EVIDENCE indicates that older workers incurred higher rates of involuntary job loss in the recession of the early 1990s than younger workers (Farber, 1993, 1997; Gardner, 1995; Siegel, Muller, & Honig, 2000). Previous research has shown that, once displaced, older workers can face substantial long-term reductions in employment probabilities, and if they do find jobs, they experience large losses in earnings (Chan & Stevens, 1999; Couch, 1998; Hipple, 1999; Jacobson, Lalonde, & Sullivan, 1993). The earnings loss occurs at the period in the life cycle when many Americans still need to accumulate a significant portion of their retirement savings (Mitchell & Moore, 1998). These financial difficulties and the loss of the job itself have the potential to negatively affect workers’ health and ultimately the health of other family members. Evidence from various age groups suggests that involuntary job loss has an adverse impact on displaced workers’ mental health (Gallo, Bradley, Siegel, & Kasl, 2000; Jahoda, 1988; Kasl & Cobb, 1979; Kasl, Gore, & Cobb, 1975; Kasl & Jones, 2000; Kessler, Turner, & House, 1987; Liem & Liem, 1988; Liem & Rayman, 1982; Linn, Sandifer, & Stein, 1985). Studies have shown that, through the effects of the layoff on family economic well-being and the mental health of laid off workers, husbands’ layoffs adversely affect wives’ mental health (Dew, Bromet, & Penkower, 1992; Dew, Bromet, & Schulberg, 1987; Dew, Penkower, & Bromet, 1991; Liem & Liem, 1988; Penkover, Bromet, & Dew, 1988).

Despite the importance of this topic, the effect of husbands’ job loss on wives’ mental health has not been widely examined. One study, which used a sample of longitudinal data on two largely blue-collar western Pennsylvania communities, found that husbands’ involuntary job loss did not have a direct effect on wives’ mental health (Dew et al., 1987; Penkower et al., 1988). Nonetheless, two studies have shown that husbands’ job loss affects wives’ mental health when job loss caused a change in husbands’ own psychological well-being (Dew et al., 1987; Liem & Liem, 1988). Prior research further suggested that the adverse effect of husbands’ job loss on wives’ mental health may vary based on financial strain (Penkower et al., 1988). However, these studies were conducted on community samples of younger wives. Studies have not been conducted among a nationally representative sample of older adults.

We hypothesize that wives of older workers are particularly likely to suffer adverse mental health consequences after a husband’s layoff. Prior studies of older adults have shown that job loss is associated with increased depressive symptoms of older workers (Gallo et al., 2000), and that depressive symptoms in one spouse can significantly increase depressive symptoms in the other spouse (Tower & Kasl, 1995, 1996). We might thus anticipate that, within older couples, husbands’ depressive symptoms resulting from job loss might contribute to an increase in depressive symptoms in their wives.

However, the literature on this topic, despite its usefulness, remains limited in several ways. Few studies have investigated the effect of husbands’ job loss on wives’ depression. These studies have focused on samples of younger wives. They used small samples that were not representative...
of the U.S. population as a whole. The objective of this research is thus to measure the effect of husbands’ involuntary job loss on older wives’ mental health in the United States, using longitudinal data on a nationally representative sample of older couples (Health and Retirement Survey [HRS]). Our second objective is to ascertain whether the effect of husbands’ job loss on older wives’ mental health varies with a change in husbands’ depression or initial financial circumstances. This work builds on Gallo and colleagues (2000), which found that involuntary job loss adversely affects older workers’ own mental health.

**METHODS**

**Sample**

We used data on spousal pairs from the first three waves of the HRS (1992, 1994, 1996) to estimate the effect of husbands’ involuntary job loss on wives’ depressive symptoms. The HRS is a longitudinal data set of households in which at least one household member was born between 1931 and 1941. It focused on the labor market and retirement behavior, health, and finances of its participants, and surveyed the U.S. population (Juster & Suzman, 1995; Moon & Juster, 1995; Wallace & Herzog, 1995). In 1992, HRS participants included 7,702 households interviewed at home; in 1994, 7,093 households were reinterviewed by telephone, in person, or occasionally by mail. This included 4,950 couples in which both spouses provided interviews in 1992 and 4,369 in which both spouses provided interviews in 1994. Single respondents and coupled respondents in which only one spouse provided an interview, were eliminated.

We created two longitudinal data sets of two waves each to construct the data sets for our analysis. The first longitudinal data set, or period, combined Waves 1 and 2 of the HRS, and described the 1992–1994 experience of spousal pairs in our sample. We combined Waves 2 and 3 of the HRS to create the second data set, or period. It described the 1994–1996 experience of a subset of these couples.

For our 1992–1994 analysis, we initially restricted our sample to couples who were married at Wave 1 and eliminated couples in which either spouse had a proxy or partial proxy Wave 1 interview. Wives had to have been born between 1931 and 1941 (aged 50–61 in 1992) to reflect the HRS sampling frame. These restrictions reduced the Wave 1 sample to 2,949 couples. The sample was further reduced to 1,217 couples because husbands had to have had some long-term attachment to the labor force at Wave 1. In particular, as evidence of a stable work history, husbands had to have been employed by their firm for at least 3 years (Fallick, 1996) and employed full-time at Wave 1. Self-employed and noncivilian employees were excluded.

Of the 1,217 couples, 377 were eliminated from our analysis because they either retired (n = 132) or left their job for reasons other than a business closing or layoff (n = 245) between Waves 1 and 2. This left 840 couples potentially available for analysis. Of these, 52 were eliminated because one of the spouses had a proxy Wave 2 interview. In addition, one couple was not interviewed in Wave 2, and thus was lost because of sample attrition. Two ended their marriage between waves. As a final set of restrictions, based on responses to the wave 2 survey, we limited our sample to those 785 couples in which the husbands were continuously employed (n = 730) or displaced from their job (n = 55) between Waves 1 and 2. Displaced men were those who, in Wave 2 of the HRS, indicated that they lost their job because the business closed or because they were laid off since Wave 1. Our 1992–1994 sample of displaced and continuously employed workers was smaller than that used in Gallo and colleagues (2000) because we only included male workers married to the same spouse for both survey waves, whose wives were born between 1931 and 1941.

For analyses of the second period (1994–1996), there was additional loss to follow-up based on responses to the Wave 3 survey. Of the 785 couples in which the husband was displaced or continuously employed between Waves 1 and 2, 156 couples were eliminated because the husbands either retired (n = 125) or left their job for reasons other than a business closing or layoff (n = 26) between Waves 2 and 3. None of the 55 husbands who were displaced between Waves 1 and 2, were re-employed with sufficient job tenure to qualify as either continuously employed or displaced in the analysis of the second period. This left 574 couples potentially available for analysis. Of these, 69 couples were not interviewed by the HRS at Wave 3, and 42 couples were missing values for at least one of the covariates included in our models at Wave 3. Thus, our final sample for the second period consisted of 463 wives whose husbands’ had been continuously employed (n = 425) or displaced from their job (n = 38) between Waves 2 and 3. These 463 husbands were a subset of the 730 husbands continuously employed between Waves 1 and 2.

**Dependent Variable**

The measure used for wives’ depressive symptoms at follow-up in 1994 and 1996 was the same as that used by Gallo and colleagues (2000). Specifically, wives’ depressive symptoms were measured by 8 items of the 20-item Center for Epidemiologic Studies–Depression scale (CES-D) used in the second and third waves of the HRS. Although we would have preferred to use the full scale (Radloff, 1977), only these eight items were asked. Six of the eight items indicated the presence of depression (in the last week, the respondent felt depressed; felt everything s/he did was an effort; experienced restless sleep; could not get going; felt lonely; felt sad). Two items suggested the absence of depression (in the last week, the respondent enjoyed life; was happy). The Wave 2 and Wave 3 surveys revised the scale’s original frequency response categories to yes/no responses. We recorded the first wave accordingly. In particular, if the respondent reported that s/he felt a particular way all or almost all or most of the time, the response was recoded as a “yes.” If the respondent reported that s/he felt a particular way some of the time or none or almost none of the time, it was recorded as a “no.” Thus, the scale ranged from 0 to 8, with higher values of the scale indicating greater distress.

Precedent for this recoding was found in Gallo and colleagues (2000), and Gallo tested the reliability of this subset of items from the CES-D. Turvey, Wallace, and Herzog (1999) also provide evidence that using this eight-item subset of the CES-D, with the yes/no response format, does not
appear to compromise the psychometric properties of the scale. Kohout, Berkman, Evans, and Corno-Huntley (1993) provide additional evidence of the reliability of shorter forms of the CES-D. For our sample, the standardized Cronbach’s alpha ranged from .763 for Wave 1 to .826 for Wave 2 to .823 for Wave 3 (Cronbach, 1951; Nunnally, 1967).

Independent Variables

Independent variables were chosen based on our interest in involuntary job loss, the literature we cited previously suggesting the importance of the variable in interacting with husbands’ involuntary job loss in impacting wives’ mental health (Dew et al., 1987; Liem & Liem, 1988; Penkower et al., 1988) and medical sociology literature indicating the influence of socioeconomic factors on mental health (Kaplan, 1989; Link & Dohrenwend, 1989).

Displacement dummy.—Our primary focus, a dummy variable for husband’s involuntary job loss, took the value one if the wife’s husband had been displaced between survey waves and zero if the husband had been continuously employed.

Mental health.—Because we were interested in the effect of husbands’ job loss on the change in wives’ mental health, we controlled for wives’ baseline mental health. Baseline mental health was likely to be strongly associated with health 2 years later. This baseline CES-D index was composed of the same eight items as our dependent variable.

Physical health.—We also expected wives’ baseline physical functioning to impact the change in their mental health. We thus composed an index of measures of wives’ physical functioning, ranging from 0 to 16, in which additional restrictions on functioning were reflected in higher index values. This index is similar to the one used by Gallo and colleagues (2000). Included measures were the ability to run or jog a mile; walk several blocks; walk one block; walk across a room; get up from a chair after sitting for long periods; get in and out of bed without help; climb several flights of stairs without resting; climb one flight of stairs without resting; lift or carry weights over 10 pounds like a heavy bag of groceries; stoop, kneel, or crouch; pick up a dime from a table; bathe or shower without help; reach or extend arms above shoulder level; pull or push large objects like a living room chair; eat without help; and dress without help.

Baseline mental and physical health were measured in 1992 for the first period (1992–1994) and in 1994 for the second period (1994–1996). These variables were discounted by the Consumer Price Index (CPI), with the base year chained (1982–1984 was set equal to 100). The CPI for 1992 was 140.3, and the CPI for 1994 was 148.2. Income and wealth were included as continuous variables, with one exception. When we examined the interaction between husbands’ job loss and household income, we dichotomized income as above or below the sample median value; this specification was also used for the main effect of household income and wealth. We dichotomized income to facilitate the interpretation of the interaction term. We dichotomized wealth to be consistent with our dichotomization of income. Nonetheless, we also examined the interaction between husband’s job loss and household income, with household income and wealth measured as continuous variables. This did not affect the results of our analysis.

Husbands’ baseline mental health and change in mental health.—Because in community samples of younger women, husbands’ job loss increased wives’ follow-up depressive symptoms when there was an increase in husbands’ depression, we included as an independent variable the change in husbands’ depression. We wished to replicate the finding that the impact of husbands’ displacement on wives’ mental health operated through the impact of the displacement on the change in husbands’ mental health (Dew et al., 1987). The change in husbands’ depressive symptoms was measured as the difference between husbands’ baseline and follow-up CES-D, where the CES-D was composed of the same eight items as our dependent variable. For our first period (1992–1994), the change in husbands’ depressive symptoms was measured as the difference between his CES-D in the first and second waves of the survey. For our second period (1994–1996), the change in husbands’ depressive symptoms was measured as the difference between his CES-D in the second and third waves of the survey. This variable could potentially range between plus and minus eight (a range of 16). We also included husbands’ baseline depression in the model to control for levels of depression unrelated to the employment experience.

Household wealth.—As our measure of wealth, we used household net worth. This measure included the baseline values of housing equity less outstanding mortgage debt, checking and savings accounts, certificates of deposit, bonds and Treasury bills, individual retirement accounts, stock and mutual funds, business equity, equity in real estate other than the respondent’s primary assets, and other reported assets.

Baseline income and wealth were measured in 1992 for the first period (1992–1994) and in 1994 for the second period (1994–1996). These variables were discounted by the Consumer Price Index (CPI), with the base year chained (1982–1984 was set equal to 100). The CPI for 1992 was 140.3, and the CPI for 1994 was 148.2. Income and wealth were included as continuous variables, with one exception. When we examined the interaction between husbands’ job loss and household income, we dichotomized income as above or below the sample median value; this specification was also used for the main effect of household income and wealth. We dichotomized income to facilitate the interpretation of the interaction term. We dichotomized wealth to be consistent with our dichotomization of income. Nonetheless, we also examined the interaction between husband’s job loss and household income, with household income and wealth measured as continuous variables. This did not affect the results of our analysis.

Dependent Variables

Since we were interested in the effect of husbands’ job loss on the change in wives’ mental health, we controlled for wives’ baseline mental health, husbands’ baseline mental health, and the change in husbands’ mental health. Baseline mental health was likely to be strongly associated with health 2 years later. This baseline CES-D index was composed of the same eight items as our dependent variable.

Physical health.—We also expected wives’ baseline physical functioning to impact the change in their mental health. We thus composed an index of measures of wives’ physical functioning, ranging from 0 to 16, in which additional restrictions on functioning were reflected in higher index values. This index is similar to the one used by Gallo and colleagues (2000). Included measures were the ability to run or jog a mile; walk several blocks; walk one block; walk across a room; get up from a chair after sitting for long periods; get in and out of bed without help; climb several flights of stairs without resting; climb one flight of stairs without resting; lift or carry weights over 10 pounds like a heavy bag of groceries; stoop, kneel, or crouch; pick up a dime from a table; bathe or shower without help; reach or extend arms above shoulder level; pull or push large objects like a living room chair; eat without help; and dress without help.


Demographic variables.—Several socioeconomic variables were included. Wives’ baseline age and schooling were included as continuous variables. Wives’ race was measured as a dummy variable equal to 1 for White and 0 for non-White respondents. Baseline age, schooling, and race were measured in 1992 for the first period (1992–1994) and in 1994 for the second period (1994–1996).

Household income.—Our measure of income at baseline was total household income, which included husbands’ labor earnings, wives’ labor earnings, capital income, private pension and annuity income, social security retirement income, disability (including social security) income, unemployment income, welfare income, other income from wives or husbands, and income from other family members. We used total income as the appropriate measure because wives’ mental health was more likely to be affected by their husbands’ job loss if the family had no income source other than his earnings.

Household wealth.—As our measure of wealth, we used household net worth. This measure included the baseline values of housing equity less outstanding mortgage debt, checking and savings accounts, certificates of deposit, bonds and Treasury bills, individual retirement accounts, stock and mutual funds, business equity, equity in real estate other than the respondent’s primary assets, and other reported assets.

Baseline income and wealth were measured in 1992 for the first period (1992–1994) and in 1994 for the second period (1994–1996). These variables were discounted by the Consumer Price Index (CPI), with the base year chained (1982–1984 was set equal to 100). The CPI for 1992 was 140.3, and the CPI for 1994 was 148.2. Income and wealth were included as continuous variables, with one exception. When we examined the interaction between husbands’ job loss and household income, we dichotomized income as above or below the sample median value; this specification was also used for the main effect of household income and wealth. We dichotomized income to facilitate the interpretation of the interaction term. We dichotomized wealth to be consistent with our dichotomization of income. Nonetheless, we also examined the interaction between husband’s job loss and household income, with household income and wealth measured as continuous variables. This did not affect the results of our analysis.

Husbands’ baseline mental health and change in mental health.—Because in community samples of younger women, husbands’ job loss increased wives’ follow-up depressive symptoms when there was an increase in husbands’ depression, we included as an independent variable the change in husbands’ depression. We wished to replicate the finding that the impact of husbands’ displacement on wives’ mental health operated through the impact of the displacement on the change in husbands’ mental health (Dew et al., 1987). The change in husbands’ depressive symptoms was measured as the difference between the CES-D in the first and second waves of the survey. For our second period (1994–1996), the change in husbands’ depressive symptoms was measured as the difference between his CES-D in the second and third waves of the survey. This variable could potentially range between plus and minus eight (a range of 16). We also included husbands’ baseline depression in the model to control for levels of depression unrelated to the employment experience.
Interaction Terms

Interaction of change in husbands’ mental health with husbands’ job loss.—We further included as an independent variable the interaction of the change in husbands’ depressive symptoms with husbands’ job loss. This was used to assess whether the effect of job loss on wives’ mental health was modified by the change in husbands’ mental health.

Interaction of baseline financial circumstances with husbands’ job loss.—We considered as a second interaction how the effect of husbands’ job loss on wives’ follow-up mental health varied with initial household financial circumstances. First, we considered the effect of wives’ initial financial satisfaction modifying the effect of husbands’ job loss on wives’ follow-up depressive symptoms. This was ascertained by their response to a single question asking them to rate their financial satisfaction on a scale of 1–5, with higher values indicating less satisfaction. Because the variable indicating wives’ financial satisfaction was only available in the 1992 survey, this analysis was restricted to the first period (1992–1994). Prior studies considered the role of financial difficulties, and thus we also examined the effect of low income at baseline interacted with husbands’ job loss on wives’ distress. We measured low income by defining a dummy variable indicating income below the sample median value.

Estimation Model and Empirical Approach

We estimated the effect of husbands’ job loss on wives’ mental health separately in our two periods. In each period, we observed wives’ mental health at two points in time, the first and second survey waves or the second and third survey waves. Call these time $t$ and $t + v$. Let $t + k$ represent the time at which a subset of husbands experienced job loss, where $t < t + k < t + v$. In our first model, we were interested in the effect of husbands’ job loss on wives’ follow-up mental health, adjusting for baseline mental health. Thus, we estimated the following equation:

$$ M_{i,t+v} = B_0 + B_1 M_{i,t} + B_2 H_{i,t} + B_3 Z_{i,t} + \gamma d_{i,t+k} + e_{i,t+v} \quad (1) $$

where $i$ indexed wives’ characteristics (including those of the household), $s$ indexed husbands’ characteristics, $M$ was a measure of wives’ mental health, $H$ was a measure of wives’ physical health, $Z$ was a vector of wives’ socioeconomic characteristics, $d$ was a dichotomous indicator variable defined to take the value 1 if the husband was displaced and 0 otherwise, and $e$ was a stochastic error term. The parameter $\gamma$ measured the effect of husbands’ involuntary job loss on the follow-up mental health of wives in our sample, controlling for baseline mental health, relative to the effect on mental health of having a husband who was continuously employed.

Our second model tested the hypothesis that husbands’ involuntary job loss increased wives’ follow-up depressive symptoms above their baseline level when we adjusted for the potential confounding effect of husbands’ baseline depression and the change in husbands’ depressive symptoms. Thus, to the model specified in equation (1), we added husbands’ baseline mental health, $M_{s,t}$, and the change in husbands’ mental health between survey waves, $M_s = M_{s,t+v} - M_{s,t}$. We initially added the main effect of husbands’ depressive symptoms and the change in husbands’ depressive symptoms to examine whether their inclusion affected the coefficient of our displacement indicator.

We also considered the possibility that husbands’ job loss had an indirect impact on wives’ mental health through its impact on husbands’ mental health. This was investigated in two ways. First, we assessed how the parameter estimates for husbands’ job loss were affected by the inclusion of husbands’ changes in mental health in the models. Second, we used two-stage least squares, in which we first estimated the effect of a husband’s job loss on the change in his own mental health, controlling for his physical health and other sociodemographic factors, and obtained the fitted values for husbands’ changes in mental health. We then re-estimated the wives’ mental health regression, substituting the fitted values of husbands’ change in mental health for the observed values of the change in husbands’ mental health. Thus, we derived the indirect effect of husbands’ job loss on wives’ mental health through its effect on husbands’ mental health. This approach is typically used to control for the endogeneity of a variable. In our model, a change in husbands’ mental health was a function of his Wave 2 (Wave 3) mental health, and Wave 2 (Wave 3) was also used to define our dependent variable, wives’ Wave 2 (Wave 3) mental health. Our identifying instruments were husband’s physical function index, husband’s age, and husband’s schooling.

In a final set of models, we investigated whether the effect of husbands’ involuntary job loss on wives’ follow-up depressive symptoms varied with either the change in husbands’ mental health or with the households’ baseline financial circumstances. Because wives’ financial satisfaction was only available in the first wave of the survey, the latter analysis was only performed in the first period: 1992–1994. We considered the modifying effect of low household income, using a dummy variable indicating households with baseline income below the sample median value.

We estimated our regressions separately for each period, using ordinary least squares, because a key interaction term, wives’ financial satisfaction, was only available in the first period (1992–1994), not the second period (1994–1996). In estimating our models, we took into account the complex sampling design of the HRS (i.e., the weighting, clustering, and stratification of the sample). Weighting adjusts for the fact that, although observations were selected through a random process, different observations had different probabilities of selection. Using sampling weights results in estimators that are approximately unbiased. Without weighting, our estimates may be very biased, and the standard errors of our estimates may also be affected. Thus, all analyses were weighted by the wife’s person level analysis weight. This weight took into account the complex sample design of the HRS, which includes oversamples of Blacks, Hispanics, and Florida residents. These weights also adjusted for geographic and race group differences in response rates and for the subsampling of households in a small number of locked buildings or dangerous areas. The HRS also made poststratification adjustments in these weights at both the household and person level to control sample demographic distributions to known 1990 Census totals.
We also adjusted our standard errors to take into account the stratification and clustering of the HRS sample. We used the code SE Stratum, which defined the sampling error computation strata for the HRS data, and the code Secu, the half-sample code for analysis of sampling error to estimate standard errors using the approximate “two-per-stratum” Taylor Series method. Because of the sampling design, observations in the same cluster were not independent. If we used estimators that assumed independence, our estimates of the standard errors were likely to be too small. Thus, accounting for clustering was necessary for valid estimation of standard errors, p values, and confidence intervals. In addition, we also adjusted for the stratification of the HRS, whereby different groups of clusters were sampled separately. With the stratum divisions fixed in advance, sampling was done independently across strata. Because strata were thus statistically independent, analyzing them accordingly was likely to lead to smaller (valid) estimates of the standard errors (StataCorp, 1999).

RESULTS

Variable Means

Table 1 presents the means of covariates used in the wives’ mental health equations, weighted by the wives’ person weight. These statistics are shown in the aggregate and by husbands’ employment status. Means for the first period (1992–1994) are shown in the first three columns of the table. We found that husbands in 7% of our sample households lost jobs between the first and second waves of the HRS. There was a small increase in wives’ CES-D between survey waves. This was likely from the rescaling of the Wave 1 measure, because our mapping of the frequency responses to the Wave 1 CES-D questions into yes/no responses may not have perfectly corresponded to how individuals would have responded if their initial response choice was yes/no. Nonetheless, given our mapping, 68% of wives in Wave 1 reported zero depressive symptoms and 92% reported two symptoms or less. In Wave 2, 56% of the wives reported zero symptoms and 85% reported two symptoms or less. On average, wives were 55 years old and completed 12.5 years of schooling; 93% of wives were White. Households had an average of $229,196 in wealth, including the value of housing assets and $66,050 in income.

The last three columns of Table 1 present the means of covariates used in the wives’ mental health equations for the second period: 1994–1996. Husbands in 9.3% of our sample households lost jobs between the second and third waves of the HRS. On average, wives were 56 years old and completed 12.6 years of schooling; 91% of wives were White. Households had an average of $235,717 in wealth, including the value of housing assets, and $71,071 in income.

The Impact of Husbands’ Job Loss and Depressive Symptoms

The first three columns of Table 2 present regression results for 1992–1994, whereas the last three columns of Table 2 present regression results for the 1994–1996 period. We found that husbands’ involuntary job loss did not have a significant effect on wives’ mental health in either the first (Column 1) or second (Column 4) period. Although the study had sufficient power (80%) to detect a .40 difference in the standard deviation of the CES-D of the wives of displaced and continuously employed men in Period 1 and a .50 difference in the standard deviation of the CES-D of wives of displaced and continuously employed men in Period 2, the observed change in the outcome was far smaller than that. In fact, the change was very modest. Hence it was not surprising that this small effect was not statistically significant. One would need a sample of 234 displaced men and 3,106 continuously employed men to detect such a small effect as statistically significant (with 80% power) in Period 1, and 4,842 displaced men and 54,154 continuously employed men to detect such a small effect in Period 2.

When we added the main effect of a change in husbands’...
depressive symptoms to the model in column 2 (Period 1) and column 5 (Period 2), we found that an increase in husbands’ depressive symptoms significantly increased wives’ follow-up depressive symptoms ($p < .01$). The coefficient of displacement doubled in magnitude in Period 1 and was reduced by half in Period 2, but it remained statistically nonsignificant ($p > .15$). We included the quadratic of this change in husbands’ mental health to test for nonlinear effects (regressions not shown) and found that this quadratic term was not significant in either period. The significance of the effect of this change in husbands’ mental health on wives’ follow-up mental health suggests the plausibility of his displacement on wives’ mental health. This would suggest that the interaction of husband’s job loss with a change in his depressive level may be significant.

When we added the interaction of husbands’ job loss with a change in his depression level to the regressions for Period 1 (column 3) and Period 2 (column 6), the coefficient was not significant in either period. When we pooled the two periods and estimated the model using Generalized Estimating Equations, we found that the three-way interaction of a period dummy with husbands’ job loss and the change in husbands’ mental health was not significant (Liang & Zeger, 1986; Verbeke & Molenberghs, 2000). Thus, there were no significant differences in the modifying role of husbands’ mental health between the two samples.

We have thus far established that the coefficient of displacement, considered alone, and the coefficient of the interaction of displacement with a change in husbands’ mental health, considered alone, do not have a significant effect on wives’ follow-up mental health. Nonetheless, it is conceivable that, among husbands who were displaced who then experienced an increase in depressive symptoms, the full effect of displacement, measured by summing these two coefficients, had a significant impact on wives’ follow-up mental health. Thus, we estimated the model specified in the third column of Table 2 for both the first and second periods (i.e., for Period 1, we estimated the model specified in the third column of Table 2, without including financial satisfaction). We summed the coefficient of displacement and the coefficient of the interaction of displacement with a change in husbands’ mental health, and adjusted the standard error of this sum for the survey’s complex sample design. We assumed a 1 point increase in husbands’ CES-D. We found that, in Period 1, the full effect of displacement was $-0.208$ ($SE = .199$), and in Period 2, the full effect of displacement was $0.741$ ($SE = .722$). In neither case was the effect significant. For the first period, we also calculated the effect of displacement on wives’ follow-up mental health among couples in which the husbands became more depressed and wives were financially satisfied at baseline (financial satisfaction = 1). We thus estimated the full effect of displacement, based on the model specified in column 3 of Table 2. Summing these three coefficients (husbands’ displacement, the interaction

### Table 2. Ordinary Least Squares Estimates of the Impact of Husband’s Involuntary Job Loss on Wife’s Mental Health

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<td>Impact of Husband’s Job</td>
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<td>Loss and Change in CES-D</td>
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<td>Wife’s CES-D</td>
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<td>Loss Interacted with Change in</td>
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<td>Change in His CES-D</td>
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<td>Impact of Husband’s Job</td>
<td>Impact of Husband’s Job</td>
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<tr>
<td>Husband displaced</td>
<td>$-0.105 (.193)$</td>
<td>$-0.018 (.335)$</td>
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<tr>
<td>Husbands’ CES-D</td>
<td>0.093 (.067)</td>
<td>0.022 (.330)</td>
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<tr>
<td>Change in husbands’ CES-D</td>
<td>0.154** (.065)</td>
<td>0.190* (.086)</td>
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<td>Wives’ CES-D</td>
<td>0.099*** (.026)</td>
<td>0.201* (.090)</td>
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<tr>
<td>Wives’ Physical Function Index</td>
<td>0.100*** (.025)</td>
<td>0.134*** (.033)</td>
</tr>
<tr>
<td>Wives’ age</td>
<td>0.008 (.017)</td>
<td>0.145** (.033)</td>
</tr>
<tr>
<td>Wives’ schooling</td>
<td>0.101*** (.025)</td>
<td>0.337*** (.073)</td>
</tr>
<tr>
<td>Wives’ White</td>
<td>0.347*** (.025)</td>
<td>0.347*** (.076)</td>
</tr>
<tr>
<td>Household wealth</td>
<td>0.001 (.001)</td>
<td>0.001 (.001)</td>
</tr>
<tr>
<td>Household income</td>
<td>0.000 (.002)</td>
<td>0.000 (.002)</td>
</tr>
<tr>
<td>Wives’ financial satisfaction</td>
<td>0.080 (.058)</td>
<td>NA</td>
</tr>
<tr>
<td>Interaction: Husband Displaced $\times$ Change in His CES-D</td>
<td>0.074 (.123)</td>
<td>NA</td>
</tr>
<tr>
<td>Interaction: Husband Displaced $\times$ Wives’ Financial Satisfaction</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Constant</td>
<td>1.994* (.360)</td>
<td>3.999* (.1570)</td>
</tr>
</tbody>
</table>


*p < .05; **p = .01; ***p < .001.
of husbands’ displacement with an increase in husbands’ mental health, and the interaction of husbands’ displacement with wives’ financial satisfaction), we found that the full effect of displacement was .182 (SE = .282), and thus the effect was not significant. Finally, we found that, although husbands’ job loss was significantly associated with the change in husbands’ mental health, there was no evidence of an indirect effect of husbands’ job loss on wives’ follow-up mental health through its effect on the change in husbands’ mental health.

We further examined how the effect of husbands’ job loss on wives’ mental health varied with baseline financial circumstances. In the first period (1992–1994), we measured financial circumstances as wives’ baseline financial satisfaction, with higher values indicating less satisfaction. We found that greater baseline financial satisfaction among wives (see Table 2, column 3) magnified the effect of husbands’ displacement on wives’ follow-up mental health ($p < .05$). Unfortunately, this variable, wives’ financial satisfaction, was not available in the second wave of the survey. Thus, we could not test whether this relationship held in the second period.

We also examined how the effect of husbands’ job loss on wives’ mental health varied with initial household income below the sample median value (regressions not shown). These models were specified the same as the regressions presented in Table 2, except that when we interacted husbands’ job loss with income below the sample median value, we also measured the main effects of household income and wealth as household income and wealth below the sample median values. We found that this interaction did not have a significant impact on the relationship between husbands’ job loss and wives’ mental health in either the first or second period.

**The Impact of Husbands’ Re-employment**

Since Gallo and colleagues (2000) found that re-employment was positively associated with own mental health at follow-up ($p < .05$), a remaining question was whether wives of re-employed displaced men were less depressed than wives of displaced men who were still unemployed. Our sample of displaced workers was too small to estimate the effect of re-employment on wives’ follow-up mental health.

**DISCUSSION**

This study is the first of which we know that examines the effect of husbands’ involuntary job loss on wives’ mental health using a nationally representative sample of older adults in the United States. We find no evidence that husbands’ job loss impacts wives’ subsequent mental health over a 2-year follow-up period. These results are consistent with the findings of previous studies of younger women (Penkower et al., 1988).

We examine whether interaction results point to vulnerable subgroups of wives. In the interaction of displacement with the change in husbands’ mental health, the vulnerable subgroup is wives whose husbands were displaced and experienced an increase in depressive symptoms. In the second interaction, the vulnerable subgroup is wives whose husbands lost their jobs and whose initial satisfaction was relatively high. Tower and Kasl (1995, 1996) have postulated that, because of emotional contagion, depressive symptoms in husbands may result in mental health symptoms in their wives, as a consequence of the interaction between two people in a close relationship, such as marriage, that may facilitate changes in one person fostering changes in the other. We find that when an increase in husbands’ depressive symptoms is associated with a job loss, it does not appear to have a significant impact on wives’ follow-up mental health. Nonetheless, Dew and colleagues (1987) and Liem and Liem (1988) found evidence that when a husbands’ layoff adversely affects their own mental health, this has a negative psychological effect on their wives.

Our findings do suggest that when wives are more financially satisfied at baseline, a husbands’ job loss adversely affects their mental health. These findings suggest that perhaps for wives with greater financial satisfaction, job loss is less expected and thus the new experience has a greater impact. We obtain this result based on the first period of data (1992–1994). During this period following the 1990’s recession, re-employment probabilities and earnings on new jobs are likely to be lower than during the later expansion. Thus, it would have been desirable to replicate this finding on later waves of the HRS with a larger sample of displaced husbands. Unfortunately, this variable, wives’ financial satisfaction, is not available in later waves of the HRS. Thus, we are unable to test whether it has a similar effect on the relationship between husbands’ job loss and wives’ mental health when the economy is expanding. Prior studies have examined the impact of initial financial strain rather than financial satisfaction on the effect of job loss. Our results suggest that the effect of financial contentment on subsequent response to a job loss deserves further attention.

The study has several limitations. Our measure of mental health may not be sufficiently precise, introducing measurement error. Only 8 items of the 20-item CES-D are used in the second and third survey waves, and thus in this study. Although we would have preferred to use the full scale, only these eight items are asked in the second and third waves of the survey. Another limitation is that the variable indicating wives’ financial satisfaction is not available in the second wave of the survey. In the two periods, we measure low income as income below the sample median value. However, low income may not measure the aspects of financial difficulties that most increase older wives vulnerability to a husbands’ layoff.

This study makes several contributions, despite these limitations. First, it suggests that, among older couples, there is no evidence that husbands’ job loss affects the mental health of wives, even when job loss adversely affects the mental health of their husbands. Nonetheless, it indicates that the effect of job loss on wives’ mental health is magnified when wives were initially satisfied with their financial situation. This suggests that, among vulnerable subgroups of older couples, mental health services specifically targeted at displaced men experiencing mood disturbances should also be made available to wives.

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IMPACT OF JOB LOSS ON WIVES’ MENTAL HEALTH

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