

Civilian Employment Among Recently Returning Afghanistan and Iraq National Guard Veterans

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ABSTRACT Objective: National Guard service members face deactivation from active duty soon after they return to the United States and rapid entry into the civilian workforce; therefore, it is important to examine employment among these Veterans. Methods: The sample included 585 National Guard service members. Bivariate and multivariable analyses were conducted examining the associations between mental health symptoms, alcohol use, number of deployments, and combat exposure with employment status and full-time versus part-time employment as outcomes. Results: Forty-one percent of National Guard service members were employed 45 to 60 days following demobilization. Among those who were employed, 79% were employed full-time. Age, family income, and combat exposure were associated with employment; income and health status were associated with part-time versus full-time employment. Conclusions: Mental health status may not be strongly associated with initiating civilian employment among National Guard service members; however, better mental health status is associated with being employed full-time versus part-time.

INTRODUCTION

Over 1.6 million U.S. military service members have served in the ongoing conflicts in Afghanistan and Iraq, referred to as Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF).¹ Several studies have reported that OEF/OIF service members experience high rates of mental health and substance use problems upon their return from Afghanistan and Iraq.²⁻⁴ National Guard and Reserve service members represent 38% of the total U.S. forces deployed to Afghanistan and Iraq between September 2001 and November 2007.⁵ These Veterans experience substantially higher rates of interpersonal conflict, posttraumatic stress disorder (PTSD), depression, and overall mental health risk following their return from OEF/OIF conflicts than active duty soldiers, and they are referred to treatment for mental health concerns at higher rates than active duty soldiers.⁶ Up to 42% of National Guard and Reserve service members report a mental health problem compared to 20% of active duty service members, which suggests a need for further evaluation or treatment following their return.^{1,6}

Active duty service members enter the civilian workforce only upon separation from the military, which occurs at the end of their enlistment period sometime after they return to

the United States and at a time of their discretion, giving them adequate time for planning. In contrast, National Guard service members face earlier entry into the civilian workforce either 14 days (for service of 31–180 days) or 90 days (for service of 181 days or more) following their return to the United States. The literature on the impact of military service on employment suggests that Veteran status alone may not decrease the likelihood of working or decrease lifetime earnings.⁷ However, there is an extensive literature on the impact of mental health problems on work entry, retention, and productivity.⁷⁻¹⁰

Past research in civilian samples indicates that the employment rate and full-time employment are lower in those with psychiatric or substance use disorders than in those without these disorders.⁸ An average of 0.06 psychiatric work loss days (6 days per month per 100 workers) and 0.31 cut back days (31 days per month per 100 workers) have been reported among those with psychiatric disorders who were employed.¹¹ In the general population, neither lifetime major depression nor current major depression predicted becoming unemployed; however, diagnoses other than depression predict becoming unemployed at 1-year follow-up.⁹ Additionally, becoming unemployed significantly raises the risk of developing depressive symptoms.⁹ Those with affective disorders report larger average numbers of work loss and work cutback days than those with other disorders.¹¹ Among people with depression in the general population, the odds of working are greater for those who report excellent or very good health (compared to fair or poor health) and for those who report fewer health conditions attributable to social, cognitive, and physical limitations.¹²

Among Veterans, earlier studies have found that having a psychiatric disorder makes working less likely^{7,10}; depression and PTSD in particular have significant negative effects on hourly wages.¹⁰ PTSD seems to be the most important predictor of unemployment¹⁰ and the probability of unemployment increases as symptoms of PTSD increase.¹³ Veterans

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with higher levels of PTSD symptoms report greater levels of disability¹³ and are more likely to not be working because of disability rather than not working because of retirement.¹⁴ Additionally, a history of combat trauma has been found to be related to high rates of unemployment.¹⁵

Few studies have examined unemployment among OEF/OIF service members, particularly in the early months following their return—a critical time in their transition into the civilian workforce. In this study, we examine employment status among National Guard service members approximately 45 to 60 days following their return from deployment and the associations between employment status and reported mental health symptoms, alcohol use, number of deployments, and combat exposure. Although this timeframe is earlier than the 90 days of leave allowed by the Uniformed Services Employment and Reemployment Rights Act, examining civilian employment among National Guard service members soon after their return from deployment is important in understanding how easily these Veterans are transitioning into the civilian workforce. Among the service members who are employed, we examine the rate of full-time versus part-time employment and the associations between reported mental health symptoms, alcohol use, number of deployments, and combat exposure with full-time versus part-time employment. Study findings may have implications for developing interventions to assist National Guard service members in transitioning into the workforce.

METHODS

Data Source and Participants

Participants were recently returned National Guard service members in the Midwestern United States, who were recruited during mandatory Reintegration Workshops occurring approximately 45 to 60 days following their demobilization between February and September 2009. Service members who were elected to participate completed anonymous surveys that assessed mental health and substance use problems, functional status including job performance, and mental health treatment experiences. The survey took approximately 45 to 60 minutes to complete and each participant received a \$25 gift certificate. The final sample included 585 service members.

Measures

The primary outcome of interest was employment status based on a survey item that asked, “Have you returned to civilian work at this time (yes/no)?” Independent variables included service-member characteristics that may be associated with initiating employment in the civilian workforce. These variables included gender, age (18–30 and 31–60), race (White, Black, and Other), marital status (married/engaged/cohabitating and divorced/separated/single), education (≤ 12 and > 12 years), family income ($< \$20,000$, $\$20,001–\$30,000$, $\$30,001–\$40,000$, $\$40,001–\$50,000$, $\$50,001–\$75,000$, and

over $\$75,001$), health status (physical and mental), pain (none/very mild and moderate/very severe), symptoms consistent with PTSD (PTSD Checklist-Military Version [PCL-M]), depression (Patient Health Questionnaire-9 [PHQ-9]), anxiety (Penn State Worry Questionnaire [PSWQ]), alcohol misuse (Alcohol Use Disorders Identification Test [AUDIT]), number of deployments (1 and ≥ 2), and recent combat exposure (yes/no). Recent combat exposure was considered to be present for individuals who responded to the items “How many times were you in serious danger of being injured or killed” or “How many times did you engage the enemy in a fire-fight” with “often” or “constantly;” and for individuals who responded affirmatively to the items “Did you know someone who was seriously injured or killed,” “Were you directly responsible for the death of an enemy combatant,” or “Were you wounded or injured.”

Health status was assessed using the 12-Item Short-Form Health Survey (SF-12).¹⁶ The SF-12 is a 12-item questionnaire adapted from the Medical Outcomes Study 36-item Short-Form Questionnaire (SF-36). The SF-12 yields component scores for physical and mental health, which range from 0 to 100, with a zero score indicating the lowest level of health. Pain was assessed with an item from the SF-36 that asked “How much bodily pain have you had in the past four weeks?” For this study, this item was dichotomized into none/very mild pain versus moderate or greater pain. Both scales are widely used in epidemiological research and the reliability and validity of the SF-12 in both general and clinical populations have been well documented.^{16–19}

PTSD was assessed using the PCL-M, a self-report measure of the 17 DSM-IV symptoms of PTSD. Respondents rate how much they were bothered by the specified problem on a 5-point scale ranging from 1 (“not at all”) to 5 (“extremely”) in response to stressful military experiences. A stringent cut off score of 50 was used for likely PTSD. The PCL-M has been shown to have excellent internal consistency in Vietnam and Persian Gulf Veterans (ranging from $r = 0.94$ to $r = 0.97$).²⁰ In several studies, the PCL-M is significantly correlated with other measures of PTSD (ranging from $r = 0.77$ to $r = 0.93$).²¹

Depression was assessed using the PHQ-9, a self-report instrument that assesses 9 DSM-IV symptoms of depression over a 2-week period, with total scores ranging from 0 to 27.²² Cut off scores of 10 or higher indicate significant depressive symptoms. The PHQ-9 has acceptable reliability, validity, sensitivity, and specificity. PHQ-9 scores ≥ 10 have a sensitivity and specificity of 88% for major depression.²³

Anxiety was assessed using the self-report PSWQ. This 16-item instrument is scored on a 5-point scale (“not at all typical of me” to “very typical of me”) with total scores ranging from 16 to 80.²⁴ Scores above 45 indicate significant symptoms of anxiety. The PSWQ has a good internal consistency, with a Cronbach’s α ranging from 0.91 to 0.95, high degree of test–retest reliability (ranging from $r = 0.92$ to $r = 0.93$), and good stability over time (ranging from $r = 0.75$ at 2 weeks to $r = 0.74$ at 4 weeks).²⁴

Alcohol use was assessed using the AUDIT as a screen for alcohol-related problems and hazardous drinking. This 10-item instrument is scored on a 5-point Likert scale, with total scores ranging between 0 and 40. An AUDIT score of 8 or higher indicates alcohol misuse. The instrument has good internal consistency, with a Cronbach's α of 0.80 to 0.88.²⁵⁻²⁷ The AUDIT, using a cut off score of 8 to 11, has sensitivity ranging between 0.46 and 0.84 and specificity ranging between 0.71 and 0.90 for alcohol use disorders as defined by the Diagnostic and Statistical Manual for mental disorders.²⁶⁻²⁸

Analyses

Descriptive summary statistics were completed to describe the characteristics of the sample. Bivariate analyses were conducted that examined the significance of associations between employment status and each of the independent variables using χ^2 tests for dichotomous variables and *t* tests for continuous variables. Multivariable logistic regression analyses were performed to calculate odds ratios (ORs) with 95% confidence intervals (CIs) for employment status adjusted for all independent variables. Age, race, and gender were retained as predictors in all adjusted analyses; other independent variables were included in multivariable logistic regression analyses if the *p* value was ≤ 0.25 in the χ^2 tests and *t* tests. We elected to use the fairly low bar of ≤ 0.25 for entry into the final regression models to allow for the detection of all potentially significant effects.

For service members who were employed, we examined full-time versus part-time employment using bivariate and multivariable logistic regression analyses. As above, age, race, and gender were retained as predictors in adjusted analyses; however, for the other independent variables a *p* value of < 0.25 in the bivariate analyses was used as a cut off for inclusion in the multivariable logistic regression analyses.

RESULTS

The study sample included 585 recently returned National Guard service members from the Midwestern United States who completed the survey (60% of those attending the reintegration weekends). Data were not available for service members who did not complete the survey, and consequently, differences between responders and nonresponders are unknown. The majority of the study participants were White (75%), male (87%), 18 to 30 years old (58%), and married/engaged/cohabitating (63%). Most of the participants had more than a high school education (62%), and approximately 24% had a family income of less than \$20,000. A notable proportion of service members reported moderate to severe pain (34%), likely PTSD (14%), depression (24%), anxiety (mean PSWQ score = 34.9), and alcohol misuse (36%). About 45% of service members had been deployed 2 or more times and 44% reported recent combat exposure (see Table I).

Less than half (41%) of the National Guard service members were employed by the time of the reintegration weekend,

TABLE I. Sample Characteristics of Returning National Guard Service Members

	Full Sample (N = 585)		Employed (N = 236)	
	<i>n</i>	%	<i>n</i>	%
Gender				
Male	511	87.35	215	91.10
Female	74	12.65	21	8.90
Age				
18–30	337	57.61	96	40.68
31+	248	42.39	140	59.32
Race/Ethnicity				
Caucasian	440	75.21	176	74.58
Black	25	4.27	11	4.66
Other	120	20.51	49	20.76
Education				
HS or Less	225	38.46	78	33.05
Some College+	360	61.54	158	66.95
Family Income				
<\$20K	139	24.05	26	11.11
20K–30K	122	21.11	42	17.95
30K–40K	88	15.22	37	15.81
40K–50K	60	10.38	23	9.83
50K–75K	98	16.96	58	24.79
75K+	71	12.28	48	20.51
Marital Status				
Married/Engaged/ Cohabitating	369	63.08	175	74.15
Divorced/Separated/ Single	216	36.92	61	25.85
Number of Deployments				
1	323	55.21	104	44.07
2+	262	44.79	132	55.93
Recent Combat Exposure				
No	299	55.68	105	49.30
Yes	238	44.32	108	50.70
Health Status (SF-12)				
Physical	51.63	8.16	51.47	8.13
Mental	45.98	10.29	47.18	9.73
Body Pain				
None/Very Mild	374	65.73	148	64.91
Moderate to Very Severe	195	34.27	80	35.09
PTSD				
No	471	86.42	190	88.37
Yes	74	13.58	25	11.63
Depression				
No	436	75.69	180	77.59
Yes	140	24.31	52	22.41
Alcohol Use Dx				
No	360	64.06	151	66.81
Yes	202	35.949	75	33.19
Anxiety (mean PSWQ)	34.93	15.05	34.31	15.52

45 to 60 days following demobilization. Among those who were employed, 79% were employed full-time.

In bivariate analyses (Table II), those who were female, younger, and unmarried were less likely to be employed. Those who had a high school education or less, lower family income, and poorer mental health status were also less likely to be employed. Those who had been deployed more than once and who reported recent combat exposure were more

TABLE II. Bivariate Analyses of Factors Predicting Work Among Recently Returning National Guard Service Members (*N* = 585)

	Unemployed (<i>N</i> = 335)		Employed (<i>N</i> = 236)		<i>p</i>
	<i>n</i>	%	<i>n</i>	%	
Gender					
Male	285	57.00	215	43.00	0.03
Female	50	70.42	21	29.58	
Age					
18–30	231	70.64	96	29.36	<0.0001
31+	104	42.62	140	57.38	
Race/Ethnicity					
White	257	59.35	176	40.65	0.84
Black	14	56.00	11	44.00	
Other	64	56.64	49	43.36	
Education					
HS or Less	143	64.71	78	35.29	0.02
Some College +	192	54.86	158	45.14	
Family Income					
<\$20K	109	80.74	26	19.26	<0.0001
20K–30K	79	65.29	42	34.71	
30K–40K	48	56.47	37	43.53	
40K–50K	37	61.67	23	38.33	
50K–75K	36	38.30	58	61.70	
75K+	21	30.43	48	69.57	
Marital Status					
Married/Engaged/ Cohabiting	185	51.39	175	48.61	<0.0001
Divorced/ Separated/Single	150	71.09	61	28.91	
Number of Deployments					
1	211	66.98	104	33.02	<0.0001
2+	124	48.44	132	51.56	
Recent Combat Exposure					
No	188	64.16	105	35.84	0.01
Yes	125	53.65	108	46.35	
Health Status (SF-12)					
Physical	51.66	8.21	51.47	8.13	0.79
Mental	45.26	10.55	47.18	9.73	0.03
Body Pain					
None/Very Mild	217	59.45	148	40.55	0.84
Moderate to Very Severe	113	58.55	80	41.45	
PTSD					
No	273	58.96	190	41.04	0.31
Yes	47	65.28	25	34.72	
Depression					
No	247	57.85	180	42.15	0.35
Yes	86	62.32	52	37.68	
Alcohol Use Dx					
No	203	57.34	151	42.66	0.29
Yes	122	61.93	75	38.07	
Anxiety (mean PSWQ)	35.32	14.91	34.31	15.52	0.44

likely to be employed. Race/ethnicity, physical health status, and pain were not significantly associated with employment. In multivariable analyses (Table III), those who were younger and had a family income less than \$20,000 were less likely to be employed. Those who reported recent combat exposure were more likely to be employed. Gender, race/ethnicity, education, marital status, physical and mental health status, and

TABLE III. Multivariable Analyses of Factors Predicting Work Among Recently Returning National Guard Service Members (*N* = 502)

	OR	(95% CI)	<i>p</i>
Gender			
Male	ref		
Female	0.504	0.245–1.038	0.063
Age			
18–30	ref		
31+	1.604	1.015–2.535	0.043
Race/Ethnicity			
White	0.737	0.442–1.231	0.943
Black	0.568	0.192–1.676	0.424
Other	ref		
Education			
HS or Less	ref		
Some College+	1.226	0.795–1.890	0.356
Family Income			
<\$20K	ref		
20K–30K	2.597	1.313–5.139	0.217
30K–40K	3.585	1.777–7.232	0.796
40K–50K	2.939	1.327–6.509	0.586
50K–75K	6.363	2.980–13.589	0.006
75K+	8.663	3.774–19.888	0.000
Marital Status			
Married/Engaged/ Cohabiting	1.259	0.810–1.957	0.306
Divorced/Separated/Single	ref		
Number of Deployments			
1	ref		
2+	1.311	0.863–1.991	0.204
Recent Combat Exposure			
No	ref		
Yes	1.548	1.019–2.352	0.041
Health Status (SF-12)			
Physical	1.002	0.977–1.028	0.871
Mental	1.016	0.995–1.037	0.136

the number of deployments were not significantly related to employment.

Among service members who were employed, bivariate analyses examining service member characteristics and full-time versus part-time employment indicated that those aged 31 and older, with higher family incomes, better mental health status, poorer physical health status, and not misusing alcohol were more likely to be employed full-time (Table IV). Gender, race/ethnicity, education, marital status, pain, other mental health symptoms, number of deployments, and recent combat exposure were not significantly associated with full-time versus part-time employment. In adjusted analyses, those with a family income between \$20,000 and \$30,000 and over \$75,000 were more likely to be employed full-time than those with family income below \$20,000 (Table V). Additionally, those with better mental health status and poorer physical health status were more likely to be employed full-time. Gender, age, race/ethnicity, alcohol misuse, and number of deployments were not significantly related to part-time versus full-time employment.

TABLE IV. Bivariate Analyses of Factors Predicting Full-Time Work Among Recently Returning National Guard Service Members (*N* = 236)

	Part-time		Full-time		<i>p</i>
	<i>n</i>	%	<i>n</i>	%	
Gender					
Male	48	22.33	167	77.67	0.876
Female	5	23.81	16	76.19	
Age					
18–30	34	35.42	62	64.58	<0.0001
31+	19	13.57	121	86.43	
Race/Ethnicity					
White	42	23.86	134	76.14	0.192
Black	4	36.36	7	63.64	
Other	7	14.29	42	85.71	
Education					
HS or Less	19	24.36	59	75.64	0.623
Some College +	34	21.52	124	78.48	
Family Income					
<\$20K	18	69.23	8	30.77	<0.0001
20K–30K	14	33.33	28	66.67	
30K–40K	6	16.22	31	83.78	
40K–50K	3	13.04	20	86.96	
50K–75K	7	12.07	51	87.93	
75K+	5	10.42	43	89.58	
Marital Status					
Married/Engaged/ Cohabiting	39	22.29	136	77.71	0.915
Divorced/Separated/ Single	14	22.95	47	77.05	
Number of Deployments					
1	29	27.88	75	72.12	0.076
2+	24	18.18	108	81.82	
Recent Combat Exposure					
No	20	19.05	85	80.95	0.464
Yes	25	23.15	83	76.85	
Health Status (SF-12)					
Physical	54.27	7.05	50.62	8.265	0.004
Mental	44.73	9.94	47.92	9.57	0.038
Body Pain					
None/Very Mild	37	25.00	111	75.00	0.283
Moderate to Very Severe	15	18.75	65	81.25	
PTSD					
No	41	21.58	149	78.42	0.783
Yes	6	24.00	19	76.00	
Depression					
No	40	22.22	140	77.78	0.674
Yes	13	25.00	39	75	
Alcohol Use Dx					
No	29	19.21	122	80.79	0.054
Yes	23	30.67	52	69.33	
Anxiety (mean PSWQ)	34.98	17.39	34.11	14.97	0.724

TABLE V. Multivariable Analyses of Factors Predicting Full-Time Work Among Recently Returning National Guard Service Members (*N* = 217)

	OR	(95% CI)	<i>p</i>
Gender			
Male	ref		
Female	2.735	0.662–11.296	0.235
Age			
18–30	ref		
31+	1.508	0.600–3.790	0.164
Race/Ethnicity			
White	0.531	0.181–1.556	0.883
Black	0.329	0.051–2.133	0.353
Other	ref		
Family Income			
<\$20K	ref		
20K–30K	3.753	1.068–13.192	0.033
30K–40K	11.488	2.863–46.096	0.519
40K–50K	20.958	3.826–114.800	0.124
50K–75K	18.788	4.197–84.110	0.085
75K+	24.434	5.010–118.457	0.034
Number of Deployments			
1	ref		
2+	1.359	0.621–2.972	0.442
Health Status (SF-12)			
Physical	0.946	0.897–0.999	0.045
Mental	1.047		0.030
Alcohol Use Dx			
No	ref		
Yes	0.888	0.390–2.019	0.776

noted that OEF/OIF Veterans have higher rates of unemployment than Veterans from other eras and similarly aged individuals in the general population. The total unemployment rate among OEF/OIF Veterans returning post 2001 was 7.3%, and among OEF/OIF Veterans 18 to 24 years of age, it was 14.1%.

This is one of the first studies to examine entry into the civilian workforce among recently returned OEF/OIF National Guard service members. Approximately 1 month before the end of the leave period for most service members, only 41% were employed; however, some of these individuals may have still been on leave. The majority who were employed were employed full-time (79%). In bivariate analyses those who were female, younger, unmarried with a high school education or less, lower family income, and poorer mental health status were less likely to be employed. Those who had been deployed more than once and who reported recent combat exposure were more likely to be employed. The findings on age, income, and recent combat exposure were retained in the multivariable analysis. Although the findings on gender were not retained in the multivariable analysis, the finding that women were less likely to be employed in bivariate analyses may have been related to parenting status. Additionally, the multiple deployment variable may have been confounded with age in that those who had multiple deployments were potentially the older service members, who were also more likely to

DISCUSSION

With the recent economic downturn, the popular press has paid extensive attention to the unemployment rates in the general population.^{29,30} However, little attention has been given to how OEF/OIF Veterans are uniquely affected by unemployment, specifically recently returned National Guard service members who are under pressure to quickly enter the civilian workforce. A recent Bureau of Labor Statistics report³¹

be employed. As expected, positive mental health status was associated with an increased likelihood of being employed; however, this finding also did not hold up in multivariable analysis. The SF-12, which was used to measure mental and physical health status, may not have been sensitive enough to detect associations between mental health status and employment in multivariable analysis.

Older age, family income, better mental health, and poorer physical health status were significantly associated with an increased likelihood of being employed full-time versus part-time in bivariate analyses; the findings on income, mental, and physical health status were retained in the multivariable analysis. The fact that those with poorer physical functioning were more likely to be employed full-time is somewhat counterintuitive; however, employment itself may increase the physical strain on individuals, particularly those that hold labor-intensive jobs.

Our results suggest that mental health status may not be strongly associated with entry into the civilian workforce post deployment among National Guard service members, although better mental health status is associated with being employed full-time versus part-time. Expanded interventions are needed to assist younger, low-income Veterans in entering the civilian workforce, or education programs, regardless of their mental health status. Currently, Veterans Affairs (VA) initiatives such as Vocational Rehabilitation and Employment and Compensated Work Therapy programs are only available to Veterans who have a psychiatric diagnosis and/or a service connected disability, criteria that may exclude significant numbers of service members. Future initiatives should expand employment and education support services to include service members who are recently returning from deployments and who may require assistance in re-entering civilian life. These efforts would also be helpful to Veterans who may have had employment difficulties before being deployed, such as being underemployed or having unstable employment. These veterans may have had their more tenuous connection to the workforce further disrupted by deployment. Interventions that integrate both mental health and vocational supports would benefit Veterans who are working part-time and full-time. Additionally, younger Veterans may be good candidates to take advantage of the new GI bill and other educational benefits that are available to them.

A number of the service members who entered the civilian work force by 45 to 60 days postmobilization had significant mental health symptoms, alcohol misuse (33%), recent combat exposures (51%), and multiple deployments (51%). It may be that mental health symptoms and alcohol misuse were not associated with early work initiation because the service members were assessed 45 to 60 days after deployment and their mental health problems had not yet progressed to the point of interfering with functioning. Mental health problems may also be more strongly associated with maintaining rather than initiating employment. Several studies have suggested that service members with mental health

problems may have more difficulty maintaining employment long term.^{9,11,15} Therefore, increased supports, through employers or the VA, to help employed Veterans with mental health problems maintain their employment over time, may be beneficial. For example, the VA might be able to provide extended service hours to accommodate Veterans who are employed.

Earlier studies have found that combat trauma is related to current unemployment and 12-month job loss^{15,32}; however, this study found that recent combat exposures were associated with an increased likelihood of employment. Although the reasons for these discrepant findings are unclear, future studies examining the types of jobs held by those with and without combat exposures and interpersonal relationship patterns among those with and without combat exposures may be informative. It may be that those with combat exposures are more likely to work less desirable jobs, such as night jobs, or that they are motivated by symptoms of withdrawal, isolation, and numbness to be outside of the home. Nonetheless, these traumatic experiences have the potential to cause future employment problems; particularly as combat exposures have been found to be related to delayed onset of PTSD.¹⁵ Results from the Employment Intervention Demonstration Program found that employment models that integrate clinical and vocational services are more effective for individuals with psychiatric disorders in the general population and that individuals with psychiatric disorders who participate in some sort of supported employment program are more likely to have better employment-related outcomes.³³ Thus, supported employment programs may be key in maintaining employment and perhaps in expanding employment from part-time to full-time status.

The results of this study underscore that unemployment among recently returned National Guard service members has the potential to become a widespread issue as most service members were not employed toward the end of their leave; however, it has several limitations. Although a comprehensive population of Midwestern National Guard service members was approached about the survey, only 60% completed a survey and there may have been some biases arising from the service member decisions about participating versus not participating. Data were not available for service members who did not complete the survey; therefore, comparisons between completers versus noncompleters were not possible. Data were collected 45 to 60 days post-deactivation, providing important new information about the ease with which service members are entering the civilian workforce. However, it is possible that the findings may differ at time points further out. Future studies should examine employment among National Guard service members longitudinally. This sample also may not be representative of National Guard service members across the United States although the reported rates of mental health difficulties were similar to those reported in other samples of National Guard service members.² Data were also not collected on National Guard service members

employment status predeployment, and this may have influenced their postdeployment employment status. Potentially, a high percentage of National Guard service members may have been unemployed before deployment. The study was of cross-sectional design, and although we found significant associations between recent combat exposure, mental health symptoms, employment status, and full-time versus part-time employment status, the causal nature these relationships could not be determined. Study participants provided self-reports of their mental health symptoms and employment status; thus, it is possible that the data participants provided was not entirely accurate because of poor recall and/or concerns about stigma. Finally, improved measurements might have yielded stronger associations between mental health symptoms and employment status.

CONCLUSIONS

Even with these limitations, this is the first study of which we are aware to document the rates of early initiation of civilian employment among recently returned OEF/OIF National Guard service members. These data suggest that younger, low-income service members are less likely to be employed upon return from deployment, and although mental health symptoms may not be related to initiating employment, they are related to having full-time versus part-time employment. Future studies should examine other variables that may be related to unemployment, under employment, or maintaining employment in this population including premorbid functioning, housing, and service-related experiences. Early outreach and supportive employment counseling for younger Veterans may be important in this critical transition period to civilian employment.

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REFERENCES

1. Tanielian T, Jaycox LH (editors): *Invisible Wounds of War: Psychological and Cognitive Injuries, Their Consequences, and Services to Assist Recovery*. Santa Monica, CA, RAND, 2008.
2. Hoge CW: Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *JAMA* 2006; 295: 1023–32.
3. Jacobson IG, Ryan MA, Hooper TI, et al: Alcohol use and alcohol-related problems before and after military combat deployment. *JAMA* 2008; 300: 663–75.
4. Seal KH, Metzler TJ, Gima KS, Bertenthal D, Maguen S, Marmar CR: Trends and risk factors for mental health diagnoses among Iraq and

- Afghanistan veterans using Department of Veterans Affairs health care, 2002–2008. *Am J Public Health* 2009; 99: 1651–8.
5. Waterhouse M, O'Bryant J: *National Guard Personnel and Deployments: Fact Sheet*. Congressional Research Service, The Library of Congress, January 2008.
6. Milliken CS, Auchterlonie JL, Hoge CW: Longitudinal assessment of mental health problems among active and reserve component soldiers returning from the Iraq war. *JAMA* 2007; 298: 2141–8.
7. Anderson KH, Mitchell JM: "Effects of military experience on mental health problems and work behavior." *Response. Med Care* 1992; 30: 554–63.
8. Cowell AJ, Luo Z, Masuda YJ: *J Ment Health Policy Econ* 2009; 12: 3–17.
9. Dooley D, Catalano R, Wilson G: Depression and unemployment: panel findings from the Epidemiologic Catchment Area study. *Am J Community Psychol* 1994; 22: 745–65.
10. Savoca E, Rosenheck R: The civilian labor market experiences of Vietnam-era veterans: the influence of psychiatric disorders. *J Ment Health Policy Econ* 2000; 3: 199–207.
11. Kessler RC, Frank RG: The impact of psychiatric disorders on work loss days. *Psychol Med* 1997; 27: 861–73.
12. Elinson L, Houck P, Marcus SC, Pincus HA: Depression and the ability to work. *Psychiatr Serv* 2004; 55: 29–34.
13. Smith MW, Schnurr PP, Rosenheck RA: Employment outcomes and PTSD symptom severity. *Ment Health Serv Res* 2005; 7: 89–101.
14. Magruder KM, Frueh BC, Knapp RG, et al: PTSD symptoms, demographic characteristics, and functional status among veterans treated in VA primary care clinics. *J Trauma Stress* 2004; 17: 293–301.
15. Prigerson HG, Maciejewski PK, Rosenheck RA: Combat trauma: trauma with highest risk of delayed onset and unresolved posttraumatic stress disorder symptoms, unemployment, and abuse among men. *J Nerv Ment Dis* 2001; 189: 99–108.
16. Ware J, Kosinski M, Keller SD: A 12-Item Short-Form Health Survey: construction of scales and preliminary tests of reliability and validity. *Med Care* 1996; 34: 220–33.
17. Gandek B, Ware JE, Aaronson NK, et al: Cross-validation of item selection and scoring for the SF-12 Health Survey in nine countries: results from the IQOLA Project. *International Quality of Life Assessment. J Clin Epidemiol* 1998; 51: 1171–8.
18. Salyers MP, Bosworth HB, Swanson JW, Lamb-Pagone J, Osher FC: Reliability and validity of the SF-12 health survey among people with severe mental illness. *Med Care* 2000; 38: 1141–50.
19. Sanderson K, Andrews G, Jelsma W: Disability measurement in the anxiety disorders: comparison of three brief measures. *J Anxiety Disord* 2001; 15: 333–44.
20. Weathers FW, Lita BT, Herman JA, Huska JA, Keane TM: The PTSD checklist (PCL): reliability, validity and diagnostic utility. Paper presented at: Annual Meeting of International Society for Traumatic Stress Studies, San Antonio, TX, 1993.
21. Orsillo S: Measures for acute stress disorder and posttraumatic stress disorder. In *Practitioner's Guide to Empirically Based Measures of Anxiety*, pp 255–307. Edited by Antony M, Orsillo S. New York, KluwerAcademic/Plenum, 2001.
22. Kroenke K, Spitzer RL, Williams JB: The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med* 2001; 16: 606–13.
23. Lowe B, Kroenke K, Herzog W, Grafe K: Measuring depression outcome with a brief self-report instrument: sensitivity to change of the Patient Health Questionnaire (PHQ-9). *J Affect Disord* 2004; 81: 61–6.
24. Meyer TJ, Miller ML, Metzger RL, Borkovec TD: Development and validation of the Penn State Worry Questionnaire. *Behav Res Ther* 1990; 28: 487–95.
25. Allen JP, Litten RZ, Fertig JB, Babor T: A review of research on the Alcohol Use Disorders Identification Test (AUDIT). *Alcohol Clin Exp Res* 1997; 21: 613–9.
26. Saunders JB, Aasland OG, Babor TF, de la Fuente JR: Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO

- Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption—II. *Addiction* 1993; 88: 791–804.
27. Barry KL, Fleming MF: The Alcohol Use Disorders Identification Test (AUDIT) and the SMAST-13: predictive validity in a rural primary care sample. *Alcohol Alcohol* 1993; 28: 33–42.
 28. Bohn MJ, Babor TF, Kranzler HR: The Alcohol Use Disorders Identification Test (AUDIT): validation of a screening instrument for use in medical settings. *J Stud Alcohol* 1995; 56: 423–32.
 29. Goodman PS: U.S. unemployment rate hits 10.2%, highest in 26 years. *New York Times*, November 6, 2009.
 30. Downs K, Cannistra MK, Kelso NV: Unemployment rate by county. *The Washington Post*, December 3, 2009.
 31. Bureau of Labor Statistics: *Employment Situation of Veterans: 2008*, Washington, DC, United States Department of Labor, 2009.
 32. Prigerson HG, Maciejewski PK, Rosenheck RA: Population attributable fractions of psychiatric disorders and behavioral outcomes associated with combat exposure among US men. *Am J Public Health* 2002; 92: 59–63.
 33. Cook JA, Blyler CR, Leff HS, et al: The employment intervention Demonstration program: major findings and policy implications. *Psychiatr Rehabil J* 2008; 31: 291–5.
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