

Supporting Resilience in the Academic Setting for Student Soldiers and Veterans as an Aspect of Community Reintegration: The Design of the Student Veteran Project Study

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Abstract: *The Post 9/11 GI Bill is leading an increasing proportion of wounded warriors to enter universities. This paper describes the design and development of an adapted supported education intervention for veterans. The intervention trial was one of two projects which grew out of a participatory action research process aimed at supporting reintegration of returning veterans into the civilian community. This intervention is being tested in a foundation-funded randomized controlled trial in a large southwestern university, with participation now extended to student-veterans at colleges around the country. Some protective mechanisms which were found in theory and in prior research were also supported in early results. SEd intervention was associated with the protective mechanisms of support network density, higher mood, and resilience. Practitioners may benefit from the lessons learned in the development of this supported education intervention trial when considering implementation of this complementary intervention for veterans reintegrating into civilian life.*

Keywords: *Veterans, resilience, supported education, psychiatric rehabilitation, GI Bill*

INTRODUCTION

The Department of Defense (DoD) has initiated innovative efforts to support mission readiness and prevent mental health problems among troops in current conflicts. These efforts use two theoretical frameworks, resilience and positive psychology, which show goodness of fit with military emphasis on proactive preparedness and adaptive fitness and training (e.g., Britt, Adler, & Bartone, 2001; Castro, 2008; Cornum, Matthews, & Seligman, 2011; Mojica, 2010; Office of the U.S. Army Surgeon General, 2003, 2008, 2009; Orsingher, Lopez, & Rinehart, 2008).

Community institutions which serve military members and families, taking over educational, health, and social service delivery from DoD institutions when military service is done, may enhance continuity of care and community reintegration by adopting service models consistent with these theoretical frameworks. Choice of theory has important implications for measurement (Luthar, 1993, Luthar & Cushing, 1999), goodness of fit of intervention with target group (Greene, 2007; Holter, Mowbray, Bellamy, MacFarlane, & Dukarski, 2004; Luthar, Sawyer, & Brown, 2006), and fidelity of intervention implementation (Bond, Evans, Salyers, Williams, & Kim, 2000; Borrelli et al., 2005). Academic settings are one important community institution for returning service members, as pursuing higher education has been identified as a key goal for

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today's All Volunteer Force (AVF) soldiers (Asch, Fair, & Kilburn, 2000; Fernandez, 1980; National Priorities Project, 2006), including those with this combat era's signature conditions (Hall, 2009; Tanelian & Jaycox, 2008). This paper describes the design and development of an innovative intervention utilizing a resilience theoretical framework to support community reintegration via the academic setting, and reports first wave results.

THEORETICAL CONSIDERATIONS: WHO MAY BENEFIT FROM SUPPORTED EDUCATION FOR VETERANS AND THROUGH WHAT MECHANISMS

This author's prior resiliency-based research has suggested several potential protective mechanisms which may operate to support educational attainment for AVF veterans with mental health risks and service-connected disabilities (Smith-Osborne, 2009a; 2009b). Further, evidence-based practices in supported education (SEd) have already been established for the civilian college population with psychiatric disabilities (Anthony & Unger, 1991; Holter, Mowbray, Bellamy, MacFarlane, & Dukarski, 2004; National Public Radio, 2002); approaches to their wider dissemination have also been investigated (Mowbray, Bellamy, Megivern, & Szilvagy, 2001; Mowbray, Moxley, & Brown, 1993). How might supported education, adapted to a resilience theory framework consistent with military prevention programs, operate to promote recovery, community reintegration, and advancement for military/veterans in the academic setting?

The resilience theoretical paradigm would indicate that supported education can operate by four protective processes against mental health risk (Rutter, 1990). Initial findings from this intervention trial (reported below) suggest that supported education intervention for this population may operate by several of these processes. The first type of protective process reduces the risk impact, which could be suggested in this intervention trial by reduced or stable levels of symptoms (e.g., post-test PTSD symptoms) for the intervention group compared to unchanged or increased symptoms for the control group while functioning in the academic setting. Operation of the second type of process, to reduce negative chain reactions stemming from the risk factor, would be suggested by unchanged or decreased post-test resilience scores in the control group compared to increased or sustained scores in the intervention group. The third type of process promotes resiliency traits, which could be suggested by higher posttest scores on resilience and associated evidence-based protective factors (such as informational support network measures) for the intervention group. The fourth type of process operates by setting up new opportunities for success. The recent passage of expanded financial aid benefits under the new post 9/11 GI Bill represents one such opportunity (McChesney, 2008; Merrow, 2008). However, prior research suggests that the GI Bill alone may not be sufficient to support veterans' access to higher education without effective collateral social, health, academic, and income support systems (Smith-Osborne, 2009a; 2009b). Brokering of concrete and informational resources necessary to educational success (e.g., internships, scholarships, faculty mentoring, family income support, and child care) is a component of supported education models (Anthony & Ungar, 1991; Mowbray, 2002). Intervention effects on educational attainment variables such as college entry, use of non-

VA as well as VA financial aid, grade point average, and retention could provide evidence that supported education operates by this process.

A parallel theoretical paradigm which may be useful is the job control model for high demand and ambiguous work contexts (Dubow, Schmidt, McBride, Edwards, & Merk, 1993; Karasek, 1979). Ambiguity may characterize academic settings as contrasted with the more highly structured and directive military occupational setting (although both are high demand). This model suggests that increased latitude (relative flexibility and autonomy) in making decisions about work methods and scheduling mediates ambiguity and conflicting demands so as to prevent burnout. From this perspective, a preventive mechanism by which supported education could support resilience is through providing targeted consultation and mentoring to student veterans in exercising decision latitude in their educational decisions, thus preventing emotional exhaustion which may be related to school drop-out (Hobfall, 1989; Hobfall, Johnson, Ennis, & Jackson, 2003; Meilman, Manley, Gaylor, & Turco, 1992). Thus, a supported education model such as the Choose-Get-Keep program (Collins, Mowbray, & Bybee, 1999), which utilizes an explicit goal-setting and decision-making protocol, may operate via increasing decision latitude to prevent emotional exhaustion and (potentially) college drop out.

A higher proportion of AVF troops are married with families, compared to earlier combat era cohorts (Defense Manpower Data Center, 2008; Karney & Crown, 2007), suggesting that family resilience may also need to be addressed in order to support student veteran resilience. Lavee, McCubbin, and Patterson's double ABCX model of Family Adjustment and Adaptation (1985) has been used to investigate military families under stress and to suggest ways to enhance family resilience in earlier conflicts (McCubbin & Dahl, 1976; McCubbin, Dahl, Lester, Benson, & Robertson, 1976; McCubbin, Hunter, & Dahl, 1975). The double ABCX model highlights the importance of family appraisals of the associated hardships, and of the perceived resources and vulnerabilities for dealing with them, rather than solely the stressors themselves. The later revised version, the Resiliency Model of Family Adjustment and Adaptation, includes post-crisis variables descriptive of the long-term adaptation phase (McCubbin & McCubbin, 1991), suggesting goodness of fit for supported education intervention.

STUDENT VETERAN PROJECT INTERVENTION DESIGN

Current service delivery systems and models are reported to have limitations in reaching and serving AVF personnel with service-connected co-morbid conditions (Batten & Pollack, 2008; Hoge, Auchterlonie, & Milliken, 2006; Seal et al., 2010). Design and development of innovative interventions for this population must address these limitations, as well as be based on applicable substantive theory and empirical efficacy and effectiveness evidence. Therefore, the design of the target intervention began with a participatory action research (PAR) approach (Viswanathan et al., 2004) to engaging a range of stakeholders in the community, the VA, and higher education settings in the identification of these limitations and how they could be addressed in connection with veterans' educational goals (Smith-Osborne, 2009c). From this process emerged two trajectories: the development of efforts to enhance a veteran-friendly campus at the host institution under the auspices of a newly created interdepartmental

steering committee (being studied as implementation research [Fixsen, Naoom, Blase, Friedman, & Wallace, 2005] using mixed methods) and the development of a randomized clinical trial of an adapted manualized supported education program with a comparison “usual care” group and a wait-listed control group. This paper reports on the second effort.

The clinical trial, entitled the Student Veteran Project, selected the Choose-Get-Keep supported education model (Sullivan, Nicolellis, Stanley, & MacDonald-Wilson, 1993) as the experimental intervention due to its established efficacy and effectiveness with civilian populations, the consistency of its goal-setting emphasis with the job control theoretical model, and its consistency as a psychosocial rehabilitation program with resilience and family resilience theory (Carpenter, 2002), as described above. This Choose-Get-Keep model has a manualized protocol developed by the Boston University Center for Psychiatric Rehabilitation (Knighton, McNamara, & Nemec, 2002) which is being slightly adapted for veterans with the participation of a student-veteran advisory group. The manual identifies more than 70 practitioner skills that facilitate client success in the educational environment; examples are requesting assistance, taking notes, developing a study plan, budgeting, recognizing conflict signs, disclosing disability information, requesting feedback, and responding to feedback. In the interest of fidelity and generalizability, the adaptations are limited to the skills practice components (e.g., role play scenarios) of the lesson plan modules. They are modified to reflect typical student veteran environment: for example, a house share with other veterans, some of whom are non-students, rather than a residential rehabilitation program, and budgeting which includes a VA disability pension instead of a Supplemental Security Income benefit.

A protocol for the comparison group was developed based on information and referral case management strategies commonly used in academic advising and retention of non-traditional students (Astone & Schoen, 2000; Calloway & Jorgensen, 1990; Ofiesh, Rice, Long, Merchant, & Gajar, 2002; Paul, 2000; Rummel, Costello, Acton, & Pielow, 1990; Swail, Redd, & Perna, 2003; Weiner & Wiener, 1997). Such strategies typically use student-accessed online information platforms, and case management through email and telephone follow-up, so this “usual care” group protocol emphasizes these technology-mediated contacts.

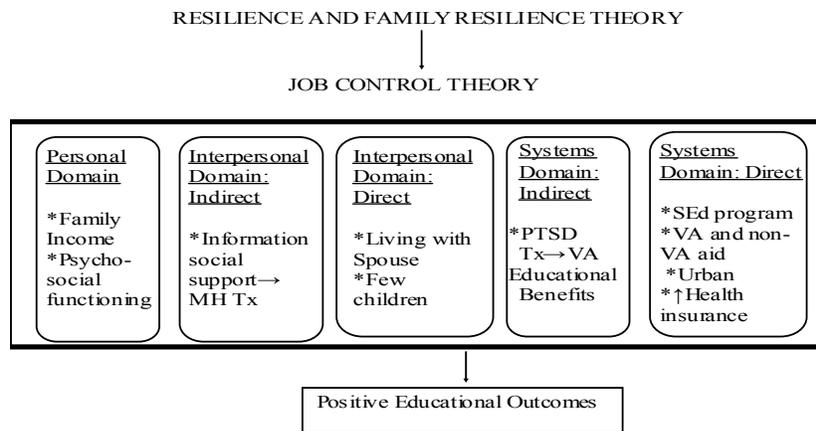
Prior research (Smith-Osborne, 2005; 2009a; 2009b) provided the foundation for intervention design, identifying resilience protective mechanisms moderating or mediating the impact of mental health risk factors on educational attainment at the personal, interpersonal, and systems (see Figure 1); they are incorporated in both the target intervention model and in usual care, and are communicated in study recruitment as well as during the setting of intervention goals.

METHOD

Design

As introduced above, one result of the PAR process was the development of a three group randomized controlled clinical trial of SEd for veterans returning to college. Procedures for random assignment and allocation concealment are described in Smith-Osborne (2008; 2009c).

Figure 1. Empirically identified protective factors applied within the selected theoretical frameworks incorporated within the target and comparison interventions.



MH = mental health; Tx = treatment; PTSD = Posttraumatic Stress Disorder; VA = Veterans Administration; SEd = supported education program.

Sample Recruitment

Approval was obtained from the author’s Institutional Review Board (protocol 07.225s). Participants are recruited at community events, employment offices, veteran services, and colleges (see Figure 2).

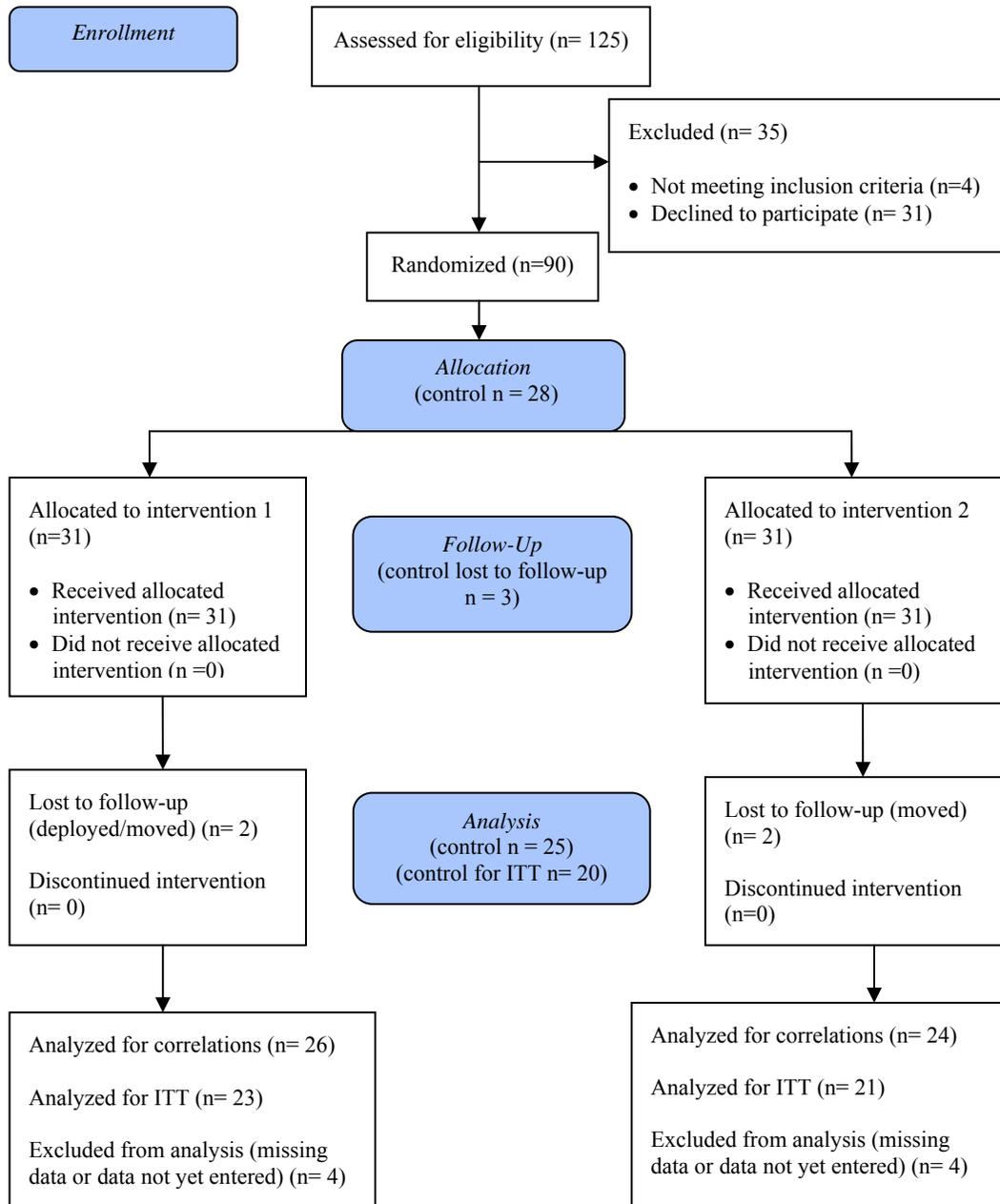
MEASURES AND PROCEDURES

Measures

Participants complete questionnaires at pre-random assignment, post-intervention period, 6 months follow-up, and 12 months follow-up. Data on contact frequency and type (“dosage”), health status, and mental health treatment engagement are collected from case records maintained during the intervention period and from qualitative interviews. Baseline analyses examine demographics and measures of resilience (Resilience Scale for Adults), social support (Perceived Neighborhood Scale), social

network density (Density of Support), PTSD (PTSD Checklist-Military), mood (Short Mood and Feeling Questionnaire), and substance abuse (CAGE-AID). A complete description of measures may be found in Smith-Osborne (2008) and of the conceptual and logic and measurement model in Smith-Osborne (2009c).

Figure 2. Participant flow chart following Consolidated Standards of Reporting Trials guidelines. ITT = intent to treat.



Intervention Fidelity Strategies

Fidelity procedures were developed and progressively refined during this design phase of the project (Smith-Osborne, 2011). Fidelity ratings enhance validity in clinical trials, and provide an important base for translation of results to implementation as evidence-based practices by community providers (Borrelli et al., 2005; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Mowbray, Holter, Teague, & Bybee, 2003). Fidelity strategies recommended by Borelli et al. (2005) were utilized. Intervention adherence was assessed for the following standards. Intervention dose consists of a standardized 1 hour intake interview, followed by contact sessions over 26-30 weeks. The minimum 4 sessions for the manualized intervention (group 1) are 1.5-2 hour sessions. The minimum 4 sessions for group 2 are delivered through an online platform, email, telephone, and face to face contact. Contact ≥ 30 minutes addressing an intervention goal are counted and online platform use is tracked. Videotapes of the experimental intervention and progress notes of the usual care comparison were also rated by a trained practitioner panel using a standardized checklist.

Staff Training

During the PAR phase of intervention development, prior to intervention delivery, online training modules were developed and pilot-tested for this study to provide training in military culture and benefit structures, to support implementation of the Choose-Get-Keep manualized protocol with a military population, to support uniform implementation of the usual care services, and to provide grounding in the theoretical framework and targeted protective mechanisms. All providers used a standardized intake format (Cournoyer, 2008) and Study-specific multi-component (Herschell, Kolko, Baumann, & Davis, 2010) training and supervision.

DATA ANALYSIS

Baseline Data

See Table 1 for sample characteristics. This population resembles the average demographics of AVF veterans, except for higher educational level at time of study enrollment (AVF average is 14 years, the same as draft-era Vietnam veterans; Smith-Osborne, 2009a). Descriptive, bivariate ($n = 75$), and multiple regression analyses ($n = 26$) using SPSS 17.0 of the developmental phase sample examine demographic and key risk and protective factors for baseline and short term (pre/post) completers (Little, 1995; Pocock, 1992; Schulz & Grimes, 2005a, 2005b).

Exploratory analyses of the key factor of resilience were repeated using intent to treat procedures ($n = 64$). Intent to treat analyses use the entire sample that was randomized regardless of intervention dosage/participation. These linear mixed model repeated measure analyses for the two time points with multiple imputations for missing values were conducted using SAS 9.0 (Abraha & Montedori, 2010; Cook & DeMets, 2008; Singer, 1998). This type of intent to treat analysis is more robust in handling groups of

unequal sizes, non-normal data, and categorical and continuous variables in longitudinal data in clinical trials, thus reducing error and increasing statistical power (Beunckens, Molenberghs, Verbeke, & Mallinckrodt, 2008; Frison & Pocock, 1992; Keselman, Algina, & Kowalchuk, 2001). Effect sizes Cohens d statistic were calculated for T1 versus T2 for each condition for t test and mixed model analyses.

Table 1. Baseline Characteristics by Group (n=75)

Variables	Group 1 (n=26) % or M (SD)	Group 2 (n=24) % or M (SD)	Group 3 (n=25) % or M (SD)
Gender:			
Male	84%	56%	88%
Female	16%	40%	8%
Age	32.68 (10.92)	31.83 (8.45)	32.67 (11.44)
Ethnicity:			
Non-minority	52%	64%	56%
Minority	48%	32%	36%
Marital Status			
Married, Living with Spouse	32%	32%	36%
Other	68%	64%	56%
Education in Yrs. (range 12-18)	14.12 (1.54)	14.15 (1.39)	14.11 (1.29)
Used nonVA Aid	40%	64%	36%
Used VA Aid	84%	72%	76%
Learning Disability	24%	24%	32%
Health Status (range 1-4)	1.76 (.83)	1.92 (.88)	1.91 (.95)
# Health Conditions	2.04 (1.34)	1.42 (.83)	2.00 (1.27)
Resilience (range 74-210)	161.18 (31.49)	157.41 (34.56)	137.50 (40.26)
Mood (range 19-39)	34.95 (3.41)	33.94 (16.45)	34.00 (5.05)
Social Support (range 4-46)	28.44 (12.85)	24.61 (10.35)	28.22 (13.19)
Network Density (range 0-16)	8.33 (4.79)	6.91 (4.79)	5.95 (5.08)
Alcoholism (range 0-2)	1.00 (.00)	.58 (.33)	.88 (.6)
PTSD (range 17-26)	36.09 (19.82)	34.61 (19.13)	35.10 (18.76)
<i>Note.</i> Percentages may not total 100% due to missing data.			

Completion Rate and Fidelity of Implementation

Eighty percent of group 1 participants and 83% of group 2 participants completed the minimum four contact sessions. One control group member and no intervention group members who were enrolled in college in the pilot phase at Time 1 dropped out by Time 2. Fidelity for the group 1 manualized model was rated as moderate overall ($M_{range\ 1-5} =$

3.67, $SD = 1.34$), although interrater agreement on the dichotomous items (e.g., worker referred to lesson plan during session: yes/no) was low (Fleiss's kappa = 0.22; Fleiss, 1971). Eighty-three percent of participants in the pilot phase met both fidelity criteria of completion rate and contact content analysis findings.

Protective and Risk Factors

Initially, after analyses for descriptive statistics and assumption tests were done, Pearson's r correlations were analyzed to focus on one risk and one protective predictor variable identified in prior cross-sectional research and resilience theory and on experimental condition (group) that had significant relationships at the .05 level with the risk and potential protective factors. The predictors found to be significant in the bivariate analyses were intervention group assignment, which was correlated with the potential protective factors of denser support networks ($r = -.41, p < .05$), and control group assignment, which was correlated with higher levels of the risk factor PTSD symptoms ($r = .47, p < .05$).

In multiple regression complete analyses ($n = 26$), intervention was significantly related to higher post social network density scores ($B = 3.66, p = .04, R^2 = 18.5\%$, Adj. $R^2 = 14.8\%$) and control group with higher post PTSD symptom scores ($B = -15.54, p = .03, R^2 = 17.4\%$, Adj. $R^2 = 14\%$). Consistent with prior cross-sectional research, these findings suggest that supported education interventions may increase social support as a protective factor and reduce PTSD as a risk factor for educational attainment. The effect size is weak to moderate (Cohen, 1988).

Resilience is a key protective factor postulated by the theoretical framework of the trial. Therefore, exploratory complete and intent to treat analyses were performed. Paired sample complete t tests ($n = 26$) suggested that neither intervention group had significantly changed in resilience scores ($t_{25} = .057, p = .96$), whereas the control group decreased significantly from pre to post ($t_{25} = -3.30; p = .01$). Findings suggest that supported education intervention may support resilience in the experience of stressors associated with reentry into the civilian life trajectory of college attendance. Intent to treat analyses were conducted using the SAS multiple imputation procedure for missing data. Mixed models with six fixed effects, plus intercept, were fit to these data. The six effects were group assignment, gender, race, marital status, time (1 and 2), and GPA, with experimental groups 1 and 2 contrasted to control group 3. Mixed repeated measure group effects for resilience in the intent to treat group and in the paired sample t test for the complete group were statistically significant. These data suggest that intervention (both groups combined) compared to wait list is significantly associated with higher resilience scores at posttest. The effect size is moderate for both conditions, consistent with the literature.

LESSONS LEARNED AND APPLICATIONS TO PRACTICE

Completion rates of the minimum intervention "dosage" were acceptable. Early non-utilization rates led to an additional search of the clinical trial literature (e.g., Cooper et al., 2009) and early adoption of an evidence-based procedure of conducting pre-

randomization and then final randomization assignment after eligibility confirmation, informed consent completion, and completion of the intake interview for all participants. Fidelity findings were mixed for the manualized protocol, leading to plans for the addition of a fidelity checklist to each group 1 case record, as well as protocol readiness checklist at each training session. Fidelity levels for usual care met expectations, both for common treatment elements (Hart, 2009) and elements specific to technology-enhanced services (Parasuraman, Ziemhl, & Malhotra, 2005). Fidelity and attrition prevention will be further supported by addition of an automated voicemail and cell text service, currently in field testing, to issue reminders for referrals, appointments, and posttests and collect data on responses to monitor follow-through. This interactive web phone technology will be used in applications to prevent or determine the cause of missed classes/appointments and to inform participants' case managers.

This report on project development examined a limited number of protective factors targeted in intervention from Time 1 to Time 2. Some protective mechanisms which were found in theory and in prior cross-sectional and meta-analytic research were also supported in these findings: intact nuclear family, resilience, and VA and non-VA financial aid were correlated with educational attainment, while SED intervention was associated with support network density, higher mood, and resilience. This may suggest that practitioners, be proactive in providing or brokering couples and family counseling and support services for families of student veterans, despite eligibility limitations on university mental health services, some private health insurance, and some VA services which exclude couples counseling or a non-student spouse for services. Practitioners with this population need to attend to concrete resources, including all forms of financial aid, concomitantly with clinical services, consistent with a generalist social work model. Of course, these preliminary findings are cautiously reported due to their consistency with the prior literature, since instability of results can characterize early phases of a longitudinal clinical trial. Results become more reliable and stable as sample size increases (Schulz & Grimes, 2005b).

Next steps in this research will implement examination of possible differences in effectiveness of the two experimental conditions in an enlarged sample over additional time points. Since the study will include multiple measures of several key variables, it will be possible to consider differences among outcome variables depending on measure, which were beyond the scope of this initial report. Future reports will also address theoretical implications of the results for resilience theory development and suggest future research to examine the alternative decision-making model using, for example, emotional exhaustion measures.

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