

# Links in the Chain of Adversity Following Job Loss: How Financial Strain and Loss of Personal Control Lead to Depression, Impaired Functioning, and Poor Health

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The authors tested hypotheses concerning risk mechanisms that follow involuntary job loss resulting in depression and the link between depression and poor health and functioning. A 2-year longitudinal study of 756 people experiencing job loss indicates that the critical mediating mechanisms in the chain of adversity from job loss to poor health and functioning are financial strain (FS) and a reduction in personal control (PC). FS mediates the relationship of job loss with depression and PC, whereas reduced PC mediates the adverse impacts of FS and depression on poor functioning and self-reports of poor health. Results suggest that loss of PC is a pathway through which economic adversity is transformed into chronic problems of poor health and impaired role and emotional functioning.

Job loss is a discrete life event with multiple adverse health and mental health impacts including depression, health complaints, and impaired psychosocial functioning (Dew, Bromet, & Penkower, 1992; Dew, Bromet, & Schulberg, 1987; Dooley & Catalano, 1988; Hamilton, Broman, Hoffman, & Brenner, 1990; Kessler, House, & Turner, 1987; Price, 1992; Vinokur, 1997). However, the mechanisms by which job loss leads to these long-term outcomes remain poorly understood. The present study drew on models of the stress process to test hypotheses regarding the role of risk mechanisms that link job loss to depression and then subsequently link depression to two additional adverse outcomes: declines in personal functioning and poor health (Kahn, 1981; Pearlin, Lieberman, Menaghan, & Mullan, 1981). On the basis of a 2-year longitudinal sample of individuals

experiencing involuntary job loss, we tested hypotheses linking employment status, financial strain, depression, personal control, role and emotional functioning, and health.

## Models of the Stress Process That Link Stressors to Adverse Health and Mental Health Outcomes

Two related and complementary theoretical traditions link stressors to negative physical and psychological health. One well-known model describes stress as a process by which social and physical stressors result in poor health outcomes (Kahn, 1981). The model suggests that social and physical stressors result in short-term psychological and social responses including heightened arousal, distress, withdrawal, and lower motivation that, in some cases, lead to chronic health problems. Kahn (1981) proposed that the strength of the causal links among initial stressors, short-term responses, and long-term health and mental health consequences can be influenced by a wide range of social, biological, chemical, and environmental factors. The model has heuristic value in identifying pathways by which acute responses to stressors may become chronic and also in identifying potential points where it may be possible to influence or prevent the development of disorder.

In a parallel formulation, Pearlin (1989) and his colleagues (Pearlin et al., 1981; Pearlin & Schooler, 1978) proposed that stress exposure, either due to discrete life events such as job loss or due to enduring life stressors such as chronic poverty, increases the risk of adverse outcomes. In particular, Pearlin ar-

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gued that the impact of stress exposure on health outcomes is influenced by mediational mechanisms such as the sense of personal control and mastery and by supportive personal relationships (Pearlin, 1989).

Viewed from these complementary theoretical perspectives, job loss represents a discrete stressful life event with long-term potential impacts on psychological disorder, health, and personal functioning (Price, 1992; Price, Friedland, Choi, & Caplan, 1998; Vinokur, 1997). Job loss may also trigger a cascade of other secondary stressors and changes in coping resources with subsequent impacts on mental health and functioning (Dooley & Catalano, 1984; Price, Friedland, & Vinokur, 1998). We review the evidence for relationships between job loss and poor health and mental health, as well as the emerging evidence implicating financial strain as a dominant mediator of the relationship between job loss and depression. We then examine the evidence for relationships between depression and two additional adverse outcomes—poor health and poor role and emotional functioning—and hypothesize that depression-induced changes in personal control are responsible for symptoms of poor health and impaired functioning.

### Job Loss, Financial Strain, and Depression

There is a large research literature documenting the impact of job loss and unemployment on health and mental health (Dooley & Catalano, 1988; Kasl, Rodriguez, & Lasch, 1998; Price, Friedland, Choi, & Caplan, 1998; Vinokur, 1997). Among the adverse outcomes associated with job loss and unemployment, depression emerges as a prominent mental health outcome (Dew et al., 1992; Dooley & Catalano, 1988; Kasl et al., 1998). In addition to elevated symptoms of depression, the increased likelihood of major depressive episodes has been demonstrated for the unemployed in large-scale psychiatric epidemiological studies (Catalano, 1991; Dooley, Catalano, & Wilson, 1994).

A variety of hypotheses have been offered to explain why job loss may lead to poor mental health. For example, Jahoda (1979) argued that unemployment produces profound changes in the life of working adults, including loss of structured time experience, valued relationships, status and identity, and loss of meaningful life goals and purpose, all of which have negative influences on psychological well-being. Similarly, Warr (1987) argued that work provides a variety of features, including the opportunity for control, use of skills, interpersonal contact, and provision of economic resources, that are respon-

sible for psychological well-being and are adversely influenced by job loss and unemployment.

However, recent evidence from several converging sources suggests that financial strain, as well as its consequences in the form of secondary stressors such as insufficient food, shelter, heat, and inability to pay bills and family distress, is the critical mediator in the relationship between unemployment and depression (Dooley & Catalano, 1984; Frese & Mohr, 1987; Kessler et al., 1987; Vinokur & Schul, 1997; Whelan, 1992). Kessler et al. (1987) evaluated several competing hypotheses concerning the mediators between unemployment and poor mental health in three community samples of unemployed, steadily employed, and previously unemployed workers. Kessler et al. found that, among the hypothesized mediators between unemployment status and poor mental health, which included marital conflict, loss of work relationships, and financial strain, it was financial strain that accounted for 90% of the explainable variance in mental health problems. An additional line of evidence is provided by Vinokur and Schul (1997), who demonstrated that, in a sample of unemployed workers, financial strain mediated the relationship between unemployment status and depression, and that subsequent reemployment reduced the influence of financial strain on depression. Accordingly, we hypothesized that the relationship between changes in employment status and depression is mediated by financial hardship and strain.

### Depression, Functioning, Health, and Personal Control

There is abundant evidence that elevated levels of depression are associated with impaired role and emotional functioning (Murray & Lopez, 1996) and may reduce the likelihood of reemployment (Hamilton, Hoffman, Broman, & Rauma, 1993). Depression has adverse effects on a variety of important spheres of functioning, including familial and parental roles and the work role (Beardslee et al., 1988; Beardslee et al., 1996; Hammen, 1990; Howe, Caplan, Foster, Lockshin, & McGrath, 1995). Furthermore, Vinokur, Price, and Schul (1995) showed that interventions that promote reemployment in unemployed samples also improved role and emotional functioning as measured by both self-reports and reports by significant others. Thus, both in general population samples of people with depression and in populations experiencing unemployment, there appears to be a relationship between depression and personal functioning. One critical implication of this hypothesized

relationship is that increases in depression may also impair the role and emotional capacities necessary to engage in job search and to successfully obtain re-employment, thus producing a downward spiral of depression and impaired functioning.

Another body of evidence suggests a number of relationships between depression and health problems. Depression has been identified as a comorbid outcome with substance abuse (Kessler & Price, 1993), anxiety disorders (Mineka, Watson, & Clark, 1998), somatoform disorders, and hypochondriasis (Rief, Hiller, & Goebel, 1995). In addition, compared with employed samples, unemployed populations exhibit both increased levels of depressive symptoms and increased levels of somatic complaints (Kasl et al., 1998; Kessler et al., 1987). In short, there is evidence for relationships between depression and role and emotional functioning on the one hand and depression and health problems on the other.

### Personal Control as a Mediating Link

Although the links among elevated levels of depression, poor functioning, and health are relatively well established, the mechanisms underlying these associations are much less well understood. However, the psychological sense of personal control over life outcomes has been a major focus of interest in understanding the stress process and in explicating the possible links among stressors, psychological well-being, health, and functioning. Various characters as locus of control (Lefcourt, 1982; Rotter, 1966), helplessness (Peterson, Maier, & Seligman, 1993; Seligman, 1975), efficacy (Bandura, 1997), personal control (Gurin, Gurin, & Morrison, 1978), or mastery (Pearlin & Schooler, 1978), the construct of personal control has been hypothesized both as an antecedent (Turner, Lloyd, & Rozwell, 1999) and a consequence of depression (Barnett & Gotlieb, 1988; Depue & Monroe, 1986). Personal control emerges as a likely mechanism linking elevated levels of depression to role and emotional functioning on the one hand and health problems on the other. However, personal control may be either an antecedent or a consequence of depression in the chain of adversity leading from job loss to poor health and functioning. These possibilities represent competing hypotheses to be tested in the present study.

Discerning the causal texture of chains of stressors and psychological responses of the sort we have hypothesized creates several distinct sampling, measurement, and analytic requirements. Longitudinal samples of individuals experiencing a single discrete life event such as job loss confer a number of advan-

tages for testing the hypotheses we have advanced. First, a discrete life event such as job loss allows more precise specification of likely mediators and outcomes, because it is plausible that different negative life events may trigger distinctively different chains of adversity, each requiring separate specification. Second, our hypotheses specifying the causal direction of influence of both direct effects and mediating processes require longitudinal samples to estimate the direction of causal influence and to adequately model mediating mechanisms. Third, testing hypotheses regarding changes in health and functioning triggered by life events such as job loss require a relatively long-term follow-up period because the course of events is likely to unfold over an extended period of time. Below we report results of analyses of a longitudinal sample of unemployed people over a 2-year period that allow tests of our hypotheses concerning links in the chain of adversity (Avison & Turner, 1988) from unemployment to poor health and disability.

## Method

### Sample

The sample of respondents in the present investigation included 756 recently unemployed job seekers. At the time of recruitment, they had been unemployed for less than 13 weeks, were still seeking a job, and were not expecting to retire within the next 2 years or to be recalled to their former jobs. This sample of respondents were members of the control group of a randomized controlled trial that also included a separate experimental group of participants exposed to a workshop for job-search skill enhancement (Vinokur et al., 1995). Our analyses were conducted on data from control group respondents who were not part of the experimental condition in the original study and who were representative of the job seekers recruited from unemployment offices using the criteria listed above.

The mean age of the 756 participants was 36 years ( $SD = 10.2$ ) with 41% (313) men, 75% (565) Whites, 21% (155) African Americans, and 3% (26) belonging to other ethnic groups. Fifty two percent (395) of this sample were married or lived with a romantic partner as a couple. In terms of education, 9% (70) had not completed high school, 32% (242) had completed high school, 36% (272) had some college education, 11% (83) had completed 4 years of college, and 11% (86) had completed more than 4 years of college. Finally, at 6 months (Time 2 [T2]) and 24 months (Time 3 [T3]) after the initial data collection (Time 1 [T1]), 60% and 71%, respectively, were reemployed, working 20 hr or more per week.

### Data Collection and Response Rate

Respondents were contacted by trained interviewers at four state unemployment offices and filled out a short screening questionnaire. Those who were eligible to partic-

ipate in the study were subsequently mailed the initial baseline questionnaire (T1) and two follow-up questionnaires, 6 months (T2) and 24 months (T3) later (i.e., after T1). Respondents were provided with \$5 incentive for completing and mailing back each questionnaire. Two telephone calls were made to respondents who failed to mail back the questionnaire in a timely manner to encourage them to do so. Of the 1,056 contacted, 72% (756) met eligibility criteria and enrolled in the study by mailing back a completed T1 questionnaire. The response rates at T2 and T3 were 88% and 81%, respectively ( $N_s = 667$  and  $616$ ).

## Measures

All of the measures in this study were based on instruments used in earlier investigations on unemployment, stress, and mental health (Abbey, Abramis, & Caplan, 1985; Caplan, Vinokur, Price, & van Ryn, 1989; Vinokur et al., 1995). Except for the demographics, all the measures are based on multiple items with Cronbach alpha reliability coefficients exceeding .78 (with one exception of .68).

*Demographics* were assessed using standard survey questions for reporting age, gender, education, marital status, and ethnic/racial identification. *Reemployment* was assessed using the respondents' report of the number of hours they worked per week and their pay per hour. Respondents who were not working were coded "0" on both indicators.

We measured *financial strain* using a three-item index ( $\alpha = .87$ ; Vinokur & Caplan, 1987). Using 5-point scales, participants rated their current and anticipated financial strain such as difficulties living on their household income and reducing their standards of living. This scale was found to be highly correlated ( $r = .76$ ) with commonly used financial strain scales that focus on financially stressful events such as borrowing money to pay bills.

*Depression* was measured with a scale of 11 items ( $\alpha = .90$ ) adapted from the Hopkins Symptoms Checklist (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). This 11-item measure required respondents to indicate on 5-point scales how much (1 = *not at all* to 5 = *extremely*) they had been bothered or distressed in the last 2 weeks by various depressive symptoms, such as feeling blue, having thoughts of ending one's life, and crying easily.

The *personal control* construct was based on the scores of two indices, *locus of control* and *self-esteem*. The locus-of-control scale (Gurin, et al., 1978) was based on a 10-item index ( $\alpha = .68$ ) from Rotter's Locus of Control Scale (1966). The self-esteem index included 8 items ( $\alpha = .83$ ) from the Rosenberg Self-Esteem Scale.

*Poor health* was assessed with four questions ( $\alpha = .78$ ) that were based on similar items from the Medical Outcome Study (Stewart & Ware, 1992). Participants were asked to answer the following questions: "In general, would you say your health is excellent, good, fair, or poor?" "To what extent do you have any particular health problems?" (1 = *never/no extent* to 5 = *a very great extent*), "Thinking about the past 2 months, how much of the time has your health kept you from doing the kind of things other people your age do?" (1 = *all of the time* to 5 = *none of the time*), and "To what extent do you feel healthy enough to carry out things that you would like to do?" (1 = *never/no extent* to 5 = *a very great extent*).

*Role and emotional functioning* was measured with a 15-item index ( $\alpha = .94$ ) developed by Caplan et al. (1984).

The items required the respondents to indicate how well they have been doing (in the last 2 weeks) with respect to various role and emotional tasks such as handling responsibilities and daily demands, emotional self-regulation, and making the appropriate decisions on a 5-point scale (1 = *very poorly*, 5 = *exceptionally well*).

## Analytic Strategy

The role of reemployment and financial strain and their cascading influence on depression, personal control, poor health, and functioning are described as a structural model. The model was tested by a confirmatory structural equation modeling (SEM) analysis using the EQS program (Bentler, 1995). The SEM analysis provides simultaneous estimation of the hypothesized regressions using the covariance matrix generated on the basis of the observed covariance matrix of the variables measured. The estimated covariance matrix is also used for evaluating the goodness of fit between the data and the model. In reporting the results of SEM, we followed the guidelines suggested by Raykov, Tomer, and Nesselroade (1991) and provide three goodness-of-fit indices: normed fit index (NFI), nonnormed fit index (NNFI), comparative fit index (CFI), and one misfit measure: root-mean-square error of approximation (RMSEA). Fit indices that exceed .90, and a RMSEA that is .06 or below, are indicative of an acceptable model fit (Hu & Bentler, 1999; for a detailed discussion of fit indices, see Bentler, 1990; Bollen, 1990).

All of our analyses were performed separately on listwise and pairwise covariance matrices. The results were virtually the same. We therefore present the results from the pairwise matrix, which generated slightly better goodness-of-fit indices and were based on a larger portion of the present sample. Overall, missing data rates amounted to 12% and, therefore, 88% ( $N = 666$ ) of the present sample size ( $N = 756$ ) was used as the actual  $N$  in the EQS procedure.

## Results

### Measurement Model

Our model is based on measures collected at T1, T2, and T3 that served as indicators of the latent variables as specified below. The first latent variable, reemployment, was indicated by the standardized scores of number of hours working per week and pay per hour. This latent factor is not included at T1 because all of the respondents were recently unemployed at that time. Financial strain was indicated by the 2-item measure and depression by three subscales that were created from the 11-item measure of depression described earlier. Scale means of the self-esteem and locus of control measures served as the two indicators for the personal control latent construct. Finally, poor health and role and emotional functioning were indicated by subscales formed from the measures described earlier. In each time period (T1, T2, and T3), we used the same set of indicators to identify the corresponding latent variables in the

Table 1  
*Interscale Correlations Among Reemployment, Financial Strain, Depression, Personal Control, Functioning, and Health Measured at Three Time Periods*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. T1 FS	—																
2. T1 DE	.34	—															
3. T1 PC	-.29	-.45	—														
4. T1 PH	.22	.31	-.39	—													
5. T1 FU	-.25	-.47	.57	-.34	—												
6. T2 RE	-.06	-.13	.11	-.14	.07	—											
7. T2 FS	.52	.25	-.23	.17	-.22	-.35	—										
8. T2 DE	.28	.47	-.43	.35	-.44	-.25	.44	—									
9. T2 PC	-.18	-.31	.62	-.37	.36	.21	-.34	-.59	—								
10. T2 PH	.20	.22	-.31	.63	-.30	-.10	.15	.43	-.41	—							
11. T2 FU	-.15	-.36	.40	-.33	.60	.17	-.29	-.65	.53	-.43	—						
12. T3 RE	-.03	-.08	.10	-.21	.08	.40	-.13	-.17	.18	-.20	.18	—					
13. T3 FS	.44	.24	-.26	.23	-.20	-.10	.48	.32	-.30	.22	-.23	-.34	—				
14. T3 DE	.20	.39	-.42	.33	-.42	-.11	.29	.59	-.44	.36	-.44	-.19	.45	—			
15. T3 PC	-.15	-.27	.61	-.38	.41	.12	-.20	-.42	.60	-.39	.43	-.39	-.60	-.60	—		
16. T3 PH	.18	.25	-.29	.61	-.33	-.10	.13	.35	-.36	.64	-.36	-.18	.26	.44	-.42	—	
17. T3 FU	-.11	-.28	.38	-.33	.56	.10	-.15	-.41	.40	-.36	.58	.16	-.36	-.64	.58	-.46	—

Note. T1 = Time 1; T2 = Time 2; T3 = Time 3; FS = financial strain; DE = depression; PC = personal control; PH = poor health; FU = role and emotional functioning; RE = reemployment.  $r > .08, p < .05$  (two-tailed).  $r > .11, p < .01$  (two-tailed).

model. Intercorrelations among the latent variables are computed and presented in Table 1.

To estimate the measurement model, we also included (a) covariances between the measurement errors of the respective indicators across the three time periods, (b) constraints setting the factor loadings as being equal across the three time periods, and (c) covariances between each latent variable and every other latent variable in the model. The estimated measurement model showed a good fit to the data:  $\chi^2(700, N = 666^1) = 1,294, p < .001$ ;<sup>2</sup> NFI = .94, NNFI = .96, CFI = .97, and RMSEA = .036. It was therefore used in testing the structural models described below.

*Structural Model: Processes Linking Unemployment to Financial Strain, Depression, Personal Control, Poor Health, and Functioning*

Our hypotheses propose a chain of influence that begins with the effects of unemployment on financial strain. In turn, financial strain is hypothesized to increase depression, which erodes the sense of personal control and reduces the likelihood of subsequent reemployment. The chain of adversity continues as the decreasing personal control is hypothesized to contribute to both poor health and lower role and emotional functioning.

Figure 1 displays the results of the analyses to test the final model and estimates of its parameters. The values along the paths represent standardized path coefficients (betas). The coefficients of the longitudinal paths, those from one variable to another in the following follow-up period, and those of the concurrent paths from one variable to another within the same follow-up period, are corrected as suggested by Kessler and Greenberg (1981).<sup>3</sup>

The stability coefficients of our latent variables were moderate to high (from .40 to .92) and, with the exception of the stability coefficients for personal control, were approximately the same magnitude between T1 and T2 as between T2 and T3. Most important, the cascading effects of reemployment through financial strain, depression, personal control down to poor health and functioning are all statistically significant in the hypothesized direction for both the concurrent paths of influence and for the longitudinal paths. Longitudinal paths represent effects of change in the independent variable on change in the dependent variables. The model indicates both financial strain and depression directly influenced personal control, which in turn influenced reports of

poor health and role and emotional functioning. In addition, as found by Hamilton et al. (1993), depression appears as a barrier to reemployment. Finally, the hypothesis regarding the adverse effect of poor health on functioning failed to receive consistent support. Only the concurrent adverse influence of poor health on functioning at T3 was statistically significant. The results regarding the effects of reemployment on financial strain and financial strain on depression are consistent with our earlier findings (Vinokur & Schul, 1997).

The possibility exists that other models may provide an equally good or better fit (MacCallum, Wegener, Uchino, & Fabrigar, 1993) to the data. Accordingly, we identified and tested two sets of alternative structural models based on a series of plausible alternative hypotheses. The first set of alternative models were created by adding a series of paths that represent the reverse causal direction as compared with the proposed direction (e.g., depression affects financial strain). The second set of alternative models included the longitudinal pathway from prior depression to subsequent reemployment and included additional direct paths between variables previously only indirectly linked by a mediator.

<sup>1</sup> After adjusting for missing data, the size of the sample used for testing our model was 666.

<sup>2</sup> Because even minute differences in a large sample produce a statistically significant chi-square, other measures such as the NFI, the NNFI, and CFI are used as indicators of goodness of fit, and, therefore, the statistical significance of the chi-square is ignored in favor of the other fit measures. Hayduk (1987) suggested that the chi-square is instructive primarily for samples ranging from about 50 to 500 cases.

<sup>3</sup> The longitudinal path coefficients in longitudinal models that include the effects of the independent variables both longitudinally and concurrently on change in the dependent variable usually display counterintuitive signs that impede clear interpretation (e.g., Eaton, 1978; Turner & Avison, 1992; Vinokur, Price, & Caplan, 1996). Kessler and Greenberg (1981) provided a mathematical treatment and substantive interpretation for these coefficients and demonstrated that it is possible to calculate the separate net effect of each source of influence (the change and the concurrent effect). Following Kessler and Greenberg's mathematical treatment, the signs of the figures of the longitudinal paths were reversed to provide the estimated net effect of change in the independent variable on the dependent variable. Then, the corrected (reversed) figures of the longitudinal paths were subtracted from the figures of the concurrent paths in the follow-ups to provide the net effects of the concurrent paths. This calculation assumes that the baseline independent variable has no direct effect on the dependent variable at the subsequent period. This assumption seems warranted when the follow-up measures are separated by long periods, in our case by 6 and 18 months (Kessler & Greenberg, 1981, pp. 77–80).

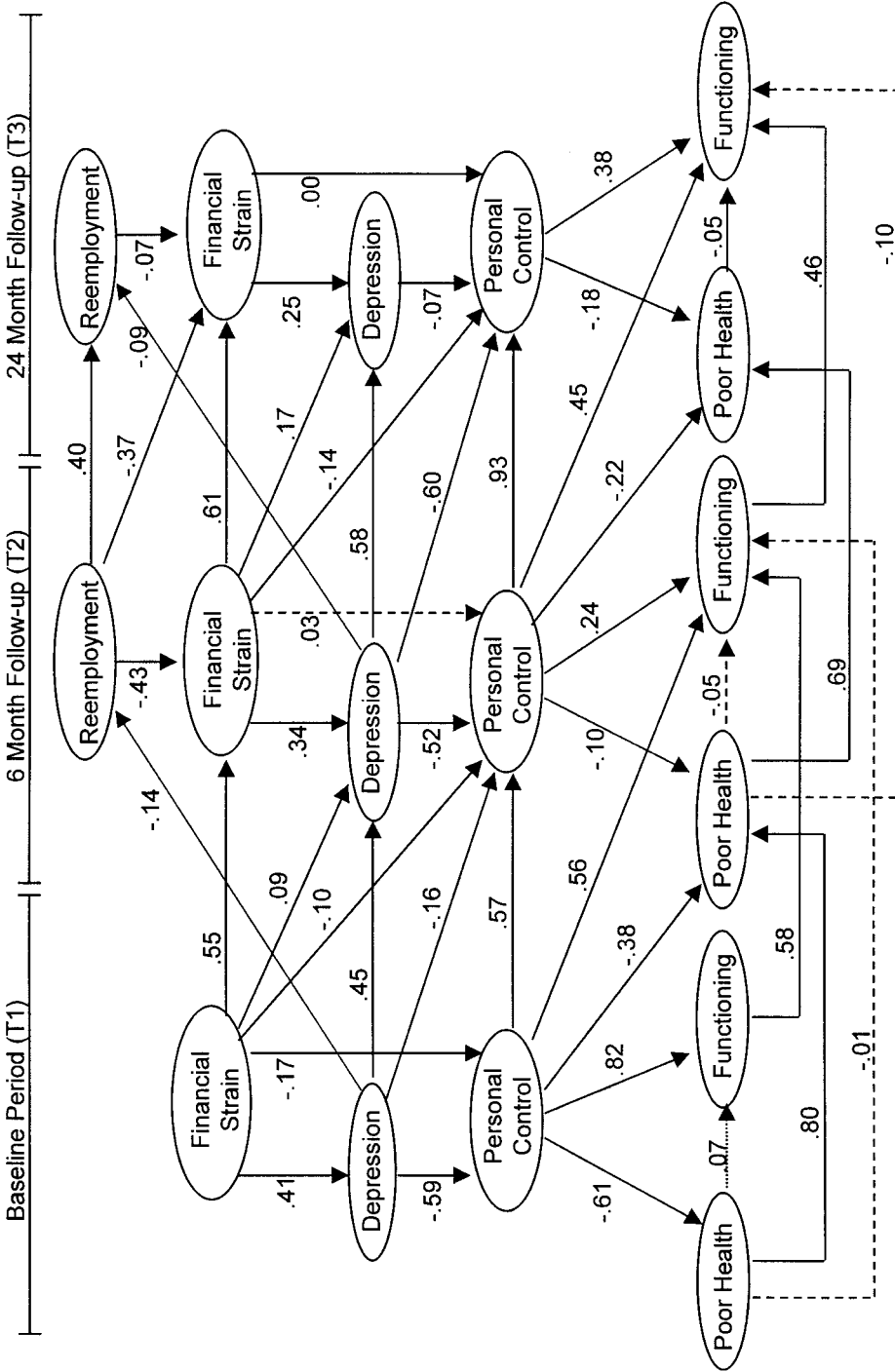


Figure 1. Structural equation model of direct and mediational effects of reemployment and financial strain on depression, personal control, poor health, and functioning:  $\chi^2(790, N = 666) = 1,582, p < .001$ ; normed fit index = .93, nonnormed fit index = .96, comparative fit index = .96, and root-mean-square error of approximation = .039. Large ellipses represent latent constructs. Solid lines represent statistically significant paths at .05 or above. The values of all diagonal and concurrent paths at follow-ups were adjusted to represent the net effect of change and of the concurrent influence on changes in the dependent variables. T1 = Time 1; T2 = Time 2; T3 = Time 3.

The final model shown in Figure 1 represents the best-fitting model among all those tested.

### *Comparing Unemployed Male and Female Participants*

Nearly 59% of our participants were women. In a national epidemiological survey, Kessler et al. (1994) reported that women experience more symptoms of depression than did men. This suggests the possibility that the results in our model based on male and female subsamples may differ. To examine this possibility, we tested our final model using the male ( $n = 276$ ) and the female ( $n = 390$ ) subsamples separately. In this analysis, the factor loadings and all structural coefficients in the final model were constrained to be equal between male and female subsamples. This model with equality constraints between two separate samples showed an acceptable fit to the data:  $\chi^2(1635, N = 666) = 2,835, p < .001$ ; NFI = .88, NNFI = .94, CFI = .94, and RMSEA = .033. The results indicate that the same pattern of results shown in Figure 1 was consistent with the data for both male and female subsamples. Of the 46 structural coefficients constrained to be equal in the two samples, only three were found to be significantly different between male and female subsamples, and the difference in these three cases ranged only from .01 to .06. It is clear that the difference between male and female subsamples in these three coefficients is quite small. Furthermore, male and female subsamples shared the same patterns in terms of direction and the strength of the paths in our final model. On the basis of these results, we conclude that the effect of gender on our findings is not substantial and that our final model adequately represents the paths examined for both male and female participants.

Overall, Figure 1 suggests that involuntary job loss and unemployment produce a set of negative outcomes, including increases in financial strain, increases in depression, and losses in feelings of personal control. It is interesting to note that personal control seems to operate as a converging point of direct negative impacts from unemployment and transmits these adverse effects to other life outcomes such as increasing reports of poor health and losses in role and emotional functioning. The undesirable effects of job loss and unemployment appear to be channeled through the experience of eroded personal control that in turn influence physical health complaints and functioning in everyday life.

## Discussion

The results presented in our model (see Figure 1) offer support for the hypothesis that financial strain mediates the relationship of job loss and unemployment to depression and personal control. In addition, the results support the hypothesis that the ensuing depression triggers losses of personal control, which in turn erode role and emotional functioning and physical health. This chain of adversity appears stable over a 2-year period, suggesting that even reversible life events such as job loss can have lasting effects on those who experience them.

### *Financial Strain as a Mediating Process*

In our results, financial strain at T2 explains a significant portion of the relationship between employment status at T2 and depression and personal control at T3. This finding supports a growing body of evidence that a cascade of secondary stressors associated with financial strain may be important in understanding the frequently observed increases in distress and depression associated with job loss and unemployment. Although these data point to the impact of job loss and financial strain on individual unemployed people, there is also substantial evidence that financial strain reverberates through families with negative impacts on support and undermining in couple relationships (Vinokur, Price, & Caplan, 1996), which in turn influence mental health.

Financial strain was measured as a composite variable in this study. However, financial strain needs to be disaggregated in several ways to allow greater specificity in models designed to clarify its influence on health, mental health, and functioning. First, it is likely that acute onsets of financial strain such as those triggered by job loss create different patterns of stressors and adaptational demands than chronic long-term effects of financial strain experienced by some populations in poverty. For example, Elder and Caspi (1988) observed that the impacts of sudden economic shocks may be quite different in their impact on families than the influence of chronic poverty. Second, financial strain is a multidimensional construct, reflecting a spectrum of deprivations ranging from inadequate resources to meet basic needs such as food, shelter, and heat to loss of less essential material resources. As might be expected, in the case of unemployment, Whelan (1992) has shown that the more basic deprivations have more substantial impacts on mental health.



### *Personal Control as a Pivotal Mediator in Chains of Adversity*

Our results also indicate that reduction in personal control is an important consequence of financial strain and elevated symptoms of depression. In the present sample of unemployed people, significant and strong longitudinal pathways from financial strain and depression to personal control were observed. Our results also suggest that the loss of personal control can have adverse impacts on health and role and emotional functioning. At the same time, the present results indicate that increases in depression have direct effects on the likelihood of reemployment, suggesting that while job loss and financial strain may influence depression, depression in turn may reduce access to opportunities to reduce financial strain through reemployment. Thus, chains of adversity are clearly complex and may contain spirals of disadvantage that reduce the life chances of vulnerable individuals still further.

Our findings are relevant to the debate concerning the antecedents and consequences of depression (Barnett & Gotlib, 1988) and raise the question of whether changes in personal control should be thought of as a cause or a consequence of depression. Although our results suggest that the best-fitting model indicates that changes in depression trigger changes in personal control, these data do not rule out the possibility that, in other samples, loss of personal control serve as an antecedent risk factor for the onset of depression. Turner et al. (1999) offered a number of arguments for the hypothesis that personal control, mastery, and related constructs should be thought of as antecedents of depression. Turner et al. reported cross-sectional data suggesting that low levels of mastery may be a risk factor for depressive symptoms and disorder for a variety of stressful life events. It is possible that personal control and other related constructs play differing roles for different life events or at different stages in the stress process, sometimes serving as an antecedent risk mechanism for the development of depressive symptoms and in other cases appearing as a consequence of elevated symptoms. Indeed, in many circumstances, sense of personal control may have a reciprocal relationship with depression, serving both as cause and consequence.

One instance in which the causal roles of depression and personal control may change over time is the case of chronic recurring depression. Depression is a chronic recurring disorder. It is plausible that loss of personal control may be a critical antecedent of earlier episodes of depression, but that with recurring depressive episodes, loss of personal control may

also be a consequence of depression and serve as a mechanism for the development of chronic illness and disability.

The present study has a number of limitations that should qualify our results. For example, the role of job loss as a triggering life event would be further clarified if we were able to obtain data from our sample of unemployed people before their job loss. In addition, because we have data only on depressive symptoms in the present sample, we cannot make strong claims about the likely impact of job loss and financial strain on major depressive episodes as defined by the *Diagnostic and Statistical Manual of Mental Disorders*. However, results reported by Turner et al. (1999) measuring the relationship among life events, mastery, and depression in which both measures of depressive symptoms and measures of depressive disorder were available showed parallel effects for both symptoms and disorder. The measurements of role and emotional functioning are also self-reports in the present study; however, previous research by Vinokur et al. (1995) clearly shows that self-reports of role and emotional functioning are strongly correlated with independent observations collected from spouses and significant others.

The structure of the chain of adversity we have reported here as well as the strength of causal pathways may vary depending on the specific nature and circumstances of the population under study. For example, the distribution of stressors (Turner, Wheaton, & Lloyd, 1995) and personal resources (Turner et al., 1999) clearly varies by gender, age, and particularly socioeconomic status. Larger longitudinal samples tracing a variety of chains of adversity following different negative life events are needed to more clearly understand these processes and to mount effective interventions to interrupt these pathological sequences.

The problem of health inequalities is now receiving greater concern, and considerable attention is now being directed to explicating the links between socioeconomic status and health and mental health (Adler et al., 1994; Marmot et al., 1991). Substantial and convincing evidence now exists demonstrating the relationship between lower economic status and poor health and mental health outcomes. Indeed, while the general relationship between economic well-being and health is well known, the risk mechanisms underlying the relationship remain unknown and largely unexplored. We suggest that exploring chains of adversity of the kind demonstrated here is the next critical step in unpacking the complex and multiple relationships among socioeconomic status, financial strain, health, and mental health.

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