Published in final edited form as:

Int J Geriatr Psychiatry. 2015 October ; 30(10): 1085–1092. doi:10.1002/gps.4266.

The Association Between Higher Social Support and Lower Depressive Symptoms Among Aging Services Clients is Attenuated at Higher Levels of Functional Impairment

Kimberly A. Van Orden,

University of Rochester School of Medicine

Li Yan,

University of Rochester School of Medicine

Carol A. Podgorski, and

University of Rochester School of Medicine

Yeates Conwell

University of Rochester School of Medicine

Abstract

Objective—Adults seeking services from the Aging Services Provider Network (ASPN) are at risk for depression. ASPN clients also have high prevalence of both functional impairments and social morbidities. Study of the relationships between these factors may inform the development of interventions for depression in this service setting.

Methods—We interviewed 373 older adults accessing ASPN services and assessed depression symptom severity, functional impairment (instrumental activities of daily living and activities of daily living), and social support.

Results—Lower social support and greater functional impairment were associated with greater depressive symptoms. At a high level of functional impairment, the inverse associations between indices of social support and depressive symptoms were attenuated.

Conclusions—Results suggest that older adults with more severe functional impairment may benefit somewhat less from increased social support with respect to depression symptom severity.

Keywords

aging; aging services; social support; social connectedness; functioning; functional impairment; depressive symptoms

The Aging Services Provider Network (ASPN) is an important service system for the detection and management of depression among older adults (Steinman, et al. 2007). A nationwide network of agencies that provide nonmedical social services to community-

Address correspondence to: Kim Van Orden, Ph.D., Department of Psychiatry, University of Rochester Medical Center, 300 Crittenden Blvd, Box PSYCH, Rochester NY 14642, kimberly_vanorden@urmc.rochester.edu.

No disclosures.

dwelling older adults, the goal of the ASPN is to promote the maintenance (or enhancement) of well-being in later life as well as to help older adults maintain independence and continue to reside in the community. Services provided 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.

Older adults who seek services from the ASPN are at risk for depressive symptoms and major depressive episodes. A previous investigation found that 31% of a sample of ASPN clients endorsed clinically significant depressive symptoms on the Patient Health Questionnaire-9 (PHQ-9) and 27% met criteria for a current major depressive episode (Richardson, et al. 2011a). Another study found that 10.6% of a sample of ASPN clients met diagnostic criteria for major depressive disorder (Gum, et al. 2009). In a sample of older adults receiving home delivered meals, 12.2% endorsed clinically significant depressive symptoms on the PHQ-9 (Sirey, et al. 2008). ASPN clients experiencing major depressive episodes are likely to also report higher levels of functional impairment, greater numbers of medical conditions and stressful life events, and lower social support than those without depression (Richardson et al. 2011a).

ASPN agencies provide a range of services that may function as mental health interventions, although not designed a priori to target outcomes such as depression. Of the correlates of depression described above, low social support and functional impairment are likely the most amenable to intervention in an ASPN setting. Indeed, a key purpose of the ASPN is to help older adults remain independent in their homes. Thus, numerous ASPN interventions aim to enhance functioning, including the installation of grab bars, transportation assistance, falls prevention, financial assistance, and care management (i.e., coordination and connection to non-medical services such as those described above). Further, many ASPN services are designed to increase social support, including programming at Senior Centers, transportation assistance, volunteer opportunities, and peer companionship.

A large body of literature indicates that both low social support and high functional impairment are associated with increased risk for depressive diagnoses and symptoms in later life (Barry, et al. 2013; Brummett, et al. 2000; Hinrichsen and Emery 2005; Oxman, et al. 1992; Schwarzbach, et al. 2014). Further, the large literature on the stress buffering hypothesis of social support (Cohen and Wills 1985; for a recent review, see Lakey and Orehek 2011) would suggest that high social support should buffer (i.e., reduce) the stressful effects of high functional impairment on depressive symptoms, such that those high in social support would experience less severe depressive symptoms in the face of functional impairment than those with low social support. However, while evidence exists involving social support as a buffer against stressful life events on the outcome of depression (Lakey and Cronin 2008), two issues are relevant. First, direct (or “main effects”) of social support on depression are more common than buffering (or “interaction” effects; Lakey and Orehek 2011). Second, it is not known if social support buffers the *specific* stressor of functional impairment and if it does so across the range of functional impairment or only at milder levels of functional impairment.

Given the role of aging services agencies in providing social support interventions for older adults, a greater understanding of the role social support plays in potentially mitigating the stress of functional impairment on depression could enable greater tailoring of interventions for older adults with functional impairment who are at risk for depression. For example, perhaps for some older adults, referrals to senior centers with transportation assistance would sufficiently reduce risk for depression, while for others, a larger “dose” of social support is needed (e.g., peer support plus senior center referral) or, alternatively, it may be the case that for some older adults with more severe functional impairment, those impairments must be addressed through care management before an older adult could benefit from a social support intervention.

Thus, the first research question addressed in the current study is: does depression severity depend on both levels of functional impairment and social support (i.e., an interaction or buffering effect)? Some previous research has begun to address this question. A study of older adult primary care patients found that low perceived social support interacted with depression diagnosis to predict (concurrently) higher functional impairment (Travis, et al. 2004). However, the interaction between social support and functional impairment on depression was not reported. Another study of primary care patients found a small, but statistically significant, moderating (buffering) effect of higher perceived social support weakening the association between greater functional impairment and greater depression (Hatfield, et al. 2013). However, given the size of the effect, the authors cautioned that the independent effects of social support and functional impairment on depression appeared most prominent. Another study of Chinese older adults in a long-term care facility (Kwok, et al. 2011) found that the relationship between greater functional impairment and greater depression was stronger for those with low peer support (compared to those with high peer support). Thus, there is some research directly investigating the hypothesis that levels of depression in later life depend upon both social support and functional impairment, with one study finding equivocal results and another supporting the hypothesis. Additional research is needed given the potential utility of this information for tailoring depression interventions for older adults.

In order to inform the tailoring of ASPN interventions, it would be useful to know not just whether a moderating effect exists, but what form it takes. We hypothesize that functional impairment attenuates the association between high social support and lower depression severity. Thus, in contrast to the stress buffering theory, we conceptualize functional impairment, rather than social support, as the moderator. This distinction has important conceptual implications. In line with the “need to belong” theory (Baumeister and Leary 1995) and other theoretical accounts emphasizing the need for social connectedness in maintaining health and well-being (Cacioppo and Patrick 2008; Lakey and Orehek 2011), we hypothesize a direct effect of social support on depressive symptoms that is likely weakened at high levels of functional impairment, rather than only finding an interaction with social support. In line with this conceptualization, our second research question addresses the form of the interaction: does functional impairment attenuate the association between social support and depression across the range of functional impairment severity or just at specific points along the range of functional impairment severity? It may be that only those with the most severe functional impairment benefit from increased social support.

Conversely, in line with our hypothesis, it may be that those older adults with the most severe functional impairment are unable to benefit from increased social support, perhaps because functional impairment signals an unmet need for physical safety and security, which may represent a more basic or foundational human motivation (cf, Maslow 1943) that must be satisfied before the need for social belongingness becomes salient (for a contemporary take on Maslow's hierarchy of motives see, Kenrick, et al. 2010). Alternatively, it could be the case that social support is perceived differently among those with high functional impairment, such that it is potentially harmful. For example, social support may cease to be viewed as reciprocal when high functional impairment is present—an experience that has been found to be associated with depression in later life (von dem Knesebeck and Siegrist 2003).

In the current study, we tested these hypotheses among a sample of ASPN clients who completed in-home assessments of depression symptom severity, functional impairment (ADL and IADL impairments), and social support. We examined both structural social support (i.e., size and dimensions of the social network) and perceived social support (i.e., perception of the adequacy of support), and hypothesized that functional impairment would attenuate (moderate) the association between both indicators of social support and depression symptom severity and specifically, that the association between greater social support and less severe depressive symptoms would be attenuated at high levels of functional impairment.

Methods

Participants

The data for the present study were part of a larger project examining mental health in older adults accessing ASPN services. Analyses based on data from this larger study have been previously published; however, the study reported here involves novel research questions and analyses.

Study participants consisted of adults entering a Monroe County, NY aging service organization (Eldersource) who received an initial home assessment from social service care managers between September 2005 and August 2007. Subjects were eligible if they were English-speaking and 60 years old or older. Care managers initially identified eligible participants and referred them to study staff. In total, 509 eligible participants were identified and, of these eligible participants, 377 were enrolled in the study and 373 completed the questionnaires used in the current study (excluded subjects had missing data on the social support scales). As described elsewhere (Richardson, et al. 2011b), study participants did not differ from the larger population of social services clients on age, race, gender, income, or marital status. Descriptive data on participants' characteristics appears in Table 1. Additional descriptive data on this sample has been previously published (O'Riley, et al. 2013; Richardson et al. 2011a; Richardson et al. 2011b; Simming, et al. 2010).

Procedures

Care managers briefly introduced the study during initial in-home care management assessments. Clients who verbally consented were referred to study personnel who conducted research interviews with written informed consent. The University of Rochester's Research Subjects Review Board approved the study.

Measures

Major Depressive Disorder was diagnosed using the Structured Clinical Interview for DSM-IV (First, et al. 2001), which was administered by masters level research assistants.

Structural Social support was assessed with the Lubben Social Network Scale (LSNS) (Lubben 1988), a 10-item self-report scale designed for older adults that characterizes the social support network and was developed as an alternative to the Berkman Social Network Index (Berkman 1983). It assesses family networks (e.g., "How many relatives do you see or hear from at least once per month, How many relatives do you feel at ease with, that you can talk about private matters?"), friend networks (same items as for relatives but with friends substituted), confidant relationships ("When you have an important decision to make, do you have someone you can talk to about it?"), helping others (e.g., "Do you help anybody with things like shopping, filling out forms, doing repair, providing child care, etc.?"), and living arrangements ("Do you live alone or with other people?"). Scores of LSNS range from 0 to 50 and higher scores correspond to higher levels of social support. Lubben (1988) suggested that a score of less than 20 can identify socially isolated older adults.

Perceived social support was measured with the Multidimensional Scale of Perceived Social Support (MSPSS)(Dahlem, et al. 1991). This 12 item self-report scale measures perceived adequacy of support from 3 different sources—significant others (e.g., "There is a special person who is around when I am in need," "There is a special person in my life who cares about my feelings"), family (e.g., "My family really tries to help me," and "I get the emotional help and support I need from my family"), and friends (e.g., "I can count on my friends when things go wrong" and "I can talk about my problems with my friends"). MSPSS scores range from 12 to 84 with higher values indicating higher levels of perceived support.

Depression symptom severity—The Patient Health Questionnaire (PHQ-9)(Spitzer, et al. 1999) is a 9-item scale that measures severity of depression symptoms in the prior two weeks. Each item is rated from 0 (not at all) to 3 (nearly every day), with total scores ranging from 0 to 27; higher scores indicate more severe depressive symptoms.

Functional impairment—The total number of Activities of Daily Living impairments (zero to six) and Instrumental Activities of Daily Living (IADL) impairments (zero to eight) was the indicator of functional impairment (Katz, et al. 1963; Lawton and Brody 1969), with the need for any type of assistance indicative of impairment. The range of functional impairment could range from zero to 14 impairments.

Cognitive Impairment was measured with the Six Item Screener (Callahan, et al. 2002), which includes a three item recall and three item orientation test. Scores are computed by summing errors. This measure was used to characterize the sample.

Number of Medical Conditions was assessed using a checklist adapted from the Minimum Data Set – Version 2.0. (Centers for Medicare & Medicaid Services 2000). This measure was used to characterize the sample.

Data Analysis

Analyses were conducted with STATA version 13.0. We used multivariate linear regression analysis with depression symptom severity as the dependent variable and the following variables as predictors: main effects of age, gender, and marital status (covariates); main effects of social support (LSNS score and MSPSS score); main effect of number of functional impairments; and the interactions of both LSNS and MSPSS with number of functional impairments. A trimmed model was then run after dropping any non-significant interaction terms. Prior to creating interaction terms, predictors were centered. To examine the form of significant interactions, we tested simple slopes of the associations between social support and depression severity at each level of functional impairment in our sample (i.e., from 0 to 14 impairments) in order to capture the range of functioning in our sample.

Results

Descriptive statistics characterizing the sample appear in Table 1. Of note, 20.38% of the sample meets Lubben's suggested cut-off for social isolation. Our sample's mean level of perceived social support (59.20) is higher than the level reported for a sample of Chinese older adults residing in long-term care facilities (mean=55.68; Liu, et al. 2014), and higher than a sample of depressed outpatient adults (mean=55.85; Gladstone, et al. 2007), but lower than the level reported by community dwelling adults, including postpartum women (mean=72.24) and medical residents (mean=68.28; Zimet, et al. 1990).

As seen in Table 2 (full model), age, marital status (coded as 0=unmarried and 1=married), and MSPSS were negatively associated with depressive symptoms, while number of functional impairments was positively associated with depressive symptoms. Further, these main effects were qualified by a marginally significant interaction between functional impairments and perceived social support (i.e., MSPSS). Given the small magnitude (and non-significance) of the interaction between functional impairment and structural social support (LSNS), this interaction was dropped in a trimmed model. This trimmed model appears in the bottom half of Table 2. In this model, the interaction between perceived social support and functional impairment was statistically significant.

We examined the form of the interaction between perceived social support and functional impairment across the range of functional impairment in our sample using simple slopes analyses. When functional impairment was absent (and up to the presence of 5 impairments), there was a significant inverse association between greater perceived social support and lower depression (see Table 3 and Figure 1 for simple slopes). However, at elevated levels of functional impairment (i.e., 6 or more impairments), the association

between perceived social support and depression symptom severity was attenuated and non-significant.

Discussion

In a sample of aging services clients, we found that depression severity depended on both perceived social support and functional impairment. This significant interaction indicated that higher levels of perceived social support were associated with lower depression scores when subjects reported zero to five functional impairments. However, with six or more impairments, the association between greater social support and lower depression severity was non-significant. These results are consistent with the hypothesis that older adults with more severe functional impairment may benefit less from social support with respect to depression severity.

We found a main effect of social support on depression, as well as an interaction with functional impairment, suggesting there may be a direct health benefit of high social support with regard to depression among older adult ASPN clients, which is relevant to the literature on the stress-buffering hypothesis of social support. We conceptualize our interaction between social support and functional impairment as evidence that social support may become less protective with regards to depressive symptoms at high levels of functional impairment. This suggests two possibilities: first, social support is not potent enough to compensate for, or ameliorate, the negative effects of functional impairment with regards to depression at high levels of functional impairment (a buffering effect). This could be the case because, as mentioned above, functional impairment may trigger motivational systems that have evolved in the service of promoting physical safety and security, which has been theorized to be a more fundamental motive that must be satisfied before needs such as belongingness becomes salient (Kenrick et al. 2010). Second, it may be the case that the direct health benefits of high social support disappear in the presence of high functional impairment (a main effect), perhaps because the nature of social support changes with increasing functional impairment. For example, at high levels of functional impairment, high levels of social support may be indicative of the need for assistance with functioning and therefore relative lack of independence, whereas at lower levels of functional impairment, high social support may reflect a more diverse and integrated social network. Qualitative research regarding social support with ASPN clients at differing levels of functional impairment as well as more nuanced quantitative measures of social support could begin to examine these hypotheses.

A limitation of the current study is the cross-sectional design, which precludes examination of mechanisms and causal associations, especially pertinent given the transactional relationship between social support and depression (Hinrichsen and Emery 2005). An additional limitation is that due to the limited number of non-white participants in our study, we chose not to examine race as an additional potential moderating variable. Our sample consists of older adults receiving services through the ASPN, which may limit generalizability to service seeking older adults. Many older adults in our sample may have sought services from the ASPN because of functional limitations and it is possible that those who seek services for functional limitations are those for whom social support is less

protective against depression, while this may not be the case for those not needing (or choosing not to seek) services. Relatedly, we do not have data on services received through the ASPN, which could provide additional context through which to understand our findings.

Our results generate hypotheses for future research. It could be the case that when an older adult is unable to perform several instrumental activities of daily living, his/her experiences of social support are less likely to be characterized as reciprocal or mutually beneficial, which has been found to be associated with depression in later life (von dem Knesebeck and Siegrist 2003). For example, a more impaired older adult might rely on a member of his/her support network for transportation to an outing and thus experience lower levels of positive affect from the interaction. If this hypothesis were supported in future research, it should also be examined whether perceptions of burdensomeness on others could play a role in attenuating the beneficial effects of social support, as perceptions of burdensomeness have been found to be associated with indices of reduced well-being in later life (Cukrowicz, et al. 2011). Alternatively, with increasing levels of functional impairment, it may be that the composition of social networks providing support shifts from friends to family, which could change the nature and salutatory effects of the support.

Our results suggest that researchers testing the potential benefits of increasing social support in later life need to consider the role of functional impairment. It may be the case that older adults with significant functional impairment may derive less benefit from social support interventions, such as peer companionship or congregate meals, unless functional impairment is addressed. Thus, programs such as the Senior Companion program of the National Senior Corps in which retired older adults provide peer companionship to homebound older adults could potentially promote greater well-being by specifically capitalizing on what functional capacities the older adults do possess and compensating for limitations. It is possible that ASPN interventions that promote a sense of positive contribution could produce even better outcomes; for example, volunteers in the Senior Companion program may be deriving even greater benefit in terms of well-being and reduced depression, than the older adults receiving peer companionship. Our results suggest that older adults may receive the most benefit from “packages” of interventions that target both social support and functional impairment. This could likely be best achieved through greater integration of the ASPN with health services: in this way, independence and well-being could be promoted by integrating expertise on improving functional independence from a disease management model with expertise from a social services model. Both models have much to contribute to the well-being of older adults and their integration could lead to better tailoring of interventions, coordination of care, and adherence to interventions, not to mention reaching older adults who might not otherwise seek ASPN services.

Acknowledgments

This research was supported in part by Grant Nos. R24MH07610 and K23MH096936 from the National Institute of Mental Health. We wish to thank the staff of Eldersource for their support in conducting the study, and Judy Sroka and Constance Bowen for their help with data collection and management.

References

- Barry LC, Soulos PR, Murphy TE, Kasl SV, Gill TM. Association between indicators of disability burden and subsequent depression among older persons. *J Gerontol A Biol Sci Med Sci*. 2013; 68:286–292. [PubMed: 22967459]
- Baumeister RF, Leary MR. The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*. 1995; 117:497–529. [PubMed: 7777651]
- Berkman LF. The assessment of social networks and social support in the elderly. *J Am Geriatr Soc*. 1983; 31:743–749. [PubMed: 6655175]
- Brummett BH, Barefoot JC, Siegler IC, Steffens DC. Relation of subjective and received social support to clinical and self-report assessments of depressive symptoms in an elderly population. *J Affect Disord*. 2000; 61:41–50. [PubMed: 11099739]
- Cacioppo, JT.; Patrick, W. *Loneliness: Human Nature and the Need for Social Connection*. New York: W.W. Norton & Company; 2008.
- Callahan CM, Unverzagt FW, Hui SL, Perkins AJ, Hendrie HC. Six-item screener to identify cognitive impairment among potential subjects for clinical research. *Medical Care*. 2002; 40:771–781. [PubMed: 12218768]
- USDoHaHS. , editor. Centers for Medicare & Medicaid Services. Minimum Data Set, Version 2.0. Baltimore, MD.: Centers for Medicare & Medicaid Services; 2000.
- Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. *Psychol Bull*. 1985; 98:310–357. [PubMed: 3901065]
- Cukrowicz KC, Cheavens JS, Van Orden KA, Ragain RM, Cook RL. Perceived burdensomeness and suicide ideation in older adults. *Psychology and aging*. 2011
- Dahlem NW, Zimet GD, Walker RR. The Multidimensional Scale of Perceived Social Support: a confirmation study. *Journal of clinical psychology*. 1991; 47:756–761. [PubMed: 1757578]
- First, MB.; Spitzer, RL.; Gibbon, M.; Williams, JBW. *Structured Clinical Interview for DSM-IV-TR Axis I Disorders - Non-patient Edition*. New York, NY 10032: Biometrics Research Department, New York State Psychiatric Institute 1051 Riverside Drive - Unit 60; 2001.
- Gladstone GL, Parker GB, Malhi GS, Wilhelm KA. Feeling unsupported? An investigation of depressed patients' perceptions. *J Affect Disord*. 2007; 103:147–154. [PubMed: 17328958]
- Gum AM, Petkus A, McDougal SJ, Present M, King-Kallimanis B, Schonfeld L. Behavioral health needs and problem recognition by older adults receiving home-based aging services. *International Journal of Geriatric Psychiatry*. 2009; 24
- Hatfield JP, Hirsch JK, Lyness JM. Functional impairment, illness burden, and depressive symptoms in older adults: does type of social relationship matter? *Int J Geriatr Psychiatry*. 2013; 28:190–198. [PubMed: 22495689]
- Hinrichsen GA, Emery EE. Interpersonal factors and late-life depression. *Clinical Psychology-Science and Practice*. 2005; 12:264–275.
- Katz S, Ford AB, Moskowitz RW, Jackson BA, Jaffe MW. Studies of Illness in the Aged. The Index of Adl: A Standardized Measure of Biological and Psychosocial Function. *JAMA*. 1963; 185:914–919. [PubMed: 14044222]
- Kenrick DT, Griskevicius V, Neuberg SL, Schaller M. Renovating the Pyramid of Needs: Contemporary Extensions Built Upon Ancient Foundations. *Perspect Psychol Sci*. 2010; 5:292–314. [PubMed: 21874133]
- Kwok SY, Yeung DY, Chung A. The moderating role of perceived social support on the relationship between physical functional impairment and depressive symptoms among Chinese nursing home elderly in Hong Kong. *Scientific World Journal*. 2011; 11:1017–1026. [PubMed: 21552765]
- Lakey, B.; Cronin, A. *Risk factors in depression*. San Diego, CA: Elsevier Academic Press; 2008. Chapter: Low social support and major depression: Research, theory and methodological issues. 2008; p. 385–408.US.
- Lakey B, Orehek E. Relational Regulation Theory: A New Approach to Explain the Link Between Perceived Social Support and Mental Health. *Psychological Review*. 2011; 118:482–495. [PubMed: 21534704]

- Lawton MP, Brody EM. Assessment of older people: self-maintaining and instrumental activities of daily living. *Gerontologist*. 1969; 9:179–186. [PubMed: 5349366]
- Liu L, Gou Z, Zuo J. Social support mediates loneliness and depression in elderly people. *J Health Psychol*. 2014
- Lubben JE. Assessing social networks among elderly populations. *Family & Community Health*. 1988; 11:42–52.
- Maslow A. A theory of human motivation. *Psychological Review*. 1943; 50:370–396.
- O'Riley AA, Van Orden KA, He H, Richardson TM, Podgorski C, Conwell Y. Suicide And Death Ideation in Older Adults Obtaining Aging Services. *Am J Geriatr Psychiatry*. 2013
- Oxman TE, Berkman LF, Kasl S, Freeman DH Jr, Barrett J. Social support and depressive symptoms in the elderly. *Am J Epidemiol*. 1992; 135:356–368. [PubMed: 1550090]
- Richardson TM, Friedman B, Podgorski C, Knox K, Fisher S, He H, Conwell Y. Depression and Its Correlates Among Older Adults Accessing Aging Services. *J Nurs Care Qual*. 2011a; 20:346–354.
- Richardson TM, Simning A, He H, Conwell Y. Anxiety and its correlates among older adults accessing aging services. *Int J Geriatr Psychiatry*. 2011b; 26:31–38. [PubMed: 20066684]
- Schwarzbach M, Lupp M, Forstmeier S, König HH, Riedel-Heller SG. Social relations and depression in late life-a systematic review. *Int J Geriatr Psychiatry*. 2014; 29:1–21. [PubMed: 23720299]
- Simning A, Richardson TM, Friedman B, Boyle LL, Podgorski C, Conwell Y. Mental distress and service utilization among help-seeking, community-dwelling older adults. *Int Psychogeriatr*. 2010; 22:739–749. [PubMed: 20478101]
- Sirey JA, Bruce ML, Carpenter M, Booker D, Reid MC, Newell KA, Alexopoulos GS. Depressive symptoms and suicidal ideation among older adults receiving home delivered meals. *Int J Geriatr Psychiatry*. 2008; 23:1306–1311. [PubMed: 18615448]
- Spitzer RL, Kroenke K, Williams JB. Validation and utility of a self-report version of PRIME-MD: the PHQ primary care study. Primary Care Evaluation of Mental Disorders. Patient Health Questionnaire. *JAMA : the journal of the American Medical Association*. 1999; 282:1737–1744. [PubMed: 10568646]
- Steinman LE, Frederick JT, Prohaska T, Satariano WA, Dornberg-Lee S, Fisher R, Graub PB, Leith K, Presby K, Sharkey J, et al. Recommendations for treating depression in community-based older adults. *Am J Prev Med*. 2007; 33:175–181. [PubMed: 17826575]
- Travis LA, Lyness JM, Shields CG, King DA, Cox C. Social support, depression, and functional disability in older adult primary-care patients. *Am J Geriatr Psychiatry*. 2004; 12:265–271. [PubMed: 15126227]
- von dem Knesebeck O, Siegrist J. Reported nonreciprocity of social exchange and depressive symptoms. Extending the model of effort-reward imbalance beyond work. *J Psychosom Res*. 2003; 55:209–214. [PubMed: 12932793]
- Zimet GD, Powell SS, Farley GK, Werkman S, Berkoff KA. Psychometric characteristics of the Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*. 1990; 55:610–617. [PubMed: 2280326]

Key points

- Adults seeking services from the Aging Services Provider Network (ASPN) are at risk for depression.
- Levels of social support and functional impairment were associated with depressive symptoms.
- At a high level of functional impairment, the inverse associations between indices of social support and depressive symptoms were attenuated.
- Results suggest that older adults with more severe functional impairment may benefit somewhat less from increased social support with respect to depression severity.

Figure 1.

Simple slope analyses depicting the interaction of functional impairment and perceived social support on depression symptom severity

Note. Solid lines indicate statistically significant simple slopes, while dashed lines indicate non-significant simple slopes. Slopes are depicted at -1SD and +1SD of perceived social support. Not all levels of functional impairment are depicted in order to enhance the clarity of the graph.

Table 1**Participant Characteristics**

	N(%) or Mean (std)
Age	77.04 (9.14)
Male	117 (31.37%)
Lives alone	167 (44.77%)
Race: White	315 (84.45%)
Race: Black	54 (14.48%)
Race: Other	4 (1.08%)
Hispanic	5 (1.34%)
Education (some college or higher)	154 (41.28%)
Married	148 (39.68%)
Income <\$1250 per month	151 (40.92%)
Current Major Depressive Episode	99 (26.54%)
Past Major Depressive Episode	147 (40.05%)
Depression Symptom Severity (PHQ-9)	7.74 (5.60)
Cognitive impairment screen ^a positive	49 (13.14%)
Number of medical conditions	5.03 (2.43)
Number of ADL impairments	1.62 (1.87)
Number of IADL impairments	2.66 (2.69)
Structural Social Support (Lubben) ^b	27.12 (9.77)
Socially isolated (Lubben > 20)	76 (20.38%)
Perceived Social Support (MSPSS) ^c	59.20 (14.33)

Note.

^aCognitive impairment screen = Six Item Screener;

^bLubben Social Network Scale;

^cMSPSS = Multidimensional Scale of Social Support

Table 2

Multivariate linear regression analyses with social support and functional impairment predicting depressive symptom severity (n=373)

	b (SE)	β	<i>t, p</i>
<i>Full model</i>			
Age	-0.118(0.031)	-0.193	-3.83, <0.001
Marital status	-0.465(0.189)	-0.136	-2.46, 0.014
Gender	0.047(0.610)	0.004	0.08, 0.939
LSNS	-0.035(0.043)	-0.061	-0.83, 0.407
MSPSS	-0.054(0.027)	-0.138	-2.00, 0.046
Fx Impairments	0.354(0.068)	0.265	5.25, <0.001
LSNS by Fx	0.007(0.010)	0.047	0.72, 0.473
MSPSS by Fx	0.011(0.006)	0.112	1.73, 0.084
<i>Trimmed model</i>			
Age	-0.118(0.031)	-0.193	-3.82, <0.001
Marital status	-0.459(0.189)	-0.135	-2.43, 0.015
Gender	0.007(0.606)	0.001	0.01, 0.990
LSNS	-0.041(0.042)	-0.072	-0.98, 0.325
MSPSS	-0.052(0.027)	-0.133	-1.94, 0.053
Fx Impairments	0.352(0.067)	0.264	5.22, <0.001
MSPSS by Fx	0.014(0.005)	0.142	2.88, 0.004

Note: Gender coded: 0=female, 1=male; Marital status coded: 0=unmarried, 1=married; Fx Impairments=number of ADL + IADL impairments; LSNS = Lubben Social Network Scale (a measure of structural social support); MSPSS = Multidimensional Scale of Perceived Social Support (a measure of perceived social support); LSNS by fx = interaction of structural social support and number of functional impairments; MSPSS by fx = interaction of perceived social support by number of functional impairments.

Table 3

Simple slopes of perceived social support on depression symptom severity at each level of functional impairment (while controlling for age, gender, marital status, and structural social support)

# of Impairments	Slope	Std error	z	p	95%
0, n=108	-0.113	0.032	-3.510	0.000	-0.176
1, n=38	-0.099	0.030	-3.330	0.001	-0.157
2, n=28	-0.085	0.028	-3.040	0.002	-0.139
3, n=18	-0.070	0.027	-2.630	0.008	-0.123
4, n=19	-0.056	0.027	-2.120	0.034	-0.108
5, n=25	-0.042	0.027	-1.540	0.122	-0.096
6, n=21	-0.028	0.029	-0.970	0.332	-0.085
7, n=24	-0.014	0.031	-0.450	0.655	-0.075
8, n=22	0.000	0.034	0.010	0.994	-0.066
9, n=17	0.014	0.037	0.390	0.699	-0.059
10, n=23	0.029	0.041	0.700	0.485	-0.051
11, n=5	0.043	0.045	0.960	0.339	-0.045
12, n=14	0.057	0.049	1.170	0.244	-0.039
13, n=8	0.071	0.053	1.340	0.180	-0.033
14, n=7	0.085	0.057	1.490	0.137	-0.027