Research Article

PROVIDING SOCIAL SUPPORT MAY BE MORE BENEFICIAL THAN RECEIVING IT: Results From a Prospective Study of Mortality

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Abstract—*This study examines the relative contributions of giving versus receiving support to longevity in a sample of older married adults. Baseline indicators of giving and receiving support were used to predict mortality status over a 5-year period in the Changing Lives of Older Couples sample. Results from logistic regression analyses indicated that mortality was significantly reduced for individuals who reported providing instrumental support to friends, relatives, and neighbors, and individuals who reported providing emotional support to their spouse. Receiving support had no effect on mortality once giving support was taken into consideration. This pattern of findings was obtained after controlling for demographic, personality, health, mental health, and marital-relationship variables. These results have implications for understanding how social contact influences health and longevity.*

As demographic shifts have produced a relatively more aged population, factors that influence longevity have taken on increased prominence. The documented health benefits of social support may offer a promising avenue for reducing mortality among older adults. Indeed, there is a robust association between social contact and health and well-being (House, Landis, & Umberson, 1988). However, it is not clear that receiving support accounts for these benefits (House et al., 1988). Tests of the social-support hypothesis—that receiving support improves health and well-being—have provided somewhat inconsistent results (Kahn, 1994), demonstrating in some instances that receiving support is harmful (e.g., S.L. Brown & Vinokur, in press; Hays, Saunders, Flint, Kaplan, & Blazer, 1997; Seeman, Bruce, & McAvay, 1996). In fact, a meta-analysis of the link between social support and health outcomes produced negligible findings, leading the study's authors to conclude that the "small amounts of shared variance [between receiving support and health outcomes] may not be considered significant nor generalizable" (Smith, Fernengel, Holcroft, Gerald, & Marien, 1994, p. 352).

Conceptually, it is not clear that receiving social support will always be beneficial. For example, depending on other people for support can cause guilt and anxiety (Lu & Argyle, 1992). And feeling like a burden to others who presumably provide support is associated with increased suicidal tendencies, even after controlling for depression (R.M. Brown, Dahlen, Mills, Rick, & Biblarz, 1999; de Catanzaro, 1986). The correlation of social support with dependence may help to explain why studies have failed to consistently confirm the social-support hypothesis.

Furthermore, the benefits of social contact may extend beyond received support to include other aspects of the interpersonal relationship that may protect health and increase longevity—for example, giving support to others. However, with few exceptions (e.g., Liang, Krause, & Bennett, 2001), social-support studies rarely assess whether there are benefits from providing support to others. Some measures of social support do seem to tap giving—perhaps inadvertently—yet the benefits are often attributed to receiving support or sometimes attributed to reciprocated support. For example, a nationwide survey of older peoples' support networks measured social support by a combination of what was received and what was provided to others (Antonucci, 1985). Implicit in this assessment is the recognition that receiving social support is likely to be correlated with other aspects of close relationships, including the extent to which individuals give to one another. Thus, some of the benefits of social contact, traditionally attributed to receiving support, or to reciprocated support (e.g., Antonucci, Fuhrer, & Jackson, 1991), may instead be due to the benefits of giving support.

THE BENEFITS OF PROVIDING SUPPORT TO OTHERS

There are both theoretical and empirical reasons to hypothesize that giving support may promote longevity. For example, kin-selection theory (Hamilton, 1964a, 1964b) and reciprocal-altruism theory (Trivers, 1971) suggest that human reproductive success was contingent upon the ability to give resources to relationship partners. Social bonds (S.L. Brown, 1999) and emotional commitment (Nesse, 2001) have been theorized to promote high-cost giving. The resulting contribution made to relationship partners is theorized to trigger a desire for self-preservation on the part of the giver, enabling prolonged investment in kin (de Catanzaro, 1986) and reciprocal altruists.

Although few studies have explicitly examined whether helping others increases longevity, sociologists note the ubiquity of giving to others (Rossi, 2001), and studies show that individuals derive benefits from helping others, such as reduced distress (Cialdini, Darby, & Vincent, 1973; Midlarsky, 1991) and improved health (Schwartz & Sendor, 2000). Moreover, volunteering has beneficial effects for volunteers, including improved physical and mental health (Omoto & Synder, 1995; Wilson & Musick, 1999). Even perceptions that are likely to be associated with giving, such as a sense of meaning, purpose, belonging, and mattering, have been shown to increase happiness and decrease depression (e.g., Taylor & Turner, 2000; see Batson, 1998, for a review).

THE PRESENT STUDY

Using data from the Changing Lives of Older Couples (CLOC) sample, we addressed two questions: (a) Do the benefits of providing social support account for some or all of the benefits of social contact

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that are traditionally interpreted as due to support received from others? (b) Does receiving support influence mortality once giving support and dependence are controlled?

Traditionally, social support has been defined in numerous ways, leading some authors to conclude that measurement issues are a source of contradictory findings (e.g., Smerglia, Miller, & Kort-Butler, 1999). For the purpose of the present study, we focused our analyses on items for which our measures of giving and receiving tapped similar domains of support. Similar domains of support were measured for the exchange of emotional support between spouses and the exchange of instrumental support with individuals other than one's spouse. House (1981) suggested that these two domains of support—emotional and instrumental—represent two of the functions of interpersonal transactions.

To isolate the unique effects of giving and receiving social support on mortality, it was important to control for factors that may influence any of these variables, including age, gender, perceived health, health behaviors, mental health, socioeconomic status, and some individual difference variables (personality traits). Controlling for these variables helped to increase our confidence that any beneficial effect of giving we observed was not due to enhanced mental or physical robustness of the giver. We also examined variables associated with relationship phenomena that could influence giving support, receiving support, and dependence; these variables included perceived equity (the perception that one receives the same amount as one provides to the relationship partner) and relationship satisfaction. Responses at baseline were used to predict mortality status over the ensuing 5-year period of the study.

METHOD

Sample

The CLOC study is a prospective study of a two-stage area probability sample of 1,532 married individuals from the Detroit Standard Metropolitan Statistical Area. The husband in each household was 65 years of age or older (see Carr et al., 2000, for a complete report). Of those individuals who were selected for participation in the CLOC study, 65% agreed to participate, a response rate consistent with response rates in other studies in the Detroit area (Carr et al., 2000). More than one half of the sample (n = 846) consisted of married couples for whom mortality data on both members were available. These 423 married couples were the respondents in the present study.[1] Baseline measures were administered in face-to-face interviews, conducted over an 11-month period in 1987 and 1988. Of the subsample of 846 respondents, 134 died over the 5-year course of the study.

Mortality Data

Mortality was monitored over a 5-year period by checking daily obituaries in three Detroit-area newspapers and monthly death-record tapes provided by the State of Michigan. Mortality status was indicated with a dichotomous variable (1 = deceased, 0 = alive).

Baseline Measures

Instrumental support

Giving instrumental support to others, GISO, was measured by four survey questions that asked respondents whether they had given instrumental support to friends, neighbors, and relatives other than their spouse in the past 12 months. Respondents indicated (yes/no) whether they helped with (a) transportation, errands, shopping; (b) housework; (c) child care; and (d) other tasks. Respondents were instructed to say "yes" to any of these questions only if they did not live in the same household with the recipient of support and they did not receive monetary compensation. Responses were coded so that a "0" indicated a "no" response to all four items, and a "1" indicated a "yes" response to at least one item.

Receiving instrumental support from others, RISO, was assessed by a single item: "If you and your husband [wife] needed extra help with general housework or home maintenance, how much could you count on friends or family members to help you?" Responses were coded on a 4-point scale.[2]

Emotional support

Giving and receiving emotional support was assessed with items from the Dyadic Adjustment Scale (Spanier, 1976). *Giving emotional support to a spouse*, GESS, was assessed using two items that asked participants whether they made their spouse feel loved and cared for and whether they were willing to listen if their spouse needed to talk (α = .51). Rankin-Esquer, Deeter, and Taylor (2000) reviewed evidence to suggest that the benefits of receiving emotional support from a spouse come from both feeling emotionally supported by a spouse and feeling free to have an open discussion with one's spouse. The two-item measure of *receiving emotional support from a spouse*, RESS (α = .66), was identical to GESS with the exception that participants were asked whether their spouse made them feel loved and cared for, and whether their spouse was willing to listen if they needed to talk. Responses were coded on a 5-point scale.[3]

Control variables

To control for the possibility that any beneficial effects of giving support are due to a type of mental or physical robustness that underlies both giving and mortality risk, we measured a variety of demographic, health, and individual difference variables. (See Appendix A for a description of the health, mental health, and personality variables used.) Both *age* and *gender* (1 = male, 2 = female) were controlled for in each analysis to take into account the possibilities that (a) older people give less and are more likely to die than younger people and (b) females give more and are less likely to die than males.

To isolate the unique effects of giving and receiving support, above and beyond other known relationship influences on health, we included measures of social contact and dependence. *Social contact* was assessed with the mean of the following three questions: "In a typical

1. For the entire sample, spousal mortality, rather than respondent mortality, was tracked, so respondent mortality could be obtained only if both members of a couple participated in the study.

2. All response options were coded so that higher values indicated higher levels of the measured variable.

3. Unless otherwise stated, scale composites were formed by taking the mean of the items.

week, about how many times do you talk on the phone with friends, neighbors, or relatives?" "How often do you get together with friends, neighbors, or relatives and do things like go out together or visit in each other's homes?" and "How often do you go out socially, by yourself, or with people other than your husband [wife]?" Scores were standardized so that higher values indicated greater social contact (α = .51). *Dependence on the spouse* was coded on a 4-point scale and was measured with three items asking participants whether losing their spouse would make them feel lost, be terrifying, or be the worst thing that could happen to them (α = .82).

Additional relationship variables

We measured additional aspects of the marital relationship in order to examine alternative explanations for any effects of giving and receiving emotional support. Specifically, we used items from the Dyadic Adjustment Scale (Spanier, 1976) to assess *equity* (the absolute value of the difference between an individual's ratings of perceived emotional support received from the partner and perceived emotional support provided to the partner; higher values indicated greater discrepancy) and *marital satisfaction* (one item).

Additional measures of receiving and giving support

To consider the possibility that any observed benefits of giving or receiving support were an artifact of the chosen measures, we included all of the remaining support measures from the CLOC data set (Appendix B).

RESULTS

We examined our hypotheses using the 846 persons for whom mortality data were available. Because this sample included the responses of both members of a couple, we computed the intraclass correlation (ICC) for the couple-level effect on mortality. We first created a variable that grouped individual participants by couple (n = 423). We next constructed a two-level hierarchical model (Level 1 estimated variation in mortality at the individual-participant level, Level 2 estimated variation at the couple level) using RIGLS (restricted iterative generalized least squares) estimation for binomial models (MLwiN ver. 1.1, Multilevel Models Project, Institute of Education, London, 2000). A significant ICC could be interpreted as indicating that the death of one partner was significantly related to an increase or decrease in the probability of the other partner dying (within the study period). Results of this procedure indicated that there was no couple-level effect on mortality (ICC = .00, n.s.). Thus, for all analyses, we treated each member of a couple as an independent source of data.

Giving Support, Receiving Support, and Social Contact

Table 1 presents a correlation matrix of the focal social-support measures. Receiving and giving were significantly and strongly correlated for measures of emotional support exchanged between spouses (r = .58, $p < .001$), and weakly correlated for measures of instrumental support exchanged with others (r = .09, $p < .01$).

To examine whether giving instrumental support reduced risk of mortality, we ran a hierarchical logistic regression procedure. Results of this analysis are displayed in Figure 1, and also presented in Table 2. Step 1 of this analysis regressed mortality status on social contact, age, and gender. The results were consistent with previous research in indicating that social contact reduced the risk of mortality (b = −0.21, $p < .05$). To examine whether giving versus receiving support accounted for this effect, we entered GISO and RISO simultaneously in the second step. Results at this step indicated that mortality risk was decreased by GISO (b = −0.85, $p < .001$) but marginally increased by RISO (b = 0.17, $p < .10$). Social contact was no longer significant at this step (b = −0.13, n.s.).

Table 1. *Correlation matrix of the focal social-support measures*

Measure	Social contact	RISO	GISO	RESS
RISO	.15***			
GISO	.25***	.09**		
RESS	−.02	.12***	−.01	
GESS	−.05	.15***	−.04	.58***

Note. RISO = receiving instrumental support from others; GISO = giving instrumental support to others; RESS = receiving emotional support from a spouse; GESS = giving emotional support to a spouse. **$p < .01$. ***$p < .001$.

Because individuals in poor health may have difficulty providing others with instrumental support, functional health status, satisfaction with health, health behaviors, and mental health variables were added to the model in order to control for the alternative possibility that individuals who give support to others live longer because they are more mentally and physically robust than those who do not give support. Results at this step indicated that after controlling for these measures of health, the effect of GISO was reduced, but GISO was still significantly related to mortality (b = −0.56, $p < .01$). In fact, GISO exerted a beneficial effect on mortality even after controlling for interviewer ratings of health, income and education level, self-reports of feeling vulnerable to stress, dispositional influences on mortality, and personality influences on mortality. After all control variables were held constant, GISO significantly decreased mortality risk (b = −0.54, $p < .05$), and RISO marginally increased mortality risk (b = 0.23, $p < .10$).

These results support the hypothesis that giving support accounts for some of the benefits of social contact. However, our findings are based on the use of different measures to operationalize giving and receiving support. That is, the GISO variable measured support that was actually provided to other people (i.e., enacted support), whereas the RISO variable assessed whether others could be depended upon to provide support (i.e., available support).[4] Furthermore, it is not clear whether the adverse effect of RISO was due to received support or to the covariation of received support with dependence. In order to control for the difference between the giving and receiving measures, as well as the potentially adverse effect of dependence, we examined the exchange of emotional support between spouses. This domain of support offered virtually identical giving and receiving measures, and included measures of dependence.

4. Research suggests that structural differences in the operationalization of received support may underlie contradictory findings in the literature (Smerglia et al., 1999).

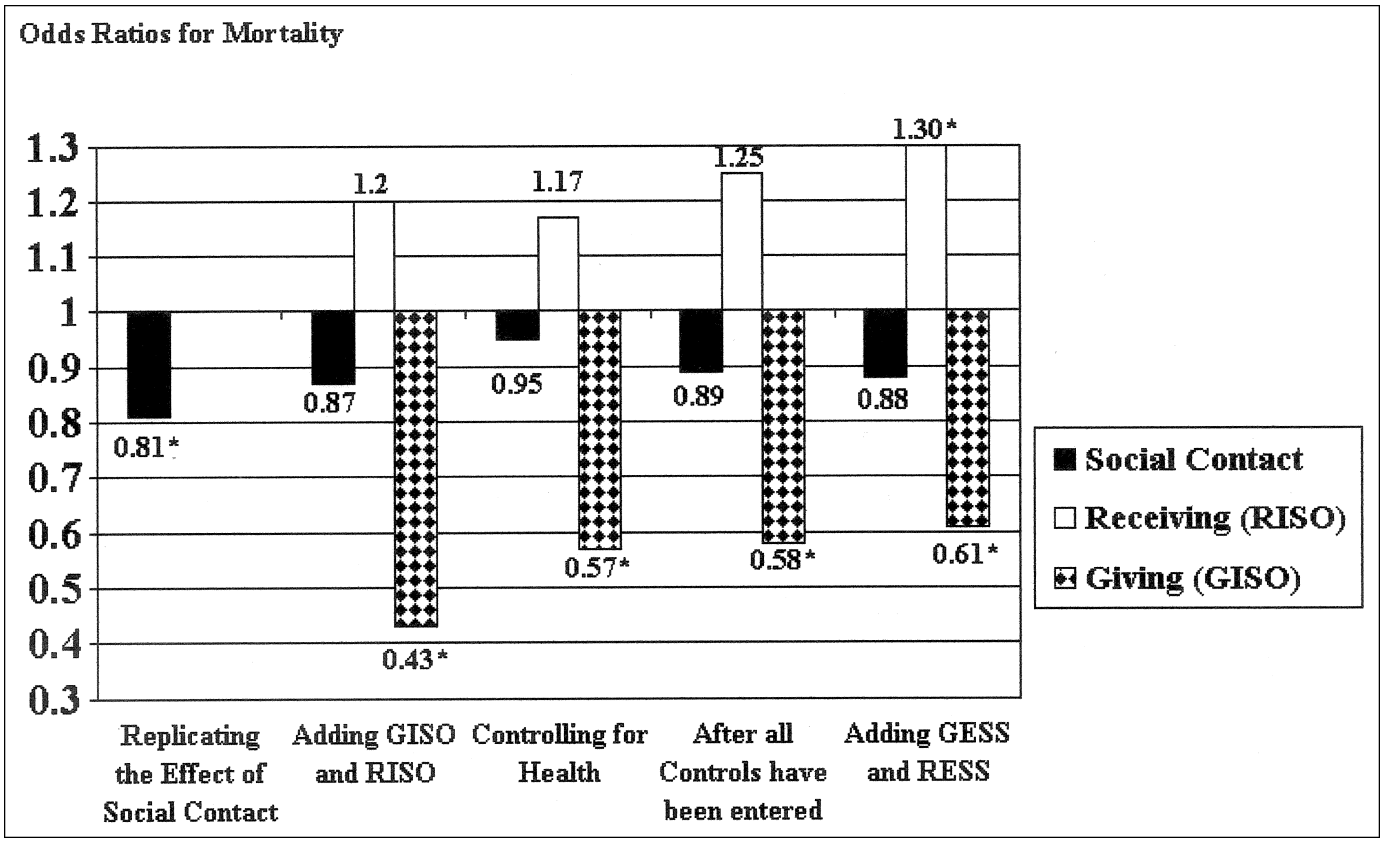

Fig. 1. Hierarchical logistic regression model of the effects of receiving instrumental support from others (RISO) and giving instrumental support to others (GISO). All effects have been adjusted for the effects of age and gender. *$p < .05$. GESS = giving emotional support to a spouse; RESS = receiving emotional support from a spouse.

Analyses With Identical Measures of Giving and Receiving Support

To clarify the role of receiving support on mortality, we ran a hierarchical logistic regression procedure in which RESS was entered in Step 1, along with age and gender. As can be seen in Figure 2, there was no significant effect of RESS on the risk of mortality ($b = -0.17$, n.s.). However, after controlling for the effect of dependence in Step 2, the effect of RESS became a significant predictor of reduced mortality risk ($b = -0.23$, $p < .05$). Thus, the results of Step 2 replicated the beneficial effect of receiving support sometimes found in the literature—but only after the adverse effect of dependence was held constant.

To compare the relative benefits of receiving versus giving support using identical measures, we entered GESS on the third step of this analysis. As shown in Figure 2, the unique effect of GESS accounted for a significant decrease in mortality risk ($b = -0.36$, $p < .05$), and rendered the effect of RESS nonsignificant ($b = -0.05$, n.s.). In order to examine whether GESS remained beneficial after controlling for GISO and the cumulative effect of all of the control variables, we entered GESS into the hierarchical regression model presented in Table 2 (Step 5). Results of this analysis demonstrated that both GESS ($b = -0.51$, $p < .01$) and GISO ($b = -0.50$, $p < .05$) made a unique, significant contribution to reducing mortality risk, above and beyond that of the control variables. Thus, giving to one's spouse (GESS) and giving to friends, relatives, and neighbors (GISO) both appear to exert an independent influence on the reduction in risk of mortality.

Finally, we examined two additional relationship factors that may be related to giving support—equity and marital satisfaction. We first added marital satisfaction to the overall model (shown in Table 2 and Fig. 1); it was not a significant predictor of mortality ($b = -0.15$, n.s.), nor did it affect the strength of any of the other predictors. We ran a similar model for equity, without GESS and RESS. Equity did not predict mortality ($b = 0.20$, n.s.).

Additional Measures of Receiving and Giving

Because the CLOC data included additional measures of giving and receiving, it was possible to determine whether our pattern of results was simply an artifact of the measures chosen. To examine this possibility, we correlated mortality status with each of the giving and receiving measures available in the CLOC data set. In addition, the composites for giving support were broken down into single items and correlated independently with mortality status. As shown in Table 3, only 1 of the 10 different receiving measures significantly reduced mortality risk[5]; 1 receiving measure signifi-

5. Substituting the only beneficial receiving measure in the overall regression model presented in Table 2 did not alter our pattern of findings.

Table 2. *Hierarchical logistic regression model used to predict mortality risk*

Variable	Step 1		Step 2		Step 3		Step 4		Step 5	
	b	Odds ratio	*b*	Odds ratio	*b*	Odds ratio	*b*	Odds ratio	*b*	Odds ratio
Social contact	−0.21*	0.81	−0.13	0.87	−0.10	0.95	−0.11	0.89	−0.13	0.88
Age	0.10***	1.11	0.09**	1.10	0.09***	1.10	0.09***	1.09	0.09**	1.10
Gender	−0.45*	0.64	−0.60**	0.55	−0.76**	0.47	−0.61*	0.55	−0.64*	0.53
Social support to (from) others										
RISO			0.17†	1.2	0.16	1.17	0.23†	1.25	0.27*	1.30
GISO			−0.85***	0.43	−0.56*	0.57	−0.54*	0.58	−0.50*	0.61
Self-rated health										
Satisfaction with health					−0.68***	0.51	−0.64**	0.53	−0.68**	0.51
Functional health					−0.11	0.90	−0.02	0.98	−0.07	0.94
Health behavior										
Smoking					0.01	1.01	0.01	1.01	0.02	1.2
Drinking					0.01	1.01	0.01	1.01	−0.07	0.94
Exercise					0.01	1.01	−0.01	0.99	−0.00	1.0
Mental health										
Depression					0.09	1.10	0.10	1.11	0.12	1.13
Well-being					0.21†	1.23	0.19	1.21	0.23†	1.26
Anxiety					0.06	1.06	0.13	1.14	0.11	1.12
Interviewer rating of health							0.20	1.22	0.15	1.16
Socioeconomic status										
Income							−0.11†	0.89	−0.11†	0.90
Education							0.00	1.00	0.02	1.02
Individual differences										
Vulnerability to stress							−0.24	0.79	−0.26	0.77
Self-esteem							−0.15	0.86	−0.10	0.91
Internal control							−0.05	0.95	−0.09	0.92
External control							0.26*	1.29	0.28*	1.33
Extroversion							−0.05	0.95	−0.03	0.97
Agreeableness							−0.13	0.88	−0.08	0.92
Conscientiousness							0.13	1.14	0.17	1.18
Emotional stability							0.18	1.19	0.19	1.21
Openness							0.13	1.13	0.14	1.15
Interpersonal dependency							−0.19	0.82	−0.14	0.87
Autonomy							−0.08	0.93	−0.01	0.99
Social support to (from) spouse										
GESS									−0.51**	0.60
RESS									0.13	1.14
Dependence									0.17	1.19

Note. RISO = receiving instrumental support from others; GISO = giving instrumental support to others; RESS = receiving emotional support from a spouse; GESS = giving emotional support to a spouse.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

cantly increased mortality risk. In contrast, all 4 of the different giving measures significantly reduced mortality risk. When the composites for giving support were broken down, 4 of the 6 items were significantly correlated with decreased mortality risk, including the only item that assessed available, rather than enacted, support. Taken together, these findings strongly suggest that giving support, rather than receiving support, accounts for the benefits of social contact, across different domains of support, different targets of support, and different structural features of support.

DISCUSSION

In this study, older adults who reported giving support to others had a reduced risk of mortality. The provision of support was correlated with reduced mortality in all analyses, whether giving support was operationalized as instrumental support provided to neighbors, friends, and relatives or as emotional support provided to a spouse. It is important to note that our analyses controlled for a wide range of demographic, personality, and health variables that might have accounted for these findings. Thus, these results add to a small but growing body of research that documents the health benefits of providing support to others (McClellan, Stanwyck, & Anson, 1993; Midlarsky, 1991; Schwartz & Sendor, 2000).

We also found that the relationship between receiving social support and mortality changed as a function of whether dependence and giving support were taken into consideration. Receiving emotional support (RESS) appeared to reduce the risk of mortality when depen-

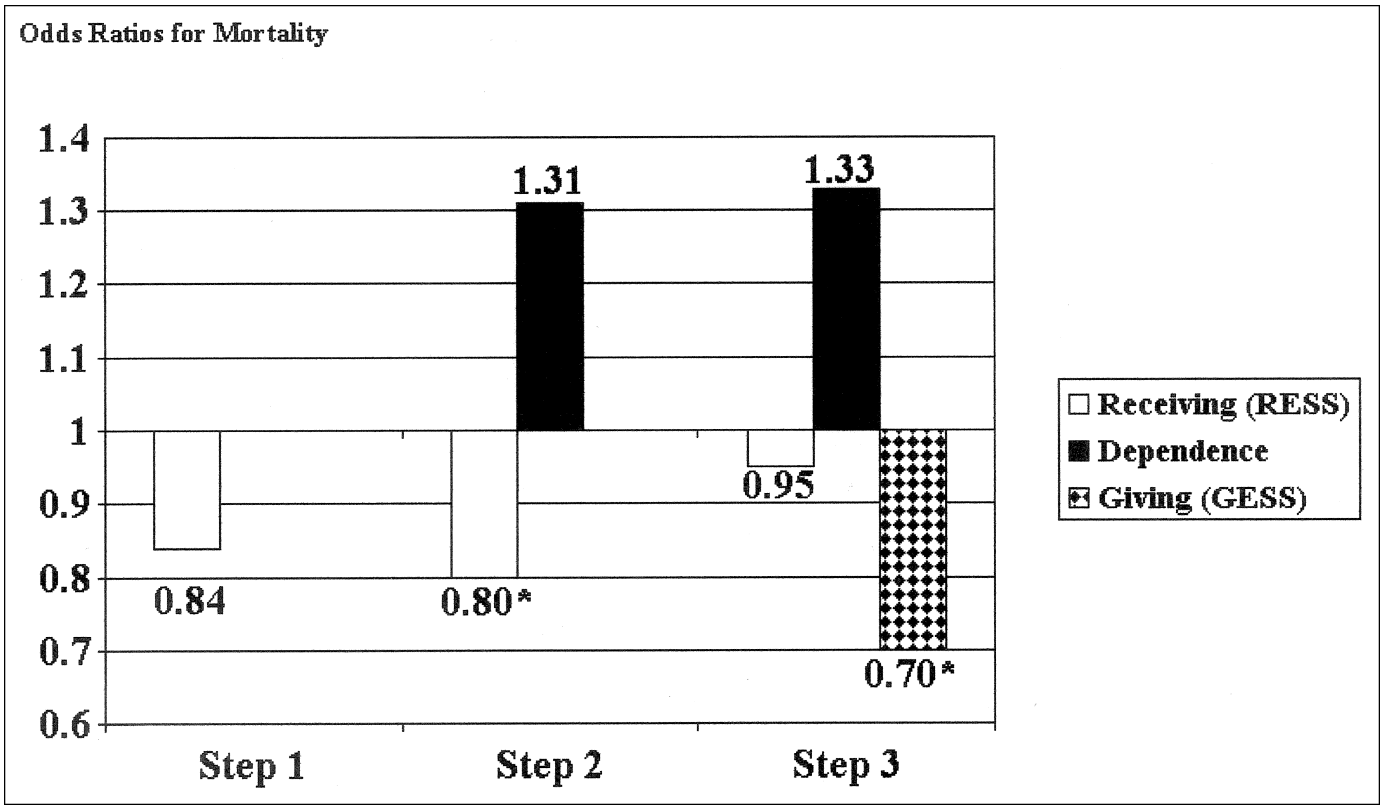

Fig. 2. Hierarchical logistic regression model of the effects of receiving emotional support from a spouse (RESS), giving emotional support to a spouse (GESS), and dependence. All odds ratios have been adjusted for the effects of age and gender. *$p < .05$.

dence but not giving emotional support was controlled. Receiving instrumental support from others appeared to increase the risk of mortality when giving support, but not dependence, was controlled. Taken together, these findings may help to explain why tests of the social-support hypothesis have produced contradictory results. If the benefits of social contact are mostly associated with giving, then measures that assess receiving alone may be imprecise, producing equivocal results.

Although we have identified no single mediator of the link between giving support and mortality—one that could be informative about the process underlying the beneficial effects of giving support—many social psychological studies show that helping others increases positive emotion (e.g., Cialdini & Kenrick, 1976). Positive emotions, in turn, have been demonstrated to speed the cardiovascular recovery from the aftereffects of negative emotion (Fredrickson, Mancuso, Branigan, & Tugade, 2000). Thus, helping may promote health through its association with factors, such as positive emotion, that reduce the deleterious effects of negative emotion. Research is currently under way to examine this possibility.

More broadly, a link between giving and health supports the possibility that the benefits of social contact were shaped, in part, by the evolutionary advantages of helping others. Older adults may have been able to increase their inclusive fitness (the reproductive success of individuals who shared their genes) by staying alive and prolonging the amount of time they could contribute to family members (de Catanzaro, 1986). Of course, this possibility relies on the assumption that a motivation for self-preservation can influence mortality. In fact, there is evidence to suggest that individuals with a "fighting spirit" survive longer with cancer than individuals who feel helpless or less optimistic about their chance of survival (Greer, Morris, & Pettingale, 1994).

Limitations and Directions for Future Research

Although the prospective, longitudinal design of this study is very strong, given the outcome of interest, alternative explanations for these findings remain viable. It may be, for example, that giving support is a better measure of health than receiving support, or that individuals who have the resources and motivation to give are also more robust than those who do not, or that an abundance of resources promotes longevity and makes it easier to give. However, the beneficial effects of giving support were observed after controlling for the effects of age, functional health, satisfaction with health, health behaviors, mental health, interviewer ratings of health, socioeconomic status, and vulnerability to stress. Moreover, two distinct types of giving—GESS and GISO—contributed simultaneously to longevity. This means that a third variable correlated with one measure of giving—such as robustness of one's health—would have been held constant in a model that simultaneously tested the effect of the other giving measure. Thus, it is unlikely that the same alternative explanation can account for both effects of giving support. Of course, given the correlational nature of the study design, the regression methods used to disentangle

Table 3. *Correlation of receiving versus giving variables with mortality status*

Variable	Correlation with mortality status
Receiving variables	
Focal composites	
Availability of others, besides a spouse, to provide instrumental support (RISO)	−.021
Enacted and available emotional support from a spouse (RESS)	−.004
Enacted and available emotional support from others, besides a spouse	−.078*
Availability of others, besides a spouse, to provide caretaking for a serious illness	−.056
Availability of anyone, including spouse, to provide intimacy	−.021
Number of individuals, including spouse, who provide intimacy	−.022
Enacted support from a spouse—household chores	.123*
Enacted support from a spouse—household repairs	−.036
Enacted support from a spouse—bills	.064†
Enacted support from a spouse—financial or legal advice	−.045
Giving variables	
Focal composites	
Enacted instrumental support to others, besides a spouse (GISO)	−.175***
Enacted and available emotional support provided to a spouse (GESS)	−.069*
Number of hours spent providing instrumental support to others, besides a spouse	−.15***
Enjoyment from providing instrumental support to others, besides a spouse	−.087*
Single item: Available emotional support provided to a spouse[a]	−.074*
Single item: Enacted emotional support to a spouse[a]	−.044
Single item: Enacted instrumental support to others, besides a spouse—errands[b]	−.13***
Single item: Enacted instrumental support to others, besides a spouse—housework[b]	−.06†
Single item: Enacted instrumental support to others, besides a spouse—child care[b]	−.11**
Single item: Enacted instrumental support to others, besides a spouse—miscellaneous[b]	−.092**

[a]Item included in the GESS composite. [b]Item included in the GISO composite.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

these alternatives do not give the confidence that would be achieved by an experimental design. Nonetheless, longitudinal prospective studies like the one described here are important precursors to eventual long-term (and large-scale) experimental interventions that promote giving support.

It would be premature, on the basis of a single study, to conclude that giving support accounts for the traditional effects of receiving social support found in the literature (to our knowledge, no other studies have advanced this hypothesis). Nevertheless, the results of the present study should be considered a strong argument for the inclusion of measures of giving support in future studies of social support. Perhaps more important, our results corroborate the suggestion by House and his colleagues (1988) that researchers should be cautious of assuming that the benefits of social contact reside in the supportive quality of the relationship. Thus, whether or not mortality risk is a function of giving support, our results highlight the continued need for further research to seriously examine the fundamental assumption guiding the study of social support.

Conclusion

Giving support may be an important component of interpersonal relationships that has considerable value to health and well-being. It may not be a coincidence that mortality and morbidity studies inadvertently assess giving or manipulate giving (e.g., taking care of a plant; Rodin & Langer, 1977) to operationalize variables of interest such as receiving social support or locus of control. If giving, rather than receiving, promotes longevity, then interventions that are currently designed to help people feel supported may need to be redesigned so that the emphasis is on what people do to help others. The possibility that giving support accounts for some of the benefits of social contact is a new question that awaits future research.

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APPENDIX A: CONTROL VARIABLES

Physical health was measured with two scales assessing (a) satisfaction with health ($\alpha = .84$) and (b) functional health. Satisfaction with health was a three-item scale measuring the extent to which participants rated their health as excellent, good, fair, or poor; the extent to which they thought their health limited their daily activities; and the extent to which they were satisfied with their health. The functional health index measured the extent to which participants' health prevented them from leaving their bed or chair (yes/no) or interfered with a variety of tasks, including walking, climbing stairs, bathing, and housework (yes/no). Functional impairment levels were as follows: 1 = most severe (respondents who were currently in bed or a chair, who had a lot of difficulty bathing or could not bathe, or both); 2 = moderately severe (respondents who had a lot of difficulty climbing stairs or could not climb stairs); 3 = least severe (respondents who had difficulty doing heavy work, but were not in one of the more severe categories); 4 = no functional impairment (answered "no" to all questions).

To control for the possibility that there are aspects of physical robustness that are not partialed out with self-report measures, we also included *interviewer ratings of the physical health* of the participant, from 1, *excellent*, to 4, *poor. Health behaviors* included measures of smoking (number of cigarettes per day), drinking (number of drinks in the past month), and exercise (frequency of taking walks or other form of exercise). *Depression* ($\alpha = .83$) was measured with a short form of the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff, 1977). *Subjective well-being* ($\alpha = .79$) was assessed with a subset of five items developed by Bradburn (1969) to assess how often (1 = *hardly ever*, 2 = *some of the time*, 3 = *most of the time*) participants experienced positive feelings such as joy and contentment.

Individual difference variables included modified scales from the NEO Five-Factor Personality Inventory (i.e., *Extraversion*, $\alpha = .53$; *Agreeableness*, $\alpha = .62$; *Conscientiousness*, $\alpha = .73$; *Openness to Experience*, $\alpha = .51$; and *Neuroticism*, $\alpha = .70$; Costa & McCrae, 1992), as well as measures of *self-esteem* ($\alpha = .72$; Rosenberg, 1962), *locus of control* (internal $\alpha = .71$; external $\alpha = .68$; Levenson, 1973), *interpersonal dependency* ($\alpha = .66$), and *autonomy* ($\alpha = .75$; Hirschfield et al., 1989). We also measured *vulnerability to stress* ($\alpha = .60$) with items assessing the degree to which participants felt they could handle themselves in a crisis.

APPENDIX B: ADDITIONAL MEASURES OF GIVING AND RECEIVING

The following items were used to measure additional forms of receiving: the availability of others, besides a spouse, to provide caretaking for a serious illness; the availability of anyone, including a spouse, to provide intimacy; the number of individuals, including a spouse, who provide intimacy; a composite of enacted and available emotional support from others besides a spouse (similar to RESS); dependence on a spouse for receiving help with household chores (enacted support); spouse's help with household repairs (enacted support); spouse's help with paying bills (enacted support); and spouse's help with financial or legal advice (enacted support). The following items were available to measure additional forms of giving: number of hours spent helping others with errands (including transportation and shopping), child care, housework, or other needs without compensation, and satisfaction of providing help without compensation to others, besides a spouse.