

The Interplay Between Life Stressors and Depressive Symptoms Among Older Adults

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This study examined mutual predictive associations between life stressors and depressive symptoms in later life. A sample of late-middle-aged and older adults ($N = 1,291$) was surveyed at baseline and 1 year, 4 years, and 10 years later. At each contact point, participants completed an inventory that assessed chronic and acute life stressors and depressive symptoms. Over the 10-year interval, there was evidence of both social causation and social selection processes: More life stressors were associated with subsequent increases in depressive symptoms (social causation), and more depressive symptoms were associated with subsequent increases in stressors (social selection or stress generation). These findings reflect a mutual influence process in which life stressors and depressive symptoms can alter each other.

STRESSFUL life circumstances have been consistently implicated as a primary cause of vulnerability to depression (Kraaij, Arensman, & Spinhoven, 2002). Recent advances have broadened this unidirectional model by focusing on the reverse causal direction; that is, recent focus has been on the ways in which depressed individuals foster or generate stressors (Hammen, 1999). In brief, social causation theories emphasize the process by which interpersonal conflict and criticism, and other stressful life circumstances, such as financial and health problems, are associated with a subsequent rise in depression (Monroe & Hadjiyannakis, 2002). Social selection or stress-generation theories posit that an individual's depression elicits interpersonal conflict and other stressful circumstances (Hammen).

Following these ideas, current conceptual models posit a reciprocal relationship between life stressors and depression. However, few if any studies have examined the mutual interplay between stressors and depression, especially over long time intervals. In addition, there is very little information on the nature of social selection and social causation processes with respect to more pervasive stressors and persistent depression, the time frame over which these processes operate, and their applicability to older adults. Here we examine social causation and social selection processes by using information about chronic stressors, negative life events, and depressive symptoms obtained from a group of late-middle-aged and older adults studied at baseline and at 1-year, 4-year, and 10-year follow-ups.

Social Causation: The Influence of Life Stressors on Depression

Evidence from mixed-age and older samples shows that ongoing interpersonal stressors, especially criticism and conflict, are associated with the symptoms and syndrome of depression (Finch, Okun, Pool, & Ruehlman, 1999; Hooley & Gotlib, 2000; Mazure, 1998). Most studies of older adults have focused on stressful social relationships in general (Finch, Okun, Barrera, Zautra, & Reich, 1989; Ingersoll-Dayton, Morgan, & Antonucci, 1997; Lynch & George, 2002; Rauktis, Koeske, & Tereshko, 1995); however, a few studies have considered negative interactions with specific social network members such as spouse or partner, children, extended family

members, and friends (Cicirelli, 1989; Clarke, Preson, Raksin, & Bengtson, 1999; Okun & Keith, 1998).

With respect to noninterpersonal stressors, financial and physical health problems have been associated with more depressive symptoms among groups of mixed-age and older adults (Aldwin & Revenson, 1986; Chiriboga, Black, Aranda, & Markides, 2002; Krause, 1997; Patten, 1999). The total number of different domains in which stressors occur has also been linked to more depressive symptoms (McGonagle & Kessler, 1990).

Although this research constitutes a useful body of work, most prior studies have been cross-sectional or have involved just two waves of data and short-term follow-ups; only a few studies have focused on separate sources of stressors in different life domains. We extend this work here by examining the predictive associations between several sets of life stressors and depressive symptoms at four assessments over a 10-year interval.

Social Selection: The Influence of Depression on Life Stressors

A depressed individual's hopelessness, withdrawal, and lack of motivation often create burdens for family members and friends, who tend to avoid or castigate the individual (Benazon & Coyne, 2000; Coyne, Thompson, & Palmer, 2002). Accordingly, depressed individuals often experience more interpersonal stressors than nondepressed individuals do, in part because their behavior triggers or fosters such stressors (Chun, Cronkite, & Moos, 2004; Coiro & Gottesman, 1996; Daley et al., 1997; Harkness, Monroe, Simons, & Thase, 1999).

In a longitudinal study of older adults, Krause and Rook (2003) found that more depressive symptoms were associated with more subsequent interpersonal conflict. Unpleasant interactions were relatively stable over time and were positively correlated across different social relationships, suggesting that some older adults play a role in eliciting and maintaining interpersonal conflict. In addition, distress among older adults has been associated with more subsequent daily hassles and more negative health and nonhealth events (Fiske, Gatz, & Pedersen, 2003; Russell & Cutrona, 1991).

Schuster, Kessler, and Aseltine (1990) studied a mixed-age sample and noted that individuals with more depressive symptoms

had more problematic interactions with relatives and friends. Similarly, Johnson (1991) found that mental distress predicted the erosion of social ties with friends and relatives. Depressive symptoms and distress have also been associated with subsequent financial and health-related problems (Aldwin & Revenson, 1986; Chun et al., 2004; Meeks, Murrell, & Mehl, 2000).

Relatively little is known about the extent to which depressed individuals generate stressful interactions in specific interpersonal domains, such as their relationships with spouse or partner, children, and friends. Furthermore, most studies in this area have not controlled for prior levels of stressors, and therefore they do not clarify the effect of depressive symptoms on subsequent stressors independent of the influence of ongoing stressors. Here, we extend prior work by considering stress generation among older adults in specific life domains, controlling for prior levels of stressors, focusing on whether individuals who report more persistent depressive symptoms generate more pervasive stressors, and examining stress-generation processes at four points over a 10-year interval.

Coping Responses and Help-Seeking

Coping responses are important factors in the long-term course of depressed mood. More reliance on avoidance and less on approach coping is associated with more depressive symptoms among mixed-age and older adults (Blalock & Joiner, 2000) and with a poorer prognosis and worse outcome of treatment for depression (Bifulco & Brown, 1996; Cronkite, Moos, Twohey, Cohen, & Swindle, 1998; Sherbourne, Hays, & Wells, 1995).

Approach coping can include seeking formal help for one's problems or depressive symptoms. Obtaining professional advice or counseling may directly influence depressive symptoms; help-seeking may also mediate the link between life stressors and depression. For example, receiving guidance and support can help to alleviate depression by contributing to greater reliance on approach coping and enhancing relationships with family members and friends (Joiner, 2002). Accordingly, we focus here on whether approach coping responses or help-seeking explain or mediate any of the associations between specific life stressors and depressive symptoms.

Overall, we consider four questions: First, with respect to social causation, do chronic stressors in the domains of family, friends, finances, or health and new negative life events predict an increase in depressive symptoms after the effect of prior depressive symptoms is considered? Second, with respect to social selection, does having more depressive symptoms predict an increase in chronic and acute stressors once preexisting levels of such stressors are controlled? Third, are causation and selection effects evident for more pervasive life stressors and more persistent depressive symptoms? Fourth, do these effects hold after individuals' reliance on approach coping and help-seeking is controlled for?

METHODS

Participants

We recruited a sample of 1,884 late-middle-aged community residents (55–65 years old at baseline) between 1986 and 1988 to participate in a study of stressful life circumstances and

health. The sample was composed of individuals who had had outpatient health care within the past 3 years and was comparable to similarly aged community samples with regard to such health characteristics as prevalence of chronic illness and hospitalization. We obtained informed consent from all participants; additional details about recruitment are available elsewhere (Moos, Brennan, & Moos, 1991).

We contacted these individuals again 1 and 4 years later and obtained 95% response rates at both follow-ups. By the 10-year follow-up, 489 individuals had died; of the 1,395 participants who were still living, 1,291 (93%) completed the follow-up surveys. We collected the baseline and follow-up data by using a combination of mail and telephone surveys.

On average, at baseline, participants were 61.3 years of age ($SD = 3.2$); 74% had more than a high school education. Overall, 41% of the individuals were women and 59% were men; 92% were Caucasian. A total of 71% of the participants were married and 51% were employed; the average personal annual income was \$24,900.

Measures

Life stressors.—We assessed seven sets of life stressors that occurred in the past year with the use of the Life Stressors and Social Resources Inventory (LISRES; Moos & Moos, 1994). These indices have been used in a variety of studies and have shown concurrent and predictive validity in relation to measures of functioning such as depression (Moos, 2000). Four of the stressor sets reflect chronic interpersonal stressors: spouse–partner stressors ($\alpha = .82$), child-related stressors ($\alpha = .82$), extended-family stressors ($\alpha = .83$), and friend-related stressors ($\alpha = .77$). We assessed each of these interpersonal stressors in terms of the problems and conflicts stemming from participants' relationships with these individuals. Each set contained five parallel items, such as “Is he or she critical or disapproving of you” and “Do you have fights or arguments with him or her,” which the participants rated on 5-point scales varying from *never* (0) to *often* (4).

Each of three additional sets of stressors reflects another discrete area of stressor exposure. We assessed financial stressors ($\alpha = .93$) by using six items reflecting finances, such as “Do you have enough money to afford good medical and dental care when you need it?” The items were rated on 4-point scales varying from *definitely yes* (0) to *definitely no* (3). For health-related stressors, we made a count of items (range = 0–26) reflecting medical conditions diagnosed by a physician (such as cancer, diabetes, or high blood pressure) as well as serious physical ailments (trouble breathing or shortness of breath, or pains in the back or spine) that began more than a year ago.

For negative life events, we made a count of life events (range = 0–74) that occurred for the first time in the past 12 months. These events were primarily new stressors in the six domains already listed, such as having a spouse–partner or child be diagnosed with a serious medical condition, experiencing the death of an extended family member or close friend, going on welfare, and having one's own newly diagnosed medical conditions.

From the LISRES, we also developed an index of pervasive stressors at baseline and each follow-up; this index reflects the

number of life domains (0–7) in which individuals had a high level of stressors, as defined by a score 1 *SD* or more above average.

Depression.—We assessed depressive symptoms ($\alpha = .94$) with 18 items derived from the Research Diagnostic Criteria and included in the Health and Daily Living Form (Moos, Cronkite, & Finney, 1992). The participants rated all items on a 5-point scale (0 = never, 1 = seldom, 2 = sometimes, 3 = fairly often, 4 = often). This measure is significantly correlated with the Beck Depression Inventory and is predictably related to other indices of functioning, such as physical symptoms and self-confidence (Moos et al., 1992; Moos, Cronkite, & Moos, 1998a).

Persistent depression is a dichotomous variable reflecting whether or not individuals responded “fairly often” or “often” to 4 or more of 10 of the depression items (e.g., “feeling sad or blue,” “poor appetite or weight loss,” “feeling slowed down and having trouble moving,” and “feeling guilty, worthless, or down on yourself”) that reflect diagnostic criteria for depression according to the American Psychiatric Association’s *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition (DSM-IV) and that have been used to identify nonremitted depression in clinical samples (Cronkite et al., 1998; Moos et al., 1998a).

Coping responses.—We assessed individuals’ reliance on approach-coping strategies by using four six-item indices drawn from the Coping Responses Inventory (CRI; Moos, 1993). These indices show expected correlations with other measures of coping and are predictably associated with aspects of functioning such as depression (Moos, 2004). Respondents were asked to report their most important stressor of the past year and to indicate how they had responded to it on 4-point scales varying from *not at all* (0) to *fairly often* (3). Two sets of items assessed approach coping (positive reappraisal and problem solving) and two sets assessed avoidance coping (cognitive avoidance and emotional discharge). We obtained the percentage of approach coping by dividing the sum of positive reappraisal and problem solving by the sum of all of the coping responses.

Help-Seeking.—Help-seeking was a measure drawn from the Health and Daily Living Form (Moos et al., 1992), and we assessed it by whether or not the individual had obtained advice or help over the past year for marriage, family, or other personal problems from each of eight sources, such as a marriage or family counselor, minister or spiritual counselor, physician, lawyer, or self-help group. The help-seeking score was the number of sources of help utilized.

Analytic Plan

We first compared the baseline scores of participants who were successfully followed with those who were not. Next, we calculated repeated measures analyses of variance (RM-ANOVAs) to assess changes in the seven sets of life stressors and depression over time. We estimated missing data (about 4%) on the basis of information the respondent provided in the nearest prior assessment. We then calculated correlations between individuals’ demographic characteristics, the seven

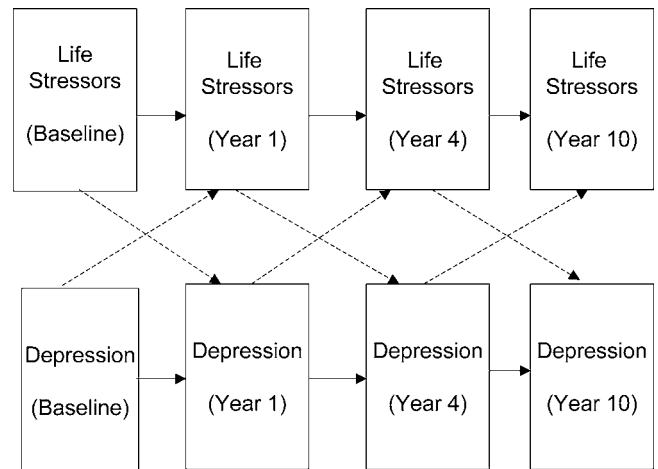


Figure 1. A four-wave, two-variable panel model of the interrelationships between life stressors and depression.

indices of life stressors and the index of pervasive stressors, percentage of approach coping, help-seeking, and depressive symptoms and persistent depression.

Next, we conducted panel regression analyses, controlling for demographic characteristics, to estimate the path coefficients (standardized betas) for a series of two-variable (one life stressor index and depressive symptoms), four-wave (baseline, and 1-year, 4-year, and 10-year follow-ups) panel models (see Figure 1). We estimated a total of eight models, one for each of the seven indices of life stressors and one for the index of pervasive life stressors. The first seven models used the 18-item measure of depressive symptoms; the model for pervasive stressors used the dichotomous index of persistent depression.

More specifically, we examined the influence of baseline stressors on 1-year depression, controlling for baseline depression; the influence of life stressors at 1 year on 4-year depression, controlling for depression at Year 1; and the influence of life stressors at 4 years on 10-year depression, controlling for depression at Year 4. We also examined the influence of baseline depression on life stressors at 1 year, controlling for baseline stressors; the influence of depression at 1 year on life stressors at 4 years, controlling for stressors at 1 year; and the influence of depression at 4 years on life stressors at 10 years, controlling for stressors at 4 years. We conducted additional analyses to identify any gender differences in the associations between stressors and depression and to examine these associations after we controlled for approach coping and help-seeking.

RESULTS

Preliminary Analyses

Attrition.—We first compared the baseline characteristics of the 1,291 individuals who were successfully followed at 10 years with those of the 104 participants who had not died and were not followed. A series of *t* tests on the demographic characteristics, life stressors, and depression indicated only one significant difference: Retained participants had higher annual

Table 1. Means and Standard Deviations for Different Domains of Life Stressors and Depression at Baseline and at 1-Year, 4-Year, and 10-Year Follow-ups

Measure	Occasion				F
	Baseline	Year 1	Year 4	Year 10	
Stressors					
Spouse or partner	7.03 ^b (3.49)	7.03 (3.33)	7.30 ^b (3.48)	6.93 (3.52)	4.64**
Child related	5.63 ^{b,c} (3.51)	5.49 (3.39)	6.03 ^b (3.48)	5.44 ^c (3.69)	15.16**
Extended family	4.93 ^{b,c} (3.45)	4.79 (3.21)	5.53 ^b (3.28)	4.86 ^c (3.42)	25.80**
Friend related	4.25 ^{a,b} (2.72)	4.10 ^a (2.56)	5.04 ^b (2.57)	4.50 (2.58)	66.57**
Financial	3.87 ^c (4.29)	3.89 (4.14)	3.96 (4.17)	3.55 ^c (3.89)	9.14**
Health	3.58 ^{a,c} (3.28)	3.12 ^a (3.08)	3.35 (3.23)	4.31 ^c (3.51)	93.43**
Negative life events	3.30 ^{b,c} (2.84)	3.24 (2.90)	3.08 ^b (2.69)	3.39 (2.73)	4.39**
Pervasive	0.97 ^c (1.17)	1.01 (1.22)	1.01 (1.21)	0.92 ^c (1.18)	3.85**
Depressive symptoms	19.79 ^{a,b,c} (13.03)	18.78 ^a (12.98)	18.34 ^b (12.57)	19.87 ^c (13.16)	13.27**
Persistent depression (%)	12.6 ^{a,b,c}	10.5 ^a	9.1 ^b	12.9	6.41**

Notes: $n = 906$ for spouse-partner stressors, 1,157 for child-related stressors, and 1,232 for extended family stressors because of individuals who were not married or were widowed, and because of individuals who did not have children or extended family members or had no contact with them; $n = 1,289-1,291$ for all other variables.

^{a,b,c}There is a significant difference ($p < .01$) between baseline and the 1-year, 4-year, and 10-year follow-ups, respectively.

** $p < .01$.

income at baseline; $M = \$24,900$ versus $\$20,200$, $t(1339) = 3.40$, $p < .01$.

Levels of life stressors and depression.—RM-ANOVAs and subsequent comparisons between baseline and each follow-up revealed increases at 4 years in spouse or partner, extended family, and friend-related stressors, and an increase followed by a decline in child-related stressors (Table 1). Financial stressors declined at the 10-year follow-up, but, as we expected among older adults, health-related stressors were higher at 10 years than at baseline. Depressive symptoms and persistent depression declined at the 1-year and 4-year follow-ups and then rose above baseline at 10 years.

Intercorrelations of life stressors.—To find out whether older adults who experienced life stressors in one area also tended to experience stressors in other areas, we examined the correlations among the seven domains of life stressors at

baseline and at each follow-up. At baseline, there were moderate positive correlations among the chronic stressors (average $r = .23$; range = $.15-.45$) and between negative life events and the chronic stressors (average $r = .17$; range = $.09-.21$). The associations among the life stressors were comparable at the 1-year, 4-year, and 10-year follow-ups.

Correlations of demographic factors, coping, and help-seeking with life stressors and depression.—Compared with men, women reported more extended family stressors and fewer friend-related and financial stressors (Table 2). Older age was associated with fewer child-related stressors and negative life events, and married individuals experienced fewer extended family, friend, financial, and health stressors, and fewer negative events and pervasive stressors. Individuals with more education had fewer spouse or partner, financial, health, and pervasive stressors. Married and better educated individuals reported fewer depressive symptoms and were more likely to report persistent depression. Because these demographic factors were associated with life stressors and depression, we controlled for them in subsequent panel analyses.

Individuals who experienced more chronic interpersonal and noninterpersonal stressors, and more negative life events and pervasive stressors, were less likely to rely on approach-coping strategies and more likely to seek help. To determine whether approach coping and help-seeking altered the relationship between life stressors and depression, we controlled for them in additional panel analyses.

Panel Analyses

In addition to focusing on the stability of life stressors and depression, we examined the interrelationships between stressors and depression over three time intervals. We conducted the analyses for eight domains: four domains of interpersonal stressors, two of noninterpersonal stressors, negative life events, and pervasive stressors.

Influence of life stressors on depression (social causation).—Depressive symptoms were quite stable over time

Table 2. Correlations Between Baseline Indices of Life Stressors and Depression, and Demographic Factors, Approach Coping, and Help-Seeking

Stressor or Depression	Gender	Marital			Approach Coping	Help Seeking
		Age	Status	Education		
Spouse or partner	.05	-.03	-.01	-.08	-.20	.14
Child	.04	-.15	-.04	.03	-.18	.14
Extended family	.08	-.07	-.11	-.01	-.18	.15
Friends	-.09	-.04	-.14	-.03	-.15	.15
Finances	-.10	-.07	-.30	-.34	-.19	.11
Health	.00	.03	-.08	-.18	-.18	.22
Negative events	.05	-.11	-.10	-.04	-.15	.29
Pervasive stressors	-.07	-.11	-.13	-.16	-.26	.26
Depressive symptoms	.10	-.11	-.18	-.12	-.46	.33
Persistent depression	-.01	-.07	-.13	-.10	-.28	.23

Note: For gender, 1 = female and 0 = male; for marital status, 1 = married and 0 = unmarried; numbers vary ($n = 1,009-1,291$) as a result of missing data and individuals who were not married or were widowed, and those who did not have children or extended family members or had no contact with them. Correlations of .08 or above are significant at $p < .01$.

Table 3. Panel Model Analyses of Relationships Between Stressors in Different Domains and Depression

Predictors	Criterion	Type of Stressor							
		Spouse or Partner	Child	Extended Family	Friends	Finances	Health	Negative Events	Pervasive Stressors
Depression baseline	Depression at 1 year	.70**	.73**	.73**	.73**	.73**	.71**	.73**	.37**
Stressors baseline	Depression at 1 year	.09**	.04*	.03	.03	.04	.07**	.03	.17**
Depression Year 1	Depression at 4 years	.71**	.73**	.73**	.72**	.71**	.71**	.71**	.31**
Stressors Year 1	Depression at 4 years	.03	.01	.01	.05**	.08**	.05*	.06**	.08**
Depression Year 4	Depression at 10 years	.62**	.61**	.61**	.61**	.62**	.60**	.63**	.30**
Stressors Year 4	Depression at 10 years	.06**	.09**	.10**	.10**	.05*	.11**	.03	.15**

Notes: Numbers vary: $n = 1,028-1,060$ for spouse or partner, $1,156-1,185$ for children, and $1,231-1,284$ for extended family because of individuals who were not married or were widowed and because of individuals who did not have children or extended family members or had no contact with them; $n = 1,288-1,291$ for all other stressors. All entries are standardized beta coefficients and control for gender, age, marital status, and education. The first seven models used the 18-item measure of depressive symptoms; the model for pervasive stressors used the dichotomous index of persistent depression.

* $p < .05$; ** $p < .01$.

(betas shown in rows 1, 3, and 5 of Table 3). More important, spouse-, child-, and friend-related stressors generally were associated with subsequent depressive symptoms after we controlled for prior depressive symptoms (Table 3). Older adults who had more spouse or partner and child stressors at baseline experienced more depressive symptoms at 1 year ($\beta s = .09$ and $.04$, respectively; row 2 in Table 3). Individuals who had more friend-related stressors at 1 year experienced more depressive symptoms at 4 years ($\beta = .05$; row 4 in Table 3), and individuals who had more stressors related to spouse or partner, child, extended family, and friends at 4 years experienced more depressive symptoms at 10 years ($\beta s = .06$, $.09$, $.10$, and $.10$, respectively; row 6 in Table 3).

Prior financial and health stressors predicted more depressive symptoms at 4 years and 10 years than expected (rows 4 and 6 in Table 3). In addition, at each wave, more pervasive stressors were associated with a higher likelihood of persistent depression ($\beta s = .17$, $.08$, and $.15$; last column of rows 2, 4, and 6 in Table 3).

Influence of depression on life stressors (social selection).—Life stressors were relatively stable over time (betas shown in rows 1, 3, and 5 in Table 4). More important, prior depressive symptoms were consistently associated with a subsequent increase in life stressors. Older adults who reported more depressive symptoms at baseline experienced increases in stressors related to spouse or partner and children at Year 1 ($\beta s = .07$ and $.08$, respectively; row 2 in Table 4). Individuals who

reported more depressive symptoms at 1 year experienced more stressors related to spouse or partner, children, extended family, and friends at 4 years ($\beta s = .06$, $.06$, $.11$, and $.10$, respectively; row 4 in Table 4). Those who reported more depressive symptoms at 4 years had more spouse-partner, child, and friend stressors at 10 years ($\beta s = .16$, $.06$, and $.09$ respectively; row 6 in Table 4).

The findings were comparable for financial and health-related stressors and for negative life events (Table 4). Older adults who reported more depressive symptoms at baseline experienced greater-than-expected increases in all three of these sets of stressors (row 2 in Table 4). Individuals who had more depressive symptoms at Year 1 experienced more than expected increases in health stressors and negative life events at Year 4 (row 4 in Table 4), and those who had more depressive symptoms at Year 4 had more financial and health-related stressors and negative life events at Year 10 (row 6 in Table 4). In addition, at each wave, persistent depression was associated with a subsequent increase in the likelihood of experiencing pervasive life stressors (last column of rows 2, 4, and 6 in Table 4).

Gender Differences, Approach Coping, and Help-Seeking

To identify potential gender differences in the associations between life stressors and depression, we reran the panel analyses with an additional zero-centered term to reflect the interaction between gender and the life stressor or depression

Table 4. Panel Model Analyses of Relationships Between Depression and Stressors in Different Domains

Predictors	Criterion	Type of Stressor							
		Spouse or Partner	Child	Extended Family	Friends	Finances	Health	Negative Events	Pervasive Stressors
Stressors baseline	Stressors at 1 year	.69**	.64**	.63**	.57**	.75**	.66**	.38**	.55**
Depression baseline	Stressors at 1 year	.07**	.08**	.03	.03	.07**	.12**	.14**	.05**
Stressors Year 1	Stressors at 4 years	.64**	.59**	.52**	.52**	.69**	.63**	.37**	.50**
Depression Year 1	Stressors at 4 years	.06*	.06*	.11**	.10**	.01	.14**	.11**	.13**
Stressors Year 4	Stressors at 10 years	.49**	.54**	.47**	.47**	.62**	.61**	.28**	.47**
Depression Year 4	Stressors at 10 years	.16**	.06*	.03	.09**	.08**	.11**	.17**	.09**

Notes: Numbers vary: $n = 928-1,023$ for spouse or partner, $1,156-1,184$ for children, and $1,231-1,284$ for extended family because of individuals who were not married or were widowed and because of individuals who did not have children or extended family members or had no contact with them; $n = 1,288-1,290$ for all other stressors. All entries are standardized beta coefficients and control for gender, age, marital status, and education. The first seven models used the 18-item measure of depressive symptoms; the model for pervasive stressors used the dichotomous index of persistent depression.

* $p < .05$; ** $p < .01$.

predictor. There were a few scattered interactions; however, only one interaction was replicated in more than one wave of data. Compared with men, women who experienced pervasive stressors at baseline and Year 4 were more likely to have persistent depression at Year 1 and Year 10, respectively.

As we noted earlier, approach coping and help-seeking may account for some of the association between life stressors and depression. However, when we controlled for these two indices, the beta coefficients for all but one of the significant relationships between stressors and depression shown in Tables 3 and 4 remained statistically significant, as did the beta coefficients for all but two of the significant relationships between depression and stressors.

DISCUSSION

In support of social causation, life stressors predicted subsequent increases in depressive symptoms. In support of social selection, depressive symptoms were associated with a subsequent increase in life stressors. These findings reflect a mutual influence process in which life stressors and depression can amplify or mitigate each other (Lynch & George, 2002).

Social Causation: Life Stressors as Precursors of Increases in Depression

In general, life stressors were predictably associated with changes in depressive symptoms. Specifically, interpersonal conflict and criticism, especially from a spouse or partner or children, were associated with a rise in depressive symptoms. Conflict and criticism in relationships with friends also affected depressive symptoms, indicating that older adults' problems with friends may influence their mood as strongly as do problems with family members. This finding may reflect the increasing importance of relationships with friends as older adults retire and experience the death of their spouse and other family members.

These results extend earlier cross-sectional and short-term longitudinal work in this area (Finch et al., 1989; Ingersoll-Dayton et al., 1997; Rautkis et al., 1995). The findings also strengthen the conclusion that negative interactions with specific social network members, such as spouse or partner, children, and friends are associated with depression and distress (Cicirelli, 1989; Clarke et al., 1999; Okun & Keith, 1998). In fact, relationships with adult children may take on increasing importance with age and even protect older adults against premature mortality (Silverstein & Bengston, 1991).

Consistent with earlier studies (Aldwin & Revenson, 1986; Arling, 1987; Chiriboga et al., 2002; Krause, 1997), financial and health-related stressors were associated with a subsequent rise in depressive symptoms. Thus, noninterpersonal stressors may influence depressive symptoms as profoundly as interpersonal stressors do. The depression-generating role of life events was somewhat weaker than that of chronic stressors. Studies of older adults tend to emphasize the importance of major, aging-related life events; however, ongoing chronic stressors may be equally as or more important in determining depression in later life (Kraaij et al., 2002).

Consistent with the findings of McGonagle and Kessler (1990), older adults who reported high levels of life stressors in multiple domains were at increased risk of developing

persistent depression. Although we did not measure clinical depression, our index of persistent depression was based on items that closely reflect DSM-IV diagnostic criteria for depression and identify nonremitted depression in clinical samples (Cronkite et al., 1998; Moos et al. 1998a). Our findings support the idea that life stressors can have long-term effects on older adults' depressed symptoms and persistent depression.

Social Selection: Depression as a Precursor of Life Stressors

As expected, chronic stressors were relatively stable over a time frame as long as 6 years; negative life events were less stable. In addition, individuals who experienced more pervasive stressors at one assessment tended to experience them at other assessments. This relative stability of life stressors is consistent with the findings of Krause and Rook (2003), who identified consistency in older adults' experience of interpersonal conflict both over time and with different social network members (see also Schuster et al., 1990). These findings suggest that some older adults manage their relationships with social network members and other types of problem situations in a way that maintains highly stressful social contexts.

We obtained evidence for the stress-generation role of depression in both interpersonal and noninterpersonal domains. With respect to interpersonal stressors, the findings held at all three follow-ups for the association between depressive symptoms and more subsequent problems with spouse or partner and children, and at the 4-year and 10-year follow-ups for the association between depressive symptoms and more subsequent problems with friends. Together with prior studies (Daley et al., 1997; Russell & Cutrona, 1991), our findings support the idea that depressed individuals may trigger a high level of interpersonal stressors. The findings imply that older adults' depressive symptoms may impair social relationships that may play an important role in adjustment to relocation, health outcomes, and mortality risk.

Depressive symptoms also were associated with increases in financial and health-related stressors and with a rise in negative life events. In addition, persistent depression foreshadowed more pervasive life stressors. These findings extend prior studies in this area, which have shown that depressed individuals may elicit interpersonal problems and provoke criticism and conflict with family members (Chun et al., 2004; Coiro & Gottesman, 1996; Hammen & Brennan, 2002; Krause & Rook, 2003), and that depression and poor psychological health are associated with a subsequent rise in both health and nonhealth stressors (Aldwin & Revenson, 1986; Fiske et al., 2003; Meeks, Murrell, & Mehl, 2000).

Contrary to our expectations, neither approach coping nor help-seeking explained the association between life stressors and depression. These results imply that the influence of stressors and depressive symptoms on each other is independent of individuals' approach coping and help-seeking. Nevertheless, approach coping was associated with fewer life stressors and depressive symptoms and may moderate the influence of life stressors on depression. In addition, our measure of help was limited to the number of sources of formal help, which may reflect the severity of problems and the lack of effectiveness of the help-seeking process.

Although the magnitude of the individual cross-lagged effects was modest, the findings were generally consistent across life domains and the three time intervals. In addition, the magnitude and generality of both social selection and social causation effects were roughly comparable and were similar for women and men. An earlier study of depressed patients' family and friend resources found that having more social resources contributed to a decline in depression, whereas depression did not contribute to a decline in social resources (Moos, Cronkite, & Moos, 1998b). It may be that depressive symptoms do not entirely erode an individual's social support even though they continue to elicit a more problematic social context and generate more stressors. In any case, once they are set in motion, these processes may endure for several years, perhaps because of depressed individuals' relatively stable personality and interaction patterns (Bagby et al., 2001; Chun et al., 2004; Nelson, Hammen, Daley, Burge, & Davila, 2001).

Limitations and Future Directions

Our findings are of considerable interest, but some limitations should be noted. Because we did not assess life stressors or depression more frequently, we do not know how much short-term variation there may have been in these indices or their interrelationships. Depression often is episodic, and depressive symptoms and life stressors may influence each other over shorter intervals than those we assessed here.

Because our data are based on self-reports, the relationships we identified could reflect a systematic distortion in older adults' perceptions of themselves and their life stressors. However, there were only moderate correlations among the seven indices of life stressors, implying that older individuals do not hold strong generalized biases about their social context. In addition, we recruited a community sample composed primarily of Caucasian and relatively well-educated individuals; the findings need to be replicated on more diverse groups of older adults. In this vein, further research is needed to assess the extent to which each domain of stressors has independent effects on depressive symptoms, and whether pervasive stressors affect persistent depression, in more representative samples of older individuals.

With respect to future research, it is important to obtain interview-based and observational measures of interaction patterns between depressed individuals and their family members and friends. Although self-report measures of life stressors seem to predict the course of depression as well as interview-based measures do (Hooley & Teasdale, 1989), they may not assess depressed individuals' full impact on their social network. In addition, information obtained directly from family members and friends could clarify social network members' own styles of relating and help to explain the tendency for depression to spread among family members (Adrian & Hammen, 1993; Benazon & Coyne, 2000).

The apparent enduring nature of stress generation may not be due to depression per se, but rather to some more stable characteristic of depressed individuals. In this vein, such personal traits as neuroticism and sociotropy, which may remain stable despite the alleviation of depression (Bagby et al., 2001; Nelson et al., 2001), may mediate the stress-generation processes.

From a different perspective, some depressed individuals show relatively little deficit in interpersonal functioning and are able to maintain their social resources (Moos et al., 1998a). In this vein, the process linking stressors and depression for older adults is not unidirectional, and it does not spring primarily from stressors that are unique to late life. Some older adults are caught up in a negative stressor–depression spiral; however, many individuals are able to establish a positive reciprocity between the social context and their mood.

The reciprocal process we have identified and its apparent persistence independent of approach coping and help-seeking highlight the importance of identifying specific personal resources and characteristics of life context that may disrupt the mutual influence of late-life stressors and depression. This information can be used to guide effective prevention and intervention efforts aimed at reducing the risk that late-life stressors and depression will continue to amplify each other.

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