Disability Compensation and Work Among Veterans With Psychiatric and Nonpsychiatric Impairments

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Objective: This study examined the relationship of Department of Veterans Affairs disability compensation payments and employment among veterans with psychiatric disorders and veterans whose impairments were nonpsychiatric. Methods: Data from a 1987–1988 national survey of Vietnam-era veterans (N=1,634) were used to evaluate the relationship between compensation payments and employment. The employment activity of veterans whose application for benefits was rejected was compared with that of veterans who were awarded benefits. Multivariate analytic techniques were used to control for health status and other factors that also influence an individual's decision to work. Results: Veterans who received compensation of less than $500 a month were no less likely to work than were rejected applicants. Overall, the effect of compensation payment was significant but modest: each additional $100 a month was associated with a 2 percent decline in the number of veterans who worked, a decline of an hour a week in the number of hours worked, and a reduction of $1,110 a year in estimated employment income. No significant differences were observed in the relationship between disability payments and employment among veterans with psychiatric disorders and those with other functional impairments. Conclusions: The association of disability compensation with nonparticipation in the labor force is generally small, except at high levels of payment, and is no greater for veterans with psychiatric disorders than for those with nonpsychiatric impairments. (Psychiatric Services 46:359–365, 1995)

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During the past decade, the vocational rehabilitation of severely impaired psychiatric patients has emerged as a major emphasis in treatment (1–3). At the same time, considerable attention has been devoted to assuring the rights of such patients to fair adjudication of disability claims (4–6). These two efforts may contradict one another if, as some believe, disability payments have a negative effect on the motivation of psychiatric patients to participate in vocational rehabilitation programs and, ultimately, to return to competitive work (7,8).

Although the goal of disability income programs is to replace income that has been lost as a consequence of a physical or mental illness, several studies of the Social Security Disability Insurance (SSDI) program have found that SSDI payments stimulate additional withdrawal from the labor force beyond the effects of illness (9). Other studies, however, have found these effects to be small (10) or negligible (11). In all of these studies, measures of functional impairment and illness have been rudimentary. None of them included measures of psychopathology, and none have specifically examined the relationship between disability payments and work among persons compensated for psychiatric disorders or, more generally, among persons who suffer from psychiatric disorders, regardless of the specific illness for which they are compensated.

In this study we considered the relationship of Department of Veterans Affairs (VA) compensation payments to employment activity. Cross-sectional data from a national survey of Vietnam-era veterans, the National Vietnam Veterans Readjustment Survey, conducted in 1987–1988 (12), were used to address three questions. First, is employment activity greater among veterans who applied for benefits but who were rejected than among veterans who applied for and were granted benefits? Second, what is the direction and magnitude of the association of disability payments and employment activity, after controlling for health status and other factors that influence work behavior? And third, are the effects of disability payments in the same direction and of the same magnitude for veterans who suffer from psychiatric illnesses and for those whose impairments are nonpsychiatric?

The National Vietnam Veterans Readjustment Survey was conducted to evaluate psychiatric and social adjustment problems among Vietnam veterans. The survey includes an unusually rich array of information on health status and social adjustment, making possible detailed examination of a wide range of psychiatric and nonpsychiatric determinants of labor force participation in addition to compensation payments.

Methods

The VA compensation program. The VA compensation program is an indemnity program providing financial support to veterans who are disabled by injuries or diseases that were incurred or aggravated during military service (13). Veterans' compensation payments are more generous than SSDI payments, and the structure of the program minimizes disincentives for labor-force participation (see below). Although the average VA monthly compensation payment is $352 per month, the average payment for totally disabled veterans is $1,892 per month (14), considerably larger than the $300 to $600 monthly payment in the SSDI and Supplemental Security Income (SSI) programs, for which recipients must be totally disabled in order to qualify (15).

The VA program also differs from SSDI in that it allows compensation at reduced levels for those who are only partly disabled, and VA payments are not automatically discontinued if the recipient returns to work. Nor are VA payments reduced to offset other income, as in the SSI program. Program participation is thus quite compatible with employment.

Although it must be acknowledged that some applicants and recipients may reduce their work effort to help establish or continue their VA compensation, a 1989 survey of disabled veterans found that only 1 percent of recipients reported that they ever avoided seeking employment because they feared loss of disability benefits, and only 18 percent reported that their payments were ever decreased (16). In view of the structure of the program, it is possible to estimate the relationship of additional income alone to employment activity, apart from any disincentive to work resulting from program rules.

Sample. The sampling frame for the National Vietnam Veterans Readjustment Survey was a representative national screening sample of computerized military personnel records (17). Blacks and Hispanics were oversampled from this sampling frame. As a result, the sample used in our analyses is not strictly representative of the population of Vietnam-era veterans. In our analyses, however, adjustment is made for the oversampling of minorities.

The subsample used for this study included all male veterans in the survey of Vietnam veterans who were less than 60 years old at the time of the interview (N=1,638). Veterans over age 60 were excluded because of the potentially confounding issue of retirement benefits. Veterans who received support from the VA's pension program (N=4) were excluded from the analyses, leaving a total of 1,634. The original study was conducted by a private research contractor, and participants were given absolute assurances that no identifying data would ever be given to VA.

Measures. For the study reported here, the dependent variables were current labor force participation, hours worked per week, and a proxy measure of employment income. In addition to level of benefit payments, three types of independent variables were considered: sociodemographic characteristics, economic characteristics, and factors related to health and functional impairment.

Veterans were considered to be labor-force participants if they were working at the time of the survey or were only temporarily out of work due to factors such as illness, vacation, or a strike. Hours worked per week were derived from a question about the typical number of hours worked each week at the current job. The proxy for annual earned income was total annual personal income (recorded to a maximum of $50,000) reduced by the value of VA payments.

To evaluate the accuracy of this proxy measure, a secondary analysis was done using survey data from the 1987 Third Survey of Veterans (18). This analysis showed a very high correlation between our proposed proxy measure and true employment earnings ($r=.94$, $p<.001$, N=2,590). The correlation remained high even when the sample was limited to veterans who received VA compensation payments ($r=.91$, $p<.001$, N=255).

The main independent variable of interest is monthly VA compensation payments, measured as a continuous variable reflecting dollars received from this source. To evaluate the specific effect of various levels of payment, three separate dichotomous variables were also created: compensation between $1 and $200 per month, compensation between $201 and $500 per month, and compensation greater than $500 per month. To compare compensation for different types of illness, separate variables were used to measure payment for psychiatric and nonpsychiatric illnesses. For comparative purposes, veterans who had applied for benefits but whose applications were denied were also identified.

Sociodemographic variables included age, minority ethnicity (black or Hispanic), marital status, and number of dependent children living at home. We also assessed two social adjustment factors: criminal behavior, measured with an ordinal index, and occupational instability, measured as the log transformation of the number of episodes of unemployment (excluding any current episode) since the age of 18.

Independent variables in the area of economic characteristics included annual income of other family members, years of education, and job skill level, represented by a dummy code for current or past experience in professional or managerial jobs. Education and job skill were used to approximate potential wage level.

Lifetime psychopathology was measured with a lifetime psychiatric illness index based on the number of lifetime psychiatric disorders for which the veteran met criteria (0, if the veteran did not meet criteria for any disorder; 1, if the veteran met criteria for one disorder; and 2, if the veteran met criteria for more than one disorder). Presence of six disorders—major depressive episode, manic episode, dysthymic disorder, panic disorder, obsessive-compulsive disorder, and generalized anxiety disorder—was determined using *DSM-III* criteria assessed with the Diagnostic Interview Schedule (DIS), a standardized, structured diagnostic interview (19). Presence of a seventh disorder, posttraumatic stress disorder (PTSD), was determined using a cutoff score of 89 on the Mississippi Scale for Combat-Related PTSD (20).

A lifetime substance abuse index was based on the number of lifetime substance abuse disorders for which the veteran met criteria (0, if none; 1, if alcohol or drug abuse; and 2, if both alcohol or drug abuse). Lifetime substance abuse diagnoses were also derived from the DIS.

Functional impairment was assessed using responses to 14 questions about inability to perform tasks, such as driving a car, getting around the community, walking, lifting, and doing vigorous exercise, that had lasted for more than three months. Responses to these questions were summed to create a functional impairment index.

We controlled for variations in labor market and other conditions in the local area using one dummy-coded variable that indicated a rural area or city of less than 100,000 population and ten dummy variables representing the nine United States Census Bureau divisions and Puerto Rico.

Analyses. The first analysis was designed to describe labor force participation among veterans in different VA compensation statuses. In this analysis the sample was divided into five groups: those who had never applied for VA disability, those who had applied but were denied benefits, those who received between $1 and $200 in benefits per month, those who received between $201 and $500, and those who received more than $500. Analysis of variance (ANOVA) with multiple-range test (Tukey test [21] for multiple comparisons, $p<.05$) was used to test for differences in measures of employment between the five veteran groups.

The relationship of compensation payments and employment activity was then evaluated through three multiple regression analyses that adjusted for other factors. A logistic regression analysis (22) that examined whether the veteran worked at all was followed by two ordinary least-squares regression analyses in which the dependent variables were, first, the number of hours worked each week and, second, our proxy measure of employment earnings (income minus VA benefits). Factors other than compensation that influence employment (23) were covariates in these models.

The same models were then tested substituting the three dichotomous measures of the three compensation levels (between $1 and $200, $201 to $500, and more than $500) for the continuous measure of compensation payments. Logistic regression coefficients were used to compute the marginal effects of benefits, that is, the change in the percentage of veterans working that results from each $100 of additional compensation payment. (For additional information on calculation of marginal effects for logistic regression coefficients, see reference 24, page 317).

These methods were then applied to analyze the data for veterans specifically compensated for psychiatric as contrasted to medical illnesses, and for veterans who met criteria for lifetime psychiatric illness as contrasted to those who were impaired by a nonpsychiatric illness.

Table 1
Employment characteristics of a subsample of veterans (N=1,634) from the National Vietnam Veterans Readjustment Survey, by VA compensation status

Characteristic	Never applied (N=1,230)	Applied but rejected (N=138)	Awarded benefits (per month) <$201 (N=170)	$201 to $500 (N=56)	Over $500 (N=40)	F[1]	p <
Working (%)[2]	89.4	74.1	85.3	69.6	38.4	30.2	.001
Hours worked per week[2]	40.9	32.5	38.7	30.7	14.8	28.7	.001
Annual non-disability income[3]	$26,185	$19,729	$23,797	$19,476	$7,471	25.7	.001

[1] df=4, 1,629 for all comparisons
[2] All paired comparisons are significant except those between values for never applied and awarded <$201 and between values for applied but rejected and awarded $201 to $500.
[3] All paired comparisons are significant except those between values for never applied and awarded <$201, between values for applied but rejected and awarded <$201, between values for applied but rejected and awarded $201 to $500, and between values for awarded <$201 and awarded $201 to $500.

Results

Sample. Veterans in the sample had a mean±SD age of 42±5.4 years. Twenty-seven percent were black, and 23 percent were Hispanic. They had a mean±SD of 13.4±2.4 years of education. Twenty-six percent had worked at professional or executive jobs. Altogether, 73 percent of the sample were married, and, on average, they had one or two dependent children.

One-fourth of the sample had applied for VA compensation, and 16 percent were current beneficiaries, receiving a mean±SD of $285±$132 per month. Eighty-six percent of the sample were labor force participants, working 39±19 hours per week and earning an average of $25,370 per year.

Analysis of variance between groups. Table 1 shows that, as expected, veterans who had never applied for compensation were significantly more likely to work, worked significantly more hours, and had higher earned incomes than three of the four groups of veterans who had applied for compensation. Only those at the lowest level of payment (between $1 and $200 per month) worked and earned as much as those who had never applied.

Veterans who had applied for and had been denied compensation, and therefore experienced no work disincentive from the VA compensation program, did not work or earn any more than those who were compensated less than $500 per month. However, veterans whose compensation was $500 or more (average payment=$1,004 per veteran for veterans in this category of compensation), worked and earned significantly less than all other groups.

Table 2
Multivariate analyses of veterans' labor force participation, hours worked, and employment income showing effects of sociodemographic and economic characteristics (N=1,634)

Characteristic	Working[1] (mean=85.8%)	Hours worked per week[2] (mean=38.98)	Income[2] (mean= 24.71)[3]
R^2	0.25***	0.23***	0.34***
Age	–0.05**	–0.30***	0.12*
Black	–0.48*	–4.05***	–3.48***
Hispanic	–0.05	–1.13	–0.81
Married	0.84***	5.72***	4.58***
Dependent children	–0.10	–0.53	0.09
Criminal activity	–0.29***	–1.50**	–1.49***
Times unemployed (natural log)	–0.25*	–2.63***	–3.33***
Other family income (in $1,000s)	0.00	–0.06	–0.24***
Education	0.14***	–0.54**	1.03***
Professional or managerial job	0.46*	3.65***	2.02**
Lifetime psychiatric diagnosis index	–0.66***	–1.78**	–1.38**
Lifetime substance abuse index	–0.06	–0.25	–1.02
Functional impairment index	–0.23***	–1.88***	–0.82***
Lives in a city with less than 100,000 population	0.02	1.18	2.49***
U.S. geographical divisions			
New England	0.79	5.71*	3.61*
Middle Atlantic	–0.03	–1.63	1.24
East North Central	–0.07	0.11	0.84
West North Central	0.02	0.26	–2.38
South Atlantic	0.09	0.73	–1.41
East South Central	–0.22	0.85	–2.56
West South Central	–0.56	–2.87	–4.65***
Mountain	–0.16	–0.99	–3.91**
Puerto Rico	–0.78	–6.26*	–12.57***
Average VA disability payment (in $100s)	–0.18***	–1.04***	–1.11***
Marginal effect[4]	–2.1%		
VA disability benefit			
$200 or less	0.37	1.72	–0.61
$201 to $500	0.62	–4.03	–4.10*
Over $500	–1.64***	–15.76***	–12.94***

[1] Logistic regression analysis
[2] Ordinary least-squares regression analysis
[3] Proxy for income in $1,000s
[4] Marginal effect calculation is based on the logistic regression coefficient for average VA disability payment.
*p<.05
**p<.01
***p<.001

Relationship to employment and earnings. The first data column in Table 2 presents the logistic regression analysis of labor force participation. This analysis showed a significant negative relationship between labor force participation and receipt of VA compensation payments. Every additional $100 in compensation was associated with a 2.1 percent reduction in the proportion of veterans who were in the labor force.

The same set of covariates were used in a separate regression analysis examining the relationship between amount of monthly VA disability benefits and labor force participation. This analysis is presented at the bottom of Table 2. The covariates are not presented in this section of the table to simplify the presentation. This second analysis showed a modest negative relationship between working and compensation payments between $201 and $500 per month, and a large and highly significant negative relationship between working and payments over $500 per month.

In addition to compensation payments, several other variables significantly reduced the likelihood of working. They were being older and black and having past legal system involvement, past episodes of unemployment, a lifetime psychiatric disorder, and physical functional impairment. Variables that significantly increased the likelihood of employment included years of education, work experience at the professional or managerial level, and being married.

The second data column in Table 2 presents the ordinary least-squares regression analysis of weekly hours of work for the entire sample. This analysis showed a significant but small negative relationship between compensation payments and the number of hours of work per week. For every $100 of compensation per month, veterans worked only 1.04 fewer hours per week. Veterans who were compensated between $201 and $500 per month worked an average of four hours less per week than other veterans, and those compensated at more than $500 per month worked 16 hours less per week than other veterans.

Analyses of the relationship of compensation to the proxy measure of employment income (for the entire sample, including both workers and nonworkers) are presented in the last column of Table 2. Each dollar of compensation was associated with a reduction in earned income of similar magnitude. Every $100 of monthly compensation (equivalent to $1,200 per year) was associated with $1,100 less earned income per year.

Table 3 shows the relationships between employment activity and compensation for psychiatric disorders and for nonpsychiatric disorders for the entire sample. The significance of differences between coefficients was compared by using the standard errors to determine the 95 percent confidence intervals of the coefficients. If the upper and lower limits of these estimates overlapped, the coefficients were not considered

to be significantly different from one another. The differences between coefficients did not reach statistical significance.

Table 3 also compares the relationship of compensation payment and employment among veterans who met criteria for a lifetime psychiatric disorder (excluding all other veterans) and among veterans who did not meet criteria for a lifetime psychiatric disorder but who reported functional impairment, presumably on the basis of a nonpsychiatric illness. Here, too, there were no significant differences between coefficients, although there remained significant relationships between compensation and employment.

Table 3
Multivariate analyses of labor force participation, hours worked, and employment income showing effects of health and functional impairment factors, adjusting for sociodemographic and economic covariates

Factor	Working[1]	Hours worked per week[2]	Income[2,3]
Total sample (N=1,634)			
Payment for psychiatric illness (in $100s)	–0.33**	–1.89***	–1.16***
Standard error	(0.13)	(0.40)	(0.28)
Marginal effect[4]	–4.0%		
Payment for medical illness (in $100s)	–0.15**	–1.19***	–1.10***
Standard error	(0.05)	(0.28)	(0.19)
Marginal effect[4]	–1.8%		
Veterans with psychiatric diagnoses (N=485)			
VA disability payment (in $100s)	–0.18**	–1.47***	–1.29***
Standard error	(0.05)	(0.35)	(0.25)
Marginal effect[4]	–3.6%		
Veterans with functional impairments but no psychiatric diagnoses (N=261)			
VA disability payment (in $100s)	–0.15	–2.09***	–1.33***
Standard error	(0.10)	(0.40)	(0.25)
Marginal effect[4]	–2.0%		

[1] Logistic regression analysis
[2] Ordinary least-squares regression analysis
[3] Proxy for income in $1,000s
[4] Marginal effect calculation is based on logistic regression coefficient for average VA disability payment.
**p<.01
***p<.001

Discussion and conclusions

The central challenge in evaluating the specific effect of disability payments on labor force participation is the estimation of the level of labor force participation among beneficiaries that would have occurred in the absence of disability payments. People who receive disability payments differ from those who do not in many respects other than the receipt of benefits. The presence of a medical condition that impairs the ability to function is the central criterion for participation in disability programs, and such conditions are themselves major causes of reduced labor force participation. Those who apply for disability benefits may also differ from peers who do not apply in their earning potential and in their motivation and attitude toward work. These factors would reduce labor force participation whether disability payments are received or not.

This study sought to determine how much additional reduction in labor force participation results from each additional dollar of disability payments, other things being equal. Because it would be both illegal and unethical to experimentally withhold disability payments from people who are legally entitled to them, we used an ex post facto observational design to explore this question.

Only modest differences were observed in employment between applicants whose claims were rejected—persons who had once thought of themselves as disabled but who had received no VA compensation payments—and applicants who receive benefits. It could be argued, however, that the comparison of the impact of benefits on rejected applicants and awardees is spurious because veterans who were denied VA benefits may have obtained disability payments from other sources.

To evaluate this possibility, we examined data from the 1987 Third Survey of Veterans (18). Among male Vietnam veterans under age 60, those who had applied but had been rejected for VA compensation received a mean±SD of $880±$2,746 in non-VA disability payments. However, veterans who received VA compensation payments also received non-VA disability payments, averaging $719±$2,242 per year, not a significantly smaller amount. These data showed that comparisons between rejected applicants for VA compensation and awardees were not likely to have been confounded by differences between the groups in receipt of non-VA disability payments.

Veterans who received less than $500 per month in benefits worked no less and earned no less than veterans who had applied for compensation and were rejected, even without controlling for health status and other factors. In contrast, those who received compensation payments over $500 per month worked and earned about half as much as rejected applicants. In the multivariate analysis, controlling for health factors, a limited but significant relationship between compensation payments, work, and earnings was observed, and this relationship was substantial among veterans who received high levels of benefits.

Because information on non-VA disability benefits were not available in this data set, we could not directly compare the effect of VA compensation on employment to that of other disability programs. The SSDI program includes structural disincen-

tives related to employment that could have had a larger negative effect on employment. One study estimated that a $100 increase in monthly SSDI payments reduces labor force participation between 3 and 4 percent (25), somewhat greater than the 2.1 percent reduction reported in this study.

During the 1940s, policymakers discussing the structure of the SSDI program expressed serious doubts about coverage for psychiatric disabilities. They feared that because such illnesses were difficult to diagnose and were therefore vulnerable to malingering (26), these benefits would be abused. Strong sentiments against allowing payments for anything less than total disability were also expressed. Both positions reflected concerns that disability payments would encourage people not to work, that such payments would reduce national productivity (as measured by employment earnings contributing to the Gross National Product), and that disability programs would put a severe strain on the federal budget.

Our findings on hours worked and earned income indicate that the first two of these fears are unfounded, at least in a program without work restrictions. Veterans with psychiatric disorders do not function differently in relationship to compensation than veterans with nonpsychiatric disorders, and partial disability payments (that is, those less than $500 per month) appear to have little effect on employment or productivity. However, because 94 percent of all compensated veterans receive partial disability payments, and they received 68 percent of all payments in 1991 (14), partial disability payments could have a substantial influence on government expenditures, even if they do not substantially affect national productivity.

Perhaps the most important conclusion of this study is that income obtained through the VA compensation program, and perhaps through others as well, is not likely to be as large an impediment to vocational rehabilitation as factors related to illness, functional impairments, or attitudes. Although this finding does not alter the challenges faced in psychiatric rehabilitation, it does suggest that these challenges are primarily clinical and are not related to compensation policies.

Several methodological limitations of this study must be acknowledged. First, self-reports of health status may be biased by receipt of disability benefits, because veterans who receive compensation payments may be more focused than others on their health. Although such bias could result in an overestimation of the effect of health status in comparison with the effect of compensation payments, other studies have suggested that reporting biases among disability beneficiaries are likely to have little effect on estimates of the effect of disability payments on labor force participation (10,27).

Second, our measures of earning potential and functional limitations are rudimentary and may bias our conclusions in either direction. More detailed data on past attitudes toward work, on work experience, and on past wage rates could be best obtained in a prospective study in which such factors were measured before the onset of disability. Third, the sample we used is representative of the general population of veterans and probably includes only a small number of veterans who suffer from severe mental illnesses. Haveman and Wolfe (10) have suggested that the effects of disability payments may be greatest on persons with more severe impairments. Our estimates of the impact of compensation payments in a general population sample may underestimate their effect on severely mentally ill persons.

Further studies are needed of the relationship between disability payments, psychiatric disorder, and employment activity, both to improve the design of disability programs and to facilitate clinical rehabilitation efforts. These studies can be strengthened by using prospective designs, by using more objective measures of functional capacity (28), by collecting more detailed information on employment history, and by focusing specifically on persons who suffer from severe mental illness.

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Service Utilization and Costs of Care for Severely Mentally Ill Clients in an Intensive Case Management Program

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Objective: The study evaluated the effects of an intensive case management model on clients' use of inpatient and outpatient psychiatric care and on the costs of care. Methods: Ninety clients of a county mental health system who were frequent users of inpatient services were randomly assigned to either an intensive case management group, a traditional case management group, or a control group who received no particular services. Outcome variables measured over a two-year period were number of units used by clients and costs of inpatient care in county and private facilities and various types of outpatient care, including day treatment and use of an emergency psychiatric unit. Results: Clients who received intensive case management had fewer inpatient days and reduced overall costs for mental health services. Conclusions: Assertive outreach and intensive case management can reduce hospitalizations of clients who are frequent users of inpatient care and can reduce overall mental health care costs. Mental health consumers employed as case management aides can play an important role in the delivery of mental health services, particularly with frequent users of inpatient care. (Psychiatric Services 46:365–371, 1995)

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A serious problem for public mental health service delivery systems in times of critical shortages in mental health funding is the consumption of a disproportionately large share of resources by the small percentage of clients who repeatedly use inpatient psychiatric services. In many systems, intensive case management has generated much interest as a strategy for providing services to these clients at a potentially lower cost.

Use of intensive case management to reduce readmissions was first reported by Stein and Test (1,2), whose approach included assertive outreach, small caseloads, field-based practice, and persistent involvement with clients regardless of service setting. Stein and Test (2) found that this model reduced hospitalizations dramatically.