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14. ABSTRACT This study collected survey data and rich qualitative information on student veterans' mental health, help-seeking behavior, and attitudes regarding mental health treatment. Ultimately, this survey and qualitative data will inform the development of a new screening and linkage to care intervention that is feasible in the community college setting and acceptable to this student veteran population and their families. Analyses from the survey indicate that psychiatric distress is prevalent in the sample of veterans: 32% depression, 23% generalized anxiety, 26% PTSD, 44% with any MH disorder, and 36% binge drinking. Compared to a civilian sample from the same schools, the veterans have significantly higher prevalence of MH disorders in all categories except generalized anxiety. The rates being reported for positive screens are high, thereby demonstrated a need to for increased recognition and intervention in the population. The Veterans in the in-depth interviews recommended linkage and or services interventions that are acceptable to them, many of which are consistent with current interventions in VA, while some are completely novel. Investigators are exploring these intervention ideas further, creating intervention plans in partnership with student Veterans and college representatives, and writing grant applications to allow us to develop and pilot test them.					
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INTRODUCTION: While the majority of returning OEF and OIF military service members successfully reintegrate into family life, vocational pursuits, and educational activities, a significant percentage have difficulty because they suffer with TBI, PTSD, depression, and substance misuse and do not seek mental health treatment. It is critical to link OEF/OIF veterans with mental health problems to care in order to promote successful re-integration into a productive, civilian life. **One reintegration domain that is extremely important to veterans and the DOD is attaining further postsecondary education.** A substantial number of OEF/OIF veterans suffering with mental health difficulties will enter rural community colleges on the new GI Bill. They will be forced to make the transition from the highly structured and hierarchical military setting to the unstructured and sometimes chaotic environment of a college.

Rural community colleges represent an important community context through which we can potentially promote veterans' engagement with formal care. Yet little has been done to address student veterans' mental health needs as they reintegrate and attend two-year community colleges. A concurrent challenge is that many returning student veterans live and attend school in rural regions where mental health resources are scarce. In order to address the needs of rural OEF/OIF veterans, it is critical to partner with community stakeholders, such as community colleges, who are likely to have frequent interactions with these veterans. **Linking these suffering student veterans to quality care is critical to their educational success on the new GI bill and their successful re-integration into civilian life.**

Overarching Research Objective: This study first collected survey data and then rich qualitative information on student veterans' mental health, help-seeking behavior, and attitudes regarding mental health treatment. Ultimately, this study will inform the development of new screening and/or linkage to care interventions that are feasible in the rural community college setting and acceptable to this student veteran population and their families.

BODY: The following sections provides an overview of the data collection and results of the study. Summaries of major findings thus far are included, and references are made to manuscripts and/or presentations that are attached in the appendix. We included below information on the **Tasks** associated with data collection and results only.

Task 1: Complete UAMS IRB and USAMRMC HRPO review and approval processes for the study:

We obtained IRB approval at the University of Arkansas for Medical Sciences for human subject data collection in the web-based survey/quantitative portion of the study. The UAMS approval letter was dated 2-2-2011.

In addition, we obtained an approval memorandum from the USAMRMC HRPO for human subject data collection in the web-based survey/quantitative portion of the study. This approval memorandum was obtained ahead of schedule—this task was actually planned for Months 4-6. The date of the HRPO approval memorandum email is 2-7-2011.

Task 2: Development of a web-based quantitative survey instrument:

We created the Web-based survey questionnaire investigating student veteran mental health, help-seeking behavior, and attitudes about treatment based on the national Healthy Minds Survey of college mental health. This questionnaire received both UAMS IRB and DoD HRPO approval as described above. After a trip to Ann Arbor to work with colleagues there in the survey, it was fielded in the Fall of 2011.

Task 3: Task 3: Development of a qualitative interview guide (Months 1-6):

We developed the qualitative interview guide with input from Drs. Cheney (anthropologist) and Curran (sociologist). The guide was approved by the IRB and HRPO As described in Task 6.

Task 4: Hire and train a research technologist and a research assistant.

We combined these roles into a single hire—Lakiesha Mitchell, MA.

Task 5: Recruiting student veteran participants for the web-based quantitative survey, fielding this web-based survey, and cleaning of the survey data:

Survey Sciences Group-Center for Student Studies assisted us in recruiting student Veterans via both mail and email in the 11 rural Arkansas community colleges who agreed to participate in this study and provided student contact lists. Initially, we predicted that we would recruit from a pool of at least 1,000 student veterans. We ended up having a pool of 928 student Veterans at 11 participating community colleges. Student veterans were offered generous \$20 pre-incentives to complete the survey, and with this pre-incentive, we aimed, perhaps naively, to achieve a 70% response rate. Unfortunately, our response rate was less than this target—the response rate ended up being approximately 30%. Prior non-Veteran research on student mental health using similar methods often achieves 40%; but we expected the large incentive and focus on Veterans to produce a larger rate. **Our final sample of student veterans in the survey was 228. Our final civilian sample was 554** (collected with NIMH funds from an R21), **resulting in a total survey sample of 782**. Because of the large numbers, we have adequate power for our proposed calculations, but we were concerned about bias due to non-response. We are managing with this lower than expected response rate by using weights to control for response bias. As we have communicated before in previous reports, we had difficulties getting the necessary data to make the weights (from one school in particular) which caused significant delays, but this problem was addressed. We have the weights and are applying them in all analyses. Per our expert colleagues at the University of Michigan and the Survey Sciences Group, our response rate at these rural community colleges was not surprising because they have noted lower response rates in 4-year commuter schools compared to residential 4-year schools. Community colleges are also “commuter schools” by definition.

The Survey Sciences Group-Center for Student Studies compiled and cleaned the collected survey data and provided our team with an SPSS data file for data analysis. We are continuing to perform analyses on the weighted data and submitting papers.

Task 6: Obtain UAMS IRB and USAMRMC HRPO approval for the qualitative portion of the study and then recruit, consent, and interview 20-40 (20-25 men and 10-15 women) student veterans who screened positive for a mental health condition (Months 12-42):

We obtained IRB approval at the University of Arkansas for Medical Sciences for human subject data collection in the key participant interview portion of the study (Task 6a). UAMS IRB approved the interview guide, protocol, and the related consent form and flier. We received HRPO approval for the qualitative key participant interviews on 3-14-2012 (Phase 2).

6b. Recruit participants (20-25 men and 10-15 women student veterans who screened positive for a mental health condition) and conduct in-depth face-to-face interview (1-2 hours) at the participant’s college (or other location selected by the participant). Participants will have a \$50 incentive for participating in these involved interviews (Months 18-42).

We received a list of 87 potential participants from our partners at SSG who both screened positive for at least one mental health condition and were willing to be contacted for further research when they completed their quantitative survey consent form. This is the pool from which we can draw the participants for the in-depth interviews. Participants receive a \$50 incentive for participating in these involved interviews.

We completed 25 interviews (18 men, 7 women). This is fewer than we had planned. One complication that arose was that most of the potential interview participants were not answering their phones when we called, and in many cases were not able to leave a voicemail. We got new contact information from the colleges and continued to recruit during the duration of the study. Even with the lower numbers than expected, we feel we achieved theoretical saturation on most themes.

Task 7: Focus Group and Intervention Development Process (Months 25-42)

We completed 2 focus groups with 10 student Veterans total, and 1 focus group with 6 significant others of student Veterans. We drew from the pool of veterans who completed the in-depth interviews to participate in the focus groups.

We completed the proposed Intervention Development Meeting on April 30th. We spent a half-day going over findings from the survey and qualitative portions of the study and doing brainstorming on potential interventions. We had representatives from 3 community colleges (top administrators and heads of Veterans assistance programs), the National Guard (State Surgeon, Social Worker, and the head of Academic Affairs), VA substance use disorder treatment programs, community treatment programs, and student Veterans (3 from the study). The group did an excellent job providing feedback and prioritizing potential interventions. We are moving forward with their top prioritized intervention suggestion—developing and testing a student Veteran peer support program that embeds screening and brief interventions for risky drinking within the overall assistance program. **This group is staying intact** and is serving as the Steering Committee for an NIAAA proposal that will be submitted in October 2015. If funded, they will continue to provide oversight during the grant period. We are working on having the group serve another function—improving the relationships between the National Guard, community colleges in Arkansas, and the VA. The level of enthusiasm during the April 30th meeting was very high, and the group is excited to continue to meet and work on solutions.

Task 8: Data analyses (Months 12-48):

As described above, Survey Sciences Group-Center for Student Studies compiled and cleaned the survey data and provided our team with a SPSS data file for data analysis. Using the response weights we are performing analyses and submitting manuscripts. We have completed numerous analyses around mental health prevalence and services use for mental health disorders, and we also have conducted multivariate analyses on perceived need for care, help seeking, and academic achievement. Many more analyses are currently being conducted. We have developed a paper-writing plan and have outlined numerous papers to be created. All qualitative interviews and focus group interviews have been transcribed and we are coding those data, making interpretations, and writing manuscripts. See also the list of current manuscripts below.

Task 9: Manuscript Development (Months 18-48):

2 manuscripts (1 quantitative and 1 mixed quantitative-qualitative) are under review at this time and 2 others are in development. Our first paper describing mental health prevalence and barriers to help-seeking from the survey data was submitted is being resubmitted with revisions shortly. A copy of this paper is in the appendix ("Mental Illness Prevalence and Help Seeking Behaviors among Veteran and Civilian Community College Students"). A mixed-method (quantitative-qualitative) paper exploring the impact of trauma exposure on student Veterans is in submission as well. A copy of this paper is in the appendix ("The Impact of Traumatic Exposure on Veterans Seeking Higher Education"). A third paper describing the mental health services use of the overall survey sample is in development. A fourth paper describing the prevalence of binge drinking and illegal drug use and their impact on academic performance is also in development. Data from these manuscripts are contained in a recent presentation from study investigators which is enclosed in the appendix (entitled "Linking Student Veterans in Rural Community

Colleges to Mental Health Care”). In addition to these manuscripts, we have thus far submitted two R34 grants to NIH to develop and test 1) a brief alcohol intervention using student Veteran peer support, and 2) a depression intervention using student Veteran peer support. Neither were funded on their initial submission. The alcohol-focused grant is being resubmitted in October 2015.

Summary of Findings

Analyses from the survey data indicate that the student Veterans are reporting high levels of psychological distress. Thirty-three percent of the student Veterans screened positive on a 9-item screener for current depression (past 2 weeks). Twenty-three percent screened positive on a 7-item screener for generalized anxiety. Twenty-Six percent of the student Veterans screened positive on a 4-item screener for post-traumatic stress (PTSD). Forty-Four percent of the student Veterans screened positive on at least one mental health screening instrument. Thirty-Six percent of the student Veterans reported recent binge drinking. All of these rates, with the exception of generalized anxiety, are statistically significantly and substantially higher for the student veterans than the comparison group of non-Veterans from the same colleges. Further, 19% of the student Veterans reported thoughts of suicide in the past year, compared to 11% of the non-Veterans comparison group from the same colleges. In terms of perceived need for help, 39% of the student Veterans reported a perceived need for help for an emotional or mental health problem. In terms of service use, 24% of student veterans reported the use of a psychiatric medication, and 21% reported using counseling. Compared to non-Veterans from the same collages, these rates were not significantly different, except in the case of counseling services, where the student Veterans used more counseling services. In multivariate models, positive scores on screens for PTSD and generalized anxiety disorder are significantly associated with perceived need for treatment and actual receipt of psychotherapy and psychiatric medications. Predictors of binge drinking include veteran status, being married, use of illicit drugs, and finances being "not a problem" (compared to being "a struggle"). Binge drinking is not predictive of academic performance, but illicit drug use associated with lower academic performance as measure by self-reported grades. Below we include 3 tables from the "mental health prevalence" manuscript currently in resubmission (and included in the appendix).

Table 1. Demographic characteristics of community college student sample

Variable	All N=775 Weighted %	Veteran N=211 Weighted %	Civilian N=554 Weighted %	p
Age				
18-22	49.5	9.2	50.8	
23-30	23.4	52.5	22.4	
31-40	16.5	25.6	16.2	<.001
41+	10.6	12.7	10.6	
Male	33.1	76.3	31.6	<.001
Race				
White	73.9	69.6	74.1	
Black	15.3	17.1	15.2	.614
Other ¹	10.8	12.9	10.7	
Married ²	31.3	59.3	30.4	<.001
Hours Employed Per Week				
0	36.7	31.5	36.9	
1-20	21.8	11.7	22.2	
21-30	9.9	4.9	10.1	<.0001
>30	31.5	51.9	30.8	
Health Insurance	61.3	78.0	60.7	<0.001
Current financial situation				
It is a financial struggle	39.4	33.1	39.6	
It is tight, but doing fine	48.0	47.5	48.1	.066

Finances not a problem	12.6	19.4	12.3	
Religiosity				
Very religious	27.0	16.0	27.4	
Fairly religious	48.0	42.9	48.2	
Not too religious	19.9	30.4	19.6	<.001
Not at all	5.1	10.8	4.9	
Years attending community college				
1	46.3	30.4	46.9	
2	36.0	51.9	35.4	
3	11.0	14.6	10.8	<.001
4+	6.7	3.0	6.9	
Lives off campus ³	97.6	98.8	97.6	.361
Mother's education				
8th grade and lower	6.4	4.5	6.4	
9th - 12th grade	6.3	12.6	6.1	
High school degree	34.5	34.4	34.5	
Some college	22.9	27.0	22.8	.034
Associate's degree	13.4	11.3	13.5	
Bachelor's degree	10.5	7.6	10.6	
Graduate degree	5.9	2.6	6.0	
Father's education				
8th grade and lower	8.1	6.8	8.1	
9th - 12th grade	9.5	12.5	9.3	
High school degree	38.7	43.5	38.5	
Some college	20.3	18.1	20.4	.635
Associate's degree	7.1	7.3	7.1	
Bachelor's degree	10.3	8.3	10.4	
Graduate degree	6.1	3.6	6.2	
Deployed	-	76.5	-	NA

1 Other includes American Indian/Alaskan Native, Arab/Middle Eastern or Arab American, Asian/Asian-American, Pacific Islander and biracial and multiracial ethnicity/race.

2. Married included married or living in a domestic partnership. Not married included single, in a relationship, divorced or widowed.

3. Living on campus included college residence hall, fraternity or sorority house, or other on-campus student housing.

Table 2. Unadjusted and adjusted civilian-veteran differences in the prevalence of mental illness and suicidal thoughts

Variable	All N=765	Veteran N=211	Civilian N=554	Unadjusted			Age-Sex-Race Adjusted		
	Weighted %	Weighted %	Weighted %	OR	95% CI	p	OR	95% CI	p
Screening instruments									
Depression ¹	19.9	33.1	19.5	2.05	1.36-3.08	<.001	2.12	1.18-3.79	.011
GAD ²	17.6	23.1	17.4	1.42	0.91-2.21	.119	1.37	0.77-2.44	.287
PTSD ³	13.0	25.7	12.6	2.41	1.50-3.88	<.001	1.87	0.99-3.55	.059
Thoughts and behaviors									
Self-injury ⁴	8.6	8.3	8.6	0.97	0.49-1.92	.920	2.28	0.82-6.31	.113
Suicide ideation ⁵	10.8	19.2	10.6	2.01	1.17-3.46	.011	2.34	1.10-5.02	.028
Acute suicide ideation ⁶	8.0	12.5	7.9	1.66	0.89-3.10	.110	2.12	0.86-5.18	.101

1. PHQ-9 cutoff \geq 10

2. GAD-7 cutoff \geq 10

3. PC-PTSD cutoff \geq 3

4. In the past year, have you ever done any of the following intentionally, without intending to kill yourself? Response options - Cut myself, Burned myself, Punched or banged myself, Scratched myself, Pulled my hair, Bit myself, Interfered with a wound healing, Carved words or symbols into my skin, Rubbed sharp objects into my skin, Punched or banged an object to hurt myself, Other harm to myself, No, none of these

5. Over the last 2 weeks, how often have you been bothered by any of the following problems? Thoughts that you would be better off dead or of hurting yourself in some way? Response options - Not at all, Several days, More than half the days, Nearly every day

6. In the past year, did you ever seriously think about attempting suicide? Response options - Yes, No

Table 3. Unadjusted and adjusted civilian-veteran differences in help seeking behavior

Variable	All N=765	Veteran N=211	Civilian N=554	Unadjusted			Age-Sex-Race Adjusted		
	Weighted Mean	Weighted Mean	Weighted Mean	Difference in Means	95% CI	p	Beta	95% CI	p

Stigma									
Personal stigma ¹	0.81	0.93	0.81	0.12	-0.05-0.29	.163	0.05	-0.17-0.27	.680
Public stigma ²	2.28	2.54	2.28	0.27	0.08-0.46	.006	0.28	0.04-0.51	.020
Variable	All N=765	Veteran N=211	Civilian N=554	Unadjusted			Age-Sex-Race Adjusted		
	Weighted %	Weighted %	Weighted %	OR	95% CI	p	OR	95% CI	p
Perceived need									
Think needed help ³	32.9	39.2	32.7	1.33	0.91-1.95	.144	1.97	1.11-3.50	.021
Perceived Treatment Effectiveness									
Believe therapy can help ⁴	68.1	59.7	68.4	0.68	0.47-1.01	.054	1.12	0.64-1.93	.699
Believe medication can help ⁵	56.3	44.1	56.7	0.60	0.42-0.87	.007	0.76	0.44-1.30	.311
Help seeking									
Psychotropic medications ⁶	21.2	24.0	21.1	1.19	0.77-1.83	.442	1.04	0.56-1.92	.897
Psychotherapy ⁷	6.5	21.2	6.0	4.21	2.39-7.42	<.001	2.36	1.02-5.50	.046

1. Average response to following questions: 1) I would willingly accept someone who has received mental health treatment as a close friend, 2) I would think less of a person who has received mental health treatment (reverse coded); 3) I feel that receiving mental health treatment is a sign of personal failure (reverse coded). Response options - Strongly agree (0), Agree (1), Somewhat agree (2), Somewhat disagree (3), Disagree (4), Strongly disagree (5).
2. Average response to following questions: 1) Most people would willingly accept someone who has received mental health treatment as a close friend; 2) Most people feel that receiving mental health treatment is a sign of personal failure (reverse coded); 3) Most people think less of a person who has received mental health treatment (reverse coded). Response options - Strongly agree (0), Agree (1), Somewhat agree (2), Somewhat disagree (3), Disagree (4), Strongly disagree (5).
3. In the past 12 months, did you think you needed help for emotional or mental health problems such as feeling sad, blue, anxious, or nervous? Response options – Yes, No.
4. How helpful, on average, do you think medication is, when provided competently, for people your age who are clinically depressed? Response options - Very helpful, Quite helpful, A little helpful, Not at all helpful. Very helpful and quite helpful were combined to create a dichotomous variable.
5. How helpful, on average, do you think therapy or counseling is, when provided competently, for people your age who are clinically depressed? Response options - Very helpful, Quite helpful, A little helpful, Not at all helpful. Very helpful and quite helpful were combined to create a dichotomous variable.
6. Based on a doctor's prescription, on how many occasions in the past 12 months have you used the following types of drugs? Response options for each drug category – No occasions, 1-2 occasions, 3-5 occasions, 6-9 occasions, 10-19 occasions, 20-39 occasions, 40+ occasions. All occasions >1 were combined to create a dichotomous variable.
7. In the past 12 months have you received counseling or therapy for your mental or emotional health from a health professional (such as psychiatrist, psychologist, social worker, or primary care doctor)? Response options – Yes, No

Analyses from the in-depth interviews have uncovered a number of consistent emergent themes. For example, numerous barriers to help-seeking are being reported and elucidated, including-- lack of perceived need, skepticism of treatment efficacy, stigma, and lack of available services. Relative to their recommendations for interventions they would find acceptable, a common theme that is emerging is "Vet-to-Vet connections." Numerous participants have discussed their ideas about using student Veterans as liaisons and/or connectors to care. Some also recommend using student Veterans to screen the Veteran student populations for potential problems. Others recommended setting up activities for student Veterans that were "positive" (such as fishing or volunteering), to enhance well-being, but also to allow relationships to be established, thereby allowing those student Veterans who are struggling avenues to self-identify as needing help. They are also expressing distress and some anger around relations with non-veteran students, whom many in our qualitative sample consider "still young, not serious, and getting in the way of others' success in school." Focus group participants are echoing these themes and recommending a focus on peer-led interventions. Participants in the significant other focus group also recommended programs to be developed for them so they could better assist their significant other with their struggles and to assist in navigating seeking help.

Additional analyses and manuscript preparation will take place for some time.

Task 10: New product development synthesis activities

Task 11: Report on new screening and linkage approach

Please note that we folded these tasks into Task 7 above as the "Product Development Process." As described above, the multi-stakeholder panel we put together helped us to synthesize the data from the survey and qualitative interventions and focus groups and is now serving as an advisory panel for an NIH grant being resubmitted in October 2015. Investigators are finalizing a set of slides that will be sent to all of the colleges that participated after the NIH grant is submitted. It will be based on the slides which are in the appendix to this report.

Problem Areas

Our main problem areas were recruiting for both the survey and the qualitative portions of the study.

As described above, one problem was the lower than expected response rate on our quantitative web-based survey. Even with the very generous incentives, we were only able to attain a 30% response rates among the 928 student Veterans in the 11 participating rural community colleges. It is difficult to determine the exact reason for this lower-than-expected response (Colleagues in the Healthy Minds Study at 4-year schools with non-Veterans usually get closer to 40+%). It likely was a combination of age and cultural factors among this specific population, lower than average computer and broadband access in these rural areas, and less than perfect student contact lists provided by these community colleges who are not particularly accustomed to participating in large scale research projects that contributed to the lower rate. We were not concerned about having adequate power for our analyses, but were more worried about the potential non-response bias. We developed weights to attempt to address these concerns. We are applying those weights in all analyses (and are described in detail in the first manuscript attached to the appendix).

In terms of the in-depth interview and focus group data collection, we were below our expected enrollment. We attempted to reach all of the 87 eligible Veterans multiple times (5-10 times) to invite them to participate in the qualitative interview (and those who have interviews, the focus groups). Nobody refused. However, many telephone numbers turned out to be "wrong numbers". Further, most people we attempted to reach did not actually answer our calls which forced us to leave repeated voicemails and/or repeated calls. We learned that many of the Veterans did not have voicemail-enabled phones (i.e., we are not able to leave a message). These factors negatively impacted recruitment. We employed two remedies that increased enrollment slightly a result—1) we got home addresses for each participant from the schools and we contacted them by mail, 2) we got additional/new telephone contact information from the schools on those still enrolled who are not picking up.

It is common to reach "theoretical saturation" at 15-20 interviews for similar subpopulations (e.g., male Veterans in community colleges), so we believe strongly that we reached theoretical saturation for the male Veterans.

It is possible that greater involvement by administration and faculty at the schools could increase the response rates of both survey and qualitative research studies in these locations. If their support was

more apparent and known by the students, a better rate could possibly be achieved. Also, perhaps providing larger incentives would increase response rates in similar surveys and studies in the future.

KEY RESEARCH ACCOMPLISHMENTS: We are pleased to report the following accomplishments:

- The survey was fielded and completed (228 veterans). An accompanying set of surveys from civilians from the same schools were collected as well, funded by NIMH, (554 civilians).
- The survey dataset was cleaned, response weights completed, and analyses are ongoing. 3 manuscripts thus far from the survey data are either in submission (1) or in development and close to submission (2).
- We completed 25 key informant interviews and focus groups involved 16 Veterans (and/or their significant others). Rich data were achieved on the lived experiences of student Veterans with mental health and/or substance use problems, and many useful intervention ideas were generated. 1 manuscript thus far from the qualitative data has been submitted.
- 2 manuscripts have been submitted thus far, and 2 others are close to being ready for submission. We have given 4 presentations at national meetings thus far in addition to yearly presentations at Fort Detrick and local research conferences at UAMS.
- 2 NIH grants based on quantitative and qualitative findings were submitted and while not funded, will be revised and resubmitted. The group assembled for the Intervention Development Activity is continuing to meet to assist the investigators with grant submissions and provide assistance and support to each other.

REPORTABLE OUTCOMES: We have prepared 4 presentations from the data thus far as follows:

1. Curran GM, Cheney AM, Fortney JC. 2013. "A Mixed Methods Analysis of Binge Drinking Among Student Veterans in Rural Community Colleges." Presented at the Annual Meeting of the Research Society on Alcoholism, June 25, Orlando, Florida.
2. Cheney, A. M., Curran, G. M., Fortney, J., Pyne, J. 2013. "Uncovering a Framework to Develop a Screening and Linkage-to-Care Program for Student Veterans with Substance Use and Mental Health Problems." Presented at the Addiction Health Services Research Conference, October 23-25, Portland, Oregon.
3. Cheney, A. M., Curran, G. M., Fortney, J., Pyne, J. 2014. "Listening to the Voices of Underserved Student Veterans: Preferences for Mental Health Screening and Linkage to Care." Paper presented at the Society for Applied Anthropology, March 19-23, Denver, Colorado.
4. Curran GM, Cheney AM, Fortney JC. 2014. "Binge Drinking among College Student Veterans and Relationships to Student Outcomes." Presented at the Annual Meeting of the Research Society on Alcoholism, June 23, Seattle Washington.

We submitted 2 NIH grants thus far (both unfunded). The NIAAA grant will be resubmitted in October of 2015.

1. "Comparative Engagement in SBIRT for Veteran Drinking in Community College. Curran, PI. R34 Submitted to NIAAA October 2013.
2. "Using Peer Support to Improve Engagement in cCBT" Cucciare, PI. R34 submitted to NIMH October 2013.

CONCLUSION: It is clear that the student Veterans are experiencing substantial psychological distress. The rates being reported for positive screens are high, thereby demonstrated a need to for increased recognition and intervention in the population. The Veterans in the in-depth interviews are recommending linkage and or services interventions that are acceptable to them, many of which are consistent with current interventions in VA, while some are completely novel. We will be exploring these intervention ideas further, creating intervention plans in partnership with student Veterans and representatives from these community colleges, and re-submitting applications to pilot test these interventions.

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4. Curran GM, Cheney AM, Fortney JC. 2014. "Binge Drinking among College Student Veterans and Relationships to Student Outcomes." Presented at the Annual Meeting of the Research Society on Alcoholism, June 23, Seattle Washington.

APPENDICES: The following documents follow in the appendix:

1. Fortney JC, Curran GM, Hunt JB, Cheney AM, Lu L, Valenstien M, Eisenberg D. "Mental Illness Prevalence and Help Seeking Behaviors among Veteran and Civilian Community College Students." (in submission; do not cite)
2. Medley J, Cheney AM, Abraham, T, Grubs K, Hunt JB, Lu L, Fortney JC, Curran GM. "The Impact of Trauma Exposure on Veterans Seeking Higher Education." (in submission: do not cite)
3. Curran GM. "Linking Student Veterans in Rural Community Colleges to Mental Health Care." (unpublished data: do not cite)

APPENDIX

Mental Illness Prevalence and Help Seeking Behaviors
among Veteran and Civilian Community College Students

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Abstract

Objective: Millions of disadvantaged youth and returning veterans are enrolled in community colleges. Our objective was to determine the prevalence of mental disorders and help seeking behaviors among community college students. **Methods:** Veterans (n=211) and civilians (n=554) were recruited from 11 community colleges and administered screeners for depression (PHQ-9), generalized anxiety (GAD-7), posttraumatic stress disorder (PC-PTSD), non-lethal self-injury, suicide ideation and acute suicide ideation. The survey also asked about the perceived need for, barriers to, and utilization of services. Regression analysis was used to compare prevalence between civilians and veterans adjusting for non-modifiable factors (age, gender, and race/ethnicity). **Results:** A large proportion of student veterans and civilians screened positive and unadjusted bivariate comparisons indicated that student veterans had a significantly higher prevalence of depression (33.1% versus 19.5%, $p<0.01$), PTSD (25.7% versus 12.6%, $p<0.01$), and suicide ideation (19.2% versus 10.6%, $p=0.01$). Adjusting for age, gender, and race/ethnicity, veterans were significantly more likely than civilians to screen positive for depression (OR=2.10, $p=.01$) and suicide ideation (OR=2.31, $p=.03$). Student veterans had significantly higher odds of perceiving a need for treatment than civilians (OR=1.93, $p=.02$), but were more likely to perceive stigma ($\beta=0.28$, $p=.02$). Despite greater need among veterans, there was no significant civilian-veteran difference in use of psychotropic medications, although veterans were more likely to receive psychotherapy (OR=2.35, $p=.046$). **Conclusions:** Findings highlight the substantial difference between the prevalence of and treatment seeking for mental disorders among community college students. Interventions are needed to link community college students to services, especially for student veterans.

Keywords – Psychiatric Epidemiology, Community Colleges, Veterans

Introduction

The onset of mental illness typically occurs before age 24¹ and these disorders account for about half of the overall burden of illness for adolescents and young adults.² Early detection and treatment is critical because, if left untreated, mental illness has significant negative consequences for academic achievement,³ employment,⁴ substance misuse,⁵ and social relationships.⁶ The college years in particular represent a

developmentally challenging transition period to adulthood. Sixty-eight percent of high school graduates attend college⁷ and, like their same-aged non-students peers, about a third of college students meet diagnostic criteria for a psychiatric disorder.⁸ However, only about a third of college students with a mood disorder report taking psychotropic medications or going to counseling in the previous year.^{8,9} Therefore, campus-wide efforts to engage college students in mental health treatment may be warranted.

In recent years, the growing number of two-year community colleges has given disadvantaged students increased access to post-secondary education. In fact, nearly half (42%) of all college students are enrolled in two-year community colleges.⁷ In 2014, there were 1,132 two-year community colleges with 12.8 million enrolled students.¹⁰ Community colleges, also called junior colleges or technical colleges, are two-year institutions that grant certificates and associate's degrees. Community colleges enroll mostly students from the local community, and are primarily funded by state and local governments. The vast majority (88%) of two-year community colleges have open enrollment policies.⁷ The average age of community college students is 28, 49% are racial and/or ethnic minorities, and 60% are part-time students. Annual household incomes are substantially lower among two-year college students compared to four-year college students.¹¹ In addition, two-year college students have substantially lower high school grade point averages and college admission tests scores (e.g., SAT, ACT) than four-year college students.¹¹ Only 16% of two-year community college students receive a degree within three years of enrollment.¹¹ In addition, community college students are significantly more likely to have experienced traumatic events compared to four-year college students.¹² Because lower socioeconomic status and trauma are risk factors for poor mental health among students,^{12,13} the prevalence of mental disorders may be higher at community colleges than four-year colleges. Yet, there has been virtually no research investigating the prevalence of mental disorders and help seeking behaviors on community college campuses. While college campuses potentially represent an ideal setting to detect and treat mental disorders, most (58%) two-year community colleges lack student health centers,¹⁴ and even fewer appear to provide mental health services.^{15,16}

Another important reason to better understand mental illness on community college campuses is that a substantial number of veterans from Operations Enduring Freedom, Iraqi Freedom and New Dawn (OEF/OIF/OND) have been entering community colleges on the new Post-9/11 GI Bill. A majority of returning service members successfully reintegrate into family life, educational activities and vocational pursuits.¹⁷ While

attaining further postsecondary education is an extremely important reintegration goal for many veterans, it is difficult to make the transition from a highly structured and hierarchical military setting to the less structured and more self-directed campus environment.¹⁸ These student veterans must contend with the traditional pressures of college life while also dealing with the stress of re-integration. Moreover, a substantial percentage of veterans experience mental disorders, but most do not seek treatment because of stigma.¹⁷ Since the Post-9/11 GI Bill was implemented in August 2009, the Department of Veterans Affairs has provided educational benefits to one million veterans and their family members, amounting to over \$30 billion.¹⁹ A third (34.6%) of those using the Post-9/11 GI Bill have enrolled in a community college.²⁰

To determine the prevalence of mental disorders and help seeking behaviors, we fielded a survey to population-based samples of veterans and civilians attending community colleges. We hypothesized that veterans would have a higher prevalence of mental disorders than civilians. We also compared student veterans and civilians with regard to their perceived need for treatment, perceived stigma associated with receiving treatment, and perceived effectiveness of treatment. We also compared the utilization of mental health services between student veterans and civilians. We hypothesized that student veterans would perceive a greater need for treatment, but would also perceive greater stigma and use fewer services.

Methods

Eleven two-year community colleges were recruited from across the state of Arkansas. The registrar's office of each community college provided us with the list of students enrolled in the 2012 Spring semester, which served as the sampling frame. For purposes of sampling, all students using the Post-9/11 GI bill were preliminarily classified as veterans. Using a stratified sampling scheme, we sampled 100% of veterans at each community college and randomly sampled 2.8% - 18.5% of civilians from each community college, so that the ratio of civilians to veterans sampled was 1.7 at each institution. We sampled and recruited a total of 2,500 students including 1,572 civilian students and 928 student veterans. Design/stratification weights were specified as the inverse probability of being sampled.

Sampled students were sent a letter with a \$20 incentive inviting them to complete a survey online followed by up to four email reminders. Written informed consent was obtained online. The study was approved by the University of Arkansas for Medical Sciences Institutional Review Board. Veteran status (as

reflected by Post-9/11 GI bill benefits) was initially determined from the registrar's office and was later confirmed from self-report. The overall survey response rate was 31.3% (30.7% for veterans and 31.6% for civilians). Data were collected during the period from January to April 2012.

Post-stratification weights were calculated to account for potential non-response bias. Using demographic data (age category, gender, race/ethnicity minority status, and veteran status) legally available from the registrar's office under the Family Educational Rights and Privacy Act (<http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html>), a logistic regression equation was specified predicting survey response. Post-stratification/non-response weights were specified as the inverse predicted probability of responding for each individual. The stratification weight was multiplied by the post-stratification weight to generate an overall weight and then standardized by dividing by the mean of the overall weights in the sample. Survey respondents self-reported whether they had served in the military and 74 students using the Post-9/11 GI bill reported not serving in the military (i.e., spouses) and were reclassified as civilians. In addition, 17 students not using the Post-9/11 GI bill reported serving in the military. These respondents were dropped from the sample because their stratification weights were extreme outliers and artificially inflated the sampling variance. The final analytical sample included 765 students (211 veterans and 554 civilians). Because all veterans were sampled, the total (stratification*post-stratification) weights for student veterans were substantially smaller than for civilians ($\mu=0.12$ versus $\mu=1.34$), thus substantially reducing the weighted sample size of student veterans.

Items and instruments used in the Healthy Minds Study^{21,22} were used to collect information about socio-demographics, mental health, perceived need, barriers to care, and treatment seeking. The prevalence of current mental disorders was assessed using validated screening instruments for depression (PHQ-9),²³ generalized anxiety disorder (GAD-7),²⁴ and posttraumatic stress disorder (PC-PTSD).²⁵ Prevalence of non-lethal self-injury (e.g., cutting) in the past month was assessed using an item developed for the Healthy Minds Study.²⁶ Suicide ideation in the past two weeks was assessed with the PHQ-9.²³ Acute suicide ideation (i.e., intent on lethal self-injury) in the past year was assessed using an item from the National Comorbidity Survey Replication (<http://www.hcp.med.harvard.edu/ncs/index.php>).¹

Perceptions about the need for and barriers to treatment, as well as the utilization of mental health services over the past year was measured using items from the Healthcare for Communities Study.²⁷

Perceived need was assessed with a single yes/no question about needing help for emotional or mental health problems. Personal stigma was measured using three items that asked the respondent to rate how they would characterize individuals receiving mental health treatment on a likert scale from strongly agree (0) to strongly disagree (5). Public stigma was measured using three items that asked the respondent to rate how “most people” would characterize individuals receiving mental health treatment on a likert scale from strongly agree (0) to strongly disagree (5). Summated scales for both personal stigma and public stigma were generated by averaging the responses across the three items. Perceived treatment effectiveness was assessed using separate questions about psychotropic medications and counseling with likert scale responses (Very helpful, Quite helpful, A little helpful, Not at all helpful). The Very helpful and Quite helpful responses were combined to create a dichotomous variable representing the perceived effectiveness of medications and the perceived effectiveness of counseling. Service use was recorded if participants reported receiving counseling from a health professional (psychiatrist, psychologist, or social worker) for their mental or emotional health or if they had taken any psychotropic medications in the past year.

SAS 9.3 PROC SURVEYFREQ, PROC SURVEYMEANS and PROC SURVEYREG (with weights and stratification by college) were used to calculate all percentages and means. SAS 9.3 PROC SURVEYFREQ (with weights and stratification by college) was used to calculate Rao-Scott Chi-Square tests in order to compare veteran-civilian differences in modifiable and non-modifiable characteristics. SAS 9.3 PROC SURVEYLOGISTIC (with weights and stratification by college) was used to calculate Wald Chi-Square tests unadjusted odds ratios in order to compare veteran-civilian differences in prevalence, perceived need, perceived treatment effectiveness and service utilization. SAS 9.3 PROC SURVEYREG (with weights and stratification by college) was used to calculate t- tests and unadjusted differences in means in order to compare veteran-civilian differences in perceived stigma. To account for the non-modifiable demographic differences between veterans and civilians (i.e., age, gender, race/ethnicity), PROC SURVEYLOGISTIC and SURVEYREG (with weights and stratification by college) was also used to conduct logistic and linear regression analyses in order to calculate age-sex-race adjusted veteran-civilian differences in prevalence, perceived need, perceived stigma, perceived treatment effectiveness, and service utilization. An alpha significance level of 0.05 was used to determine statistical significance.

Results

There were substantial and significant modifiable and non-modifiable socio-demographic differences between veteran and civilian community college students (Table 1). Compared to civilians, student veterans were significantly older, more likely to be male, more likely to be married, more likely to be employed more than 30 hours per week, more likely to have health insurance and less likely to be very religious. Three quarters of the student veterans had been deployed during their military careers.

Table 2 presents the unadjusted and the age-sex-race adjusted proportion of students screening positive for mental disorders. Unadjusted bivariate comparisons indicated that student veterans had a significantly higher prevalence of current depression (33.1% versus 19.5%, $p < 0.01$), PTSD (25.7% versus 12.6%, $p < .01$), and suicide ideation (19.2% versus 10.6%, $p = 0.01$). There were no significant bivariate differences with respect to GAD, acute suicide ideation, or self-injury. Controlling for age, gender, and race/ethnicity, the multivariate findings were consistent with the bivariate findings with regard to depression (OR=2.10, CI₉₅=1.18-3.73, $p = .01$), and suicide ideation (OR=2.31, CI₉₅=1.09-4.91, $p = .03$) (Table 2). While the age-sex-race adjusted odds of having screening positive for PTSD were still larger for veterans than civilians, it was not statistically significant (OR=1.86, CI₉₅=0.97-3.55, $p = .06$), as it was in the bivariate analysis. There were no significant age-sex-race adjusted veteran-civilian differences with respect to GAD, self-injury or acute suicide ideation, which was consistent with the bivariate findings.

Table 3 presents the unadjusted and the age-sex-race adjusted prevalence of perceived need, perceived stigma, perceived treatment effectiveness, and service utilization. With respect to perceived need, unadjusted bivariate comparisons indicated that a similar proportion of student veterans and civilians (39.2% versus 32.7%, $p = .14$) indicated that they needed help with emotional or mental health problems in the past year. However, when adjusting for age, race/ethnicity and especially the predominantly male gender of veterans (OR=0.28, CI₉₅=0.15-0.52, $p < .0001$), student veterans had significantly higher odds of perceiving need for treatment than civilians (OR=1.93, CI₉₅=1.09-3.43, $p = .02$). Both veterans and civilians reported relatively low levels of personal stigma ($\mu = 0.9$ and $\mu = 0.8$ respectively, on a scale from 1-5) and an unadjusted bivariate comparison indicated that veterans had similar perceptions about personal stigma compared to civilians (unadjusted difference in means=0.12, $p = .16$). Controlling for age, gender, and race/ethnicity, the multivariate findings were consistent with the bivariate findings (beta=0.05, CI₉₅=-0.17-0.27, $p = .68$). Both

veterans and civilians perceived higher levels of public stigma ($\mu=2.5$ and $\mu=2.3$ respectively, on a scale from 1-5), and an unadjusted bivariate comparison indicated that veterans perceived greater public stigma than civilians (unadjusted difference in means=0.27, $p=0.007$). Controlling for age, gender, and race/ethnicity, the multivariate findings were consistent with the bivariate findings (beta=0.28, $CI_{95}=0.04 - 0.51$, $p=.02$). A somewhat smaller percentage of veterans than civilians believed that counseling was helpful (59.7% versus 68.4%, $p=0.054$). Adjusting for age, gender, and race/ethnicity, there was not a significant difference between veterans and civilians with regard to the perceived effectiveness of counseling (OR=1.12, $CI_{95}=0.64-1.93$, $p=.70$). According to the bivariate analysis, veterans were significantly less likely to believe that psychotropic medications were helpful (44.1% versus 56.7%, $p<.01$). However, when controlling for age, race/ethnicity, and especially the predominantly male gender of veterans (OR=2.05, $CI_{95}=1.173 - 3.569$, $p=.01$), beliefs about the effectiveness of medications were not different for veterans compared to civilians (OR=0.76, $CI_{95}=0.44-1.30$, $p=.31$). In terms of service use, less than a quarter of both student veterans and civilians received psychotropic medications in the previous 12 months (24.9% versus 22.6%, $p=.435$) and there were no significant veteran-civilian difference in adjusted analyses (OR=1.04, $CI_{95}=0.56-1.91$, $p=.91$). However, a significantly and substantially higher proportion of student veterans received psychotherapy in the previous 12 months compared to civilians (21.8% versus 9.2%, $p<0.01$). Adjusting for age, race/ethnicity and gender, student veterans had significantly higher odds of receiving psychotherapy (OR=2.35, $CI_{95}=1.02-5.45$, $p=.046$).

Discussion

There is a small, but growing, literature on community college students' risky health behaviors, including alcohol and tobacco use.²⁸ However, to the best of our knowledge, this is the first study to report the prevalence of depressive and anxiety disorders, and help seeking behaviors among community college students. The proportion of students screening positive appear to be similar at community colleges compared to four-year colleges and universities, despite the increased socioeconomic burden¹¹ of community college students. Among students at four-year colleges and universities, the Healthy Minds Study reports (<http://www.healthymindsnetwork.org/research/data-for-researchers>) the proportion of students screening positive was 22% for depression, 17% for GAD, 16% for self-injury, 12% for suicide ideation, and 2% for acute suicide ideation. Using the same methodology, the proportion of community college students screening

positive was 20% for depression, 18% for GAD, 9% for self-injury, 11% for suicide ideation, and 8% for acute suicide ideation. Among undergraduate students attending one university and one community college in the mid-west, the percentages of students screening positive for PTSD were 11% and 15% respectively (not statistically different), which is similar to the percentage screening positive for PTSD in our sample of community college students (13%).¹²

In addition to the similar prevalence of mental disorders, community college students had somewhat similar levels of perceived need for mental health care relative to students at four-year colleges.⁹ However, the patterns of mental health service use were somewhat different at two-year community colleges and four-year colleges. In the Healthy Minds Study, 16% of traditional college students reported taking a psychotropic medication in the past year,⁹ whereas 21% of students in our community college sample reported taking a psychotropic medication. In contrast, while 18% of four-year college students reported receiving psychotherapy in the past year⁹, only 7% of students in our community college sample reported receiving psychotherapy. While not a direct comparison, the seemingly greater reliance on psychotropic medications and the lower use of psychotherapy may reflect the lack of counseling services available on community college campuses.

To the best of our knowledge, this is the first study to directly compare the mental health and help seeking behaviors of student veterans and civilians. Despite the high prevalence of mental illness among civilian community college students, student veterans had an even higher age-sex-race adjusted odds (roughly double) of screening positive for depression and suicide ideation as hypothesized. The prevalence of screening positive for GAD, PTSD, acute suicide ideation and self-injury were also higher among student veterans than civilians, but not significantly so when adjusting for age, gender and race/ethnicity. The proportion of veterans screening positive for a mental disorder was quite high, with 33.1% screening positive for depression, 25.1% for PTSD, and 19.2% for suicide ideation. Importantly, the proportion screening positive in this sample of veterans enrolled in community college is substantially higher than the proportion screening positive in general samples of OEF/OIF/OND veterans. For example, in a nationally representative random sample of 1,965 OEF/OIF veterans, 13.7% screened positive for depression and 13.8% screened positive for PTSD.²⁹ In addition, adjusting for age, gender and race/ethnicity, student veterans had a greater perceived need for treatment as hypothesized. The risk factors associated with being a veteran and a community college student may be cumulative. Three quarters of the student veterans in our sample had been deployed. This

deployment history together with the stress of reintegrating into the community college setting while maintaining full or part-time employment may have all contributed to the relatively high risk of screening positive.

As hypothesized, compared to civilians, student veterans perceived higher levels of public stigma and were less likely to believe that psychotropic medications were helpful. Despite these barriers, student veterans at community colleges had similar psychotropic medication use as civilian students, which was contrary to our hypothesis. Also contrary to our hypothesis, student veterans had twice the age-sex-race adjusted odds of psychotherapy use compared to civilians. This likely reflects student veterans' enhanced access to psychotherapy. In fact, the vast majority (70.5%) of student veterans receiving psychotherapy in our sample reported visiting clinics operated by the Department of Veterans Affairs.

The results of this study highlight the need for linking community college students to effective mental health services. The substantial difference between the proportion screening positive and the proportion seeking treatment suggests that there are high levels of unmet need among community college students. Because only about half of community colleges nationwide have student health centers on campus,¹⁴ many community college students do not have the opportunity to be treated in this setting. Moreover, the majority of community colleges appear to lack any on-site mental health services.¹⁵ Thus, non-clinic based programs should be developed to detect mental disorders and link students with off campus mental health services. In order to promote OEF/OIF/OND veterans' successful re-integration into a productive civilian life it is especially important to identify and refer the large numbers of student veterans attending community colleges on the Post-9/11 GI Bill who are suffering from mental disorders. Linkage programs developed for community college campuses will likely need to be customized for student veterans who may not identify with the larger civilian student population. Peer outreach programs may be particularly effective at identifying student veterans with untreated mental disorders and linking them with needed services.³⁰

This study has several limitations. All the community colleges were located in one state and results may not generalize to other regions. Likewise, like many on-line surveys, the response rate was low, which increases the risk of non-response bias. However, the response rate is similar to other on-line surveys administered to community college students.²⁸ In addition, this limitation was mitigated somewhat by the use of non-response weights developed using the characteristics (age category, gender, race/ethnicity minority

status, and veteran status) of all sampled students obtained from the registrars' offices. Another limitation is that the students were surveyed using clinical screening instruments rather than structured diagnostic interviews which have better sensitivity and specificity. Finally, while we oversampled student veterans (in order to facilitate future sub-sample analysis), this led to small sampling weights for veterans and reduced statistical power to detect meaningful veteran-civilian differences in outcomes (e.g., prevalence of PTSD). Despite these limitations, the results from this study highlight the extraordinary degree of unmet need in the community college setting, especially for OEF/OIF/OND veterans using the Post 9/11 GI Bill. Given the multibillion-dollar investment being made by the Department of Veterans Affairs for the Post 9/11 GI Bill, policy makers should consider deploying screening and linkage programs for student veterans suffering from mental illness to maximize the return on this national investment.

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Table 1. Demographic characteristics of community college student sample

Variable	All N=775 Weighted %	Veteran N=211 Weighted %	Civilian N=554 Weighted %	p
Age				
18-22	49.5	9.2	50.8	
23-30	23.4	52.5	22.4	
31-40	16.5	25.6	16.2	<.001
41+	10.6	12.7	10.6	
Male	33.1	76.3	31.6	<.001
Race				
White	73.9	69.6	74.1	
Black	15.3	17.1	15.2	.614
Other ¹	10.8	12.9	10.7	
Married ²	31.3	59.3	30.4	<.001
Hours Employed Per Week				
0	36.7	31.5	36.9	
1-20	21.8	11.7	22.2	
21-30	9.9	4.9	10.1	<.0001
>30	31.5	51.9	30.8	
Health Insurance	61.3	78.0	60.7	<0.001
Current financial situation				
It is a financial struggle	39.4	33.1	39.6	
It is tight, but doing fine	48.0	47.5	48.1	.066
Finances not a problem	12.6	19.4	12.3	
Religiosity				
Very religious	27.0	16.0	27.4	
Fairly religious	48.0	42.9	48.2	
Not too religious	19.9	30.4	19.6	<.001
Not at all	5.1	10.8	4.9	
Years attending community college				
1	46.3	30.4	46.9	
2	36.0	51.9	35.4	
3	11.0	14.6	10.8	<.001
4+	6.7	3.0	6.9	
Lives off campus ³	97.6	98.8	97.6	.361
Mother's education				
8th grade and lower	6.4	4.5	6.4	
9th - 12th grade	6.3	12.6	6.1	
High school degree	34.5	34.4	34.5	
Some college	22.9	27.0	22.8	.034
Associate's degree	13.4	11.3	13.5	
Bachelor's degree	10.5	7.6	10.6	
Graduate degree	5.9	2.6	6.0	
Father's education				
8th grade and lower	8.1	6.8	8.1	
9th - 12th grade	9.5	12.5	9.3	
High school degree	38.7	43.5	38.5	
Some college	20.3	18.1	20.4	.635
Associate's degree	7.1	7.3	7.1	
Bachelor's degree	10.3	8.3	10.4	
Graduate degree	6.1	3.6	6.2	
Deployed	-	76.5	-	NA

1 Other includes American Indian/Alaskan Native, Arab/Middle Eastern or Arab American, Asian/Asian-American, Pacific Islander and biracial and multiracial ethnicity/race.

2. Married included married or living in a domestic partnership. Not married included single, in a relationship, divorced or widowed.

3. Living on campus included college residence hall, fraternity or sorority house, or other on-campus student housing.

Table 2. Unadjusted and adjusted civilian-veteran differences in the prevalence of mental illness and suicidal thoughts

Variable	All N=765	Veteran N=211	Civilian N=554	Unadjusted			Age-Sex-Race Adjusted		
	Weighted %	Weighted %	Weighted %	OR	95% CI	p	OR	95% CI	p
Screening instruments									
Depression ¹	19.9	33.1	19.5	2.05	1.36-3.08	<.001	2.12	1.18-3.79	.011
GAD ²	17.6	23.1	17.4	1.42	0.91-2.21	.119	1.37	0.77-2.44	.287
PTSD ³	13.0	25.7	12.6	2.41	1.50-3.88	<.001	1.87	0.99-3.55	.059
Thoughts and behaviors									
Self-injury ⁴	8.6	8.3	8.6	0.97	0.49-1.92	.920	2.28	0.82-6.31	.113
Suicide ideation ⁵	10.8	19.2	10.6	2.01	1.17-3.46	.011	2.34	1.10-5.02	.028
Acute suicide ideation ⁶	8.0	12.5	7.9	1.66	0.89-3.10	.110	2.12	0.86-5.18	.101

1. PHQ-9 cutoff \geq 10

2. GAD-7 cutoff \geq 10

3. PC-PTSD cutoff \geq 3

4. In the past year, have you ever done any of the following intentionally, without intending to kill yourself? Response options - Cut myself, Burned myself, Punched or banged myself, Scratched myself, Pulled my hair, Bit myself, Interfered with a wound healing, Carved words or symbols into my skin, Rubbed sharp objects into my skin, Punched or banged an object to hurt myself, Other harm to myself, No, none of these

5. Over the last 2 weeks, how often have you been bothered by any of the following problems? Thoughts that you would be better off dead or of hurting yourself in some way? Response options - Not at all, Several days, More than half the days, Nearly every day

6. In the past year, did you ever seriously think about attempting suicide? Response options – Yes, No

Table 3. Unadjusted and adjusted civilian-veteran differences in help seeking behaviors

Variable	All N=765	Veteran N=211	Civilian N=554	Unadjusted			Age-Sex-Race Adjusted		
	Weighted Mean	Weighted Mean	Weighted Mean	Difference in Means	95% CI	p	Beta	95% CI	p
Stigma									
Personal stigma ¹	0.81	0.93	0.81	0.12	-0.05-0.29	.163	0.05	-0.17-0.27	.680
Public stigma ²	2.28	2.54	2.28	0.27	0.08-0.46	.006	0.28	0.04-0.51	.020
<hr/>									
Variable	All N=765	Veteran N=211	Civilian N=554	Unadjusted			Age-Sex-Race Adjusted		
	Weighted %	Weighted %	Weighted %	OR	95% CI	p	OR	95% CI	p
Perceived need									
Think needed help ³	32.9	39.2	32.7	1.33	0.91-1.95	.144	1.97	1.11-3.50	.021
Perceived Treatment Effectiveness									
Believe therapy can help ⁴	68.1	59.7	68.4	0.68	0.47-1.01	.054	1.12	0.64-1.93	.699
Believe medication can help ⁵	56.3	44.1	56.7	0.60	0.42-0.87	.007	0.76	0.44-1.30	.311
Help seeking									
Psychotropic medications ⁶	21.2	24.0	21.1	1.19	0.77-1.83	.442	1.04	0.56-1.92	.897
Psychotherapy ⁷	6.5	21.2	6.0	4.21	2.39-7.42	<.001	2.36	1.02-5.50	.046

1. Average response to following questions: 1) I would willingly accept someone who has received mental health treatment as a close friend, 2) I would think less of a person who has received mental health treatment (reverse coded); 3) I feel that receiving mental health treatment is a sign of personal failure (reverse coded). Response options - Strongly agree (0), Agree (1), Somewhat agree (2), Somewhat disagree (3), Disagree (4), Strongly disagree (5).
2. Average response to following questions: 1) Most people would willingly accept someone who has received mental health treatment as a close friend; 2) Most people feel that receiving mental health treatment is a sign of personal failure (reverse coded); 3) Most people think less of a person who has received mental health treatment (reverse coded). Response options - Strongly agree (0), Agree (1), Somewhat agree (2), Somewhat disagree (3), Disagree (4), Strongly disagree (5).
3. In the past 12 months, did you think you needed help for emotional or mental health problems such as feeling sad, blue, anxious, or nervous? Response options – Yes, No.
4. How helpful, on average, do you think medication is, when provided competently, for people your age who are clinically depressed? Response options - Very helpful, Quite helpful, A little helpful, Not at all helpful. Very helpful and quite helpful were combined to create a dichotomous variable.
5. How helpful, on average, do you think therapy or counseling is, when provided competently, for people your age who are clinically depressed? Response options - Very helpful, Quite helpful, A little helpful, Not at all helpful. Very helpful and quite helpful were combined to create a dichotomous variable.
6. Based on a doctor's prescription, on how many occasions in the past 12 months have you used the following types of drugs? Response options for each drug category – No occasions, 1-2 occasions, 3-5 occasions, 6-9 occasions, 10-19 occasions, 20-39 occasions, 40+ occasions. All occasions >1 were combined to create a dichotomous variable.
7. In the past 12 months have you received counseling or therapy for your mental or emotional health from a health professional (such as psychiatrist, psychologist, social worker, or primary care doctor)? Response options – Yes, No.

Running head: Trauma among Returning Student Veterans

Title: The impact of traumatic exposure on veterans seeking higher education

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Abstract.

Despite evidence that mental health burden is associated with lower academic success and non-completion in college students, few studies report on these relationships in returning student Veterans. This paper presents findings from a study on the mental health burden of student Veterans attending rural community colleges in the southern United States. Based on qualitative research, the findings illustrate how the sequelae of combat-related trauma exposure impact classroom integration and academic achievement. The findings highlight need for supportive services that integrate student Veterans into campus communities and link them to mental healthcare resource, potentially improving academic success.

Keywords

Academic success; Student Veterans; mental health; trauma exposure

Introduction

As the nation has largely withdrawn from two separate campaigns in the Middle East, millions of returning veterans are redirecting their focus from fighting in conflicts overseas to reintegrating into society. In order to ease this transition, Congress implemented the post-9/11 GI Bill on August 1st, 2009, which provides more than \$20 billion in educational benefits for veterans and their families (Office of Public and Intergovernmental Affairs [OPIA], 2014). These benefits have provided Veterans with the opportunity to pursue a civilian education, which has a number of benefits (e.g., increased employment opportunities, long term earning potential). However, information is lacking on the interplay of veteran combat experiences, mental health, and experiences in educational settings. Because prior research has shown that mental health burden is associated with lower academic achievement and a greater risk of non-completion of college (Kessler, Foster, Saunders & Stang, 1995; Hunt, Eisenberg, & Kilbourne, 2010), it is important to explore these relationships.

Among returning Veterans, trauma is often a root cause of psychological distress that impacts Veterans in multiple aspects of daily life. Many of the intense and disorganizing feelings associated with psychological trauma are experienced immediately following the event (James & Gilliland, 2013). However, many individuals experience long-lasting psychological effects that, if lasting longer than one month, may indicate post-traumatic stress disorder (PTSD) (Foa, Hembreet, and Rothbaum, 2007; Diagnostic and Statistical Manual of Psychiatric Disorders, 5th edition [DSM-V]). Returning Veterans with PTSD may experience the intrusion of symptoms, such as recurrent or involuntary memories, distressing dream/sleep disturbance, and dissociative reactions or flashbacks, and negative alterations in mood; they may also persistently avoid triggering events. Returning veterans may also be susceptible to delayed response of autonomic hyperarousal to stimuli unrelated to combat (e.g., feelings of isolation or re-experiencing trauma in situations that pose no serious threat; James & Gilliland, 2013). While each person's response to a traumatic event is unique, traumatic exposure, specifically multiple exposures, increases the likelihood of developing symptoms that interfere with day-to-day life (Foa, Hembreet, & Rothbaum, 2007).

This can be particularly difficult for student veterans who may also struggle to relate to the civilian world and their peers. Student Veterans may have difficulty relating to others, and may perceive student peers as immature or perceive comments as disrespectful (DiRamio, Ackerman, & Mitchell, 2008). The extended gap between high school and college (four to five years for veterans compared to two to three months for freshman), older age, and deployment experiences further differentiates many student Veterans from other students, making it challenging for them to integrate into classroom settings (Johnson, 2010; Olsen, Badger, & McCuddy, 2014). As a result, student Veterans may struggle to find a sense of belonging that leads to feelings of isolation (Whiteman et al., 2013). Furthermore, student veterans often face physical and mental injuries, deployment- and combat-related stress, and family/relationship disruption after deployments, which can make it challenging to concentrate and learn (RAND, 2010), negatively affecting academic performance.

Because so many student veterans returning from the wars in Iraq and Afghanistan have been exposed to trauma and exit military service with signs and symptoms of PTSD, it is critical to explore the impact of psychological trauma on classroom performance and integration (Rudd, Goulding, & Craig, 2011). To date, we know very little about the mental health burden of veterans attending rural community colleges, what their experiences are like obtaining higher education, and how trauma may impact their experiences. In this article, we seek to fill the gap in literature by examining how trauma exposure impacts the mental health and experiences of rural veterans seeking higher education.

Methods

The analysis presented in this article is part of a mixed-methods study of the mental health burden and treatment-seeking behaviors of veterans utilizing the post-9/11 GI bill to attend underserved community colleges in the state of Arkansas. As of 2010, over 5,500 (United States Department of Veterans Affairs, 2010) veterans in Arkansas have utilized the GI Bill to obtain higher education. Many of these veterans attend two year community colleges and four year universities that are close to their homes, often in rural, underserved areas of the state (Field, 2008). A total of 11 community colleges from diverse rural regions throughout

Arkansas, including colleges in the Arkansas Mississippi Delta Region and the Ozark Mountains, classified as medically underserved areas, participated in the study (U.S. Department of Health and Human Services, 2015).

Veterans were recruited into the study from a list of students registered for the 2012 Spring semester obtained from the registrar's office of each community college. All students using the Post-9/11 GI bill were preliminarily classified as Veterans, and veteran status was later confirmed from self-report. The first phase of the study was marked by quantitative data collection (from January to April 2012), which was then followed by qualitative data collection (from March 2012 to December 2014).

Study design

A large-scale quantitative survey administered in a web-based format was conducted first, followed by in-depth qualitative interviews. Because research to date has primarily focused on four year college students (Eisenberg, Hunt, & Speer, 2013), quantitative data were collected first to better understand the prevalence of mental health conditions among community college student veterans and civilians and to assess their treatment-seeking behaviors. In-depth qualitative interviews were then conducted with a subset of participants to elicit student veterans' experiences of having mental health problems, providing a more granular picture of the links between mental health and life stressors and how they affect day-to-day life as a student. Last, focus group discussions (FGDs) were conducted to deepen understanding of findings from in-depth interviews and to elicit additional information on ideal ways to screen and link student Veterans to healthcare services. Elsewhere, we report on the prevalence of mental disorders and help seeking among veterans and civilian community college students (Fortney et al., 2015); therefore, this paper reports on the qualitative findings of the larger mixed-methods study.

The study received full ethical approval from the University of Arkansas for Medical Sciences Institutional Review Board (IRB). Participants were informed of the purpose of the study and assured that their participation was voluntary and their responses were confidential; all participants provided written informed consent online.

Recruitment and sampling

Participants for the qualitative phase of the study were recruited through their participation in the first phase of the research involving a web-based survey. A total of 211 Veterans completed the survey (response rate of 30.7%) and 79 screened positive for depression, general anxiety disorder (GAD), and/or posttraumatic stress disorder (PTSD) and agreed to be contacted for future research. These participants were recruited for the qualitative phase of the study.

Data collection

Quantitative Survey. For the purposes of this article, we report on the socio-demographic, mental health, and military service characteristics of the survey participants who screened positive for depression, PTSD, and/or GAD and also agreed to participate in the qualitative research (n=23). Items and instruments used in the Healthy Minds Study were used to collect data on participants' socio-demographic characteristics, socio-economic backgrounds, mental health conditions, and treatment-seeking behaviors (Eisenberg, Hunt, & Speer, 2011; Eisenberg, et al., 2013). Current mental health conditions were assessed using validated screening instruments for depression (PHQ-9; Kroenke, Spitzer, Williams, 2001), GAD (GAD-7; Lowe et al., 2008), and PTSD (PC-PTSD; Prins et al., 2003); positive screens made participants eligible for the qualitative phase of the study. Suicide ideation in the past two weeks was assessed with the PHQ-9 (Kroenke et al., 2001). Acute suicide ideation in the past year was assessed using a single item, "In the past year, did you ever seriously think about attempting suicide?" from the National Comorbidity Survey Replication (<http://www.hcp.med.harvard.edu/ncs/index.php>).

Participants were asked if they had ever served in the United States (U.S.) Armed Forces, military Reserves, or National Guard, and if so, if they were currently in Reserve Officers' Training Corps (ROTC), military Reserves or National Guard, active duty or active duty during the last 12 months or in the past but not during the last 12 months. Participants with a history of military service were then asked if they had ever been deployed (within the U.S. or outside the continental U.S.) and, for all those with deployment experiences, a series of questions were asked about their experiences during deployment to understand if or how often they

had gone on combat patrols or other dangerous duties, had been under enemy fire, had been surrounded by the enemy, had soldiers in their units who were killed, wounded, or missing, had fired rounds at the enemy, had seen someone hit by incoming or outgoing rounds, or had been in danger of being injured or killed.

Qualitative interviews. Of the 79 student Veterans who screened positive for depression, GAD, and/or PTSD and agreed to be contacted, 23 agreed to participate in the qualitative phase of the study. These Veterans participated in a qualitative, in-depth interview on mental health burden, treatment-seeking behaviors, and ideal models of screening and linkage to care. A semi-structured interview guide with open-ended questions was used to elicit information on participants' 1) military experience; 2) transition from military to civilian life and college; 3) day-to-day stressors and emotional and psychological health; 4) support systems; 5) help-seeking behaviors; 6) perceived need for treatment; and, 7) ideal models of screening and linkage to care. Interviews, which lasted from 45 minutes to two hours, were held in a private location at the participant's campus.

Focus group discussions were also held with 10 student Veterans (6 men and 4 women) who had participated in an in-depth interview. During the FGDs, veterans were presented with an overview of the findings on mental health burden, treatment seeking, and barriers to care and discussed how the findings related to their own experiences. In addition, they were also presented with initial findings on Veterans' recommendations for screening and linkage-to-care programs and were given an opportunity to elaborate on these ideas and discuss their value. Participants in both the qualitative interviews and focus groups received \$50 for their participation in the study.

Data analysis

We used data from both phases of the research to enrich our interpretation of the findings, providing a more complete understanding of the mental health burden among student Veterans and how it affects day-to-day life (Creswell, Klassen, Plano Clark, & Smith, 2011). The quantitative survey data were used to generate descriptive statistics, including frequencies on socio-demographics, socio-economics, military service, and current mental health conditions. The qualitative interview data provide in-depth insights into how trauma exposure during military service affects day-to-day life and the experience of being students.

The qualitative interviews were recorded and transcribed, then imported into MAXQDA, a qualitative data analysis software program (MAXQDA, 1989-2012). In the first phase of analysis, structural codes (i.e., codes derived from the interview guide) were first applied to the text, and in the second, emergent themes were identified through a line-by-line reading of the text (Bradley et al., 2007). The second and last author developed a detailed codebook and independently applied the structural codes to the same text to assess inter-coder agreement (MacQueen, McLellan, Kay, & Milstein, 1998). The coders met to reconcile disagreement and to revise the codes until an inter-coder reliability of .80, considered an acceptable percent of agreement between coders, was reached (Bernard, 2002). The first author then used an inductive approach, engaging in line-by-line reading of the text to identify emergent themes (Ryan & Bernard, 2003). Once themes were identified, the first and second author defined their dimensions and discussed relationships among themes, their dimensions, and data (Strauss & Corbin, 1990).

Results

In Table 1, we depict the socio-demographic and mental health characteristics of the 23 student Veterans involved in the qualitative phase of the larger mixed-methods study. The veterans were mostly married, White men between ages 23 to 30 in their second year of college. Nearly 70% had been on active duty in the past, with 17% on active duty at the time of the study. Eighty-three percent screened positive for depression, 65.2% for GAD, and 56.5% for PTSD. Nearly a quarter (21.7%) endorsed suicide ideation in the two weeks prior to the survey.

In Table 2, we report on the military experiences of the 23 student Veterans in the qualitative research. Nearly three-fourths (69.6%) had been deployed, 69% were under enemy fire, 56% had been surrounded by enemy fire and had seen someone hit by rounds. Over a third (34.5%) reported danger of being injured or killed, with a quarter indicating 4 to 12 exposures to injury or death.

The Transition from Military to Civilian Life

Many of the student Veterans in our study deployed to support the conflicts in Iraq and Afghanistan and were involved in combat patrols. Participants recounted traumatic events such as being under enemy fire, seeing

fellow comrade in arms get hit by enemy fire, and fearing their own bodily injury or death. Unfortunately, such experiences do not always fade with the passing of time, and can leave enduring psychological scars that haunt Veterans for years. Veterans described feeling hyper-vigilant and having intense reactions to everyday sights and sounds as well as having a “short temper” and anger outbursts upon returning from deployments and reintegrating into civilian life. The transition from a highly structured environment where roles are clear and institutionally enforced to a less structured environment where roles are unclear and not always enforced created a sense of disorientation.

During interviews, Veterans discussed the difficulties they faced as they transitioned out of the military, pursued civilian education, reintegrated with family, and attempted to cope with the lingering effects of trauma. In the following section we describe Veterans experiences as they transitioned from the military to civilian life as a student highlighting how social distance, the stress of multiple competing demands, and re-experiences of trauma make it difficult for them to integrate into the classroom and achieve academic success.

Social distance. Many struggled with relating to the civilian world and their student peers. A young man in the focus group discussion said, “We’re very well trained, very disciplined individuals and very motivated.” Referring to a previous comment made by another man in the focus group, he said “Like one of the other guys was saying, we’re not kids. We’re not 18-, 19-year-old kids; we’re disciplined, organized, intelligent individuals.”

Others also expressed a sense of disconnection from their peers because of their older age and prior military and deployment experiences: “Being the oldest guy in class, that makes it a little hard, too, because everybody looks at you and calls you the old man.” Student Veterans also talked about their frustration with having to interact with civilian “kids” who they often described as immature. In one of the focus group discussions, Veterans candidly discussed their irritation with “civilians and immature kids”:

“That’s the thing I had problems with the first probably year or two I was in. I got so irritated being with civilians and immature kids and stuff. It about drove me insane because I just wanted to go into class [and] sit down.”

The social distance Veterans felt from other students due to their immaturity was compounded by the stigma attached to having served in military combat. These perceptions were often substantiated by experiencing the inappropriate questions and assumptions civilians often maintained about service members.

A salient theme verbalized by multiple veterans was the lack of sensitivity their peers exhibited by asking about war experience. A veteran explained, “[...] a lot of the kids here, when they ask you about the military or if you’ve been to war, one of the first questions that everybody always asks is, ‘Did you kill anybody?’ That’s a question that’ll piss off a Veteran quicker than anybody.” Questions such as these may inadvertently reinforce feelings of isolation that many veterans struggle to overcome.

Another perception that Veterans in our focus group expressed was the belief that many university students are treated as children. They were often taken aback at the way students were coddled in the classroom:

“I had a similar issue where people just didn’t understand that I’m not a kid. I just want to get in and sit down and learn and take it seriously and do what I need to do and get out. I hate to say it, but they’d really pander to the college kids and treat them like they’re kids. I was like, “I’m a grown adult. I’ve been in the military and I don’t feel like I should be treated like a kid.”

Stress of competing demands and expectations. Many struggled to successfully juggle the demands and expectations of marriage and parenthood, employment, and education. Despite receiving assistance from the 9/11 GI Bill which pays for tuition and books and provides a housing allowance throughout the academic year, participants struggled to pay bills, childcare, and everyday expenses. Throughout the semester, participants worked full-, part-time, and/or odd jobs to “get by.” For some, competing demands necessitated dropping or discontinuing classes. This single male Veteran, who worked full-time and had an 18-hour course load, discussed the challenges with juggling both:

I had to drop some classes because I was taking way more classes and work full time. Just before I started that semester, work offered me a fulltime position, which I took because I needed the money. . . I thought I could handle and it just became more or less I couldn't, there wasn't enough time in the day to finish all my work.

Some struggled to find purpose and meaning in their new role as a student. Many described this role as less meaningful than military service. Veterans also felt they could not adequately provide for their families and were not doing enough to meaningfully contribute to society: "It [being a student] makes me feel like I'm not providing for my family and it makes me feel like I'm just a drain on society." Veterans discussed how these demands coupled with drastic changes in their financial situation, which tended to shift from having enough money to pay bills and enjoy leisure time activities to barely having enough money to get by, created stress, loneliness, and in some cases depression. One veteran discussed how staying home to study while his wife went to work made him feel depressed frequently:

There's five or six times a month where I'll have a little pity party sitting at the house. The wife will come home and I'm just over there at my desk feeling sorry for myself. I'll be in a bad mood all afternoon, walking around mumbling, crying to myself.

In this case, the demands of education involving long hours of studying alone, was isolating and contributed to depression symptoms. At time, this veteran similar to others, would use alcohol to cope with loneliness, depression, and traumatic memories. He explained:

"I'll just start cracking a beer to go watch a movie. The next thing you know I'm looking at my buddies on the wall – their pictures, feeling sorry about that; feeling sorry that I can't find a job; feeling sorry because this bill's behind or am I going to have enough money to go do this with the family. And then before you know it, the night's up and I'm stumbling to bed drunk.

Existing mental health problems such as depression, PTSD, or anxiety exacerbated veterans' symptoms making it challenging to succeed academically. A woman veteran with a history of depression explained:

“I saw the warning signs [of depression]; I ignored them. I had been thinking that the depression and stress and all that, was coming from, ‘Well if I make better grades then I won’t have that [depression].’

Depression, PTSD, and anxiety made it challenging for veterans to attend classes regularly and meet educational expectations (e.g., passing or high grades). For this veteran and others the depression symptoms interfered with her academic performance. As she explained: “I’m a little depressed and that’s why I’m not even in class this semester.”

Re-experiencing trauma. Further complicating the ability of veterans to integrate into the classroom and achieve academic success were events or situations on campus that triggered memories related to combat. These memories, in turn, induced heightened levels of stress and, in some cases, caused veterans to re-experience and re-live the trauma of combat.

Some participants described how being in crowded situations was distressing, shaping not only their campus experience, but how they navigated daily life at school. For these participants, and other student veterans like them, situations that reminded them of combat were not only anxiety producing, but also resulted in a hypervigilance that only increased their distress. In this excerpt, a woman who screened positive for PTSD, described situations that would, for her, invoke anxiety on campus:

“It was just the registration portion of it, like being in those little offices. . . They would have [...] that front desk [...] that woman was helping all the students in there. And its 30 students standing there in that little space waiting for her. That’s how it was in almost every office you went into. . .”

In some instances, specific events or experiences on campus triggered disturbing memories, such as that described by a participant in the following excerpt:

“Well, for instance, the other day I came and there was a kid that we thought seized out downstairs [...] and I had him in my arms, trying to keep him from hitting his head and stuff. And when I was sitting there holding him the same way I was holding this guy that got shot in Iraq, and the guy died, I was sitting there thinking, “Oh my God. Is this guy gonna die too?”

Experiences such as that described above reinforced the psychological distance between students with combat experience and their peers, further disrupting processes of classroom integration.

Other Veterans struggled with intrusive thoughts and memories related to traumatic experiences that interfered with their ability to focus and concentrate during class, which negatively affected their academic performance. In the following excerpt, a Veteran explicitly described how combat-related trauma and re-experiencing trauma in the classroom can negatively impact academic performance:

Veteran: “Yeah, just thinking back to the things you’ve been through, like the things that happened [...]. Some of the classes what they discussed would bring up... (trails off).”

Interviewer: “Would bring up those memories?”

Veteran: “Yeah, and so I would find myself sometimes zoned off in deep thought about other things that I had been going through versus what we’re talking about in class.”

For others, thoughts and memories of traumatic events occurred at night drastically affecting sleep patterns and making it especially hard to attend classes. A male combat Veteran explained:

“One thing that really made it hard on me [going to school] was a lot of mornings I would wake up and still be tired because I have these real bad dreams during the night. Trying to make it into class after being up just about all night was just very hard.”

These student veterans brought lived experiences of trauma with them to the classroom, and the residual effects of trauma, for many, shaped both classroom integration and academic performance.

Discussion

While prior research on student Veterans has focused on four year universities, our study is among the first to fill the gap on the mental health burden faced by veterans at the community college level. By studying 11 community colleges from diverse rural regions throughout Arkansas, the findings from our study indicate that veterans, who were not limited to a strict diagnostic category (i.e., PTSD), were struggling with mental health concerns, especially trauma related to combat exposure. The findings reveal how some returning veterans were unable to connect with peers and experienced feelings of isolation while transitioning from military service to a campus environment. Our study highlights the need for more data on the range of experiences of veterans seeking out secondary education using the GI Bill in a variety of educational settings (e.g., Universities, community colleges, vocational schools, etc.) so that appropriate support can be provided in each context. This will become especially important as the number of degree seeking Veterans is expected to grow (Widome, Kehle, Carlson, Laska, 2011).

In our study, we found that the vast majority of Veterans had deployed and reported being in danger of being injured or killed. Trauma exposure, as the veterans narratives highlight, affected their mental health contributing to depression, PTSD, and anxiety. Similar to participants in other studies about re-integration among veterans, participants in our study conveyed the difficulty they faced during the transition from the highly structured military profession to a campus setting with peers that they were unable to connect to due to differences in life experiences, age, and stage in life (Johnson, 2010). For instance, many veterans were married and had parental responsibilities, which can increase feelings of isolation, making the transition even more difficult (Livingston et al., 2011).

In addition, many student veterans also had to deal with the effects of trauma exposure while adapting to an environment where they felt isolated and out of place. Kraus (2010) demonstrated that war-related trauma and additional impairments can limit the educational achievement of returning Veterans. In our study, Veterans explained how they perceived many of their peers to be immature and undisciplined. Some felt as if the behaviors that had once made them successful were now devalued and isolated them from their peers. Bonar

and Domenici (2011) referred to the integration process as a type of culture shock that requires “attainment of a new set of cultural competencies and awareness” (p. 208).

Limitations

The data described in this article reflect the difficulties veterans experienced trying to integrate into the classroom at community colleges in rural areas of the South. The experiences of our participants might not be entirely representative of what other veterans experience in other contexts, for instance in more urban settings in the North East. Additionally, because we have described the lived experiences of veterans, it is important to understand that the qualitative findings are meaning-centered and context dependent, rather than generalizable.

Conclusion

For student veterans already facing the difficult task of reintegration, managing the symptoms of psychological trauma may impede their ability to successfully utilize existing educational tools, compromising their ability to interact with other students (Smee, Buenrostro, Garrick, Sreenivasan, & Weinberger, 2013). While the post-911 GI Bill benefits are intended to be a reinvestment in both the veteran and the community, for veterans struggling with the aftermath of trauma exposure the potential return could be diminished. As seen among the Veterans in our study, sleep disturbance, hypervigilance, irritable/aggressive behavior, and problems concentrating were the most recognizable criterion associated with PTSD. However, many Veterans also presented with additional symptoms (e.g., depression symptoms) or comorbid disorders. Trauma-related stressors and comorbid disorders have the potential to reduce the effectiveness of current programs by creating barriers that make it challenging for student veterans to overcome. Linkage-to-care interventions, such as peer-led supportive services, have been found to be especially effective among student veteran populations and have the potential to connect Veterans to needed resources as well as offer Veterans a sense of community, potentially increasing retention rates and helping to ensure academic success (Cheney et al., n.d.; Olsen et al., 2014).

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Table 1. Student veterans' demographic characteristics

Variable	Veteran N=23
	N (%)
Age	
18-22	1(4.35)
23-30	12(52.17)
31-40	6(26.09)
41+	4(17.39)
Male	15(68.18)
Race	
White	13(56.52)
Black	5(21.74)
Other ^a	5(21.74)
Married	13(56.52)
Years attending community college	
1	7(30.43)
2	14(60.87)
3	1(4.35)
4+	1(4.35)
Lives off campus	22(95.65)
Current financial situation	
It is a financial struggle	16(69.57)
It is tight, but doing fine	7(30.43)
Finances not a problem	0(0)
Mental Health	
PHQ-9	19(82.61)
GAD-7	15(65.22)
PC-PTSD	13(56.52)
Thoughts and behaviors	
Suicide ideation	10(43.48)
Acute suicide ideation	5(21.74)

Table 2. Frequency and percent

Variable	Level	Veteran (N=23)	Number of times	Military service ^a
Deployed, N (%)				16(69.57)
Served in US military, N (%)	Currently in military Reserves or National Guard			3(13.04)
	Now on active duty			4(17.39)
	On active duty past 12 months, not now			0(0)
	On active duty in past, but not past 12 months			16(69.57)
Went on combat patrol, N (%) ^b	No			2(12.5)
	Yes		1-3 times	3(18.75)
			4-12 times	3(18.75)
			13-50 times	3(18.75)
			51+ times	5(31.25)
Were under enemy fire, N (%)	Never			5(31.25)
	Yes		<1 month	3(18.75)
			1-3 months	2(12.5)
			4-6 months	3(18.75)
			7 months or more	3(18.75)
Were surrounded by enemy, N (%)	No			7(43.75)
	Yes		1-2 times	5(31.25)
			3-12 times	2(12.5)
			13-25 times	1(6.25)
			26+ times	1(6.25)
Percentage of killed, wounded or missing soldiers, N (%)	None			6(37.5)
	Some		1-25%	9(56.25)
			26-50%	1(6.25)
			51-75%	0(0)

		76% or more	0(0)
How often did you fire rounds at the enemy? N (%)	Never		8(50.0)
	Yes	1-3 times	1(6.25)
		4-12 times	3(18.75)
		13-50 times	4(25.0)
		51+ times	0(0)
How often did you see someone hit by rounds? N (%)	Never		7(43.75)
	Yes	1-3 times	1(6.25)
		4-12 times	5(31.25)
		13-50 times	2(12.5)
		51+ times	1(6.25)
How often were you in danger of being injured or killed, N (%)	Never		6(37.5)
	Yes	1-3 times	2(12.5)
		4-12 times	4(25.0)
		13-50 times	2(12.5)
		51+ times	2(12.5)

^a Military service provides frequency and percentage for those answered 'Yes' or 'Some' to the questions

Linking Student Veterans in Rural Community Colleges to Mental Health Care

PI: Geoffrey M. Curran, Ph.D.
University of Arkansas for Medical Sciences

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Award Dates: 12/11/2010 – 1/09/2014* (NCE 1/09/15)
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Background/Rationale

- A third (34.6%) of those using the Post-9/11 GI Bill have enrolled in a community college¹
 - Few MH resources on campus
- Results from Healthy Minds Study:
 - Fewer than half of students w/+ screen for depression or anxiety disorders received MH care²
 - MH status associated w/lower GPA, dropping out³
- Gap in the literature on student veterans' mental health (MH) needs who attend two-year community colleges (CCs)

(1) Shinseki, 2012; (2) Eisenberg et al., 2007; (3) Eisenberg et al., 2009

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Military Relevance and Potential Value Added

- **Gap in services for student Veterans at community colleges, especially rural**
 - What services are needed?
 - What services are recommended by Veterans?
- **Future interventions would supplement existing CC Veterans services and improve links to VA and other service providers**
 - Improved mental health should improve academic outcomes and quality of life

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Specific Aims

Hypotheses

- 1.) Veterans would have more severe MH burden
- 2.) Veterans would have lower help seeking
- 3.) Veterans would prefer Veteran peer involvement in any screening/linking intervention

- **Aim 1:** Quantitatively assess the mental health status of student Veterans attending community colleges, their help-seeking behavior, and their attitudes toward mental health care and potential screening and linkage-to-care approaches.
- **Aim 2:** Elicit student Veterans' preferences for help-seeking and their attitudes toward mental health screening and linkage-to-care interventions.
- **Aim 3:** Develop a screening and linkage-to-care model that reflects the perspectives of student Veterans and their significant others.

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Research Design

- **Mixed-methods study**
 - Quantitative data collected from student Veterans
 - Web-based, survey questionnaire
 - Qualitative data collected from subset of participant pool (those with + MH screens)
 - Semi-structured interviews
- **Data analysis**
 - Integrate the quantitative and qualitative findings
- **Intervention development**
 - Focus groups and product design meeting

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Study Locations



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Structured Survey

Self-administered, web-based questionnaire

Measures:

- PHQ-9 for depression
 - GAD-7 for anxiety
 - Brief Trauma Brain Injury Screen
 - Primary-Care PTSD screen
 - Suicidality
 - Substance Use
 - Perceived public stigma, perceived need, MH utilization
 - Social Support
- **Recruitment: 11 Community Colleges in Arkansas**
 - List of students using GI bill from participating colleges
 - Email, mailed letter
 - Veterans, n=228 (30%)
 - Civilians, n=554 (25%)
 - **Procedures**
 - Secure, confidential survey website, anonymous
 - Online consent form

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Qualitative Research

- **Semi-structured interviews (n≈30-45)**
 - 20-25 men; 10-15 women w/positive MH screens
 - Conducted at Veteran's college
- **Recruitment**
 - Veterans w/+ MH screen (87 eligible, 21 women)
 - 26 interviews thus far; 7 women
- **Open-ended questions explored:**
 - Attitudes and beliefs about MH problems, perceived need for care, barriers to help-seeking, screening and linkage-to-care ideas
- **Grounded theory techniques**
 - Theoretical sampling; inductive analysis

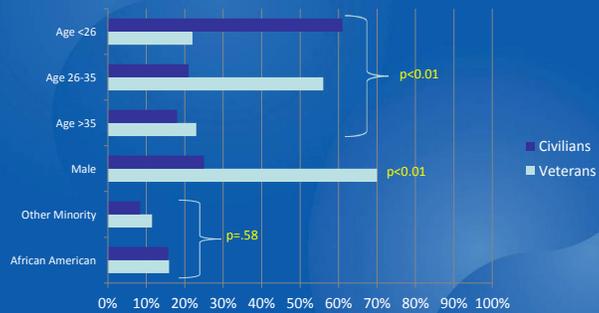
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Intervention Development

- **Intervention Development Focus Groups**
 - 2 Veteran focus groups
 - 1 significant others focus group
- **Collective brainstorming**
 - Elicit Veterans' & significant others' responses to further define intervention (e.g., access pathways, use of technology)
- **Intervention prototype development**
 - Half-day meeting w/ key stakeholders

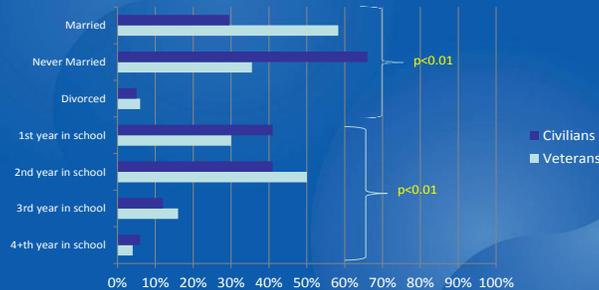
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Demographics

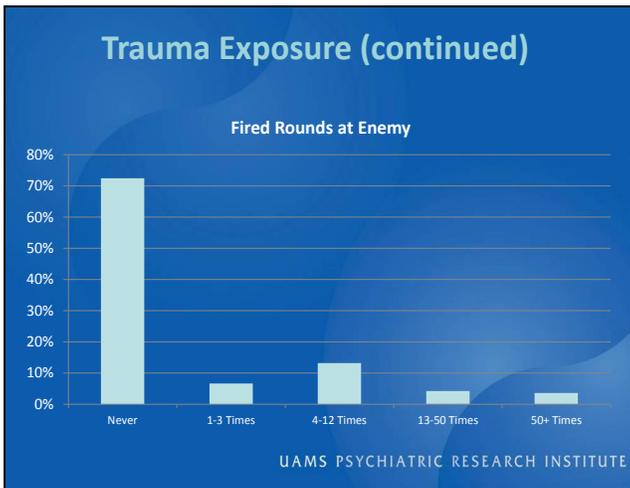
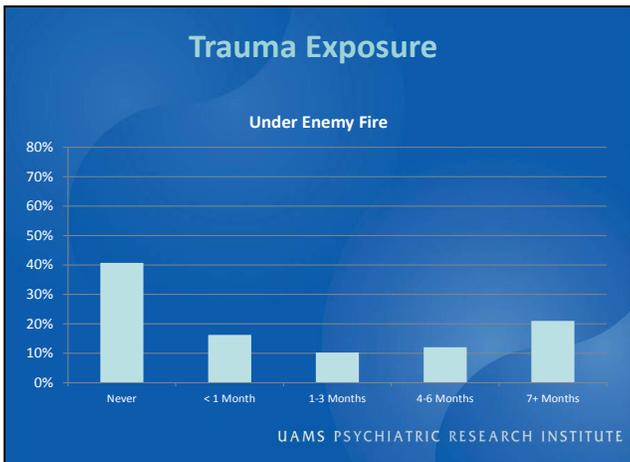
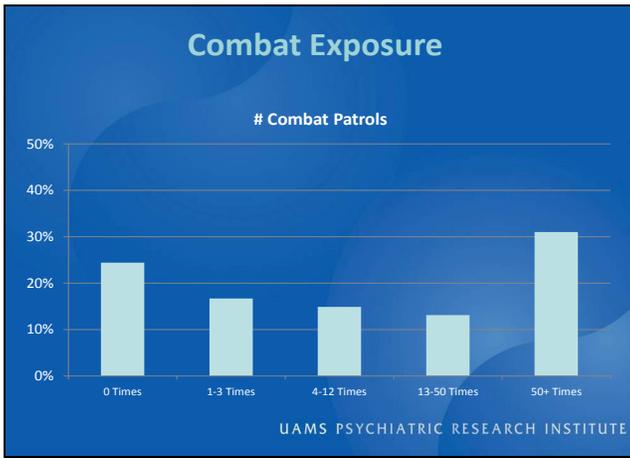


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Demographics (continued)

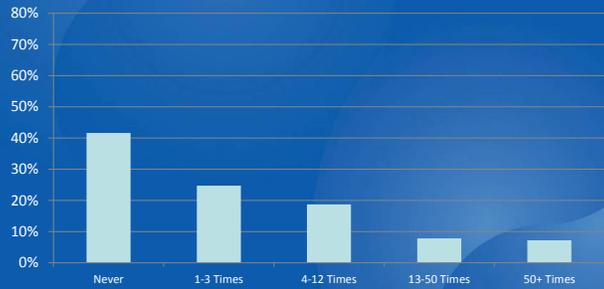


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Trauma Exposure (continued)

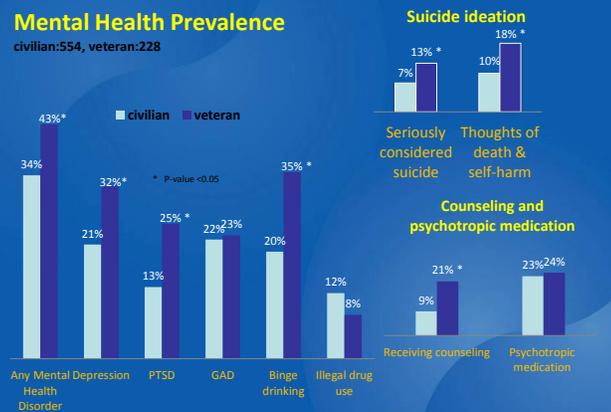
Felt You Were In Danger Of Being Killed/Injured



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Mental Health Prevalence

civilian:554, veteran:228



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Multivariate Model Odds Ratios

	Perceived Need		Psychotherapy		Medications	
Age 23-30	1.28	p=0.1044	1.13	p=0.4961	1.30	p=0.0967
Age 31-40	.936	p=0.7206	0.95	p=0.8261	.823	p=0.3350
Age 40+	1.00	p=0.9950	1.60	p=0.0908	2.03	p=0.0013
Male	.610	p<.0001	1.00	p=0.9607	.806	p=0.0685
Veteran	1.05	p=0.6620	1.31	p=0.0851	.808	p=0.1154
Married	1.11	p=0.3182	1.02	p=0.8706	1.15	p=0.2150
Others think less	1.09	p=0.3208	0.90	p=0.4521	1.07	p=0.5379
Suicide ideation	2.54	p<.0001	1.25	p=0.2039	1.41	p=0.0278
Illegal drug	1.19	p=0.2222	0.89	p=0.5825	1.01	p=0.8945
Binge drink	1.31	p=0.0095	1.04	p=0.7917	1.11	p=0.3603
Generalized anxiety +	1.35	p=0.0185	1.60	p=0.0039	1.50	p=0.0021
PTSD+	1.66	p=0.0002	1.84	p<.0001	1.80	p=0.0001
Depression+	1.46	p=0.0015	1.00	p=0.9487	1.05	p=0.7130

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Predictors of Current Binge Drinking

	Odds Ratio	P value
Age 23-30	1.3	.2485
Age 31-40	1.7	.0631
Age 40+	1.3	.4766
Male	1.1	.5320
Veteran	2.3	.0006
Married	.5	.0037
Illegal Drug	3.3	.0001
Depression+	1.1	.7041
PSTD+	1.6	.0557
Generalized Anxiety+	.97	.9175
African American	.99	.9910
Other Race	.72	.3144
Finances not a problem	.48	.0202
Finances a struggle	1.2	.3246

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Qualitative Results: Barriers to Help-Seeking

Non-military specific

- Lack of perceived need
- Unaware of services
- Skepticism of treatment effectiveness
- Stigma
- Concern about medications

Military-specific

- Seeking treatment could harm military career
- Only the “weak” seek care
- Duty to suffer

College-specific

- Lack of available services
- Penalized for missing classes

“The last time I ever talked to a therapist I was still active duty when my problem really kicked in . . . It just seemed like they’re wanting to give you pills and send you on your way. ‘Ah, you’re cured, you’ll be fine.’ It’s more aggravating than what it’s worth. *That’s why I said it’s more therapeutic to talk to my buddies.* Everybody always thinks that alcohol is bad—if you start drinking to drown your problems away that’s bad—I’ve never seen it as bad, especially when you get around your buddies. You start drinking and talking; have a good ‘ol time. And, that’s therapeutic.” [26-year-old student veteran with symptoms of PTSD, depression]

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Interview and FG Results: Emerging Themes around Vet-to-Vet Connection

Vet-to-Vet screening and linkage-to-care

“If you had a buddy system where you know that I’m a veteran or a service member . . . Have somebody already set up to say ‘Hey we need to talk to this guy.’ . . . Not a structured sit-in with a group.”

Recommendations: 1) Student veteran w/prior MH problems and treatment-seeking experiences screens & connects/provides them with services. 2) Outreach after deployment/leaving military from Vet peer, not current service member

Build relationships

“You would have to know him first. Get their background and find out what they’ve seen and done . . . You’ve got to build a good relationship, but eventually you’re gonna go there (discuss MH issues).”

How Build Relationships? Via non-health related activities: Courses together, Veteran events (meals), volunteering together

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Study Progress & Next Steps

- **Most proposed quantitative analyses completed**
 - Multivariate analyses ongoing
 - 1 paper submitted, 2 others in preparation
- **Complete qualitative data analyses**
 - All interviews transcribed and data analysis ongoing
- **Focus groups completed**
- **Product Development meeting early 2015**
- **6 conference presentations, 1 paper submitted; 2 in preparation**
- **Resubmit 2 NIH R34s based on binge drinking/ depression results and Vet-to-Vet themes**

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Dissemination Plan

- **Screening and linkage-to-care recommendation report**
 - Reflects student veterans' MH needs and is applicable across community college settings
 - Provide recommendations to community college administrators, AR NG leadership, and VA leadership
- **Scientific Papers & Presentations**
- **Continue to apply for extramural funding to test the screening & linkage-to-care interventions**

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