled for potential sociodemographic covariates of health states and mortality, such as age,[35,36] marital status,[37,38] gender, educational attainment, and race/ethnicity. Demographic information was collected in the home interview. We created 2 age categories by dividing the distribution of respondents' age in years at the median. We collapsed marital status data collected or imputed into 2 categories: living alone after having had a spouse (divorced, separated, or widowed), and living with a spouse, living with a partner, or never married. We collapsed responses to highest grade or level of schooling completed into 3 categories: less than high school education, completed through high school only, and completed more than high school. We referred to the US Office of Management and Budget's guidelines for race/ethnicity reporting in creating the variable derived by combining responses to questions of race and Hispanic origin. The categories analyzed were non-Hispanic White, non-Hispanic Black, and all others, which included subcategories such as Mexican American, other Hispanic, Native Americans, Asians, and Pacific Islanders. (For more information on NHANES demographic variables, see documentation at http://www.cdc.gov/nchs/data/nhanes/demo.pdf.)

Older Persons' Social Ties and Social Support

Perceived inadequacy of emotional support. Respondents answered yes or no to a single item that inquired, "In the last 12 months, could you have used more emotional support than you received?" However, skip patterns designed into the NHANES interview protocol excluded this item when respondents had no one providing emotional support. We imputed a "yes" response for the respondents who skipped this item, and we conducted sensitivity analyses of the final model that revealed only a slight diminishment of effect. We analyzed this item separately from the "availability of multiple sources of social support" indicator because of collinearity.

Existence (or absence) of close social ties. Respondents gave a number when asked, "How many close friends (relatives or nonrelatives) do you have?" We collapsed the total number reported into 3 categories to assess the integration of social support in social networks: no close relationships, 1 to 4 close relationships, and 5 or more close relationships.

Availability of multiple sources of emotional support. The simple interview measure was, "Can you count on anyone to provide you with emotional support such as talking over problems or helping you make a difficult decision?" Any "yes" responses resulted in a follow-up of, "In the last twelve months, who was most helpful in providing you with emotional support?" Respondents checked the social-relationship categories that provided them with the most emotional support (spouse, daughter, and so on). We collapsed item responses into 4 categories to examine the unique strength of each subnetwork: older adults who received no emotional support ("no one"), those who only found relatives to be emotionally supportive ("family only"), those who only found support from outside their families ("other only"), and those who found support from both family and community members, that is, from more than 1 category of social relationships ("family and other").

Before we finalized this scoring scheme, we tested a social network index composite scoring applied by Berkman et al.[17] in other studies that used similar interview items.[29] Scores of 0 (no one available) to 2 (2 or more people) did not yield significant findings in the first analytic subsample.

Availability of instrumental support. This dimension was assessed by a dichotomous yes-or-no item: "If you need some extra help financially, could you count on anyone to help?" As we developed our final multivariate models, we found this indicator to have no relationship to health status, so we dropped it from our analyses.

Statistical Analyses

We derived descriptive univariate statistics for the complete NHANES sample (N=3706) to generate national prevalence estimates for each response category. For descriptive purposes, we also present bivariate associations by gender within the full analytic sample (n=3476).

Our full analytic sample (n=3476) was then divided into 2 analytic subsamples, generated via random assignment with replacement and excluding case participants missing data on key variables for multivariate analyses. We applied several steps to develop the final models presented. We first fit bivariate and multinomial logits on the first subsample (n=1732). We fit models sequentially and tested interactions at each step, starting with demographic variables and adding each social support variable. Given the variable construction and the interview skip pattern, we anticipated collinearity between sources of emotional support, perceived need for more emotional support, and number of close friends. We then developed 3 final models to examine social-support indicators independent of each other. As there was no main or interaction effect of gender in the multivariate context, our final multivariate models were not separated by gender.

To cross-validate findings, we then took the 3 final multivariate main-effect models from the first subsample and applied them to the second subsample (n=1744). As differences between the 2 subsamples were not substantial, we fit these 3 validated final multivariate models to the full analytic sample to simplify presentation. The subsample models are available from the authors.

As recommended by the National Center for Health Statistics, we used SAS version 9.1 (SAS Institute, Inc, Cary, NC) to conduct all analyses.[39] We used the SURVEYLOGISTIC procedure in SAS to generate bivariate and multinomial logistic regression estimates of the relationship between social-support indicators and health status, to examine each social-support variable upon control of the other selected covariates of health status. Using point estimates for each odds ratio and for standard errors, we calculated a standard *z* score, from which a 2-sided *P* value (that used the S-plus normal distribution function) was calculated to determine the probability that the null hypothesis of no relationship was true. We present only national, unbiased population estimates. Household interview sampling weights and adjusted regression estimates corrected for multistage complex sampling that generated nested data.

RESULTS

Table 1 presents national estimates that include the magnitude of suboptimal emotional support present among US community-dwelling older persons. More than 7 million older persons, or 17% of this population, were dissatisfied with the extent of emotional support available to them. More than 2 million older persons (5%) reported not having any source of emotional support, with the majority of older persons (more than 26.5 million, or 59.6%) receiving their emotional support from family members only. The majority of older persons reported having many close social ties in their lives (27.6 million, or 62%); 32% had at least a minimal number of close friends, but 1.6 million (3.7%) were socially isolated and had no close friends. The vast majority, 78%, had not accepted financial assistance in the previous year.

Table 2 presents bivariate associations between each covariate and health status separately for men and women in the full analytic sample. Significant differences in risk of lower health status existed across all demographic control variables among both men and women, especially when comparing categories of race/ethnicity and educational attainment. When compared to older persons who were married or never married, the odds of reporting poor or fair health status compared with very good or excellent health status was more than 1.5 times greater among older persons who lacked partners as a result of divorce, separation, or death of a mate (among men, odds ratio [OR]=1.8; 95% confidence interval [CI]=1.3, 2.5; $P<.001$; among women, OR=1.6; 95% CI=1.14, 2.25; $P<.01$). A monotonic relationship between level of health status and perceived emotional support was observed among both men and women. Older persons reporting a need for more emotional support indicated that their health was poor or fair compared with very good or excellent at least 2 times more often than those who were satisfied with the emotional support they received (among men, OR=3.4; 95% CI=2.51, 4.62; $P<.001$; among women, OR=2.16; 95% CI=1.51, 3.1 $P<.001$).

This trend was repeated for respondents with fewer sources of emotional support across social-relationship categories. Older men who could not identify any source of emotional support reported poor or fair health versus very good or excellent health more than 2 times more often than did men who received emotional support from both family and community members (OR=2.56; 95% CI=1.47, 4.47; $P<.001$). Similarly, older women who considered only their relatives to be emotionally supportive reported poor/fair health compared with very good/excellent health 1.4 times more often than did women who obtained emotional support from both family and community members (95% CI=1.05, 1.91; $P<.05$). Older persons who obtained emotional support only outside their family did not report significantly different health status from older persons who received emotional support from both family and community members.

In the multinomial logit context across both subsamples and the final analytic sample, some demographic variables such as marital status no longer demonstrated statistically significant differences in odds ratios. Men and woman did not appear to differ in health status. Lower educational attainment and racial or ethnicity minority status was consistently associated with poorer health status. Older persons who reported needing more emotional support reported poor or fair health compared with very good or excellent health more than 2 times more often than did older persons who were satisfied with their available support, after we controlled for a variety of factors (model 1: OR=2.44; 95% CI=1.73, 3.44; $P<.001$; Table 3).

Models 2 and 3 contain additional indicators of sources and quantities of socially supportive relationships and control for key demographic variables (excluding perceived need for support to avoid collinearity). These data modestly support the hypothesis that the structure of one's emotionally supportive networks (fewer categorical sources or quantities of close, supportive relationships) is negatively related to

TABLE 1—Demographic Characteristics, Self-Reported Health Status, and Social Support: Older Adults in the United States, 1999–2002

	Sample Frequency	Estimated US Frequency	Estimated US % (95% CI)
Sample size	3706	44 499 821	
Health status			
Missing	5	29 573	0.07 (0.0, 0.2)
Poor/fair	1255	12 125 182	27.3 (24.9, 29.6)
Good	1172	14 286 842	32.1 (30.2, 34.0)
Very good/excellent	1274	18 058 224	40.6 (38.1, 43.0)
Age			
60–71 y (below or at median)	1853	24 641 371	55.4 (52.3, 58.4)
≥72 y	1853	19 858 450	44.6 (41.6, 47.6)
Gender			
Women	1917	25 211 147	56.7 (55.5, 57.8)
Men	1789	19 288 674	43.4 (42.2, 44.5)
Race/ethnicity			
All other	978	4 973 907	11.2 (6.8, 15.6)
Non-Hispanic Black	614	3 679 625	8.3 (5.7, 10.8)
Non-Hispanic White	2114	35 846 289	80.6 (76.5, 84.6)
Education groups			
Missing	33	348 892	0.8 (0.4, 1.1)
Less than high school	1650	14 293 339	32.1 (29.2, 35.1)
High school graduate	840	12 704 609	28.6 (26.0, 31.1)
More than high school	1183	17 152 981	38.6 (35.5, 41.6)
Marital status			
Divorced/separated/widowed	1367	14 871 435	33.4 (29.3, 37.5)
Married and other[a]	2339	29 628 386	66.6 (62.5, 70.7)
Need emotional support			
Missing	15	186 154	0.4 (0.2, 0.7)
Yes	762	7 632 860	17.2 (15.3, 19.0)
No	2929	36 680 807	82.4 (80.6, 84.3)
Sources of emotional support			
Missing	109	1 382 352	3.1 (2.4, 3.9)
Family and other[b]	844	10 445 479	23.5 (21.0, 26.0)
Family only	2216	26 528 965	59.6 (56.9, 62.4)
Other only	274	3 773 825	8.5 (7.1, 9.9)
No one[c]	263	2 369 200	5.3 (4.2, 6.4)
Number of close friends			
Missing	77	741 012	1.7 (1.2, 2.1)
None	176	1 623 273	3.7 (2.8, 4.5)
1–4	1372	14 528 392	32.7 (30.2, 35.2)
5–50	2081	27 607 144	62.0 (59.2, 64.9)
Financial support obtained			
Missing	60	733 852	1.7 (1.0, 2.3)
Obtained	809	9 109 215	20.5 (17.8, 23.2)
Will not accept or not obtained	2837	34 656 754	77.9 (75.0, 80.7)

Note. CI = confidence interval. Sampling weight and sample design adjustments have been made to all nationwide statistics presented here.
[a]Living with a spouse, living with a partner, or never married.
[b]Received support from both family and community members.
[c]Received no emotional support.

health status. For instance, older persons who only received emotional support from relatives reported poorer health compared with very good or excellent health 1.36 times more often than did older persons receiving emotional support from both family and community members (95% CI=1.02, 1.8; $P<.05$; model 2). No statistically significant difference in odds was found between older persons whose close social ties lie only among community members compared with those who receive support from family and community members. Older persons with at least 1 close friendship reported being healthier than did those with no close friendships (model 3). In the full analytic sample, the proportion of older persons reporting poor/fair health compared with very good or excellent health was 2.74 times greater (95% CI=1.5, 5.01; $P<.001$) among older persons with no friends than among those who had 1 to 4 close friends.

DISCUSSION

As suggested in previous research, one's perception of having adequate emotional support is associated with better self-reported health status in the general population of US community-dwelling older persons.[4] Self-report of perceived low social support is indeed a risk factor for poorer health status for US older persons. These NHANES data demonstrate that the desire for more social support is a predictor of poorer health in men and women alike across categories of race/ethnicity, education, and marital status. Measures of potentially confounding social determinants of health, such as lower educational attainment, do not explain away this association between social support and health status.

Results of these analyses also provide some evidence that the structure of social-support networks relates modestly to self-assessed health status in the general population. In the case of the NHANES, this construct was indicated by the sources of emotionally supportive relationships and the quantities of any close friendships among kinship and nonkinship networks. The presence or absence of a spouse was not a robust predictor compared with the perception of adequacy in one's close confidant in multivariate logit model contexts. The NHANES measure of the functional aspects of

TABLE 2—Bivariate Logits of Self-Reported Health Status, by Social Support, Demographic Characteristics, and Gender: Older Adults in the United States, 1999–2002

	Good vs Very Good/Excellent Health Status		Poor/Fair vs Very Good/Excellent Health Status	
	Men, OR (95% CI)	Women, OR (95% CI)	Men, OR (95% CI)	Women, OR (95% CI)
Age ≥72 y vs 60–71 y	1.20 (0.90, 1.58)	1.48** (1.09, 2.01)	1.50*** (1.12, 2.01)	1.55*** (1.16, 2.07)
Race/ethnicity				
All other vs Non-Hispanic White	1.31 (0.85, 2.02)	1.42 (0.89, 2.27)	2.29† (1.49, 3.51)	2.96† (1.90, 4.59)
Non-Hispanic Black vs Non-Hispanic White	2.46† (1.83, 3.32)	2.10† (1.45, 3.03)	3.02† (2.07, 4.42)	3.43† (2.26, 4.94)
Highest educational attainment				
High school vs more than high school	1.65*** (1.15, 2.36)	1.94† (1.32, 2.84)	2.05† (1.49, 2.83)	2.64† (1.84, 3.78)
Less than high school vs more than high school	2.42† (1.71, 3.44)	2.17† (1.49, 3.17)	5.42† (3.81, 7.71)	7.04† (4.86, 10.19)
Divorced/separated/widowed vs married and others[a]	1.42** (1.07, 1.90)	1.09 (0.82, 1.43)	1.80† (1.30, 2.50)	1.60*** (1.14, 2.25)
Needs more emotional support Yes vs no	1.37* (0.95, 1.97)	1.58*** (1.15, 2.16)	3.40† (2.51, 4.62)	2.16† (1.51, 3.10)
Sources of emotional support				
Other only vs family and other[b]	1.35 (0.60, 3.05)	1.11 (0.73, 1.68)	1.89* (0.90, 3.98)	0.97 (0.53, 1.75)
Family only vs family and other[b]	1.49* (0.97, 2.29)	1.25 (0.93, 1.69)	1.37 (0.86, 2.18)	1.42** (1.05, 1.91)
No one[c] vs family and other[b]	1.81** (1.02, 3.20)	1.35 (0.89, 2.05)	2.56† (1.47, 4.47)	1.76* (0.91, 3.40)
Number of close friends				
5–50 vs 1–4	0.80 (0.61, 1.60)	0.71*** (0.56, 0.91)	0.67*** (0.50, 0.89)	0.76* (0.57, 1.00)
None vs 1–4	1.44 (0.72, 2.88)	1.24 (0.46, 3.31)	3.71† (1.95, 7.05)	1.94 (0.80, 4.70)
Obtained financial support vs will not accept support/support not obtained	1.06 (0.72, 1.54)	1.49** (1.07, 2.06)	1.29 (0.81, 2.06)	1.67** (1.11, 2.53)

Note. OR = odds ratio; CI = confidence interval. For men, n = 1680; for women, n = 1796.
[a]Living with a spouse, living with a partner, or never married.
[b]Received support from both family and community members.
[c]Received no emotional support.
*P < .10; **P < .05; ***P < .01; †P < .001.

social relationships appears to be a stronger predictor of health status than structural aspects of one's supportive social networks (e.g., the number and types of relationships from which one draws emotional support).

Older persons who only obtained emotional support from outside of kinship networks did not report different health status than older persons who received emotional support from both kinship and nonkinship networks. Older persons who only obtained support from kinship networks were more apt to report poorer health than were other older persons. This suggests that an expansive social support network—specifically, one that extends beyond one's family relationships—is a key correlate or protective factor of better general health among older persons. Conversely, social isolation—having no close friendships among either relative or nonrelative networks, or being isolated from positive social ties beyond a kinship network—is a modest risk factor for poorer general health.

Although the NHANES now routinely includes a social-support battery in its interview protocol, these measures of social support, social relations, and social networks are blunt, and they limit the capacity to finely distinguish structural and functional aspects of support. However, the current study is unique because the NHANES datasets are contemporary and nationally representative, and they contain a comprehensive set of demographic variables that is large enough to be split into 2 random subsamples to examine whether random sampling error contributed to the associations found.[40] The notion that supportive relationships affect individuals' health is not new; however, recent research to identify the scope of these relationships via US national probability estimates was lacking for this period, distinguished by ongoing, rapid population growth among older adult segments.

Limitations

Complex relationships between social networks and social support, nonspecified arrays of how social relations may influence health, and lack of scientific consensus regarding the conceptualization and measurement of social relations have created inconsistencies and given rise to a debate on causal pathways by which social relations may affect mortality; all are issues this study cannot address.[29,6,15] The NHANES is a cross-sectional dataset, which prevents us from confidently examining directionality of relationships to health status or causal pathways through which social support may even be affecting health (e.g., health-determining behaviors such as alcohol use, or psychological or physiological

TABLE 3—Predictors of Self-Reported Health Status, Final Multinomial Logits: Older Adults in the United States, 1999–2002

	Good vs Very Good/Excellent Health Status			Poor/Fair vs Very Good/Excellent Health Status		
	Model 1, OR (95% CI)	Model 2, OR (95% CI)	Model 3, OR (95% CI)	Model 1, OR (95% CI)	Model 2, OR (95% CI)	Model 3, OR (95% CI)
Age ≥ 72 y vs 60–71 y	1.35*** (1.10, 1.65)	1.34*** (1.09, 1.64)	1.33*** (1.09, 1.64)	1.39** (1.07, 1.80)	1.37** (1.06, 1.79)	1.36** (1.05, 1.78)
Women vs men	1.10 (0.88, 1.37)	1.15 (0.91, 1.44)	1.12 (0.90, 1.40)	0.94 (0.78, 1.13)	0.99 (0.82, 1.18)	0.97 (0.81, 1.16)
Race/ethnicity						
All other vs non-Hispanic White	1.28 (0.92, 1.79)	1.31 (0.93, 1.84)	1.28 (0.91, 1.80)	1.90† (1.37, 2.63)	2.03† (1.46, 2.83)	1.97† (1.41, 2.76)
Non-Hispanic Black vs non-Hispanic White	2.07† (1.63, 2.64)	2.12† (1.67, 2.70)	2.01† (1.58, 2.57)	2.22† (1.67, 2.96)	2.29† (1.72, 3.04)	2.19† (1.62, 2.95)
Highest educational attainment						
High school vs more than high school	1.84† (1.45, 2.34)	1.81† (1.42, 2.30)	1.81† (1.43, 2.29)	2.40† (1.86, 3.08)	2.32† (1.80, 3.00)	2.35† (1.84, 3.00)
Less than high school vs more than high school	2.04† (1.54, 2.70)	2.00† (1.50, 2.65)	1.99† (1.51, 2.64)	5.12† (3.85, 6.80)	4.98† (3.73, 6.64)	5.03† (3.79, 6.67)
Divorced/separated/widowed vs married and others[a]	0.94 (0.76, 1.15)	0.97 (0.79, 1.18)	0.95 (0.78, 1.17)	1.14 (0.87, 1.48)	1.22 (0.95, 1.56)	1.20 (0.92, 1.56)
Needs more emotional support Yes vs no	1.51*** (1.15, 1.99)			2.44† (1.73, 3.44)		
Sources of emotional support						
Other only vs family and other[b]		1.25 (0.86, 1.83)			1.35 (0.86, 2.11)	
Family only vs family and other		1.30** (1.04, 1.62)			1.36** (1.02, 1.80)	
No one[c] vs family and other		1.40* (0.96, 2.03)			1.62* (0.95, 2.76)	
Number of close friends						
5–50 vs 1–4			0.86 (0.71, 1.04)			0.96 (0.77, 1.21)
None vs 1–4			1.37 (0.73, 2.58)			2.74*** (1.50, 5.01)

Note. OR = odds ratio; CI = confidence interval. Full analytic sample, n = 3476.
[a]Living with a spouse, living with a partner, or never married.
[b]Received support from both family and community members.
[c]Received no emotional support.
*P < .10; **P < .05; ***P < .01; †P < .001.

states such as depression or immune-system responsiveness). Inferences about causality drawn from these data are necessarily limited, especially because deteriorating health and social vulnerability can have a reciprocal relationship (e.g., when poor health decreases physical functioning and social participation).

Conclusions

Social support is itself a salient feature of quality of life, and it is an important target for social intervention among both healthy and ill older adult populations. Conversely, social isolation and inadequate instrumental support are negative quality-of-life indicators; thus, reducing their occurrence is a worthwhile goal. Since the Older Americans Act of 1965 was signed into law, many formal and informal community services have been delivered to provide practical and emotional support to older persons,[41] 93% of whom (aged 65 years and older) live in the community outside of institutions.[42] For instance, informal caregivers such as family members are estimated to save US communities $194 billion annually because of their voluntary aid of older persons with daily activities, such as banking, grocery shopping, bathing, and dressing.[43]

These analyses demonstrate that several million community-dwelling older persons still lack adequate emotional support in the United States. This important social determinant of physical and mental health remains inadequately addressed. With an estimated 7.6 million older adults feeling the need for more emotional support in America, awareness of the ongoing potential scope of the problem helps us evaluate whether providers of health and social services to older persons are adequately prepared to address these health needs. These findings underscore the possible benefits of future efforts to reduce social isolation and improve social health among this large and fastest-growing segment of the US population. ■

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Contributors

A.M. White and G.S. Philogene designed and supervised the study and interpreted the results. A.M. White led the synthesis of the material and the writing of the article. L. Fine conceptualized and supervised the study and

interpreted the results. S. Sinha designed, performed, and interpreted the analyses.

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Human Participant Protection

The study was approved by the research subjects review board of the University of Rochester, which determined that the study meets federal and university criteria for exemption because it is a secondary use of preexisting data.

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