Mental Health Risk Factors and Protective Mechanisms for Post-Secondary Educational Attainment among Young Adult Veterans

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Research Background and Hypotheses

This exploratory study examines the impact of mental health status on post-secondary educational attainment among young veterans of the first Gulf War, and the associated protective and risk mechanisms. Investigation of mental health impact on post-service enrollment or successful reentry into higher education for this population has been limited (Angrist, 1993, 1998, 2000; Savoca & Rosenheck, 2000). The research questions are:

1. What is the effect of mental health status on post-service post-secondary educational attainment?

2. What protective mechanisms moderate the effect of that risk factor (including psychiatric disorders, psychosocial functioning, and mental health problems) on post-secondary educational attainment?

3. What protective mechanisms mediate the effect of this risk factor on that positive outcome?

Drawing upon the literature and resiliency (McCubbin & McCubbin, 1996; Richardson, 2002; Rutter, 1987, 1993; Werner & Smith, 1992), life span/life course (Elder, 1986; Erickson, 1980; George, 1983; Lavee, McCubbin, & Patterson, 1986; McCubbin & Dahl, 1976; vanLieshout, 2001), and social geography theories (Auge, 1995; Bourdieu, 1989; DeCerteau, 2002; Foucault, 1986; Lefebvre, 1991; Ritzer, 2003), the author hypothesized that selected factors in the personal, interpersonal, and organizational domains could play mediating or moderating roles in the relationship between post-service psychiatric symptoms (Prigerson, Maciejewski, & Rosenheck, 2002) and level of educational attainment.

Methodology

Data from the 2001 National Survey of Veterans (NSV) were analyzed (U.S. Department of Veterans Affairs, 2001). The sample included 2075 veterans: 349 females

and 1726 males, 71% Caucasian and 29% minority, most of whom had served at least two consecutive years on active duty, almost half in a combat zone. Fifty-five percent of the veterans reported experiencing depressive symptoms in the past month, and thirteen percent had received mental health treatment in the past month.

Results

A series of regression analyses (Cohen, Cohen, West, & Aiken, 2003) were performed to explore the hypothesized relationships. Treatment in the past year for psychiatric disorders was not associated with educational attainment as defined by highest grade ever completed ($p = .935$). However, a logistic regression analysis (Table 1) that examined college educational benefit use since leaving the military showed that the likelihood of a Gulf War veteran using VA educational benefits for post-secondary education was positively related to the use of non-VA sources of financial aid ($p < .0005$), and to being treated for PTSD in the past year ($p = .001$). The odds of a veteran who used non-VA financial aid of also using VA post-secondary educational benefits were 2.589 times greater than the odds for a veteran who did not. The odds of a veteran who was treated for PTSD in the past year of using those VA benefits were 2.138 times greater than the odds for veterans who were not treated.

In the case of the moderator analysis, which was exploratory in nature, a more liberal significance criterion ($p < .10$) was used to allow "following a potentially productive lead", as recommended by Black (1999, p.397). Veterans' mental health risk factors were significantly positively moderated (Table 2) by level of health insurance ($B = .34$; $p = .01$) and level of non-GI Bill financial aid ($B = .47$; $p = .09$).

Mediator analyses (Baron & Kenny, 1986) addressed three domains. Protective mechanisms in the personal (Table 3) and organizational domains (Table 4) mediated the relationship between mental health status and educational attainment, while protective mechanisms in the interpersonal domain (Table 5) partially mediated this relationship. Personal income ($B = 1.00$; $p < .0005$) and VA educational aid ($B = 1.95$; $p <.0005$) were key protective mechanisms fully mediating mental health issues among veterans pursuing post-secondary education. Personal income, regardless of source, and VA educational benefits outweighed family relationships in the interpersonal domain as mediators. Interestingly, however, the post hoc test using the Sobel statistic was not significant for any of the organizational domain factors, suggesting that the cluster of organizational/systemic factors (VA and non-VA educational benefits, especially for those veterans who had not required recent VA mental health treatment) as a set mediated the relation between mental health and educational attainment.

Utility for Social Work Practice

The study's findings advance practice by better preparing social workers in Veterans Administration/military medical facilities, service settings for homeless veterans, and outpatient mental health settings to serve the current influx of returning

young veterans from the conflicts in Afghanistan and Iraq. Social work practice can be enhanced by awareness of the specific operation of protective mechanisms for this population, contextualized within life stage and the life trajectory turning points of military service and reentry into student status. The importance of both familial and benefit factors for educational attainment in this population suggests that generalist social work practitioners have the particular expertise and perspective to address mental health, resource, and interpersonal issues.

The need for coordination between military medical facilities and VA medical and vocational rehabilitation facilities is highlighted by study findings, as is the subsequent need for coordination between VA service systems, service systems affiliated with or embedded in colleges, and colleges themselves. The existing social work role in military and VA service systems, and social work expertise in interagency coordination and managing complex service systems, make it clear that social workers will play a pivotal role in implementing such coordination. Social workers in VA systems should work with clients to include educational goals in their treatment plans, and seek out or help initiate supported education programs and services consistent with those goals. Findings of the positive association between student status and psychosocial functioning suggest that social workers in these systems be active in encouraging soldiers and veterans to pursue post-service education. Social workers should encourage soldiers and veterans with mental health issues to consider important protective mechanisms upon re-entry into the student role, and provide them with assistance in increasing their sources of income, informational social support, health insurance, and VA and non-VA college financial aid in support of that role. VA social workers should assist veterans with PTSD symptoms in obtaining ongoing PTSD treatment, as a factor associated with use of VA educational benefits (findings from research question 1). Findings about organizational mediating factors suggest the need to assist this group of student-veterans in accessing on-campus or community-based mental health treatment resources in order to improve educational attainment outcomes, even for students who have not required recent mental health treatment in a VA facility (Benotsch et al,2000; Vasterling, Brailey, Constans, & Sutker, 1998; Wolfe, Erickson, Sharkansky, King, & King, 1999). These findings suggest a broad clinical focus, utilizing a person-in-environment perspective, may be most beneficial for this population (Carpenter, 2002).

Social workers need to expand their involvement in higher education practice settings in order to be in a position to use these approaches most effectively with student-veterans with mental health issues (Becker, Martin, Wajeeh, Ward, & Shern, 2002). The social work practice base in psychosocial rehabilitation, health disparities, and social benefits management for vulnerable populations is needed in university offices of disability services, university advising offices, and university health centers (Megivern, Pellerito, & Mowbray, 2003). Social workers serving college students and aspiring student-veterans must support clients in their use of productive medical withdrawal and reentry procedures (Hoffman & Mastrianni, 1991), consistent with policies of their college, when necessary, and in continued use of appropriate mental services and of any available supported education programs, accommodations, and assistive technology upon college reentry (Andrews, Sanderson, & Beard, 1998; Ofiesh, Rice, Long, Merchant, & Gajar, 2002; Paul, 2000; Smith-Osborne, 2005). Study findings from research question 1

indicated, as well, the need to provide increased sources of informational social support (Winterowd, Street, & Boswell, 1998), including short-term special interest groupwork (e.g., student-veteran orientation for re-entry to civilian life and student role, study groups, time management and study skills groups, post-service relocation support groups), which were found by this study to be associated with increased likelihood of obtaining treatment (Weiner & Wiener, 1996, 1997). Study findings relating to vulnerability factors suggest that special efforts, including mobilization of additional financial and support resources, should be targeted to male (Arthur, 1998), minority (Astone & Schoen, 2000), and lower income student-veterans.

Study findings pertaining to moderating mechanisms (research question 2) suggest that social workers in higher education settings and settings which serve student-veterans need to monitor changing benefit policies, and inform these clients about additional sources of health insurance and non-VA financial aid. Social workers need to educate clients about the importance of these benefit structures to their education, and assist them in applying for and maintaining maximum benefit levels while they are pursuing further education, as study findings suggest that these may be important protective factors for varying levels of mental health issues and psychosocial functioning, not just for veterans with the most severe disorders.

The study findings suggest a need for policy changes to benefit veterans with mental health issues, targeted to increasing the number of years of college completed and increasing the numbers who successfully earn degrees. Federal level policies could be instituted to mandate piloting supported education programming (Collins, Mowbray, & Bybee, 1999; Cook & Solomon, 1993; Mowbray, 1999; Unger, 1993; Unger & Pardee, 2002) by the VA service system, preferably through a coordinated joint program under the medical, educational, and vocational rehabilitation branches. Implementation of pilot programs should be supported by interagency agreements with specific community colleges and university systems. Priority for such collaboration should be given initially to colleges which already have special discrete initiatives targeted to supporting student-veterans and to educational systems in geographic areas with large concentrations of veterans recently separated from the military. Such pilot programs would be consistent with the VA's rehabilitation mission, and could be initiated in an incremental policy modification as an expansion of current vocational rehabilitation services. The high proportion of the sample reporting rated service-connected disabilities suggests that eligibility issues for supported education under the rubric of vocational rehabilitation would not be a significant problem in a pilot phase. However, findings suggest that programs to support non-disabled veterans with psychiatric symptoms in furthering their education are also needed if society is to make good on its recruitment promises to veterans.

Social workers could use findings from this study to advocate for policy changes necessary to offer this population increased opportunity for full participation in the American economy and life-stage appropriate roles. Such changes would represent a shift from recent policies to reemphasize the consumers' need and potential for upgraded training and post-secondary education. The policies which need to be addressed are not only national policies which institute and organize benefits for persons with disabilities

and chronic illnesses, but also local and organizational policies which influence access to and continuation in community and four year colleges.

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Table 1 *Logistic Regression Analysis Use of VA Educational Benefits for Post-Secondary Education (N = 2,032): Non-use vs. Use*

Predictor	B	SE B	Wald's X^2	df	p	e^B	95% CI For e^B Lower	Upper
Constant	-1.19	.20	36.71	1	<.0005	.30		
Age	.01	.01	1.04	1	.31	1.01	.99	1.02
Gender	.11	.13	.74	1	.39	1.12	.86	1.45
Minority	-.20	.11	3.14	1	.08	.82	.66	1.02
NonLabor income	.06	.05	1.50	1	.22	1.06	.97	1.17
Annual family income	-.03	.02	5.33	1	.02	.97	.94	1.00
Non-VA financial aid	.95	.12	67.27	1	.00	2.59	2.06	3.25
Substance treatment	-.65	.49	1.82	1	.18	.52	.20	1.34
PTSD treatment	.76	.22	11.49	1	.001	2.14	1.38	3.32
Other mental h. tx.	-.22	.19	1.42	1	.23	.80	.56	1.15
Overall model evaluation:								
X^2 (df=9)	92.159							
	P <.0005							
-2Log likelihood	2411.047							
R^2 Cox	.044							
Nagel	.063							
Specificity	97.7%							
Sensitivity	8.4%							

Table 2 *Multiple Regression Analysis for Moderating Effects of Protective Mechanisms on Mental Health Status (N=187)*

Variable	B	SE B	β	t	p	ΔR^2	R^2	Model F	Model p
Age	.02	.02	.08	1.07	.28	.20	.27	6.00	<.0005
Gender	.37	.27	.09	1.37	.17				
Minority Status	-.18	.26	-.05	-.69	.49				
Total Income	.99	.00	.15	1.98	.05				
Mental health	-.12	.15	-.06	-.81	.42				
Mental health by Income	-.99	.00	-.04	-.51	.61				
Social Support	-.19	.15	-.08	-1.21	.23				
Mental health by Support	-.05	.15	-.02	-.33	.74				
Level health insurance	.41	.20	.15	2.05	.04				
Non-VA financial aid	.53	.18	.21	2.91	.004				
VA educational benefits	1.51	.28	.36	5.43	.000				

Table 3 *Multiple Regression Analyses for Mediating Effects of Personal Domain Protective Mechanisms on Mental Health Status Risk Factor for Educational Attainment*

Variable	B	SE B	β	t	p	R^2	Model F	Model p
Step 1 for Mediation								
DV = Mental health						.05	55.11	<.0005
N = 2,067	.01	.05	.004	.18	.86			
Model 1	1.00	.00	.22	9.88	<.0005			
Home Ownership								
Total Income								
Step 2 for Mediation								
DV = Highest grade								
N = 2,071	.21	.05	.10	4.39	<.0005	.01	19.24	<.0005
Model 1								
Mental health								
Step 3 for Mediation								
DV = Highest grade								
N = 2,067	.02	.004	.01	.38	.71	.16	128.32	<.0005
Model 1	-.03	.10	-.01	-.34	.74			
Mental health	1.00	.00	.40	18.16	<.0005			
Home Ownership								
Total Income								

Table 4 *Regression Analyses for Mediating Effects of Organizational Domain Protective Mechanisms on Mental Health Risk Factor for Education*

Variable	B	SE B	β	t	p	R^2	Model F p
Step 1 for Mediation							
DV = Mental health							
N = 206						.31	29.56 <.0005
	.08	.13	.04	.62	.54		
Model 1	.08	.08	.06	.94	.35		
VA educ. benefits	-2.88	.32	-.54	-9.02	<.0005		
Non-VA financial aid							
VA MH Treatment							
Step 2 for Mediation							
DV = Highest grade							
N = 2,071						.01	19.24 <.0005
	.21	.05	.10	4.39	<.0005		
Model 1							
Mental health							
Step 3 for Mediation							
DV = Highest grade							
N = 206	.02	.17	.01	.12	.90	.18	11.19 <.0005
	1.95	.32	.39	6.02	<.0005		
Model 1	.36	.20	.12	1.79	.08		
Mental health	-.52	.91	-.04	-.57	.57		
VA educ. benefits							
Non-VA financial aid							
VA MH Treatment							

Table 5 *Regression Analyses for Mediating Effects of Interpersonal Domain Protective Mechanisms on Mental Health Status Risk Factor for Education*

Variable	B	SE B	β	t	p	R^2	Model F	Model p
Step 1 for Mediation								
DV = Mental health								
N = 2,019	.01	.028	-.01	-.42	.68	.02	16.35	<.0005
	.31	.049	.15	6.41	<.0005			
Model 1	-.07	.017	-.10	-4.24	<.0005			
Social support								
Marital status								
Number of dependents								
Step 2 for Mediation								
DV = Highest grade								
N = 2,071	.21	.047	.10	4.39	<.0005	.01	19.24	<.0005
Model 1								
Mental health								
Step 3 for Mediation								
DV = Highest grade								
N = 2,019						.03	15.59	<.0005
	.18	.05	.09	3.83	<.0005			
Model 1	.30	.06	.11	5.00	<.0005			
Mental health	.30	.11	.06	2.82	.01			
Social Support	-.13	.04	-.08	-3.42	.001			
Marital status								
Number of dependents								