

# Do social programmes contribute to mental well-being? The long-term impact of unemployment on depression in the United States

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<b>Background</b>	Important evidence about the mental health effects of unemployment exist; however, little is known about the possible protective effects of various social interventions or about their long-term impact. This study examines the long-term consequences that different types of social programmes, i.e. entitlement and means-tested benefits, might have as regards ameliorating a negative mental health impact of unemployment among women and men.
<b>Methods</b>	Multiple regression models were used to analyse panel data collected in the National Survey of Families and Households in 1987 and 1992. In all 8029 individuals interviewed in both 1987 and 1992 were included in the analysis. A depression index was created from the responses to 15 items from the Center for Epidemiological Studies' Depression Scale-D (CES-D) which were included in the survey.
<b>Results</b>	The receipt of government entitlement benefits by unemployed women is associated with a reduction of depression symptoms in the long term. Men and women not working and receiving means-tested or welfare benefits are more likely to report depression in both the short and long term.
<b>Conclusions</b>	The study underscores the need for monitoring the impact of welfare reform on mental health.
<b>Keywords</b>	Depression, unemployment, social programmes, mental health, social support
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The US has been very successful in lowering the overall unemployment rate to <5.3%,<sup>1</sup> but the context of unemployment has changed considerably within the last 15 years, and this adjustment can have long-term consequences. Of the full-time workers who lost their jobs and found new employment in the US, about a third suffered earning losses of >20% and took up jobs without health insurance benefits.<sup>2</sup>

The health effects of economic insecurity have been widely analysed, and we have important evidence on the mental and overall health effects of unemployment.<sup>3–9</sup> An increase in depression symptoms, substance abuse, admissions to psychiatric hospitals, death by suicide, and violence are among the most salient outcomes associated with unemployment.<sup>10–14</sup> The

evidence is inconclusive regarding other health outcomes. In addition, people in poorer health are more likely to lose their jobs and people in better health are more likely to be re-employed.<sup>15–17</sup> Comprehensive reviews discussing these findings are readily available.<sup>18,19</sup>

There is also an extensive literature on the impact of adverse working conditions on health; while most of the research in this area of inquiry started by focusing on men's work,<sup>20,21</sup> a growing number of studies are now including women.<sup>22,23</sup> It has been noted that that for women combining paid work with responsibilities related to home and family reduces the well-being benefits of employment.<sup>24,25</sup>

There has been some work on the impact of the interactions between unemployment levels and job conditions on the psychological distress of workers,<sup>26</sup> but very rarely are different working situations and unemployment studied simultaneously using individual level data. In addition, the impact of public assistance in ameliorating the effects of unemployment on perceived physical illness has rarely been addressed.<sup>27–29</sup>

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## Objectives

Our objective is to assess the long-term effects of unemployment on depression symptoms. What is unique about this study is that we explore the possible impact that different social programmes, such as entitlement unemployment benefits or means-tested welfare schemes could have with respect to ameliorating a possible negative mental health impact among the unemployed, as well as the fact that we are able to look at different employment arrangements simultaneously.

Our hypothesis is that economic hardship is only one of the effects associated with being without a job.<sup>30</sup> Unemployment may have additional psychological and sociological costs that could be mitigated by different activities and programmes of social support in addition to the provision of economic relief. We argue that in order to have a protective effect on mental health, social support should not only consist of adequate economic assistance, but should simultaneously seek to alleviate the additional sociological and psychological impact of unemployment.

The importance of social support in protecting health has been widely documented since the publication of a comprehensive review by Cassel in 1976.<sup>31</sup> In addition, recent research indicates that 'the actual social environment is not the source of some protective factors for mental health; instead, what may be more important is how the environment is perceived' (p.395),<sup>32</sup> and that the effect of perceived support is not always mediated by actual supportive behaviours.<sup>33</sup> While the social environment can be the source of adverse health outcomes, the way social support is perceived could be a key factor in benefiting from its health protective effects.

In a previous study it was found that the type of unemployment benefits received played a role in modifying the impact of unemployment on symptoms of depression,<sup>12</sup> but the nature of the cross-sectional analysis carried out precluded the possibility of assessing whether the observed differences were due to the impact of the different benefit programmes or to a selection process. By using longitudinal data, we are able to further explore the possible differences between unemployed groups in relation to full-time employed, and to better understand how men and women are affected in different ways.

## Methods

We analysed panel data collected in the National Survey of Families and Households (NSFH) 1987–1992. The 1987 NSFH study consisted of interviews with 13 014 respondents, of whom 10 008 were re-interviewed in 1992–1993. This represents an attrition rate of 23%. We analysed possible differences between respondents to the 1992 survey and those who were lost to follow-up after the 1987 interview. There were no significant differences in attrition rates by gender, age, ethnic group, and marital status between those who were re-interviewed and those lost to follow-up.

We limited our analysis to those respondents who were aged between 17 and 65 in 1987 and who were re-interviewed in 1992–1993. The total number of respondents included in the analysis was 7536.

As the outcome measure, we used a depression index created from the responses to 15 items from the Center for Epidemiological Studies' Depression Scale (CES-D) which were included

in the survey. The 15 CES-D items are described in Appendix 1. The index of depression ranged from 0 to 105, and we transformed it to log (depression + 0.05) to better fit the assumptions of multiple regression analyses. The mean (and standard deviation) of the untransformed and transformed index were 16.89 (18.52) and 2.23 (1.29), respectively. The transformation changed the skewness from 1.84 to -0.69, and made the distribution symmetric with the mean in the middle of the range of -0.693 and 4.66. An advantage of the log transformation is that the regression coefficients that result from the analysis can be back-transformed to yield an interpretation of how many times higher or lower is the depression index for one group compared to another.

An employment situation variable was constructed from several variables asking about the respondents' employment. Employed respondents in 1987 were divided into full- and part-time employed, depending on whether they worked  $\geq 30$ , or  $\leq 29$  h a week. For the 1992 interviews, we divided the employed population into two additional categories according to whether or not they were satisfied with their jobs. Satisfaction with 1992 employment reflects the perception of the individual, and could be due to a variety of both structural and personal factors (e.g. level of benefits, schedule, friendliness of supervisors or co-workers).

In addition, we differentiated those working people who were simultaneously receiving welfare benefits (i.e. means-tested or public assistance), and followed the same strategy. Males working and receiving welfare could not be included in the analysis because of the insignificant number involved.

Non-employed individuals looking for work during the 4 weeks prior to the interview, and those not actively looking for work were separated into two categories. These two groups were then further divided into three categories: (1) people receiving public assistance in the form of welfare or means-tested benefits; (2) people receiving income from government entitlement benefit programmes (including veterans' benefits, unemployment compensation, and worker's compensation), and (3) people not receiving any type of income or economic assistance. This last group of non-working people is difficult to interpret; it could include both people out of the labour force by choice, and unemployed people who have given up looking for work. Of these, we do not know how many are housewives by choice, students, or simply discouraged unemployed not eligible for any kind of benefits. There was no question included in the survey that allowed us to differentiate between these three groups of people included in the same category of non-employed and not looking for work without receiving any benefits.

Those who were fully retired in 1992 were grouped in a separate category. The typology of employment situation was operationalized as dummy variables.

## Statistical analysis

We ran three different multiple regression models to explain depression. First, we analysed the possible impact of 1987 employment status and receipt of benefits on 1992 depression, while controlling for age, race, 1987 years of education, 1987 index of depression, and two measures of social support (number of social contacts, and having someone to call in an emergency in 1987).

Second, we added other 1992 factors to the model, including years of education in 1992, marital status, family income, assets and debts, having a physical or mental limitation that would restrict the ability to work, number of weeks unemployed during the year before the second interview (i.e. 1991), frequency of social contacts, satisfaction with personal relations, and environmental variables such as unemployment rate in the State of residence and amount of unemployment benefit available per unemployed person in the relevant State. Third, we added employment situation in 1992 to create a full model that allowed us to assess the impact of current employment status on depression while controlling for 1987 employment.

We used a Box-Cox transformation of the income, assets and debts variables to reduce skewness of these variables. The optimal transformations were found by doing a grid search over possible values of the Box-Cox shape parameter. The appropriate regression diagnostic tests were performed to assess the fit of the model. We did not impute any missing values in the dependent variable. For the categorical independent variables, we added an option of ‘no response’ where necessary. The income, assets and debts variables were complex, comprised of many components. If a component was missing, we imputed the values deterministically with the predicted values estimated for the age, sex, ethnic, marital and occupational group of the respondent. Preliminary analyses indicated that results were not sensitive to the inclusion of these imputed values.

To control for a possible reverse causation effect, we included in our model previous measures of depression and employment history.

## Results

Table 1 presents a description of our sample according to employment status and reported level of depression in 1992. Consistent with the literature, women report higher levels of depression symptoms than men. The main similarities between men and women are the lower levels of depression indicators among respondents who are full- or part-time employed and satisfied with their jobs, and those who are fully retired. All respondents report higher indices of depression if they were unemployed and receiving welfare (i.e. means-tested) benefits.

Table 2 presents the results of our multiple regression analysis to assess the impact of 1987 employment status on 1992 symptoms of depression. As observed in Table 2, the important factors in explaining less symptoms of depression include age and years of education. Index of depression previously reported in 1987 is strongly related to depression in 1992. Differences between men and women include frequency of social contacts being negatively associated with depression only among men. Race other than white or African American is associated with the depression outcome only among women.

**Table 1** Means and standard deviations (SD) of depression index for different employment status groups in 1992 (range: 0–105)

Employment status	Women			Men		
	Mean	SD	N	Mean	SD	N
<b>Employment status in 1987</b>						
Full-time work	17.7	18.8	2312	13.4	15.1	2504
Part-time work	17.1	17.6	551	12.3	13.8	140
Working with welfare	27.5	22.7	125	23.3	26.0	35
Unemployed/Looking for work, with gov. <sup>a</sup> benefits	14.2	13.8	14	21.5	22.5	15
Unemployed/Looking for work, with welfare	29.3	23.3	47	25.3	27.1	11 <sup>b</sup>
Unemployed/Looking for work, no benefits	23.2	21.6	139	20.2	20.0	88
Not working/Not looking for work, with gov. <sup>a</sup> benefits	14.9	17.6	37	17.0	21.7	19
Not working/Not looking for work, with welfare	30.6	25.2	239	13.1	13.1	10 <sup>b</sup>
Not working/Not looking for work, no benefits	18.3	20.3	1056	13.5	16.5	194
Total	19.0	20.0	4520	13.8	15.7	3016
<b>Employment status in 1992</b>						
Full-time work/Satisfied with job	15.8	17.1	1639	11.3	12.5	1699
Full-time work/Others	23.0	19.6	666	17.6	16.6	657
Part-time work/Satisfied with job	13.6	15.2	414	10.5	14.2	85
Part-time work/Others	24.2	23.4	158	12.9	13.1	47
Working with welfare/Satisfied with job	26.6	24.0	52	21.4	28.5	12 <sup>b</sup>
Working with welfare/Others	31.6	24.4	25	20.6	21.0	5 <sup>b</sup>
Unemployed/Looking for work, with gov. benefits	26.7	21.1	13	15.2	20.6	22
Unemployed/Looking for work, no benefits	25.7	23.7	54	22.4	23.4	44
Not working/Not looking for work, with gov. benefits	25.6	24.3	47	18.4	15.1	30
Not working/Not looking for work, with welfare	35.0	25.0	143	34.1	29.8	18
Not working/Not looking for work, no benefits	20.2	21.8	975	20.5	23.6	209
Completely retired	15.9	18.8	329	11.5	15.4	188
Total	19.0	20.0	4520	13.8	15.7	3016

<sup>a</sup> Government.

<sup>b</sup> These groups were not included in the regression analysis due to small number of observations in these categories.

**Table 2** Parameter estimates and 95% CI from regression model (model 1) to assess impact of 1987 employment status on 1992 symptoms of depression<sup>a</sup>

	Women Estimate (95% CI)	Men Estimate (95% CI)
<b>Employment status in 1987</b>		
Full-time work	(ref.)	(ref.)
Part-time work	-0.01 (-0.11, 0.09)	-0.25 (-0.43, -0.06)
Working with welfare	0.19 (-0.24, 0.46)	0.27 (-0.19, 0.72)
Unemployed/Looking for work, with gov. <sup>b</sup> benefits	-0.80 (-1.44, -0.16)	0.18 (-0.54, 0.88)
Unemployed/Looking for work, with welfare	0.33 (-0.08, 0.74)	n.a.
Unemployed/Looking for work work, no benefits	0.08 (-0.13, 0.28)	0.19 (-0.05, 0.43)
Not working/Not looking for work, with gov. benefits	-0.28 (-0.66, 0.12)	-0.13 (-0.61, 0.35)
Not working/Not looking for work, with welfare	0.24 (0.03, 0.44)	n.a.
Not working/Not looking for work, no benefits	-0.10 (-0.18, -0.02)	-0.03 (-0.19, 0.13)
<sup>a</sup> Index of depression in 1987	0.39 (0.36, 0.41)	0.32 (0.29, 0.35)
<b>Social support in 1987</b>		
Someone to call in an emergency (family, friends, etc.)	(ref.)	(ref.)
No one to call	0.06 (-0.19, 0.25)	-0.14 (-0.38, 0.09)
Frequency of social contacts	-0.001 (-0.01, 0.01)	-0.01 (-0.02, -0.002)
<b>Race/ethnicity</b>		
White	(ref.)	(ref.)
African American	0.06 (-0.05, 0.17)	0.04 (-0.11, 0.19)
Others	0.19 (0.05, 0.31)	0.02 (-0.14, 0.19)
<b>Years of education in 1987</b>	-0.02 (-0.03, -0.005)	-0.02 (-0.03, -0.003)
<b>Age in 1992</b>	-0.01 (-0.01, -0.004)	-0.01 (-0.02, -0.01)
<b>Intercept</b>	(1.78, 2.30)	(2.00, 2.64)
<b>Standard error</b>	1.060	1.280
<b>R<sup>2</sup></b>	0.185	0.158
<b>D.f. (Model)</b>	16	16
<b>D.f. (Error)</b>	4498	2996
<b>Prob &gt; F</b>	0.0001	0.0001

<sup>a</sup> Transformed variables: log(index of depression 1992 + 0.05), log(index of depression 1987 + 0.05).

Positive value of a parameter estimate indicates a higher value of index of depression in 1992, whereas a negative value indicates a low value of index of depression in 1992.

<sup>b</sup> Government.

In comparison with full-time workers, women not working, not looking for work, and not receiving any social benefits in 1987 (i.e. mostly housewives) report a lower index of depression in 1992; their index of depression is 1.1 times (i.e. 10%) lower. A similar association is observed among unemployed women who were looking for work while receiving government (entitlement) benefits in 1987, although the confidence interval for the effect is relatively large; these women have a depression index that is 2.2 times lower than that of the reference group. In contrast, women who were not working while receiving welfare (means-tested) benefits in 1987 are significantly more likely to report depression in 1992; they have an index of depression that is 1.3 times higher.

Men have a different pattern than women with regard to the association of employment status and depression. Only those who were working part-time in 1987 report less symptoms of depression in 1992 than full-time workers. No other important differences are observed among the other employment groups.

When the 1992 explanatory variables are added to the regression model for women (Table 3, column 2), the only 1987 employment categories that remain inversely associated with 1992

depression are those of unemployed people receiving government benefits. In addition, an inverse association is observed among unemployed women who were not looking for work while receiving government benefits in 1987. For men (Table 3, column 2), we observe the same association as in our reduced model: those who were working part-time in 1987 report less symptoms of depression in 1992. The same effects remain when we add 1992 employment status to the model (Table 3, Columns 3 and 4).

Women who were not satisfied with their job in 1992 report more symptoms of depression than those who were satisfied. Among non-working women, only those who were unemployed, not looking for work, and receiving welfare benefits are more likely to report depression than the comparison group. Men working full-time but not satisfied with their jobs are more depressed than those who were satisfied, and among the unemployed men only those looking for work while receiving government benefits report more depression.

Factors strongly related to depression in 1992, for men and women alike, are having a physical or mental condition that could limit ability to work in 1992, and the respondents' baseline 1987 index of depression (Table 3). Total family assets,

**Table 3** Parameter estimates and 95% CI from regression models including 1992 factors to assess impact of 1987 employment status on 1992 symptoms of depression<sup>a</sup>

	<b>(Model 2)</b>		<b>Full model (Model 3)</b>	
	Women Estimate (95% CI)	Men Estimate (95% CI)	Women Estimate (95% CI)	Men Estimate (95% CI)
<b>Employment status in 1992</b>				
Full-time work/Satisfied with job			(ref.)	(ref.)
Full-time work/Others			0.22 (0.12, 0.33)	0.23 (0.12, 0.33)
Part-time work/Satisfied with job			-0.08 (-0.20, 0.04)	0.24 (-0.01, 0.49)
Part-time work/Others			0.21 (0.04, 0.25)	0.12 (-0.19, 0.43)
Working with welfare/Satisfied with job			0.21 (-0.20, 0.61)	n.a.
Working with welfare/Others			0.06 (-0.46, 0.58)	n.a.
Unemployed/Looking for work with gov. <sup>b</sup> benefits			0.48 (-0.18, 1.14)	0.61 (0.14, 1.07)
Unemployed/Looking for work, no benefits			0.03 (-0.29, 0.35)	0.17 (-0.16, 0.51)
Not working/Not looking for work, with gov.benefits			0.28 (-0.02, 0.58)	0.27 (-0.18, 0.72)
Not working/Not looking for work, with welfare			0.43 (0.20, 0.65)	0.03 (-0.62, 0.69)
Not working/Not looking for work, no benefits			0.01 (-0.08, 0.11)	0.06 (-0.12, 0.24)
Completely retired			0.07 (-0.07, 0.22)	-0.01 (-0.22, 0.20)
<b>Any physical or mental condition in 1992</b>				
Great limitations for paid work	0.70 (0.56, 0.84)	0.59 (0.38, 0.81)	0.67 (0.53, 0.81)	0.61 (0.39, 0.83)
<b>Years of age in 1992</b>				
	-0.01 (-0.01, -0.002)	-0.01 (-0.01, -0.002)	-0.01 (-0.01, 0.002)	-0.01(-0.01, -0.001)
<b>Years of education in 1992</b>				
	-0.01 (-0.03, 0.002)	-0.02 (-0.04, -0.01)	-0.01 (0.02, 0.003)	-0.02 (-0.04, -0.01)
Attended school between 1987 and 1992	-0.06 (-0.14, 0.02)	-0.08 (-0.19, 0.04)	-0.07 (-0.15, 0.01)	-0.08 (-0.19, 0.03)
<b>Marital status in 1992</b>				
Divorced, widow(er) or separated	0.15 (0.06, 0.24)	0.08 (-0.06, 0.23)	0.14 (0.05, 0.23)	0.10 (-0.05, 0.04)
Never married	0.004 (-0.11, 0.12)	0.18 (0.03, 0.33)	-0.01 (-0.14, 0.11)	0.17 (0.02, 0.32)
<b>Race/ethnicity</b>				
White	(ref.)	(ref.)	(ref.)	(ref.)
African American	-0.04 (-0.15, 0.06)	-0.02 (-0.17, 0.13)	-0.06 (-0.17, 0.04)	-0.02 (-0.17, 0.09)
Others	0.17 (0.04, 0.29)	0.01 (-0.15, 0.17)	0.16 (0.04, 0.29)	0.02 (-0.15, 0.18)
<b>Household characteristic in 1992</b>				
Household head	0.02 (-0.12, 0.16)	0.04 (-0.13, 0.21)	-0.01 (-0.15, 0.13)	0.03 (-0.14, 0.21)
<sup>a</sup> Income (US\$000)	-0.04 (-0.11, 0.04)	-0.02 (-0.12, 0.08)	-0.03 (-0.11, 0.04)	-0.02 (-0.12, 0.08)
<sup>a</sup> Assets (US\$000)	-0.11 (-0.16, -0.05)	-0.09 (-0.16, -0.02)	-0.10 (-0.15, -0.04)	-0.08 (-0.16, -0.01)
<sup>a</sup> Debts (US\$000)	0.10 (0.03, 0.17)	0.02 (-0.07, 0.11)	0.11 (0.04, 0.18)	0.01 (-0.07, 0.10)
No. of members	0.02 (-0.005, 0.04)	0.06 (0.03, 0.09)	0.02 (-0.01, 0.04)	0.06 (0.02, 0.09)
<b>Social support in 1992</b>				
Frequency of social contacts	0.00 (0.00, 0.00)	0.001 (0.01, 0.001)	0.00 (0.00, 0.001)	0.001 (0.00, 0.001)
Satisfied with relationships (family, friends, etc.)	-0.16 (-0.17, -0.14)	-0.15 (-0.17, -0.13)	-0.15 (-0.16, -0.14)	-0.14 (-0.16, -0.12)
<b>Job search history and environmental factors</b>				
No. weeks unemployed in 1991	0.003 (-0.002, 0.01)	-0.01 (-0.01, 0.001)	0.002 (-0.003, 0.01)	-0.01 (-0.02, -0.002)
State unemployment rate	0.01 (-0.02, 0.03)	-0.02 (-0.05, 0.01)	0.01 (-0.02, 0.03)	-0.02 (-0.05, 0.01)
State unemployment compensation (US\$000 000) paid in 1992 (per 1000 unemployed)	0.02 (-0.00, 0.04)	-0.01 (-0.03, 0.02)	0.02 (-0.001, 0.04)	-0.01 (-0.03, 0.02)
<b>Employment status in 1987</b>				
Full-time work	(ref.)	(ref.)	(ref.)	(ref.)
Part-time work	0.001 (-0.09, 0.09)	-0.22 (-0.40, -0.03)	0.02 (-0.08, 0.11)	-0.24 (-0.43, -0.06)
Working with welfare	0.004 (-0.25, 0.26)	0.15 (-0.28, 0.59)	0.01 (-0.24, 0.26)	0.18 (-0.26, 0.62)
Unemployed/Looking for work, with gov. benefits	-0.92 (-1.52, -0.32)	0.07 (-0.61, 0.75)	-0.93 (-1.53, -0.34)	0.02 (-0.66, 0.70)
Unemployed/Looking for work, with welfare	0.22 (-0.16, 0.61)	0.004 (-0.81, 0.82)	0.19 (-0.20, 0.57)	n.a.
Unemployed/Looking for work, no benefits	0.05 (-0.14, 0.24)	0.02 (-0.22, 0.26)	0.06 (-0.13, 0.26)	-0.002 (-0.24, 0.23)

continued



Table 3 (continued)

	(Model 2)		Full Model (Model 3)	
	Women Estimate (95% CI)	Men Estimate (95% CI)	Women Estimate (95% CI)	Men Estimate (95% CI)
Not working/Not looking for work, with gov. benefits	-0.32 (-0.68, 0.05)	-0.06 (-0.52, 0.40)	-0.32 (-0.69, 0.04)	-0.05 (-0.52, 0.41)
Not working/Not looking for work, with welfare	0.01 (-0.19, 0.21)	-0.01 (-0.86, 0.85)	-0.02 (-0.22, 0.18)	n.a.
Not working/Not looking for work, no benefits	-0.06 (-0.14, 0.02)	-0.10 (-0.27, 0.06)	-0.05 (-0.13, 0.04)	-0.07 (-0.25, 0.11)
<b>Index of Depression in 1987</b>	0.32 (0.30, 0.35)	0.26 (0.23, 0.30)	0.32 (0.29, 0.34)	0.26 (0.23, 0.29)
<b>Social support in 1987</b>				
No one to call in an emergency (family, friends, etc.)	-0.01 (-0.19, 0.17)	-0.18 (-0.41, 0.05)	-0.03 (-0.21, 0.15)	-0.19 (-0.42, 0.03)
Frequency of social contacts	0.01 (0.001, 0.02)	-0.003 (-0.01, 0.01)	0.01 (0.001, 0.02)	-0.002 (-0.01, 0.01)
<b>Intercept</b>	3.71 (3.30, 4.12)	3.96 (3.54, 4.47)	3.54 (3.12, 3.96)	3.78 (3.26, 4.30)
<b>Standard error</b>	0.99	1.22	0.98	1.22
<b>R<sup>2</sup></b>	0.30	0.24	0.31	0.25
<b>D.f. (Model)</b>	30	30	41	39
<b>D.f. (Error)</b>	4476	2976	4465	2967
<b>Prob &gt; F</b>	0.0001	0.0001	0.0001	0.0001

<sup>a</sup> Transformed variables:  $\log(\text{index of depression } 1992 + 0.05)$ ,  $\log(\text{index of depression } 1987 + 0.05)$ ,  $(\text{Income US\$000})^{0.25}$ ,  $(\text{Assets US\$000})^{0.2}$ ,  $(\text{Debts US\$000})^{0.1}$

Positive value of a parameter estimate indicates a high value of index of depression in 1992, whereas a negative value indicates a low value of index of depression in 1992.

<sup>b</sup> Government.

satisfaction with personal relationships (family, friends, etc.), and age are associated with lower depression for both groups. In contrast, greater frequency of social contacts is associated with more symptoms of depression.

Some of the most notable differences between men and women include the impact of debts, and marital status. While being divorced, widowed or separated is significantly related to depression among females, never having been married is what is significantly related to depression among men. Once we control for 1992 employment status in our model, the impact of years of education is no longer significant among women. In addition to total family assets, for women the amount of accumulated debt is also significantly related to depression. In addition, the number of weeks that respondents were unemployed and looking for work during the previous year (i.e. 1991) is significantly related to depression among men only.

## Discussion

### Limitations

For researchers concerned with the dynamics at work between social issues and health, going beyond the modelling of complex relationships among risk factors and focusing on an understanding of their origins and implications are significant challenges. Our study confirms the need to look at men and women separately.

We attenuated the effects of reverse causation by using prospective longitudinal data. We controlled both for having any physical or mental condition that would limit the ability to work for pay in 1992, and the previous index of depression. However, unemployed people receiving benefits differ in many ways from people not receiving benefits, and these differences

may not be fully controlled for by the background covariates used in our analysis. Our exclusion criteria and the factors controlled for in our models should have eliminated most of the differences between the various groups of unemployed people, but uncontrolled variables determining both unemployment resources and health outcomes may still have existed.

One of the difficulties in a longitudinal study is that cases are subject to attrition over time.<sup>34</sup> Many variables expected to be related to drop-out status were included in the regression model, and the per cent of respondents lost to follow-up in 1992 was similar across employment categories, with the exception of those unemployed actively looking for work and receiving welfare or no benefits at all in 1987. Among those groups, the attrition rate was close to 30%. It is plausible that unemployed people actively looking for work had a higher probability of changing residencies and relocating, and consequently a higher probability of being lost to follow-up.

### Main findings and implications

One of the most interesting findings is to see a direct effect of 1987 unemployment on 1992 depression for women who were receiving government, i.e. entitlement, benefits in 1987. Even after incorporating 1992 variables in the regression model, unemployed women who were receiving entitlement benefits in 1987 report less symptoms of depression than those who were full-time employed. This finding gives support to the hypothesis that the receipt of entitlement government assistance may have a long-term protective effect on unemployed women, and confirms previous findings using cross-sectional data.

On the contrary, being unemployed and receiving means-tested benefits in 1987 is strongly related to depression in 1992. However, the effect is reduced when we include 1992 variables

in the model. Not working while receiving welfare in 1992 has a direct effect on increasing symptoms of depression among women. One possible explanation is that the amount of welfare benefits provided is insufficient to positively influence mental health. However, given that we control for family income and wealth, other factors are more likely to be responsible for the difference. Social stigma and/or some other factors in the process associated with receiving welfare benefits could add additional stress to the lives of the recipients, which could offset some of the positive impact of welfare or other means-tested benefits. Previous research has shown the importance of perception in mediating the effect of supportive events, and how those perceptions influence the coping processes of individuals. In any case, the 1992 employment situation is more important in having an impact on depression than the fact of having been on welfare 5 years earlier.

Previous research has found an association between length of unemployment periods and depression. In our model the number of weeks unemployed during 1991–1992 does not have a direct effect on depression among women, but it has some effect on decreasing symptoms of depression among men.

In our full regression model unemployed men who were looking for work while receiving government benefits are more likely to report symptoms of depression than the employed. This could be due to the fact that government unemployment benefits are usually short-term subsidies, and depression could be higher during the initial period of the unemployment.

Men on welfare report three times more symptoms of depression than those employed and satisfied with their jobs (Table 1), and the lack of a direct impact on depression in our regression model is probably due to a small sample effect.

In this study we have been able to confirm simultaneously the significant impact that both economic and emotional resources of the family have in explaining depression, for men and women alike. Interestingly, total family income is not a significant factor once family assets and debts are included in the model, which suggests that those indicators could be better measures of wealth.

The effects of unemployment on depression depend upon gender and upon participation in governmental assistance programmes in a complex way. Continuing to develop an understanding of these effects will be increasingly important as rapid and substantial changes are made in the structure of employment and governmental assistance for those not employed.

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E Rodriguez conceptualized and designed the study, supervised the analysis and wrote the first draft of the paper. E Frongillo provided statistical expertise and contributed to the writing of the paper. P Chandra analysed the data, prepared the tables and read the final version of the manuscript. All authors participated in the interpretation of the results and can take public responsibility for the content of the paper.

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## Appendix

### Index of depression

The variable index of depression was created by adding the 15 Center for Epidemiological Studies' Depression Scale-D (CES-D) items variables included in the National Survey of Families and Households. These variables represent a list of ways one might have felt or behaved during the past week. The questions ask on *how many days during the past week* did you:

1. feel bothered by things that usually don't bother you?
2. not feeling like eating; appetite was poor?
3. feel that you could not shake off the blues even with help from family or friends?
4. have trouble keeping your mind on what you were doing?
5. feel depressed?
6. feel that everything you did was an effort?
7. feel fearful?
8. feel restless?
9. talk less than usual?
10. feel lonely?
11. feel sad?
12. feel you could not get going?
13. feel irritable, or likely to fight or argue?
14. feel like telling someone off?
15. feel angry or hostile for several hours at a time?

# Commentary: Do social programmes contribute to mental well-being? The long-term impact of unemployment on depression in the US

Jane E Ferrie

Using baseline (1987) and follow-up (1992) data from the National Survey of Families and Households (NSFH), Rodriguez *et al.* set out to examine the long-term consequences of different types of government benefit on the negative mental health impact of unemployment.<sup>1</sup> The NSFH is a rich dataset which has enabled the authors to look at the short- and long-term effects of employment status and receipt of benefit, while controlling for depression score at baseline and numerous other factors that have been shown to be associated with employment status and depression, such as debt and social support. Research

of this nature is important as few studies have explicitly examined the effects of government benefits on health outcomes using individual data.

The paper presents numerous findings, of which the authors choose to highlight the beneficial long-term effect of statutory benefits for mental health in unemployed women and the adverse short- and long-term effects of means-tested benefits in women who are non-employed, compared to women in full-time employment.

As many studies have convincingly linked the health effects of unemployment directly to financial problems<sup>2,3</sup> the explanation of these findings which springs to mind is that means-tested benefits provide insufficient income to maintain mental health. However, the analyses are controlled for household income, assets and debts as well as measures of social support.



The authors conclude that 'social stigma and/or some other factors in the process associated with receiving welfare benefits could add additional stress to the lives of the recipients...'. Such effects were widely documented in England in the 1930s depression<sup>4,5</sup> and again in the 1980s.<sup>6,7</sup> However, these accounts also provide a very vivid picture of the economic hardship resulting from dependency on means-tested benefits. The corrosive effect of this hardship is experienced directly via limited access to consumer goods and indirectly through social exclusion.<sup>8</sup> It thus seems likely that, in this population also, unrecorded material disadvantage, such as poor quality, overcrowded housing,<sup>9</sup> or access to adequate services,<sup>10</sup> makes a substantial contribution to the mental health differences between women in full-time employment and those on means-tested benefits. Findings from other epidemiological studies indicate that financial strain, which is particularly associated with long-term unemployment, has adverse effects on mental health.<sup>11,12</sup>

More surprising than the generally adverse associations between receipt of means-tested benefit and mental health are the apparently salutogenic long-term effects of statutory benefits for women. Statutory benefits are usually paid for a limited period and are dependent on having been in employment for a considerable period prior to job loss. Thus it is likely that these women had only been unemployed for a short time before the 1987 data collection. It is generally accepted that recent unemployment is associated with the steepest decline in mental health,<sup>13</sup> although there is evidence that some improvement in mental health may occur immediately post-redundancy when job loss has been preceded by a period of uncertainty.<sup>14</sup> However, the 14 women in this category have a depression index in 1992, 2.2 times lower than women in full-time employment. This salutogenic effect remains after controlling for 1992 age, education, marital status, race, limiting physical or mental illness, household characteristics including income and wealth, social support, job search history and environmental factors, and employment status, as well as index of depression and social support in 1987. However, the 37 women not working and not looking for a job but on statutory benefits in 1987, similarly have significantly lower depression scores at follow-up, although in the fully-adjusted model the difference is no longer significant. These findings lead to the conclusion that either these were exceptional women or that full-time employment has an adverse impact on mental health in certain women. Domestic responsibilities and caring have been shown to be important determinants of women's self-reported morbidity.<sup>15,16</sup> Thus, for women who have been shouldering the burden of domestic responsibilities and caring in addition to full-time employment, a period of being at home on statutory benefits might well have positive implications for mental health. Furthermore, women's resilience to job loss is thought to be greater than men's because they have these alternative roles from which they derive a sense of self-worth.<sup>17</sup>

The other consistent conclusion to come out of the study, that part-time work has significant long-term benefits for men, also appears to support the argument that full-time employment has adverse effects on the mental health of some workers. The Second European Survey of Working Conditions found part-time and temporary workers to have significantly lower levels of stress than permanent full-time employees.<sup>18</sup> One reason for this may lie in the work intensification which has accompanied

the downsizing of workforces over the past two decades. The expectation that surviving workers expand their skills and responsibilities to cover for those dismissed has increased work pressures, which in turn have been shown to have adverse effects on mental health.<sup>19</sup>

When respondents in employment in 1992 are split by job satisfaction a clearer picture of the mental health damaging effects of unsatisfactory work are seen. Unsatisfactory full-time employment is associated with significantly higher depression scores for both sexes, as is unsatisfactory part-time employment in women. Dissatisfaction with employment can be due to many factors, but there is evidence that people most vulnerable to unemployment are also those most likely to be in poor quality insecure jobs.<sup>20</sup>

In general, both population and redundancy studies have found job insecurity and threat of job loss to be related to significant increases in mental ill-health.<sup>21,22</sup> These effects are not transitory, but are increased by chronic exposure to the stressor.<sup>19,23</sup> Robust evidence of the effect of insecure employment on psychological morbidity has come from a longitudinal study of white-collar British civil servants, the Whitehall II study. In analyses adjusted for age, socioeconomic position, marital status and pre-existing morbidity, women and men re-employed in insecure jobs after losing long-term secure employment in the Civil Service had significantly higher levels of mental ill-health than those able to find secure jobs.<sup>24</sup> These findings complement those from other studies. Unsatisfactory re-employment following factory closure among male steel workers<sup>25</sup> and car workers<sup>26</sup> has been shown significantly to increase depression compared with satisfactory re-employment, whereas values for the unemployed fall between. Increased depression scores among unemployed men in the Social Change and Economic Life Initiative were not reduced by re-employment in an insecure job,<sup>27</sup> and a longitudinal population study of young women and men found psychological disorder to be higher among dissatisfied workers than in the unemployed.<sup>28</sup>

Qualitative studies of unemployment have provided evidence that different personal positions can lead to contrasting attitudes to being unemployed. Studies, such as those by Little<sup>29</sup> and Fineman,<sup>30</sup> conclude that, in a sizeable minority, unemployment gives rise to positive feelings. Of the 100 middle-class unemployed in the Fineman study, one-third saw their unemployment as an opportunity to escape from boring or stressful jobs and find employment which could meet long-frustrated needs. Those who obtained such re-employment talked of the liberating experience and the renewed energy they had for their new job. However, those who did not were left feeling inadequate and threatened in ways they had not experienced before.<sup>30</sup>

Taken together such findings has led a number of researchers to conclude that 'no job' may be better than 'any job' and that cumulative labour market disadvantage may have more relevance for psychological well-being than unemployment alone.<sup>13,27,31</sup>

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