

The Effect of Social Support on Depression in Caregivers of the Elderly

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Caregivers play a critical role in providing the social support that allows impaired elders to remain at home. The demands of caregiving, however, may stretch the physical and psychological resources of the caregiver, thus jeopardizing the elder. The social support available to the caregiver may help buffer or mitigate the ill effects of caregiving. The purpose of this review is to examine the effect of social support on the development of depression in the caregiver, with a consideration of the components and measurement of social support. The practical as well as the research implications are discussed.

Although the anticipated difficulty of caregiving depends on assessment of the elder's mental and functional disability as well, the clinician must not neglect to consider the caregiver's appraisal of the social support available. This assessment need not be elaborate and might include inquiring (1) whether the caregiver has someone in whom to confide; (2) who visits the caregiver, how often, and whether the caregiver is happy with these relationships; (3) what aspects of caregiving are most disturbing; and (4) whether there are symptoms of depression. J FAM PRACT 1990; 30:430-440.

For the first time in history, married persons in the United States are likely to have more parents to care for than children. Converging demographic and social trends mean that the average woman today might expect to spend more years caring for an elderly parent than her counterpart at the turn of the century.¹ Among the trends that account for these changes are the growth in the numbers of persons over the age of 85 years and the smaller number of children in families. Smaller families, more marriages ending in divorce, and the increasing participation of women in the workplace result in fewer adult children available to share caregiving tasks.

In addition, the children who find themselves caring for elderly parents may themselves be elderly: 25% of all caregivers are 65 to 74 years of age, and 10% are over the age of 75 years.² Half of all caregivers are women,³ especially wives (the hidden patients⁴) and daughters (the

women in the middle⁵). Not uncommonly, the caregiver is a woman in her 60s caring for her mother in her 80s.

The tasks caregivers face range from providing emotional support (such as telephone calls), to helping with the instrumental activities of daily living (such as transportation, shopping, housekeeping, and meal preparation), to helping with personal care tasks (such as bathing, dressing, and toileting). When the elder is impaired by dementia, caregiving becomes all the more stressful, as families must deal with impaired memory, difficult behaviors, and the pain of personality changes in a loved one. If the elder's behavior is embarrassing, the caregiver may become isolated and drop previously enjoyed activities. The caregiver can become so engrossed in caring for the elder that other family members, such as grandchildren and spouses, are neglected. When caring for an elder exceeds the family's capacity, it is not surprising that family members react with guilt, fear, anger, shame, doubt, and sorrow. If the elder must ultimately be cared for in a nursing home, the caregiver must then deal with the attendant emotional and financial distress. Caring for a dependent elderly parent may have become a common, "normative" experience for caregivers, but it should come as no surprise that some caregivers will have difficulty coping.⁶

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The study of the problems and opportunities of caregiving is of critical importance if caregivers are to be supported. There can be little doubt that keeping the elderly out of institutions is an important effect of caregiving on the elder,⁷⁻¹¹ yet despite the considerable physical and emotional demands of caregiving, it is only recently that the effects of caregiving on the caregiver have been appreciated.

While the caregiver is an important source of social support to the elder, the purpose of this paper is to examine the role of social support for the caregiver in mitigating depression. In addition to a review of the literature regarding social support and caregiver depression, the discussion considers general issues in the measurement of social support and of depression, factors other than social support that may be related to caregiver depression, and implications for further research and clinical application.

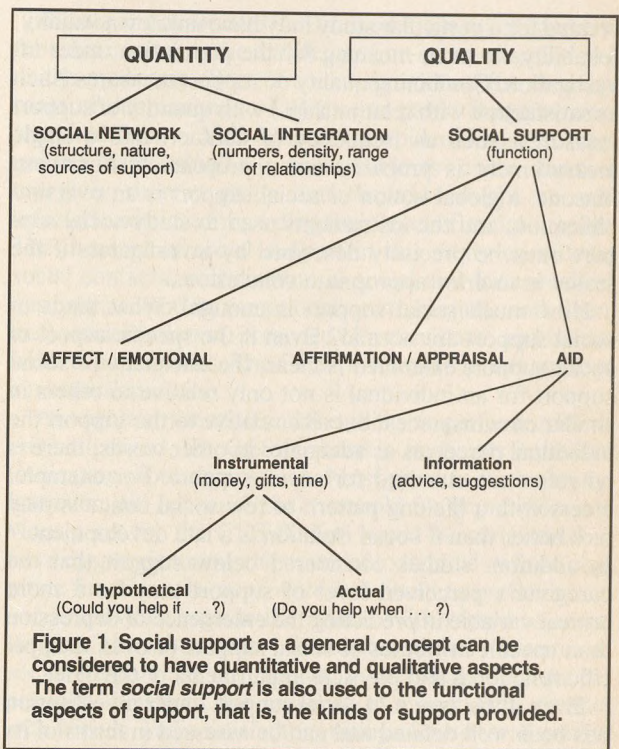
MEASUREMENT OF SOCIAL SUPPORT

Studies of the effect of social support on health reveal that even simple measures of social support, such as number of contacts, marital status, church attendance, and availability of a confidant, are linked to health outcomes. The results of Berkman and Syme¹² (namely, a twofold increase in mortality in persons with few social contacts over a 9-year period) were demonstrated by Seeman et al¹³ to persist over a 17-year period. Similarly, an investigation by House¹⁴ revealed a relationship between social activity and 12-year mortality. These studies account for such confounding variables as physical health, socioeconomic status, smoking, and sedentary lifestyle.

Schoenbach¹⁵ and Blazer¹⁶ showed that the effect of social relationships on health remains prominent for the elderly. Marriage, however, may be less of a predictor of mortality for the aged than it is for the young, whereas for the aged the presence of a confidant becomes more important.¹⁷

Social support can be viewed as having a number of components (Figure 1). Studies typically examine particular aspects of social support while other aspects are implicitly or explicitly excluded. Even a simple scheme dividing social support into quantity of relationships (number of visits or telephone calls, sources of support, and so on) and quality of relationships (kinds of support provided, satisfaction with social contacts, and so on) suggests the richness of the concept and, at the same time, the diversity of meanings taken by investigators.

Social support can be considered in terms of the (1) social network, meaning the structure and sources of relationships surrounding the individual; (2) social integration, meaning the number, density, and range of relationships available; and (3) social support, meaning the func-



tioning of those relationships and the kinds of support provided.¹⁸ The social network may be regarded as the "outer boundaries of supports upon which an individual can draw."¹⁹ Investigators differ on precisely how the functional aspects of social support are defined. For example, the kinds of social support provided may be regarded as follows:

1. Affect (expressions of love or admiration), affirmation (acknowledgment of the rightness of statements or acts), and aid (money, gifts, information, time, or advice)²⁰
2. Knowledge (that one is cared for and loved, that one is esteemed and valued, and that one belongs to a network)²¹
3. Emotional support (esteem, listening, affect), appraisal (affirmation), information (advice, suggestions), and instrumental support (money, gifts, time, labor)¹⁸
4. Hypothetical ("Could you help if . . . ?") as opposed to actual ("Do you help when . . . ?") concepts of instrumental support²²

One or several of these concepts of social support may be considered in a given study. In addition, different investigators may use different instruments and methods to examine the same aspect of social support. Scales

created for a particular study may have unknown validity, reliability, or even meaning for the population under investigation. Combining quality of support measures (such as satisfaction with relationships) with quantity of support measures (such as frequency of contact) into a single measurement is probably not appropriate.²³ For these reasons, a global notion of social support is an oversimplification, and the instruments used to study social support must be precisely described by investigators if the reader is to draw appropriate conclusions.

How much social support is enough? What kinds of social support are normal? Even if the specific aspect of social support examined is clear, the adequacy of social support for an individual is not only relative to others in similar circumstances, but also relative to the support the individual perceives as adequate. In other words, there is no reference standard for social support. For example, elders with a lifelong pattern of few social contacts may fare better than if social isolation is a late development.²⁴ In addition, studies considered below suggest that the caregiver's perceived level of support may be a more critical variable in predicting the emergence of depression than specific attributes of social support or even the specific functional and physical impairments of the elder.

Even if the aspect of social support under investigation has been well defined and can be assessed in terms of its relative or perceived adequacy, there are other problems to contend with in measuring social support, particularly when the subjects are elderly. The elderly have multiple biological, psychological, and social changes resulting from chronic disease and aging that may make it difficult to identify outcomes specific to the effect of social support. When considering the elderly, investigators must redirect attention away from a focus on mortality outcomes and instead emphasize functional outcomes.²⁵ Function, broadly defined, might include, for example, assessment of mental state, affect, and the ability to perform both the activities of daily living (ADL) and the instrumental activities of daily living (IADL).

The elder may paint an unduly optimistic view of the help that may be available. In a study of the hypothetical support available to elders in the event of hospitalization, fully 56 to 243 elders interviewed refused to allow the individual named to be contacted, saying the persons would be "angry" or "not want to be bothered."²² Support that seems sufficient based on hypothetical situations might not be forthcoming in time of real need.

The term *social support* betrays a tendency to accentuate the positive effects of social interaction. There may be a negative side to social support as well.^{19,26} Caregivers of the elderly, out of a sense of duty or guilt imposed by the social milieu, may undertake tasks that jeopardize their own mental and physical health. Caregivers might refuse help so as not to incur an additional burden through

a perceived need to reciprocate. Advice or information the caregiver receives may not be helpful, or worse, may be inappropriate or wrong.

Finally, drawing inferences about the relationship of social support to the emergence of a particular disease is not straightforward. Social support and health may interact in reciprocal causation.²⁷ Is the caregiver depressed because social support is inadequate, or is social support inadequate because the caregiver is depressed? Social support and health may be related merely through the relationship of both to a third factor.²⁷ Is poor social support and depression in caregivers related to a third factor, such as the poor health or economic circumstances of the caregiver? Cross-sectional interview studies may not be ideal for answering these kinds of questions. Before the relationship of social support to the development of depression in caregivers is examined, it is important to consider how caregiver depression is measured.

MEASUREMENT OF DEPRESSION AND CAREGIVER BURDEN

Diagnostic criteria for depression have been delineated in the third revised edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R),²⁸ but a clinical diagnosis of depression is not generally sought in studies of caregiver social support and depression. Instead, interviews and questionnaires seek to identify the symptoms associated with depression. In reality, affect is a spectrum of states, not simply a question of having or not having depression. Thus it is possible for the caregiver to have significant dysphoric moods without crossing an arbitrary threshold for depression.

Since many caregivers are themselves elderly, an issue in measuring depression in caregivers is whether the DSM-III-R criteria for depression apply for all age groups. It has been suggested that somatic symptoms, such as fatigue or insomnia, are not specific for the diagnosis of depression in older age groups because somatic complaints become more common with age. Scales devised to detect depression may have uncertain validity for older populations, and the characteristics of depression particular to the elderly that are not addressed by many scales include criticism of others, hypochondriasis, and perceived cognitive deficit.²⁹ Nevertheless, except for weight loss, which is more common in the older patient, and feelings of worthlessness or guilt, which are less common, the signs and symptoms of depression are about the same in the young and old.³⁰

Instruments used in studies of the effect of social support on depression in caregivers include the Center for Epidemiologic Studies-Depression Scale (CES-D),³¹ the

Beck Depression Inventory (BDI),³² the Short Psychiatric Evaluation Schedule,³³ the Life Satisfaction Index (LSI),³⁴ and the Affect Balance Scale.³⁵ Taking the BDI as an example of a depression-screening instrument, the sensitivity in 526 primary care medical patients was 79% and the specificity was 77%, for all age groups.³⁶ The sensitivity of the BDI in elders presenting to a psychiatric inpatient program was 93%, the specificity was 81%, and the predictive value of a positive BDI test, identifying the individual as depressed, was 93%.³⁷

Rather than searching for symptoms of depression, examining the caregiver burden is another approach in assessing the effect of caregiving on the caregiver. The concept of caregiver burden has been considered to have three components.³⁸ The first deals with the impairment of the elder, including assessment of ability to perform ADL, sociability, disruptive behavior, and mental status. Second, the tasks that correspond to the elder's needs are rated by the caregiver as difficult, tiring, or upsetting. Dealing with bowel or bladder incontinence, for example, would probably be considered more difficult, tiring, and upsetting than would assistance with meals. Lastly, the impact of the behaviors and consequent required tasks on the caregiver's life is assessed. For example, situations of caregiving may result in change of job (quitting or turning down a promotion) or redefined family relationships.³⁸ Since measures of caregiver burden assess tasks specific to the caregiver role, such instruments, in contrast to instruments measuring depression, cannot be used to compare caregivers to other noncaregiving persons.³⁹

In general, a relationship between social support and depression has been demonstrated for the elderly,⁴⁰⁻⁴² but the discussion now turns to the issue of social support and the development of depression in a special group: caregivers.

SOCIAL SUPPORT AND DEPRESSION IN CAREGIVERS OF THE ELDERLY

Studies that examine caregiver depression and its relationship to social support generally use an interview schedule to assess the level of depressive symptoms and compare this level with the reported level of social support. The assumption seems to be that, if social support has an effect on depression, caregivers with more social support will have lower levels of depression. Put another way, caregivers with less social support will be more likely to be labeled depressed by a screening instrument. Causality is difficult to assess in studies that use this retrospective approach. In other studies, social support is examined with reference to caregiver burden, a broader concept than depression.

Moritz and associates⁴³ examined the level of cognitive function in one spouse and depression in the other, as well as the mediating effect of social support on the development of depression, in 318 spouse pairs. Subjects were recruited from a Yale University epidemiologic survey, unlike many studies whose subjects come from a caregiver support group and therefore might be self-selected and biased regarding their level of social support. The measure of social support in this study considered social contacts, participation in social and leisure activities, social support (emotional, instrumental, and financial), social isolation, presence of a confidant, and household responsibilities. The CES-D was used in this study to evaluate depression.

As cognitive function and the ability to perform ADL in wives declined, the CES-D score in husbands increased (indicating more depression). Most persons in the study, however, did not reach the threshold for depression previously set for the CES-D, but would be considered to have dysphoric moods. Spouses of individuals whose cognitive function was poor were less likely to participate in social activities outside the home. With regard to social support, the investigators found that global measures of social support did not indicate a buffering effect on depression; however, the presence of a confidant, contact with friends, and a satisfactory rating of the overall quality of support available did seem to mitigate depression.

Baillie and co-workers⁴⁴ recruited 87 caregivers from educational programs for caregivers. Perceived stress and adequacy of social support, as well as the level of psychologic distress, including depression, were examined using a self-report questionnaire. Mental status and level of function of the elder, hours of daily care required by the elder, and the number of years of caregiving for the elder were all associated with caregiver depression. Caregiver satisfaction with social support and perceived level of stress were correlated to caregiver depression as well.

Haley and colleagues⁴⁵ reported a case-control study in which caregivers were compared with a group of matched control noncaregivers. The elders cared for were highly impaired with regard to cognitive function and ADL and had an average age of 79 years. Compared with the matched controls, the caregivers had similar size social networks, but expressed less satisfaction with their social contacts and were less likely to participate in social activities. In addition, the caregivers made more physician visits and received more prescription medicines than a similar group of noncaregivers. Although the mean score on the BDI for caregivers did not reach the threshold previously set for detection of depression, caregivers tended to have more depressive symptoms, and 43% of the caregivers had scores in the clinically significant range.

Similarly, George and Gwyther³⁹ at Duke University compared caregivers with noncaregivers. The non-

caregivers were derived from a national sample of community elders. Measures of social support included telephone contacts, visits from family and friends, attendance at church and clubs, time spent in hobbies, and satisfaction with social support. Spouses, who also tend to be older, report poorer health, including more depression, than other kinds of caregivers, such as children. Persons who perceived social support as inadequate participated in fewer social activities and had more depressive symptoms. Caregivers living with the elder reported more stress, used more psychoactive medication, and had lower levels of life satisfaction. Compared with a national sample of noncaregivers, the caregivers in this study reported lower levels of participation in social activities, had three times the number of stress-related symptoms, and used more psychoactive medication. The caregiving situation and the resources available to the caregiver had more important effects on caregiver well-being than particular characteristics of the elder.

Scott and co-workers⁴⁶ obtained information from 23 caregivers and 19 other family members who were not identified as the primary caregiver, and examined the burden imposed by a dependent elder in the household. Social support was rated as to the degree of adequacy by investigators viewing a taped interview of the caregiver. Contrary to expectations, caregiver burden was not related to the degree of cognitive impairment in the elder as measured by the Mini-Mental State Examination.⁴⁷ Instead, burden was greatest for caregivers who had been rated as not getting enough social support. Support provided to caregivers that was particularly helpful was long-distance telephone calls, visits from friends and family, and respite. A small Scottish interview study of caregivers also found that the caregivers' responses to stresses and level of satisfaction with social support were more predictive of depressive symptoms and morale than the specific amounts of help provided or the characteristics of the elders.⁴⁸

Poulshock and Deimling⁴⁹ interviewed members of 614 families using a concept of burden as described above. In this study, the level of elder impairment in mental status and ability to perform the ADL was related to the level of caregiver burden and social participation as well as to the impact caregiving had on the caregiver's life (such as job changes necessitated by caregiving). Caregivers' perceived level of social support correlated to the presence of depression.

In 1980, Zarit³⁸ reported the results of interviews of caregivers in order to assess factors related to caregiver burden. The elders in this study were highly dependent in ADL and had significant cognitive impairment. Like George and Gwyther,³⁹ Scott et al,⁴⁶ and Gilhooly,⁴⁸ Zarit demonstrated that the behavior and cognitive function of the elder were not associated with the level of caregiver

burden. Caregivers receiving visits from children and grandchildren reported significantly less burden and stress. How the caregiver interprets and responds to the elder's symptoms may be more important than specific characteristics of the elder.

In 1986 Zarit et al⁵⁰ reported a follow-up study that examined the longitudinal change in caregiving burden. Two years after the initial study of caregiver burden,³⁸ investigators found that the initial level of burden of the caregiver predicted nursing home placement for the elder. In other words, the more burdened the caregiver felt at the initial interview, the more likely the elder was to have been institutionalized at follow-up. The cognitive impairment or the frequency of behavioral problems of the elder did not differ in elders who had been placed in a nursing home compared with those who did not, although other characteristics, such as incontinence and the ability to dress oneself, were associated with nursing home placement in this study as in others.^{51,52} Social support to caregivers was not a strong factor in predicting nursing home placement; however, the level of support the spouses were receiving was already low in this relatively small study, so that an effect of social support may have been difficult to demonstrate.

At follow-up, disturbing behaviors in the elders seemed to abate, while deficits in ADL performance were exacerbated, and many elders died. Caregivers learned to deal with or ignore problems with time, but some apparently never learned to cope with caregiving roles. Women who ultimately had to place a husband in a nursing home reported a diminished sense of burden at follow-up.⁵⁰ This study supports other research in demonstrating that, for the most part, the perception of and reaction to caregiving tasks better predict caregiver burden and depression than the specific tasks that need to be done for the elder or the specific characteristics of the elder.

OTHER CONSIDERATIONS REGARDING CAREGIVER DEPRESSION

Factors other than the level and kinds of social support may play a role in the development of depression in caregivers to the elderly. Contrary to the expectation that the mental status and functional level of the elder are important in predicting the development of depressive symptoms in caregivers, the critical element instead seems to be the caregiver's perception of the level of social support. Personality and coping style can therefore be expected to influence the reaction to the caregiving role. Personal factors mediating reaction to stress include individual psychological defenses, personality, past experiences, verbal skills, and problem-solving ability.⁵³

Sometimes caregivers are motivated by guilt: guilt about previous wrongs, guilt for feeling angry at the elder or the illness, guilt regarding the quality of care the elder is receiving, guilt about nursing home placement and broken promises, or guilt about taking respite from caregiving.⁵⁴ The quality of the previous relationship with the elder can influence the degree of caregiver burden as well.

Caregivers can be devastated by the changes in a relative with a progressive dementia such as Alzheimer's disease. In addition to the losses usually associated with aging, the elderly caregiver must deal with the loss of support from a close relative, often a spouse. Thus, depression can be the result of the loss of a loved one, rather than imposition of specific tasks associated with caregiving.

Other considerations that may affect the development of depression in caregivers include the financial resources of the caregiver, a family history of depression, and the presence of others in the family affected by the elder (such as grandchildren). In addition, the caregiver may have medical or functional limitations that exacerbate the burden of caring for an impaired elder, and so directly or indirectly contribute to depression. Thus, there are many influences on caregivers that may influence mood, attenuating any effect social support may have and further confounding the research in this area.

The literature dealing with social support to caregivers and the development of depression has generally been cross-sectional in nature. Caregivers are interviewed regarding social support and depression, and correlations are sought. A problem with this approach, as alluded to above, is the difficulty in deciding whether poor social support precedes or follows ill health or depression. Most of the studies use a nonrandom sample, such as caregivers selected from those attending Alzheimer's disease support groups, and no control group. Longitudinal studies using randomized controlled intervention trials of increased social support might be valuable in elucidating the effect of social support on caregiver depression.

An additional problem with this research is the lack of consensus about measurement instruments and concepts. Is depression as measured by a screening instrument, such as the BDI, valid clinically? Is one depression scale comparable to another? Is burden a better concept to use? Investigators not infrequently create an assessment tool for a specific study. Are burden scales really measuring the same concept? Social support is defined differently from one study to another, and the components investigated are not always identified in the paper. What qualities of the social network and social support are important, and for what aspects of the caregiver's life? Should social support be regarded as only having a positive influence?

The role caregivers play in avoiding the institutionaliza-

tion of elderly family members will increase in importance as the population ages, so that research on factors that enhance or diminish coping with caregiving can be expected to assume greater importance.

CONCLUSIONS

Clearly, the perception the caregiver has of the difficulty of the task ahead is critical in determining risk for subsequent development of depressive symptoms. Although the anticipated difficulty of caregiving depends on assessment of the elder's mental and functional disability as well, the clinician must not neglect to consider the caregiver's appraisal of the social support available. As this review indicates, this assessment does not need to be elaborate and might include the following elements:

1. Does the caregiver have someone in whom to confide?
2. Who visits the caregiver, how often, and is the caregiver happy with these relationships?
3. What aspects of caregiving are most disturbing?
4. Are there symptoms of depression?

Clinicians can use conventions such as the social network diagram⁵⁵ to illustrate the caregiver's social situation, as well as the elder's, in the medical record. Periodic assessment of the caregiver's affective state, using a short screening instrument, may also be valuable. Actually, it is fortunate for clinicians that even simple measures of social support, such as the presence of a confidant, appear to be useful in predicting adverse effects on caregivers. Supporting caregivers is not only in the best interest of caregivers, but optimizes the care of elders, and, ultimately, benefits all of society.

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Commentary

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The preceding paper by Joseph Gallo briefly reviews a very complex and extensive body of research, namely, relationships between social factors and physical and mental well-being. Particular emphasis is placed on relationships between social supports and depression in caregivers. The article makes three contributions to the family medicine literature. First, a concise review of an otherwise amorphous and overwhelming literature is provided by discussing different conceptualizations of social factors and different measurement strategies for operationalizing such factors. For example, the author distinguishes between such theoretical constructs as social networks (ie, sources of relationships), social integration (ie, number and range of relationships), and social supports (ie, how the relationships function). In general, the lack of specificity in social support research (different constructs and measurement strategies) has impeded our understanding of this phenomenon.¹

Other important points made by the author are that a global index of social support is an oversimplification of this complex construct, that there is no known reference standard of what constitutes good or adequate support, that perceived support may be more useful than actual supports, and that there may be a negative side to "social supports."

A second contribution made by this paper is its discussion of major correlates of social supports, namely, depression and caregiver burden. The author focuses on the different measurement strategies used to examine depression, including diagnostic measures of depression and self-report measures of symptoms of depression. Different measurement strategies will yield different prevalence rates and different relationships with social factors. Even within the same category of self-report measures, different results may be obtained depending on whether such measures were developed on community² or clinical populations.³

In his discussion of caregiver burden measures, the author does not mention several limitations of these measures. First, measures designed for caregivers of general elderly populations (eg, frail individuals, cancer patients, and so on) have been used with caregivers of Alzheimer's patients in spite of the specific problems posed by patients with dementia (ie, getting lost, paranoia, repeating the

same questions, etc), and vice versa. Second, most burden measures lack parallel forms for objective burden (actual experiences) and subjective burden (distress from such experiences). This limitation is important because researchers are not able to examine discrepancies between actual and perceived experiences. Third, although reliability and validity data are available for burden measures, such measures have not been subjected to tests for sensitivity to change. In particular, few data are available on the degree to which burden scores increase with decreases in patient functioning. Finally, the vast majority of burden measures do not consider burden as having two sources, that is, problems arising from the patient (eg, poor functioning) and problems arising from the caregiver (eg, inability to do required chores).⁴ In general, these measurement problems have limited our ability both to identify caregivers at high risk for burden and to evaluate caregiver-intervention studies.

A third contribution of this paper is its emphasis on caregivers as a group vulnerable to mental and physical distress. With each advancing year a larger proportion of the population will reach aged status. By the year 1995, 13.1% of the US population will be 65 years or older and by the year 2030, this percentage will increase to 21.2%.⁵ As such, an increasing population will require care. Caregivers perform a great service for society. It has been estimated that caregivers of frail elderly save the federal government from \$9 billion to \$17 billion each year.⁶ The higher figure exceeds the gross national product of more than two thirds of all the nations in the world.⁷ Indeed, if caregivers become ill, so will the United States.

The author argues that social supports may directly or indirectly affect the well-being of caregivers. For this reason, he recommends that family physicians perform a brief assessment of a caregiver's social supports with the expectation that findings will provide insight into a caregiver's overall health prognosis and treatment. This recommendation has merit; however, it needs to be considered in the context of two related issues: first, the degree to which social supports actually affect well-being; and, second, the degree to which social support information can be used by physicians to help caregivers. The first issue involves potential mediators of the relationships of social supports and health. These mediators include per-

sonality variables (here, proclivity toward anger) and coping processes. The second issue involves the way in which social support information can be used by physicians, given their time limitations and scope of practice.

The vast majority of research on social supports and well-being is correlational. As such, the effects of social supports are, until shown otherwise, actually associations, and other variables may be driving these relationships. Such variables may be hidden in the dynamic processes that exist between social supports and mental and physical health. To better understand these dynamics, caregiver research needs to be guided by theoretical stress models. In general, such research has been atheoretical, and like an expedition without a compass, it has lacked direction.

Recently, a model has been suggested for examining stress sequelae in caregivers.⁸ The model proposes that

Burden or biobehavioral distress

$$= \frac{\text{Exposure to stressors} + \text{vulnerability}}{\text{Psychological resources} + \text{social resources}}$$

This model has received both theoretical and empirical support.^{9,10} In particular, it has been demonstrated that in the presence of vulnerability variables, such as personality and health history, psychological and social resources may not be the powerful correlates of distress that they appear to be in isolation.^{8,10}

Personality variables, such as how one experiences anger, may powerfully influence the way that social supports are used and the degree to which they are effective in thwarting health problems. For example, people with high levels of expressed anger may have lower levels of social support because they (1) judge their relationships harshly, (2) produce tension and conflict in their social environment, and (3) emotionally drain their potential supports.¹¹

Anger has been shown to play a major role in both mental^{12,13} and physical health.^{14,15} In fact, anger may be a key mediator in associations between social support and health. Research on relationships between anger and health has been both epidemiologic^{16,17} and laboratory based.¹⁸ Anger has been shown to be directly related to increased heart rate^{19,20} and blood pressure.²¹ These responses can, over prolonged periods, increase one's risk for heart disease^{22,23} and hypertension.²¹ Anger, via the hypothalamus, is associated with increases in cortisol levels, which can deplete lymphocyte production.^{24,25} Over prolonged periods this response, in turn, may increase one's risk for cancer and other illnesses, especially in elderly populations.²⁶ Moreover, anger has been shown to be related to depression,¹⁰ and depression has been shown to be related to immune and cardiovascular²⁷ functioning.

Unfortunately, very few studies have examined anger in caregivers, and yet, one would expect that anger would be a normal reaction to such heavy demands. At the University of Washington (UW), anger has been a major focus of interest in a series of studies of caregivers of Alzheimer's patients. In one study, researchers found that three variables provided independent contributions to the explanation of caregiver burden, two of which were anger variables. Caregivers with higher subjective burden scores had higher scores on both anger expression and anger suppression than did caregivers with low burden scores.⁴ Significant associations have also been demonstrated between depression and anger, with caregivers high in anger expression having higher depression scores. Interestingly, satisfaction with social supports was inversely related to caregiver burden. In the presence of vulnerability factors, such as anger expression, however, the relationship between burden and satisfaction with supports disappeared. This disappearance occurred for two reasons: Anger was simultaneously related to burden and satisfaction with supports (ie, caregivers with high anger were less satisfied with social supports); and anger was more related to burden than was satisfaction with supports. These conditions made anger a sufficient and unique predictor of burden.

In another analysis the same UW researchers found that high criticism of the patient by the caregiver was related to poorer functioning in the patient (activities of daily living), even after several patient variables (depression, age, education, gender, and cognitive status) were controlled in the analysis.²⁸ Finally, 12 of 19 (63%) of the caregivers who scored high in criticism of the patient with Alzheimer's disease had had cancer or heart disease in their lifetimes, whereas only 18 of 75 (24%) of the caregivers low in criticism had had such diseases. These rates were significantly different even after controlling for five cardiovascular disease risk factors, family history of cancer, age, and depression.²⁹

More recent research by the UW investigators points to more direct relationships between health, anger, and social supports in caregivers and age-matched controls. For example, for each of three immunologic variables (percentages of helper [CD4], suppressor [CD8], and natural killer cell activity [NK]), a regression analysis was performed controlling for age, sex, caregiving, sympathetic nervous system active drugs, and having a cold or influenza in the last week. Psychosocial variables (anger and social supports) were then entered into each equation. The results showed that CD4 cell activity was lower in individuals with high trait anger scores, CD8 cell activity was higher in individuals with poorer tangible social supports, and NK cell activity was higher in individuals with more satisfaction with social supports.³⁰

Relationships were also examined between cardiovas-

cular reactivity and anger and type A behavior (eg, hostility, hard driving, pressed for time). Reactivity was examined while the caregiver discussed his or her feelings about the patient with Alzheimer's disease. Cardiovascular measures included systolic and diastolic blood pressure. After controlling for caregiver status, sex, sympathetic nervous system active medications, and family history of cardiovascular disease, trait anger was shown to be related to diastolic blood pressure, whereas type A behavior was related to systolic blood pressure.³¹ When taken together, these results suggest that interesting dynamics exist between personality (anger), social factors, and health variables.

Social supports also may be affected by individual coping processes. For example, some individuals are more independent and do not feel the need to reach out for help as much as others. In this respect, social supports may be available, but they may not be used. Some caregivers also may be reluctant to accept help even when it is offered. As a group, however, caregivers appear to seek social supports more than others, such as individuals faced with work problems. For example, caregivers with high levels of distress (anxiety or depression) spend 24% of their coping efforts on seeking social supports, and caregivers with low levels of distress spend 27% of their efforts on seeking social supports. These rates are significantly higher than the support-seeking rates—18% and 24%, respectively—for individuals with high and low levels of anxiety or depression who are coping with work-related problems (medical students, camp counselors, and air traffic controllers). These differences exist in spite of statistical controls for age, sex, marital status, and education across these groups.³²

The next issue worthy of further clarification involves social support interventions, that is, the way in which physicians will actually use a patient's social support data. An excellent article by Antonucci and Jackson¹ addresses this issue. These researchers recommend five steps for clinicians to follow: (1) ensure that caregivers' social networks are involved in the intervention, (2) encourage caregivers' social networks to assist with specific health behaviors of importance to caregivers (here, medication compliance, monitoring blood pressure), (3) have caregivers accumulate a ledger of services (support bank) they have provided to others so that they can draw on this bank for future help, (4) explore the quality of their previous social relationships, and (5) increase their self-efficacy. Given the potential associations of anger, social supports, and health, the physician can also administer a simple, reliable, and valid measure of anger³³ to estimate this critical emotion. Obviously the demands upon physicians are too great to permit time for all of these activities, but perhaps the combined efforts of family physicians, psychologists, and social workers will be efficacious. Indeed,

the family physician is an excellent starting point for such intervention because of the respect that he or she commands from patients and families alike. In fact, the physician is in an ideal position to make appropriate referrals and to rally a family around the caregiver by prescribing social support for the caregiver.

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