

Two Years After a Job Loss: Long-Term Impact of the JOBS Program on Reemployment and Mental Health

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Analyses of data from a randomized field experiment with 1,801 participants (A. D. Vinokur, R. H. Price, & Y. Schul, 1995) examined the long-term effects of a job-search workshop (JOBS) and the independent effects of demographic and psychological factors on reemployment and mental health outcomes. Two years after the JOBS workshop, the experimental group had significantly higher levels of reemployment and monthly income, lower levels of depressive symptoms, lower likelihood of experiencing a major depressive episode in the last year, and better role and emotional functioning compared with the control group. Baseline job-search motivation and sense of mastery had both direct and interactive effects (with experimental condition) on reemployment and mental health outcomes, respectively. The interactive effects demonstrated larger benefits for those who had initial low levels of job-search motivation and mastery.

The unemployment rate that peaked in the early 1980s, and then again reached a peak of 7.8% in mid 1992 (U.S. Bureau of Labor Statistics, 1992b), was at a 28-year record low of 4.7% at the end of 1997 (Ilg & Clinton, 1998). Some of the fundamental causes of unemployment patterns are rooted in cyclical phases of the economy, and others in technological (Reich, 1991) and socio-political changes in globalization of markets (M. E. Porter, 1990). On the basis of the cyclical nature of unemployment, one can expect the present low rates to climb again in the future. Not only is unemployment a cyclical economic phenomenon, it is also a social one that strikes certain demographic groups more than others. The social consequences of unemployment include its negative impact on the mental health and well-being of the unemployed persons (Barling, 1990; Feather, 1990;

Kessler, Turner, & House, 1989; Warr, Jackson, & Banks, 1988), their spouses (Barling, 1990; Dew, Penkower, & Bromet, 1991; Liem & Liem, 1988), and their children (Barling, 1990).

A number of studies on the coping trajectory of unemployed persons have shown that reemployment reverses the negative effects of unemployment and restores the level of mental health that existed prior to the job loss (Iverson & Sabroe, 1988; Kessler, Turner, & House, 1988; Vinokur, Caplan, & Williams, 1987). In designing interventions to mitigate the adverse effects of unemployment, one must therefore investigate the factors that facilitate or inhibit the return to employment and productive work life as well as those that contribute to long-term well-being and mental health.

Reemployment is a joint outcome of the search effort of job seekers and the hiring decisions of employers. Furthermore, both the search efforts and employers' hiring decisions are also influenced by broader structural contextual factors that include social and economic forces. The proximal determinants of the search efforts and behavior of the job seeker are psychological resources such as motivation and confidence, as well as economic resources to sustain intensive search effort. The proximal determinant of the employer's hiring decision is the assessment of fit between the requirements of the position that needs to be filled and the job seeker's work skills and motivation. This assessment is largely based on the job seeker's demographic characteristics

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because they provide the employer with easily obtainable information of verifiable indications of the labor market value of the job seeker, including other factors that reflect the employer's preference. A fuller understanding of what influences the likelihood of reemployment and its outcomes must therefore include assessment of the independent contribution of both psychological and demographic variables. When reemployment is assessed and compared across different time periods, or across communities with different labor market opportunities, structural economic factors must also be included in the investigation. As shown by Turner (1995), the context of unemployment in terms of unemployment rate has direct and modifying effects on the mental and physical health of job seekers.

An appropriate social policy to help workers cope with the crisis of job loss and unemployment should be informed by data regarding demographically defined groups of workers who are at a greater risk for remaining unemployed for long periods. Knowledge of the demographic characteristics that define the disadvantaged groups is essential for implementing an efficient policy. In the same vein, knowledge of the psychological characteristics or vulnerabilities that impede successful reentry into the workforce is essential for designing social interventions that aim at enhancing marketability and job-search skills. Indeed, a study by Hamilton and associates (Hamilton, Hoffman, Broman, & Rauma, 1993) demonstrated that a higher level of depressive symptoms after a layoff was predictive of future long-term unemployment even when demographic characteristics were controlled. Furthermore, Price, van Ryn, and Vinokur (1992) have also shown that a measure of high risk that consisted primarily of high levels of baseline depressive symptoms predicted high levels of depression even 2.5 years after the job loss.

Knowledge of the independent or interactive effects of demographic characteristics and psychological coping resources on long-term reemployment outcomes is limited. Labor economic studies that examine the effects of demographics on reemployment do not include psychological variables. They often assume that the demographic variables are true indicators of psychological resources such as motivation and skill (for reviews, see Fallick, 1996; Kletzer, 1998). In contrast, studies of unemployment conducted by psychologists and sociologists have demonstrated that a number of psychological variables have important effects on reemployment (Hamilton et al., 1993; Leana & Feldman, 1995; Wanberg, Watt, & Rumsey, 1996). However, the results from these

studies are based on nonrepresentative samples of workers from plant closings in manufacturing industries with relatively short follow-up periods of a few months to a year.

The goal of this article was twofold: First, we sought to test the long-term (2 years) effects of the JOBS II intervention on reemployment and mental health; second, we sought to examine the independent contributions of demographic characteristics and assets and psychological coping resources to the reemployment and mental health outcomes. The JOBS intervention is a job-search skill enhancement workshop, which was assessed in two large randomized field experiments. The first, JOBS I, was conducted in 1986 (Caplan, Vinokur, Price, & van Ryn, 1989) and the second, JOBS II, in 1991 (Vinokur, Price, & Schul, 1995). The JOBS II study included a diverse representative community sample of 2,005 recently unemployed job seekers. Earlier reports from this study focused on the short-term effects of the intervention up to 6 months (Vinokur et al., 1995) and on its mediating processes (Vinokur & Schul, 1997). In this article, we extended the earlier analyses by focusing on the 2-year long-term follow-up. In addition, because this large sample was found to be demographically similar to the population of unemployed job seekers in the United States, it also allowed us to test the long-term impact of demographic and psychological risk factors of long-term continued unemployment and poor mental health and to examine their interaction effects. Thus, we addressed the specific purposes of this article by analyses that examined the following sets of hypotheses with respect to three main sets of independent variables: (a) the JOBS intervention, (b) demographics, and (c) psychological variables.

Hypothesis Set 1: Effects of the JOBS Intervention

The earlier report showed that the JOBS intervention had beneficial short-term effects on both reemployment and mental health outcomes (Vinokur et al., 1995). We hypothesized that these effects persist in the 2-year follow-up because the intervention helped the participants, compared with their counterparts in the control condition, to enter a more productive employment trajectory that also sustains better mental health. The recent mediational analysis of the JOBS intervention demonstrated that reemployment mediated the effect of the intervention on mental health (Vinokur & Schul, 1997).

Hypothesis Set 2: Effects of Demographic Characteristics

Effects on Reemployment

We predicted in Hypothesis 2a that the demographic characteristics of age, gender, education, family income prior to the job loss, and race have significant effects on reemployment outcomes in the direction that is valued by the labor market or that facilitate effective job-search efforts. Demographic variables constitute relevant and discriminatory "labor market signals" in employers' hiring decisions (e.g., education, age, gender, and race) as well as indicators of personal resources that facilitate effective job-search efforts (e.g., education and family income). Given the diversity and representativeness of the sample investigated in the study, we hypothesized that the direction of these effects are the same as those obtained in earlier studies, as reviewed earlier. For example, women, minorities, and less-educated workers will exhibit significant disadvantage in their reemployment outcomes.

Effects on Mental Health

Unemployment and economic hardship are often shown to be risk factors for poor mental health (e.g., Kessler et al., 1989). Labor economists who reviewed the literature (Fallick, 1996; Kletzer, 1998) highlighted evidence that women, older workers, African Americans, and those with lower education experience greater difficulties in regaining employment and also experience greater relative income losses as a result of their job loss. Therefore, in Hypothesis 2b, we predicted that the demographic characteristics that influence the difficulty in returning to gainful employment will also have adverse effects on mental health.

Hypothesis Set 3: Effects of Psychological Variables

Effects on Reemployment

We predicted in Hypothesis 3a that motivation to search for a job and sense of mastery have significant positive effects on reemployment outcomes. Both variables are important determinants of job-search behavior (van Ryn & Vinokur, 1992) that is a necessary pathway to reemployment. In contrast, we predicted in Hypothesis 3b that depressive symptoms and social undermining from the spouse/partner have negative effects on reemployment because they

deplete the energy or the motivational resources to engage in job-search behavior.

Effects on Mental Health

We predicted in Hypothesis 3c that sense of mastery as a personal resource will have a positive effect on mental health (Pearlin, Menaghan, Lieberman, & Mullan, 1981). In contrast, we predicted in Hypothesis 3d that financial strain, depressive symptoms, and social undermining will have adverse effects on mental health outcomes at follow-up. These three variables are mental health risk factors indicating lack of sufficient coping resources, personal vulnerability, and disruptive and stressful social relationship (Coiro & Gottesman, 1996; Lewinsohn, Hoberman, & Rosenbaum, 1988; Lynch, Kaplan, & Shema, 1997).

Hypothesis Set 4: Interactive Effects of the JOBS Intervention and Psychological Variables

Using retrospective analyses from the JOBS I intervention, Price et al. (1992) showed that a measure of high risk for increased depression (i.e., an index based on baseline depressive symptoms, financial strain, and social assertiveness) moderated the effects of the intervention on mental health. The prospective analyses of the JOBS II study replicated the moderation effects of high risk on both mental health and reemployment outcomes at the 2- and 6-month follow-ups (Vinokur et al., 1995). The results showed that the intervention benefited those at high risk for depression more than their low-risk counterparts. In the present study, we predicted in Hypothesis 4a that these moderating effects of risk for increased depression persisted in the 2-year follow-up. It is likely that those who succeeded in the early stages of their reemployment process were likely to persist in an employment trajectory that benefits their mental health.

In addition, we hypothesized that the effects of the intervention are moderated by the coping resources indicated by sense of mastery and by job-search motivation. In Hypothesis 4b, sense of mastery is hypothesized to moderate the effects of the intervention benefiting low-mastery participants more than their high-mastery counterparts. This hypothesis is drawn from the literature on the plasticity, malleability, and susceptibility to influence of persons low in self-esteem (Brockner, 1988), general self-efficacy (Eden & Aviram, 1993; Sherer et al., 1982), specific self-efficacy (Bandura, 1977), locus of control

(Rotter, 1966), and sense of mastery (Pearlin et al., 1981). Whereas conceptual differences among the concepts are appropriately drawn out in the literature (e.g., Maddux, 1995), there is still a great deal of overlap in the measures of these constructs (Eden & Aviram, 1993, p. 353). For that reason, we used a measure of sense of mastery that reflects this overlap.

In Hypothesis 4c, job-search motivation is hypothesized to moderate the effects of the intervention on reemployment outcomes benefiting low-motivation participants more than it benefits their high-motivation counterparts. Reemployment is conceived as a performance outcome determined by a multiplicative function of motivation and skill (L. W. Porter & Lawler, 1968). This implies that the effects of the intervention will be more pronounced for participants with low baseline job-search motivation.

Method

Detailed information about the design of the study, including the steps involved in screening and recruitment as well as pretest and posttest data collections, is provided in the initial report (Vinokur et al., 1995). A somewhat briefer description of the method is included below.

Participants and Method of Recruitment

Study participants were recruited from four offices of the Michigan Employment Security Commission in southeastern Michigan, the state agency that provides unemployment insurance payments. The recruited sample of participants included those who returned the baseline Test 1 (T1) pretest questionnaire (73% of those eligible) and was composed of 2,005 workers who had recently lost a job ($M = 4.11$ weeks since job loss) and were unemployed for no longer than 13 weeks. The demographic characteristics of this sample closely resembled the U.S. unemployed population as reported by the U.S. Bureau of Labor Statistics (1992a). For example, in this sample, the median age was 34.7 years ($M = 36.20$ years, $SD = 10.38$) and included 45% men and 55% women. Of the participants, 22% were African Americans and 76% were Whites, 41% were married, and the mean monthly income from their last job was \$1,881. The U.S. unemployed population during 1991 had a median age of 30.4 years and included 58% men, 20% African Americans, 76% Whites, 41% married, and monthly earnings of \$1,834.

Using a short screening questionnaire to determine eligibility, we recruited 1,801 respondents in the JOBS II field study. Eligible respondents were those unemployed for less than 13 weeks, still looking to find a job, and not expecting to retire within the next 2 years or to be recalled back to their former jobs. Because the intervention was conceived as a primary prevention program, 7% of those who met the above criteria but had a very high score on the depressive symptoms scale indicative of a depression episode (Derogatis & Melisaratos, 1983) were excluded from the field experiment. However, these respondents also received special information on available mental health

services in their communities as all other study respondents. A random sample of 204 of these respondents with clinically elevated depressive symptoms, referred to as "cases," was recruited as part of the survey.

The screening questionnaire included an 11-item index of depressive symptoms, a 3-item index of financial strain, and a 4-item index of social assertiveness. On the basis of the scores for the three indexes, and using the regression weights reported in Price et al. (1992), we computed a risk score for poor mental health for each respondent. In addition, a risk status code (i.e., 1 = low and 2 = high) was assigned to each respondent on the basis of the risk score. Respondents who scored higher on depressive symptoms and financial strain and lower on assertiveness were shown to be at higher risk for experiencing depression in the future. To be classified in the high-risk category, respondents had to be above a cutting point that included the 25% highest scoring respondents. Low-risk respondents were defined as those scoring below this cutting point.

Randomization Procedures and Experimental Design

Following the classification into a high- or a low-risk category, we used a computerized randomization procedure to allocate the low- and the high-risk respondents to a control condition or an experimental condition. Those randomized to the experimental condition received an invitation to participate in the JOBS intervention program in a site chosen for its proximity to the office from which they were recruited.

The JOBS workshop experimental condition consisted of five 4-hr sessions conducted during the morning hours of a 1-week period. The intervention workshops were delivered to 671 participants by three pairs of male and female cotrainers to groups ranging in size from 12 to 22 participants (mean size = 15.6). The intervention process was designed as an active learning experience that was intended to increase sense of mastery and motivation to search for a job by learning job-search skills and inoculation against setbacks (Caplan, Vinokur, & Price, 1997; Price & Vinokur, 1995).

Among those 1,249 who were assigned to the experimental condition and became study participants, 46% ($n = 578$) failed to show up for the intervention but continued to provide data at the subsequent follow-ups (T2, T3, and T4). Of those 671 who showed up, 567, or 85%, showed up for at least four of the five workshop sessions.

The control condition consisted of a small booklet that was mailed to the control group respondents. The booklet included descriptions of useful job-search methods that were also provided to the experimental workshop participants.

Data Collection Procedures

The screening questionnaire collected at the state employment offices was used to determine each respondent's eligibility and risk status for depression. Following randomization to control and experimental conditions, T1 pretest questionnaire with a \$5 respondent payment was mailed weekly to cohorts of respondents who were recruited to the study during its 6-month duration. The questionnaires were mailed about 2 weeks before the invitation for the

JOBS intervention workshop to which the respondents were randomized as experimental or control respondents.

T2 and T3 follow-up questionnaires, with \$5 payment each, were mailed to the respondents 2 and 6 months, respectively, after the week of the intervention workshop for which they were randomized as experimental or control respondents. T4 2-year follow-up questionnaire with a \$5 respondent payment was mailed to the respondents 2 years after the week of the intervention workshop.

Measures

All of the constructs in this study were assessed with multi-item indexes, and most had a Cronbach alpha coefficient (Nunnally, 1978) in the .70s and .80s. Below we describe the subset of measures that were used for the analyses of this report.

We assessed demographics using standard survey questions for reporting age, gender, education, marital status, family income prior to the job loss, and ethnic/racial identification. For the analyses described below, gender, marital status, and ethnic/racial identification were coded as dummy variables, with a score of 0 assigned to men, married respondents (living together with the spouse), and White respondents. A score of 1 was assigned to women, nonmarried or separated respondents, and non-Whites (African Americans, American Indian, Asian or Pacific Islander, and other). Family income prior to the job loss was reported on a scale with 21 bracketed income categories.

Depressive symptom level was measured with a subscale of 11 items ($\alpha = .90$ at screening and $.91$ at T4) based on the Hopkins Symptom Checklist (Derogatis, Lipmann, Rickels, Uhlenhuth, & Covi, 1974). The 11-item scale required respondents to indicate how much (1 = *not at all*, 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.

Likelihood of diagnosis with a major depression episode (MDE) during the past year was based on the University of Michigan short version of the Composite International Diagnostic Interview (UM-CIDI) scale developed by Kessler and Mroczek (1992). The scale was constructed using the diagnosis of caseness obtained in the National Comorbidity Study (Kessler et al., 1994) with the full version of the CIDI. The CIDI assessment was developed to reproduce a measure that operationalized Criteria A through C of the third, revised edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1987) diagnosis of MDE. The 9-point scale values vary between 0 to 8 ($\alpha = .92$) and correspond to increasing likelihood of an MDE diagnosis. The analyses reported below are based on the 9-point likelihood scale for meeting the MDE diagnostic criteria. In addition, a stringent diagnostic criterion for probable MDE was formed by recoding the likelihood 0-through-6 score as 0 and the 7-through-8 score as 1. Given the UM-CIDI scoring system, those coded 1 can be considered as probable cases because their likelihood to meet the criterion for MDE is higher than .90.

Role and emotional functioning was measured with a 15-item index ($\alpha = .94$) developed by Caplan et al. (1984). The items require the respondents to indicate "how well have you been doing (in the last 2 weeks) with respect to" various role and emotional tasks such as handling responsibilities and daily demands, staying level-headed, and

making the right decisions on a 5-point scale (1 = *very poorly*, 5 = *exceptionally well*).

Financial strain was measured with a three-item index ($\alpha = .87$; Vinokur & Caplan, 1987). Using 5-point scales, the respondents rated their current and anticipated economic hardship such as difficulties living on their household income and living with a reduced standard of living. This scale was found to be highly correlated (.76) with commonly used economic hardship scales that focus on financially stressful events such as borrowing money to pay bills.

Assertiveness was assessed using a short four-item index ($\alpha = .85$) based on published instruments on social reticence and shyness (Jones & Russell, 1982) and assertiveness (Galassi, Delo, Galassi & Bastien, 1974; Rathus, 1973).

We constructed the mastery measure by computing the mean score of jobs-search self-efficacy, locus of control, and self-esteem indexes described below. This combined measure was constructed following a confirmatory factor analysis that tested whether the three constructs could be accounted for by a latent factor conceived of as personal mastery. Analysis using structural equation modeling (Bentler, 1995) provided a very good fit to the model as measured by several fit indexes including Bentler and Bonnett (1980) normed fit index (.98), nonnormed fit index (.97), and comparative fit index (.98) measures. Job-search self-efficacy was assessed using a six-item index ($\alpha = .87$). Regardless of reemployment status, respondents were asked to rate on a 5-point scale their degree of confidence in being able to perform successfully six essential job-search activities, such as completing job application or resume, using their social network to discover promising job openings, and getting their point across in a job interview. The locus of control measure was based on a 10-item index ($\alpha = .68$) from Rotter's (1966) Locus of Control scale. These items were demonstrated by Gurin, Gurin, and Morrison (1978) to best capture a personal, rather than ideological, orientation and are very similar to those used in another widely used Self-Mastery Scale (Pearlin et al., 1981). The self-esteem measure included ratings on eight items from Rosenberg's (1965) Self-Esteem Scale. The ratings formed an index with an alpha of .83.

The social undermining measure assessed the respondent's perception of being the target of actions that directly undermine and diminish the sense of self-worth. The respondents were asked to indicate on 5-point scales (1 = *not at all* to 5 = *a great deal*) how much the spouse, partner, or (if not married or living together with a partner) another significant person in their life "acts in an unpleasant or angry manner toward you," "makes your life difficult," "acts in ways that show he/she dislikes you," "makes you feel unwanted," "gets on your nerves," "criticizes you," and "insults you even if he/she did not mean to." The seven-item index scale produced by these items had a reliability alpha coefficient of .89.

Job-search motivation was an index (with a score ranging from 0 to 5 and an alpha of .83) constructed from the converted mean scores of three multi-item scales assessing the attitude, subjective norms, and intention to engage in intensive job search. Attitude toward job-search behavior was measured by asking respondents to indicate the extent to which it was wise or foolish, beneficial or harmful, and useful or useless for them to try hard in the next 4 months to get a job. The respondents indicated their answers on a 7-point scale ranging from 1 = *extremely wise* (beneficial, useful) to 7 = *extremely foolish* (harmful, useless). This

three-item index had a reliability alpha coefficient of .86. Subjective norms toward job-search behavior were assessed by asking respondents to indicate how hard his or her significant other thought he or she should try to get a job in the next 4 months and how hard other people who are important to him or her thought he or she should try to get a job in the next 4 months. These two items combined into an index with a reliability alpha coefficient of .84. Intention to engage in job-search behavior was assessed through responses to the questions: "In the next 4 months, how hard do you intend to try to find a job where you'd work over 20 hours a week?" and "In the next 4 months, how likely is it that you will try hard to get a job?" Response choices for the first item ranged from 1 = *not at all hard* to 5 = *extremely hard*, whereas response choices to the second item range from 1 = *extremely likely* to 7 = *extremely unlikely*. These two items were combined in an index with a reliability alpha coefficient of .67.

Extent of reemployment was assessed in two ways by the (a) reported number of paid work hours per week and (b) the number of months during the past 12 months that the respondents reported having worked for at least 35 hr/week. Reemployment status was determined by classifying respondents working less than 20 hr per week as unemployed (coded 0) and those working for 20 hr or more as reemployed (coded 1).

Other reemployment outcomes. Respondents who worked for at least 1 hr/week also provided information on their wage rate (i.e., pay per hour). We also used monthly income as a reemployment outcome that was calculated from the reported paid work hours per week and the wage rate. Additional assessments of the quality of reemployment included the following measures.

Quality of the job was assessed using a nine-item index ($\alpha = .86$). Respondents were asked to rate on 7-point scales their feeling (1 = *terrible*, 7 = *delighted*) regarding various aspects of their job, such as the pay, chances for promotion, supervisor, coworkers, the company, the work itself, job security, and use of skills. Job stability was assessed by the respondents' ratings of the extent to which they consider their job permanent on a 5-point scale ranging from 1 = *not at all* to 5 = *very great extent*.

Fringe benefits were assessed with two measures. One measure, paid days off the job, included the total number of paid sick days, paid vacation days, and paid holidays that the employer provided the respondent per year. The second measure, benefit plans, was based on a three-item index ($\alpha = .86$). Respondents were asked to indicate how much their employer pays for their health insurance plan, disability benefit during long illness plan, and retirement plan using a 4-point scale. The scale included 1 = *none*, 2 = *just a little*, 3 = *a moderate amount*, and 4 = *pays for a generous plan*.

Effectiveness of randomization. None of the T1 demographics or job-related variables, including age, sex, education, family income, number of dependents, number of hours worked per week on last job, and wage rate on last job or mental health variables assessed at screening, were associated with experimental condition.

Response rate and attrition from T1 to T4. Of the 1,801 respondents who enrolled in the field experiment, 1,430 (79%) completed the T4 follow-up questionnaire. Compared with respondents who provided data for the T4 follow-up, dropouts were significantly younger (34.0 vs. 36.8 years; $p < .001$), male (vs. female; 55% vs. 45%; $p < .001$), and

non-Whites (vs. Whites; 41% vs. 19%; $p < .001$). The dropouts also had a lower level of education (2.71 vs. 2.87, with five levels; $p < .001$), were more likely to be unmarried (including separated) versus married (68% vs. 55%), had a lower family income (median of \$21,100 vs. \$28,300; $p < .001$), and experienced higher financial strain (3.25 vs. 3.05; $p < .001$) than those who responded.

However, there was no significant difference in attrition between experimental and control condition or between low- and high-risk respondents. Attrition was also not a function of the interaction of condition and risk status. Furthermore, with one exception,¹ there were no significant interactions between attrition status and experimental condition on baseline measures of education, family income, financial strain, depressive symptoms, job-search motivation, sense of mastery, hours of work per week, monthly income, and wage rate. Finally, except for financial strain, there were no significant triple interactions between attrition status, condition, and risk status on any of the above variables. Consequently, despite the attrition, the integrity of the randomization to experimental and control conditions was adequately preserved. Following Hansen, Collins, Malotte, Johnson, and Fielding (1985), we concluded that differential attrition rates could not affect the internal validity of the results.

Results

The Appendix provides the correlations among all of the study variables. The first three hypotheses were examined by a series of ordinary simultaneous least square (OLS) regressions (or logistic regressions for dichotomous dependent variables) that include the array of independent variables assessed at baseline (Variables 1 through 12 in the Appendix) as predictors of each of the dependent variables assessed 2 years later (Variables 13 through 21). Table 1 reports the regression coefficients (betas for the OLS² and *B*s for the logistic regression for Variables 13 and 21) as well as the multiple regression coefficients and the adjusted explained variances (adjusted R^2) for these analyses.³

¹ The exception included social undermining. This result is not interpretable.

² A table with the unstandardized regression coefficients (*B*s) is available from Amiram D. Vinokur.

³ Except for the effects of the experimental condition (Hypothesis 1), the same analyses were conducted on a combined group that included the control group and the sample of "cases" who were not randomized into the experimental conditions. For the analyses of this combined group, we weighted the subgroups of low-risk, high-risk, and cases to represent the population of unemployed job seekers they were recruited from. The results of these analyses were practically the same as those presented in Table 1. Furthermore, additional hierarchical regression analyses and Tobit analyses for truncated dependent measures (Amemiya, 1985; Baba, 1990; Tobin, 1958) produced results that were consistent with those presented in Table 1. None of the conclusions based on the OLS analyses need to be modified by the results of the other analyses.

Table 1
 Logistic Regression (B) and OLS Regression Coefficients (B) of the Effects of the JOBS Intervention, Demographics, and Baseline (T1) Psychological Factors on Reemployment and Mental Health Outcomes at 2-Year (T4) Follow-Up

Baseline predictor	T4 employment outcome					T4 mental health outcome			
	Current employment status ^{a,c}	Hours working/week ^e	Months working >35 hr ^b	\$/month income ^b	\$/hr wage rate ^b	Role functioning ^b	Depressive symptom ^b	Likelihood of MDE ^b	Probable MDE ^{a,d}
JOBS intervention (0 = control; 1 = experimental)	.44**	.08**	.06*	.07**	.03	.06*	-.06*	-.04	-.49*
Demographics									
Age	-.04***	-.16***	-.16***	-.09***	.04	-.03	.05*	-.05	-.00
Gender (0 = male; 1 = female)	-.23	-.13***	-.11***	-.18***	-.16***	.08**	.02	.03	.34
Education	.17*	.06*	.07*	.14***	.16***	.00	-.04	-.07*	-.15
Family income	.02	.08*	.11*	.21***	.30***	-.03	.01	.04	.03
Race/ethnicity (0 = White; 1 = Non-White)	-.23	-.05	-.06*	-.04	.01	-.04	.00	.00	-.14
Marital status (0 = married; 1 = nonmarried)	.20	.03	.04	.01	.00	-.03	.07*	.07*	.09
Psychological									
Motivation	.26***	.13***	.17***	.08**	-.01	.06*	-.02	-.02	.00
Sense of mastery	.08	.05	.04	.11***	.12***	.32***	-.24***	-.19***	-1.19***
Financial strain	-.10	-.01	-.02	.00	.01	-.06	.08	.10***	.45***
Depressive symptoms	-.05	.00	.01	.03	.05	.14***	.22***	.11***	.21
Social undermining	-.16	-.06*	-.07**	-.07**	-.07*	-.01	.06*	.01	.04
Multiple R		.31***	.33***	.41***	.46***	.42***	.44***	.34***	
Adjusted R ²		.09***	.10***	.16***	.20***	.17***	.19***	.10***	

Note. OLS = ordinary least square; JOBS = self-efficacy-based job-search skill enhancement workshop. T1 = Time 1; T4 = Time 4; MDE = major depressive episode.
^a Values in this column are logistic regression coefficients (B). ^b Values in this column are OLS regression coefficients (B). ^c Employment status: 0 = unemployed; 1 = employed 20 hr or more per week. ^d Probable MDE: 0 = no MDE; 1 = probable MDE.
^e * $p < .05$. ** $p < .01$. *** $p < .001$.

Hypothesis Set 1: Long-Term Effects of the JOBS Intervention

The results displayed in the first row of Table 1 demonstrate that the intervention had a significant beneficial impact on all the reemployment outcomes, except wage rate. Specifically, compared with participants assigned to the control condition, those assigned to the intervention were more likely to be currently (at the 2-year follow-up) employed for 20 or more hours per week, working more hours per week, and earning a higher income per month. In addition, in the last 12 months prior to the 2-year follow-up, they had worked more months than their counterparts in the control group. Similarly, the intervention had beneficial effects on the respondents' mental health. At the 2-year follow-up, compared with participants assigned to the control condition, those assigned to the intervention had a lower level of depressive symptoms and higher level of role and emotional functioning. Furthermore, they showed a trend for being less likely to meet criteria for MDE ($p < .10$), and significantly fewer actually met a stringent criterion for an MDE diagnosis. Together, these results provide strong support for Hypothesis 1 regarding the beneficial effects of the intervention on both reemployment and mental health.

Additional analyses examined whether reemployment and financial strain at T4 mediated the effects of the intervention on the mental health outcomes. Thus, for each mental health outcome, we repeated the regression analysis, adding separately T4 reemployment, the other reemployment indicators (e.g., hours of work per week), and financial strain, each as an additional independent variable. With these additional T4 mediational variables, the effects of the intervention on role and emotional functioning remained significant. However, with these reemployment variables, the effects of the intervention on the other mental health variables were diminished. In all cases, the significant level of the intervention on the outcomes were reduced from $p < .05$ to $p < .10$ with small reduction in the size of the betas. The reduction in the strength of the effect of the intervention on depressive symptoms and MDE when the T4 reemployment variables were controlled for indicates that at least part of the intervention effects on mental health were mediated by reemployment.

Hypothesis Set 2: Effects of Demographic Variables

Effects on reemployment. As predicted, older age was a significant predictor of poor reemployment

outcomes ($p < .001$), except for wage rate. Female gender was similarly predictive of poorer reemployment outcomes in terms of number of months working 35 or more hours per week, current work hours per week, monthly income, and wage rate. Whereas higher education and higher family income had a positive effect on all reemployment outcomes (except current status), race (non-White minority status) had a small but negative effect on at least two outcomes. Compared with Whites, non-Whites, mostly African American respondents, worked fewer months in jobs involving 35 or more hours per week and showed a trend for working fewer hours per week ($\beta = -.05$, $p < .10$). However, non-Whites did not differ significantly from Whites in their monthly income or wage rate. Overall, this pattern of results is very consistent with the results reported by labor economists (Fallick, 1996) that focused on displaced workers. However, although gender, family income, race, and social undermining were significant predictors of most reemployment outcomes, they failed to predict employment status. Evidently, employment status as a dichotomous variable is not sensitive to the effects of other important reemployment predictors.

Effects on mental health. Effects of age on the mental health outcomes appeared weak and inconsistent. Among the other demographics, we found that female gender and education were, respectively, significant predictors of higher levels of role and emotional functioning and of lower likelihood of MDE diagnosis. Women did not appear to have increased depression because baseline depressive symptoms are controlled for. Thus, although women had higher level of depressive symptoms at baseline, they did not exhibit a change for the worse. Finally, nonmarried status (including separated) was predictive of higher levels of depressive symptoms and greater likelihood of MDE. Overall, demographic characteristics showed only a few weak and inconsistent relationships to mental health outcomes.

Hypothesis Set 3: Effects of Psychological Variables

Effects on reemployment. As predicted in Hypothesis 3a, motivation to search for a job had positive significant effects on all of the reemployment outcomes, except for wage rate. In turn, sense of mastery showed significant beneficial effects on both income and wage rate and a smaller effect on hours of work per week ($p < .10$). Contrary to Hypothesis 3b, depressive symptoms did not have an effect on any of the reemployment outcomes as shown in Table 1, or

even when the same regression analyses did not include the other psychological variables as predictors. At the same time, as predicted, social undermining had a consistent and significant adverse effect on all of the reemployment outcomes except on current employment status. Finally, as predicted, financial strain did not have a clear effect on any reemployment outcomes. These results highlight the roles of motivation and sense of mastery as important contributors to successful long-term reemployment and the role of social undermining as a psychological barrier to reemployment.

Effects on mental health. As predicted in Hypothesis 3c, sense of mastery had a strong and significant positive effect on all of the mental health outcomes. Mastery was predictive of better role functioning, lower level of depressive symptoms, and lower likelihood of meeting criteria for MDE and for being classified as a "probable case." Baseline job-search motivation was predictive of role functioning but not the other mental health indicators. Baseline depressive symptoms and financial strain proved, as predicted in Hypothesis 3d, to be risk factors for long-term mental health. Thus, depressive symptoms were a significant predictor of three of the mental health outcomes (role functioning, depressive symptoms, and likelihood for MDE). In the same vein, financial strain was a significant predictor of likelihood for MDE and of probable MDE. In addition, social undermining was a significant predictor of depressive symptoms but had no effect on the other outcomes. Overall, these findings depicted the sense of mastery as a protective mental health factor and prior depressive symptoms and financial strain as mental health risk factors.

Hypothesis Set 4: Interactive Effects of the JOBS Intervention and Psychological Variables

In Hypothesis 4a, moderating effects of risk for depression were investigated by entering an interaction term that included the product of the experimental condition (dummy variable 0 and 1) and the standardized score of the risk for depression variable into each regression analysis displayed in Table 1. However, because of the high correlation (.82) between baseline depressive symptoms and risk for depression score, we omitted the depressive symptom score from the regression analysis. Contrary to our hypothesis and to the earlier results from the 6-month follow-up, the analyses of the 2-year follow-up did not produce a significant interaction effect. It appears that the risk for depression variable had only a short-term moderating effect.

In Hypothesis 4b, moderating effects of sense of mastery were investigated using the same analysis mentioned above substituting mastery as the risk variable. Statistically significant interaction effects were found on depressive symptoms ($\beta = .16, p < .01$), role and emotional functioning ($\beta = -.10, p < .05$), likelihood for major depression ($\beta = .14, p < .01$), and likely diagnosis for an MDE ($\beta = .48, p < .01$). The pattern of the interaction was the same in all cases: Respondents with a lower baseline sense of mastery benefited from the intervention more than those with higher mastery. In other words, baseline sense of mastery modified the effects of the intervention on the outcomes. Using a median split on sense of mastery, Figures 1 and 2 display the pattern of interaction effects on depressive symptoms and role and emotional functioning.

In Hypothesis 4c, moderating effects of job-search motivation were investigated using the same analysis described above substituting the job-search motivation for the risk variable. Two statistically significant interaction effects were found between experimental condition and job-search motivation. Job-search motivation moderated the effects of the intervention on current number of hours of work per week ($\beta = -.12, p < .01$) and on number of months working 35 or more hours per week ($\beta = -.12, p < .05$). An additional, slightly smaller moderation effect was found on monthly income ($\beta = -.08, p < .10$). Once again, the pattern of the interactions demonstrated that respondents with lower baseline job-search motivation benefited from the intervention more than those with higher motivation. In other words, the intervention had greater beneficial impact on those with lower job-search motivation. Using a median split on job-search motivation, Figures 3 and 4 display the pattern of interaction effects on two outcomes: current number of working hours per week and number of months in the last year the respondent worked 35 or more hours per week.

Additional analyses examined the interactive effects of the JOBS intervention with each of the demographic variables. However, the results did not reveal any significant interactions.

Discussion

The JOBS intervention workshop produced consistent and statistically significant beneficial effects on the extent of reemployment of the respondents 2 years after their job loss. The experimental group respondents were working significantly more hours per week and more months in the last year compared with

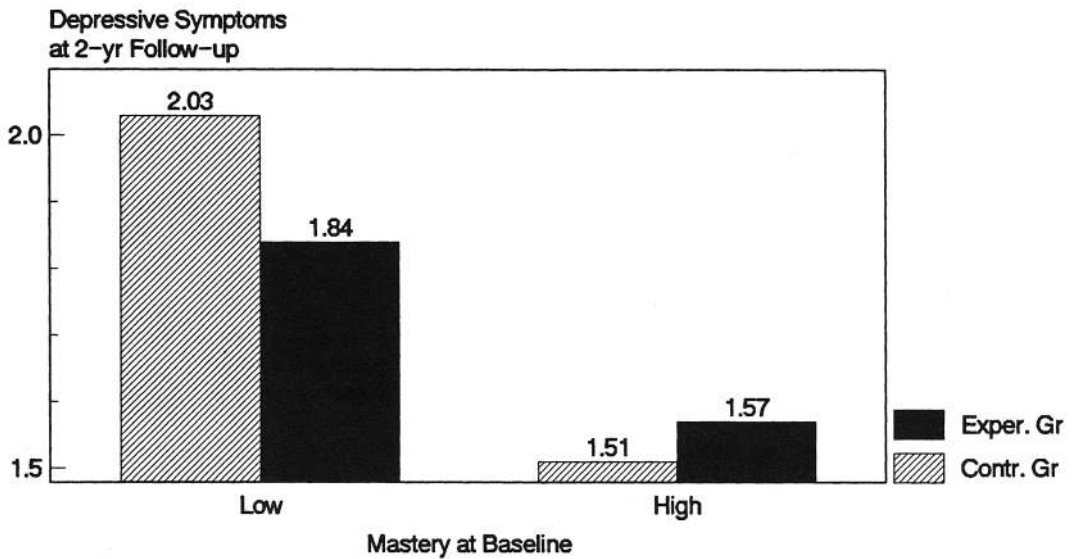


Figure 1. Interactive effects of experimental condition and mastery at baseline on depressive symptoms at 2-year follow-up. Exper. Gr = experimental group; Contr. Gr. = control group.

their control group counterparts. In addition, the JOBS intervention produced better mental health outcomes for those in the experimental group compared with those in the control group in terms of

improved role and emotional functioning, reduction in depressive symptoms, and the likelihood of experiencing an MDE during the last year of the 2-year follow-up. It must be noted that these

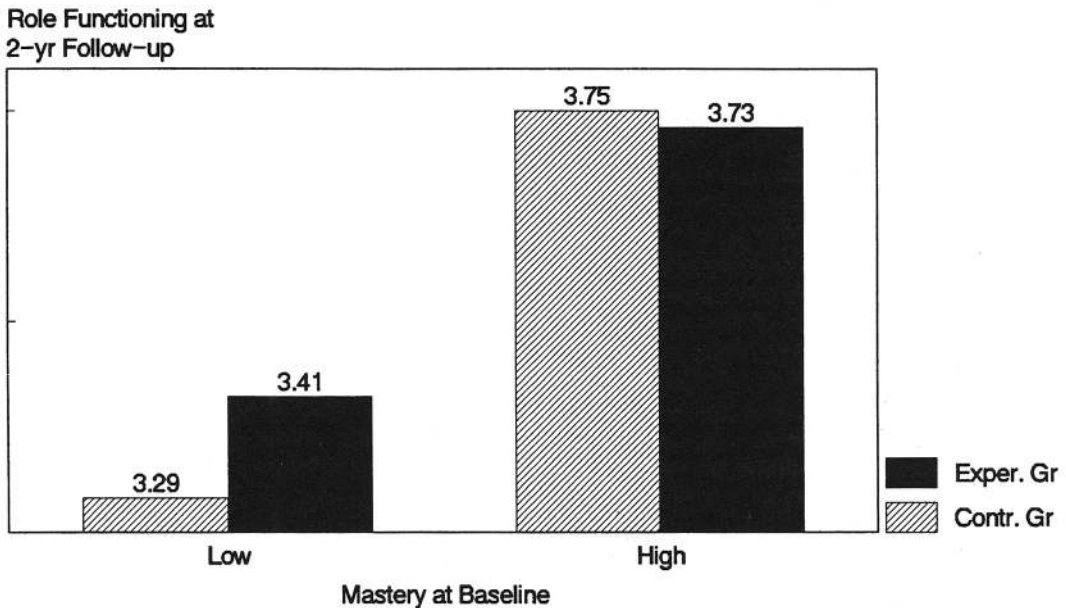


Figure 2. Interactive effects of experimental condition and mastery at baseline on role and emotional functioning at 2-year follow-up. Exper. Gr = experimental group; Contr. Gr. = control group.

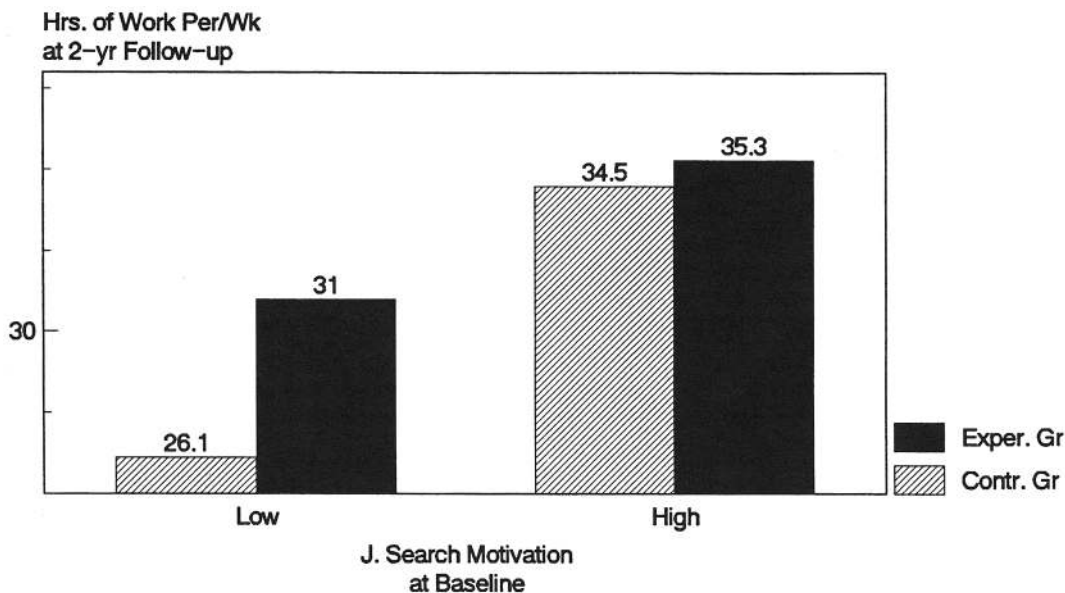


Figure 3. Interactive effects of experimental condition and job (J.)-search motivation at baseline on number of hours of work per week at 2-year follow-up. Exper. Gr = experimental group; Contr. Gr. = control group.

demonstrated effects of the intervention provide conservative estimates of the true effects of actual participation in the intervention. Our analyses preserved the integrity of the experimental design (Cook & Campbell, 1979) by including in the experimental condition all of the respondents who were randomized and invited to the workshop, yet 46% of them did not participate in the intervention workshop. Earlier analyses that focused on participation using instrumental variable techniques (Bloom, 1984; Little & Yau, 1998; Vinokur et al., 1995) showed effects of participation to be about twice as large as those that are based on the conservative analyses.

In addition to the direct effects of the experimental condition on both reemployment and mental health outcomes, the intervention also moderated the impact of two psychological variables—sense of mastery and job-search motivation at baseline—on these outcomes 2 years later. In both cases, the moderating effects benefited vulnerable individuals most. Thus, the JOBS intervention had stronger positive effects on the reemployment outcomes for those who had initially low job-search motivation as well as on the mental health outcomes for those who had a low sense of mastery. The latter interaction between the experimental condition and sense of mastery is consistent with similar findings that showed various interventions to have significantly greater impact on

persons with lower levels of self-esteem, general self-efficacy, or internal control orientation (e.g., Brockner, 1988; Eden & Aviram, 1993).

In contrast to the significant moderating effects of job-search motivation and sense of mastery, our analyses did not provide evidence for the moderating effects of risk for depression on either reemployment or mental health outcomes. The failure to replicate the interaction between experimental condition and risk that was found for both types of outcomes at the 2-month and 6-month follow-ups (Vinokur et al., 1995) was surprising. It may suggest that, over time, the low-risk participants who also experienced an enhanced sense of mastery as a result of the workshop (see Vinokur et al., 1995, Figure 2) managed to use the skills that raised their mastery and improved their situation just as their high-risk counterparts did earlier in the reemployment process. However, the interaction effects of motivation and mastery with the experimental condition may reflect a more enduring influence of the intervention in furnishing vulnerable participants with psychological resources that continue to exert their influence over the long run. Depressive symptoms, the major component of the initial risk factor (Price et al., 1992), fluctuate more readily than a more enduring personal attribute such as mastery. Indeed, we found that the stability correlation between pretest and 2-year follow-up was

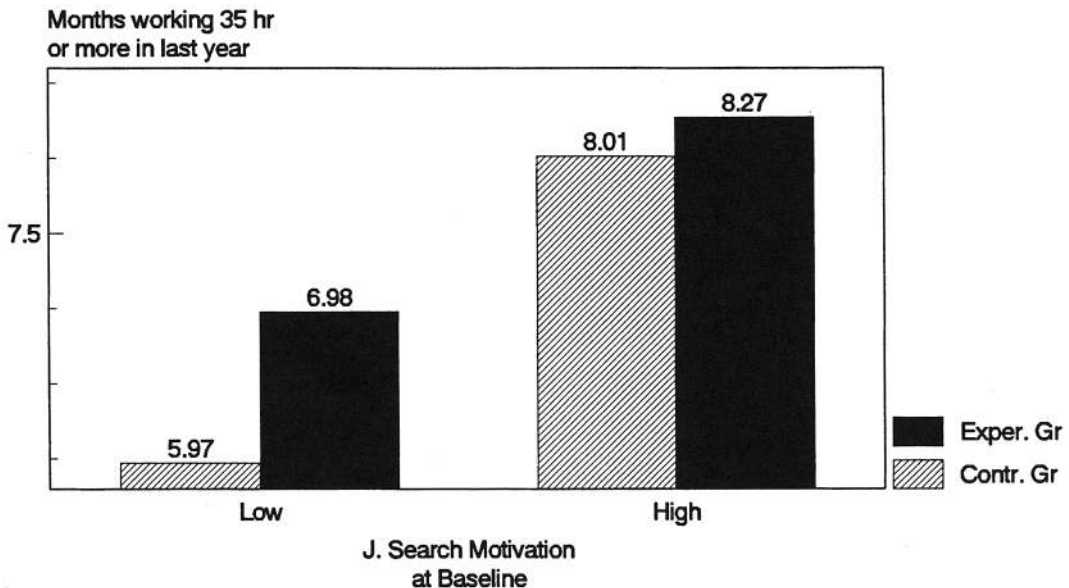


Figure 4. Interactive effects of experimental condition and job (J.)-search motivation at baseline on number of months in the last year that the respondents worked 35 hr or more per week. Exper. Gr = experimental group; Contr. Gr. = control group.

.36 for depressive symptoms compared with .62 for mastery. So, whereas elevated depressive symptoms may constitute a risk variable for the short term, a low sense of mastery is a risk variable for the longer term.

The findings of this study highlighted the importance of psychological variables in predicting and influencing both reemployment and mental health outcomes. Although labor economists emphasize the role played by human capital factors such as education and training in their studies, our findings suggest the need to also emphasize psychological resources such as job-search motivation and sense of mastery, because they also play a role in the reemployment process and can be enhanced by targeted interventions.

The role of other psychological variables in the reemployment process, namely, financial strain, depressive symptoms, and social undermining, is still unresolved. For example, on the one hand, social undermining may be an indication of the spouse or partner's critical reaction to, and prediction of, the inability of the job seeker to get a job. On the other hand, social undermining may be an indication of a social and psychological process that truly undermines efforts to seek and find a job. We did not find that depressive symptoms and financial strain were significant or consistent predictors of reemployment outcomes. Nevertheless, both variables were predic-

tive of poor mental health outcomes 2 years later and may be implicated as barriers to effective job search that in turn influence reemployment outcomes. Other psychological factors that may play important roles in the context of job search and reemployment may include career orientation (Wrzesniewski, McCauley, Rozin, & Schwartz, 1997), work values, and time structure (Feather, 1990).

The results that focused on demographics as predictors of reemployment outcomes provided a pattern that is consistent with analyses produced by labor economists who focus on displaced workers (Fallick, 1996; Kletzer, 1998). Older workers, women, and non-Whites (mostly African Americans) experience greater difficulties regaining employment and suffer greater economic losses than their younger, male, and White counterparts. The consistency in the results of this study with those reported by labor economists based on large representative samples of displaced workers is not surprising. First, as noted in the Method section, the sample in this study is demographically and occupationally heterogeneous and similar to the unemployed population in the United States. Furthermore, for the most part, the unemployed sample of workers recruited to this study appear to fit the characteristics of displaced workers in terms of the seniority ($M = 3.89$ years) at the job they lost involuntarily. Thus, the similarity of the

results of this study with those based on large representative samples provides an indication of the generalizability and wide applicability of the findings related to the impact of the JOBS intervention subject to variation in economic structural conditions noted earlier.

Despite the demonstrated impact of the JOBS II intervention on increased reemployment, the results fail to show the impact of the intervention on quality of job as assessed by wage rate and other indicators such as reemployment in jobs with greater overall quality, stability, or fringe benefits. The absence of positive intervention effects on quality of work seems surprising given the fact that the earlier JOBS I study produced strong evidence of the intervention's impact on quality of work both in the short-term follow-up (Caplan et al., 1989) and the long-term 32-month follow-up (Vinokur, van Ryn, Gramlich, & Price, 1991). Furthermore, the JOBS II study was designed as a near replication of the JOBS I study. JOBS II applied nearly the same recruitment and measurement procedures and obtained virtually the same demographic sample of unemployed persons from the same geographic area. We speculate that the difference in the results of the two studies with respect to quality of work is due to a difference in macroeconomic structural factors that existed during the time periods of the two studies. Whereas JOBS I intervention ended in summer of 1986, when the U.S. economy was rebounding after the strong recession in the early 1980s (U.S. Bureau of Labor Statistics, 1987), the JOBS II intervention ended in late summer of 1991, in the midst of another recession that peaked in mid 1992 (U.S. Bureau of Labor Statistics, 1992b). It is quite likely that this difference in the economic conditions posed critical limitations on the ability of the JOBS workshop participants to find better paying, more satisfying jobs than their counterparts in the control group. This explanation for the difference in the findings from JOBS I and JOBS II studies underscores the importance of the effects of global structural economic variations that are strongly implicated in analyses conducted by labor economists (Fallick, 1996), as well as shown more directly by recent findings of the study by Turner (1995). Thus, the findings from the JOBS I and JOBS II investigation highlight the contributions of psychological, social, and macroeconomic structural factors to the quality and extent of reemployment of unemployed job seekers and, consequently, to their mental health.

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Appendix

Correlation Matrix, Means, and Standard Deviations of Study Variables ($N = 1,801$)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1. Condition	—																					
2. Age	.02	—																				
3. Gender	-.01	.04	—																			
4. Education	.00	.06	-.04	—																		
5. Family income	-.01	.24	-.03	.24	—																	
6. Race	.01	-.14	.07	.01	-.15	—																
7. Marital status	.03	-.27	.14	-.06	-.45	.10	—															
8. Motivation	-.03	-.06	-.14	.08	-.08	-.01	.11	—														
9. Mastery	-.03	.06	.00	.16	.16	.09	-.07	.13	—													
10. Financial strain	-.01	.02	-.05	-.07	-.30	.10	.13	.20	-.09	—												
11. Baseline depressive symptom	-.01	-.01	.10	-.04	-.09	-.06	.08	.04	-.36	.34	—											
12. Social undermining	-.01	-.07	-.04	-.02	-.03	.05	-.08	-.02	-.21	.12	.15	—										
13. Employment status	.08	-.15	-.08	.09	.02	-.04	.06	.12	.04	-.04	-.04	-.06	—									
14. No. of months working	.07	-.13	-.15	.11	.09	-.07	.04	.19	.09	-.01	-.04	-.09	.57	—								
15. Hours working per week	.07	-.13	-.17	.09	.06	-.07	.03	.16	.08	-.02	-.04	-.08	.90	.65	—							
16. Monthly income	.06	-.02	-.23	.23	.26	-.08	-.09	.13	.17	-.05	-.06	-.09	.65	.57	.73	—						
17. Wage rate	.02	.13	-.19	.27	.38	-.04	-.19	.03	.20	-.06	-.05	-.09	.05	.22	.11	.87	—					
18. Role functioning	.03	.02	.02	.07	.11	-.02	-.06	.05	.37	-.14	-.27	-.11	.09	.09	.09	.11	.10	—				
19. Depressive symptoms	-.03	.02	.08	-.10	-.11	-.03	.10	-.02	-.34	.18	.36	.15	-.15	-.13	-.16	-.20	-.15	-.60	—			
20. Likelihood of MDE	-.02	-.07	.06	-.10	-.11	.01	.12	-.01	-.25	.16	.23	.09	-.06	-.10	-.08	-.12	-.11	-.36	.52	—		
21. Probable MDE	-.04	-.01	.05	-.06	-.05	.01	.04	.00	-.18	.13	.13	.06	-.07	-.08	-.09	-.08	-.05	-.26	.44	.66	—	
<i>M</i>	.69	36.19	.53	2.84	6.84	.23	.58	4.00	3.71	3.09	1.86	1.70	.76	7.40	32.15	\$1,477	10.49	3.55	1.73	1.40	.07	
<i>SD</i>	.46	10.46	.50	1.08	4.14	.42	.49	.94	.51	.99	.58	.73	.43	4.78	19.04	\$1,237	5.24	.63	.70	2.50	.26	

Note. Gender: 0 = male, 1 = female; marital status: 0 = married, 1 = nonmarried or separated; race: 0 = White, 1 = non-White; education: 1 = less than high school, 2 = high school graduate, 3 = some college, 4 = college graduate, 5 = graduate work above college; employment status: 0 = not working or working for less than 20 hr/week, 1 = reemployed for 20 or more hours per week; probable major depressive episode (MDE): 0 = no MDE, 1 = probable MDE.