

Technical Report: Land Combat Study of an Army Infantry Division 2003-2009

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE (DD-MM-YYYY) 26-06-2012		2. REPORT TYPE Technical Report		3. DATES COVERED (From - To) Aug 2011 - Apr 2012	
4. TITLE AND SUBTITLE Land Combat Study of an Army Infantry Division 2003-2009				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Kim, Paul Y Kok, Brian C Thomas, Jeffrey L Hoge, Charles W Riviere, Lyndon A				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Walter Reed Army Institute of Research 503 Robert Grant Ave. Silver Spring, MD 20910				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) US Army Medical Research and Materiel Command Ft. Detrick, Fredrick, MD 21702-5012				10. SPONSOR/MONITOR'S ACRONYM(S) WRAIR	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT Throughout the course of the wars in Afghanistan and Iraq, numerous studies have demonstrated the adverse mental and behavioral health effects on veterans. This report compiles data from multiple time-points between 2003 and 2009 to demonstrate behavioral and mental health trends across these years. Mental health rates increased between 2003 and 2008, but dropped in 2009. Alcohol misuse decreased between 2003 and 2009, but substance abuse increased through 2008. The use of mental health professionals increased throughout the years. Perceived stigma and organizational barriers to mental health care decreased over the years. These findings could be used to generate awareness of behavioral health trends among veterans and aid in understanding how best to allocate efforts to ameliorate the adverse effects of prolonged combat.					
15. SUBJECT TERMS Behavioral Health Trends					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			Same as Report (SAR)	22	Paul Kim
19b. TELEPHONE NUMBER (include area code) 301-319-7194					

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

ACKNOWLEDGEMENTS

We wish to thank the officers, NCOs, and junior enlisted Soldiers who have participated in the Land Combat Survey and the Commanders and S-3s for their support and cooperation in making the study happen.

We would like to thank the following personnel from Walter Reed Army Institute of Research for their professional and technical expertise in all phases of this project: COL Paul Bliese, MAJ Devvon Bradley, MAJ Oscar Cabrera, CPT Edward Edens, CPT Tracy Johnson, CPT Paul Wright, Dr. Richard Herrell, Dr. Joshua Wilk, SSG Duriel Randolph, SGT Michael Grushinski, SGT Matthew McGinnis, SPC Nicole Bowman, SPC Wade Bryan, Ms. Akeiya Briscoe, Ms. Julie Merrill, Ms. Wanda Cook, Ms. Megan Garrity, Mr. Richard Keller, & Mr. Robert Klocko.

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Abstract

Throughout the course of the wars in Afghanistan and Iraq, numerous studies have demonstrated the adverse mental and behavioral health effects on veterans. This report compiles data from multiple time-points between 2003 and 2009 to demonstrate behavioral and mental health trends across these years. Mental health rates increased between 2003 and 2008, but dropped in 2009. Alcohol misuse decreased between 2003 and 2009, but substance abuse increased through 2008. The use of mental health professionals increased throughout the years. Perceived stigma and organizational barriers to mental health care decreased over the years. These findings could be used to generate awareness of behavioral health trends among veterans and aid in understanding how best to allocate efforts to ameliorate the adverse effects of prolonged combat.

1 INTRODUCTION AND DATA COLLECTION

1.1 Introduction

Spanning over a decade, and affecting more than 2 million service members and veterans, the wars in Iraq and Afghanistan have undoubtedly taken their toll. A number of researchers have examined the mental and behavioral health effects of combat deployments. Although research is ongoing, the results of these studies thus far have generated increased public awareness as well as policy implications related to the administration of behavioral health care and clinical practice for wounded Soldiers.

Since combat operations began in Iraq in 2003, the Department of Military Psychiatry at the Walter Reed Army Institute of Research (WRAIR) has extensively tracked the mental and behavioral health concerns of veterans that have served in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). These efforts have resulted in comprehensive, multi-year surveys of deployment related behavioral health issues. The majority of studies using these data have been limited to single time-point, cross-sectional examinations of various mental health outcomes. This technical report utilizes all available data spanning from 2003 to 2009 to explore behavioral health trends across these years. We also investigate trends within other combat related and psycho-social outcomes in order to understand how the effects of deployment to OIF and OEF have changed year to year. The application of these findings could aid in understanding how best to allocate efforts to ameliorate the adverse effects of prolonged combat.

1.2 Dates of Data Collection

The data for this study were collected at multiple time points between 2003 and 2009. The first data collection was administered approximately 4 months post-deployment in December, 2003. The second data collection was conducted 6 months post-deployment in February 2004. A third data collection was conducted 3 months post-deployment in May 2006. Both the fourth and fifth data collections occurred at 6 months post-deployment in December 2008 and June 2009, respectively.

1.3 Locations

Data was collected from multiple infantry brigades stationed in the continental United States in years 2003, 2004, 2006, 2008, and 2009.

1.4 Number of Participants and Units

1.4.1 2003 (First Data Collection)

WRAIR researchers collected data at 4 months post-deployment in December 2003 from a brigade combat team. This unit comprised of an estimated 2,455 Soldiers, with 1,069 Soldiers completing the survey for an estimated response rate of 44%.

1.4.2 2004 (Second Data Collection)

WRAIR researchers collected data at 6 months post-deployment in February 2004 from a brigade combat team. This unit comprised of an estimated 2,455 Soldiers, with 1,306 Soldiers completing the survey for an estimated response rate of 53%.

1.4.3 2006 (Third Data Collection)

WRAIR researchers collected data at 3 months post-deployment in May, 2006 from a brigade combat team. This unit comprised of an estimated 2,455 Soldiers, with 1,221 completing the survey for an estimated response rate of 50%.

1.4.4 2008-2009 (Fourth and Fifth Data Collections)

In December 2008 and June 2009, WRAIR researchers collected 6 months post-deployment data from six units and one battalion totaling 20,402 Soldiers, of which 17,326 were available to take the survey (85%). Of those available, 7,673 Soldiers completed surveys for a response rate of 44%, although 3,380 of these surveys are included for this study since the other participants completed a non-standard version of the survey, making their responses non-comparable to previous years. It should be noted that data was not collected for the years 2005, 2007, 2010, and 2011. In total, surveys representing 7,312 Soldiers between the years 2003 and 2009 are analyzed for this report.

2 MISSION AND BACKGROUND

2.1 Purpose and Background

2.1.1 Purpose

The purpose of this report is to provide an overview of the impact of OIF and OEF deployments on Soldier well-being across the years 2003 to 2009. Based on these assessments, recommendations can be made that will support Soldiers that are in garrison transitioning from a deployment, as well as Soldiers at pre-deployment.

2.1.2 Background

Studies were approved by the command of an infantry division. Data collections were part of WRAIR Land Combat Study I, which was conducted between 2003 and 2007, and Land Combat Study II, which began in 2008. Scientific approval was obtained from WRAIR/Medical Research Materiel Command (MRMC). Completion of the survey was voluntary. Responses remained anonymous and participants were asked to provide informed consent regarding the use of their responses in research.

2.2 Methodological Approach

Individual data collections were cross-sectional and population based using brigade sized samples at each time point. Multiple sessions were held across the study period in which Soldiers from brigade and battalion sized units were administered anonymous surveys. Due to the cross-sectional nature of the study, the analyses are not intended to represent longitudinal changes within a given cohort. Rather, the data should be viewed as snapshots of various health outcomes among service members across multiple time points. Soldiers that were unavailable in their unit on the day the survey was given were in training, on personal or sick leave, or on TDY and were not considered part of the available sample.

2.3 Analytical Strategy and Verification of Results

Analyses for this report were computed using the SPSS program. For descriptive statistics, the crosstabulation function was used. For predictive analyses, logistic and linear regressions were used.

Most of the analyses reported use sample adjusted values. Values are adjusted for rank and combat and represent E1-E4 Soldiers with a combat score of 11.2, the mean number of combat experiences reported in the overall sample. Statistical comparisons across years are tested against 2009. Rates that are significantly different from the 2009 marker are underlined to illustrate statistical significance. Women and officers were excluded from primary analyses since both groups represent less than 4% of the total sample and would not be generalizable to that segment of the population.

3 RESEARCH FINDINGS

3.1 Research Model

The framework in which this report draws from is based on the Soldier Combat and Well-Being Model (Bliese & Castro, 2003). This model has been applied to all Mental Health Advisory Team (MHAT) reports and previous technical reports (Edens, Wright, Cabrera, Thomas, & Riviere, 2010). This model highlights three areas: (a) Risk Factors, (b) Resilience Factors, and (c) Behavioral Health.

Figure 1 presents each element of the model. Risk factors, such as combat exposure, are driving forces that affect behavioral health outcomes, such as mental health symptoms and morale. Resilience factors, such as perceptions of leadership, quality of behavioral health training, and unit cohesion, are elements that are changeable. Variations in these factors may enhance or exacerbate the effects of risk factors on behavioral health outcomes (i.e., serve as moderators).

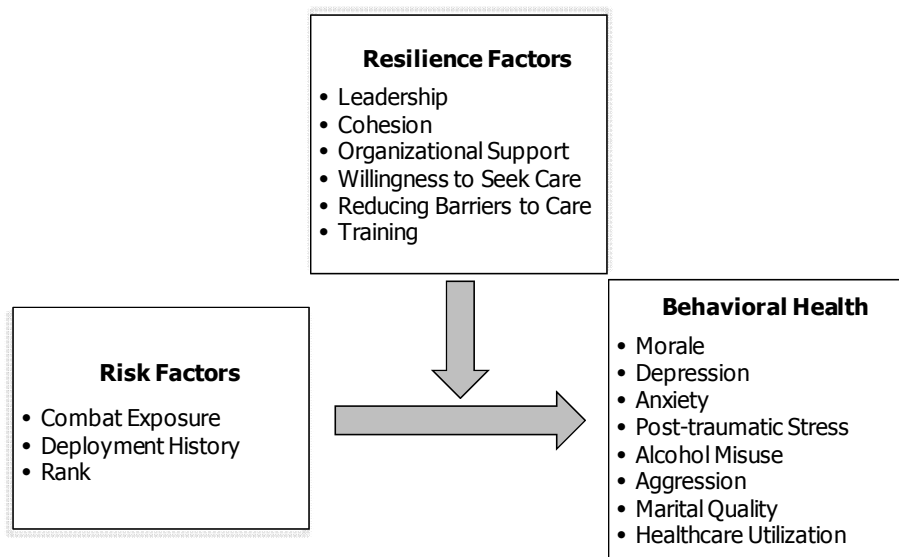


Figure 1. Soldier Combat & Well-Being Model (Adapted from Bliese & Castro, 2003)

3.1.1 Behavioral Health Findings

- Rates of PTSD increase steadily between 2003 and 2008, but drop significantly for 2009. There were no significant changes in depression across time points; rates of anxiety increased slightly over time.
- Reports of suicidal ideation ranged from a high of 16% in 2004 to a low of 10% in 2006. Overall, suicidal ideation increased slightly across time.
- Alcohol misuse decreased across time.
- Aggressive behaviors decreased slightly over time.
- Marital quality decreased over time, however a majority of Soldiers report having strong marriages.
- There were no substantive changes in individual morale across time, but unit morale increased moderately over the years.
- The number of sick call and/or medical visits increased over time, but there were no significant changes in number of days of work missed due to illness.
- Among Soldiers reporting mental health problems, there were increases in the use of mental health professionals in military and civilian facilities across time.
- The use of general medical doctors and clergy/chaplains generally decreased over time.

3.1.2 Risk Factor Findings

Soldiers with higher combat exposure reported higher rates of mental health problems, aggression, and alcohol misuse across all years. Marital problems were slightly higher for Soldiers reporting high combat in each year except 2003.

3.1.3 Resilience Factor Findings

- Among Soldiers reporting mental health disorders, rates of perceived stigma as well as perceived organizational barriers to care declined across the years.
- Perceptions of Non-Commissioned Officer (NCO) and officer leadership improved across time.
- Overall, unit cohesion increased between 2003 and 2009.
- Perceptions of unit deployment readiness declined across the years.
- Intent to leave the Army upon obligation fulfillment decreased across the years.

3.2 Sample Demographics

In Table 1, detailed demographic information is presented for all participating Soldiers by year. Across-time observation showed an increased proportion of females, older Soldiers (40+), NCOs, and married Soldiers. We also see an increase in the number of deployments to Afghanistan from 2006 on. Education levels remained largely constant, with the majority of Soldiers reporting at least a high school degree.

Table 1: Demographic Comparison of Survey Administrations

	2003		2004		2006		2008		2009	
	n	%	n	%	n	%	n	%	n	%
Gender										
Male	1048	98.2	1554	96.7	1174	96.6	1844	90.3	1167	89.5
Female	19	1.8	53	3.3	41	3.4	197	9.7	137	10.5
Age										
18-19	86	8.1	135	8.4	25	2.1	128	6.2	37	2.8
20-24	558	52.2	883	54.9	507	41.7	902	43.8	571	43.5
25-29	240	22.5	360	22.4	350	28.8	551	26.7	368	28.0
30-39	171	16.0	211	13.1	297	24.4	389	18.9	274	20.9
40+	13	1.2	18	1.1	37	3.0	91	4.4	64	4.9
Rank										
E1-E4	748	70.0	1171	72.7	597	49.5	1313	63.6	754	57.6
E5-E9	281	26.3	409	25.4	481	39.9	616	30.1	448	34.3
Officer/WO	39	3.7	30	1.8	127	10.5	115	5.6	106	8.1
Marital Status										
Single	440	46.8	706	48.3	384	35.7	714	36.4	425	33.2
Married	397	42.2	609	41.7	503	46.7	1008	51.4	704	54.9
Separated	35	3.7	37	2.5	115	10.7	98	5.0	72	5.6
Divorced	44	4.7	78	5.3	73	6.8	141	7.2	76	5.9
Widowed/Other	25	2.7	30	2.1	2	0.2	1	0.1	3	0.2
Years Married										
Less than 1 Year	54	11.5	107	14.3	120	16.6	281	23.1	148	17.7
1 Year	95	20.3	135	18.1	94	13.0	180	14.8	129	15.4
2-5 Years	184	39.2	328	43.9	293	40.6	462	38.0	332	39.7
6-10 Years	77	16.4	113	15.2	130	17.9	183	15.1	141	16.9
11+ Years	59	12.5	63	8.3	86	11.8	109	9.0	86	10.1
Number of Children										
0	140	33.3	.	.	126	19.9	1069	55.6	699	54.4
1	122	29.0	.	.	202	31.9	378	19.7	234	18.5
2	100	23.8	.	.	174	27.4	264	13.7	193	15.3
3	40	9.5	.	.	83	13.1	137	7.1	93	7.4
4+	19	4.5	.	.	49	7.8	73	3.9	54	4.3
Educational Level										
Some High School	3	0.3	14	0.9	4	0.3	9	0.4	6	0.5
HS/Diploma GED	859	81.3	1326	80.8	599	49.8	1097	53.7	646	49.5
Some College	.	.	.	.	432	35.9	777	38.0	501	38.4
Bachelors Degree	104	9.8	124	7.7	151	12.5	142	7.0	133	10.2
Graduate Degree	.	.	.	.	18	1.4	18	0.9	20	1.5
Other	91	8.6	139	8.7	.	.	.	.	.	.
Years in Military										
Less than 1	82	7.7	89	5.5	61	5.1	267	12.9	64	4.9
1-2 years	427	40.1	701	43.4	285	23.8	465	22.5	269	20.5
3-4 years	237	22.2	349	21.6	310	25.9	512	24.9	436	33.3
5-10 years	193	18.2	325	20.1	338	28.2	519	25.1	330	25.3
11+ years	127	12	152	9.6	204	17.3	299	14.2	212	16.5
Deployment History- Iraq										
Zero	124*	12.0*	205*	13.1*	39	3.5	475	23.8	215	16.5
1 Time	880*	84.9*	1324*	84.6*	744	65.0	967	48.4	736	56.6
2 Times	.	.	.	.	357	31.2	385	19.3	264	20.3
3 Times or More	.	.	.	.	4	0.3	170	8.5	86	6.8
Deployment History- Afghan.										
Zero	124†	12.0†	205†	13.1†	443	95.7	1080	52.3	729	93.3
1 Time	2†	0.2†	4†	0.3†	16	3.5	58	2.8	45	5.8
2 Times	.	.	.	.	2	0.4	11	0.5	3	0.4
3 Times	.	.	.	.	2	0.4	1	0.0	4	0.5

3.3 Combat Exposures

Table 2 presents rates of the 26 combat experiences reported in all five years. These experiences include events such as “Receiving small arms fire,” “Knowing someone seriously injured or killed,” and “Being directly responsible for the death of an enemy combatant.” The frequency of reported combat experiences generally declined across the board between 2003 and 2009.

Figure 2 presents yearly trends of mean number of combat experiences broken down by E1-E4s and E5-E9s as well as overall. Overall, mean combat scores dropped across the years. Jr. enlisted and NCO scores were similar and dropped across the years as well.

Table 2: Percentage of Soldiers indicating that they had experienced a given combat experience

Combat Experiences	2003	2004	2006	2008	2009
Being attacked or ambushed	89	91	92	62	49
Receiving small arms fire	93	94	89	66	56
Seeing dead bodies or human remains	95	94	84	67	56
Handling or uncovering human remains	50	52	46	36	30
Witnessing an accident which resulted in serious injury or death	63	64	66	51	44
Seeing dead or seriously injured Americans	65	67	75	58	50
Knowing someone seriously injured or killed	86	81	92	77	77
Being in threatening situations where you were unable to respond because of rules of rules of engagement	62	60	68	46	42
Working in areas that were mined or had IED's	63	59	38	68	64
Shooting or directing fire at the enemy	77	79	72	46	38
Calling in fire on the enemy	24	27	27	17	15
Engaging in hand-to-hand combat	22	21	12	5	4
Clearing/searching homes or buildings	80	77	70	49	52
Clearing/searching caves or bunkers	62	58	31	17	15
Witnessing brutality/mistreatment toward non-combatants	34	36	23	19	13
Being wounded/injured	14	20	23	18	13
Seeing ill/injured women or children who you were unable to help	69	69	52	42	40
Receiving incoming artillery, rocket, or mortar fire	86	86	97	81	76
Being directly responsible for the death of an enemy combatant	48	50	32	22	16
Feeling directly responsible for the death of a non-combatant	14	17	9	8	7
Feeling responsible for the death of US or ally personnel	3	6	2	6	6
Having a member of your own unit become a casualty	74	68	74	61	57
Had a close call, was shot or hit but protective gear saved you	8	14	19	16	10
Had a buddy shot or hit who was near you	22	27	25	22	15
Saved the life of a Soldier or civilian	21	24	19	17	16
Improvised explosive device (IED)/booby trap exploded near you	18	22	83	56	48

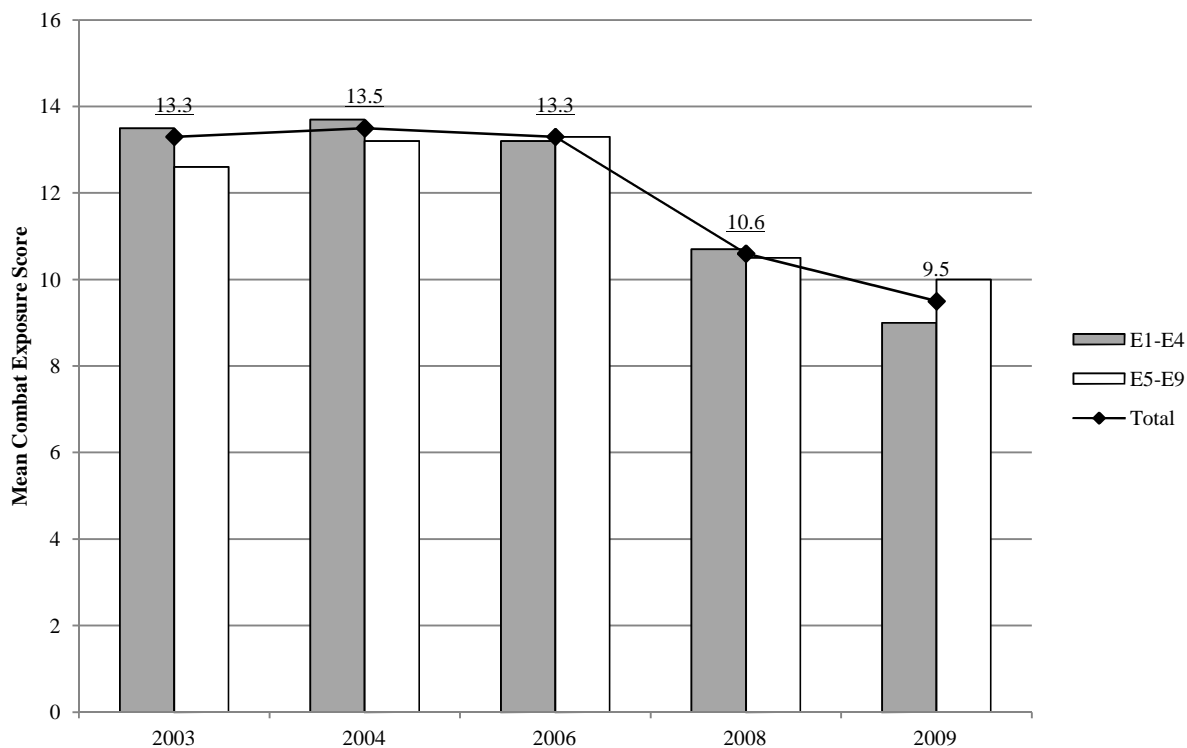


Figure 2. Mean Combat Experiences

3.4 Mental Health Status

3.4.1 Depression, Anxiety and PTSD

Major Depressive Disorder, generalized anxiety, and post-traumatic stress disorder (PTSD) were measured using standardized, validated scales (Spitzer, Kroenke, & Williams, 1999; Weathers, Litz, Herman, Huska, & Keane, 1993). Rates of mental health problems, adjusted by rank and combat, are presented in Figure 3.

Rates of depression increased slightly between 2003 and 2008, but dropped in 2009, however, none of these changes were statistically significant. Likewise, rates of generalized anxiety increased slightly between 2003 and 2008 and were followed by a drop in rates at 2009, but were not statistically significant. Rates of PTSD, however, increased significantly between 2003 and 2008, but dropped to near 2006 levels in 2009.

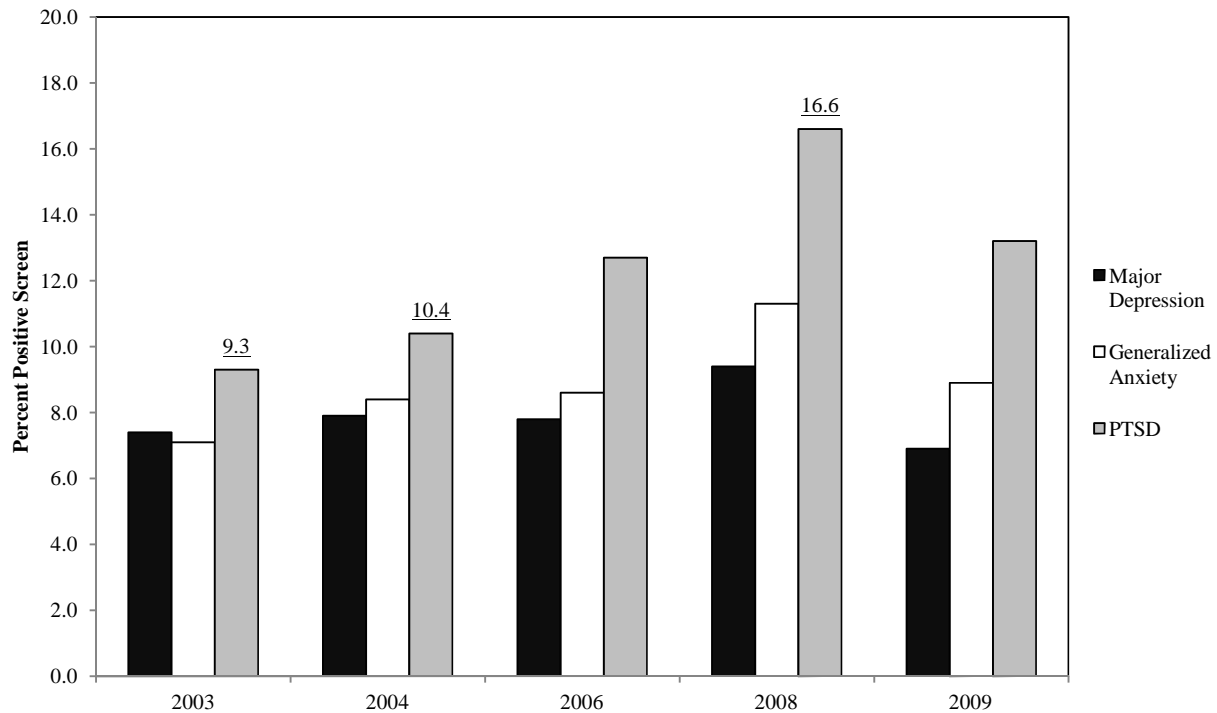


Figure 3 Mental Health Issues

3.4.2 Suicidal Ideation

Suicidal ideation was measured using one item from the PHQ-9 depression scale (Spitzer et al., 1999). This question asks how often in the past four weeks had the respondent been bothered by the following: “Thoughts that you would be better off dead or of hurting yourself in some way.” Any response of “Few or several days” or more was considered to be a concern for suicidal ideation.

Figure 4 presents adjusted rates of suicidal ideation between 2003 and 2009. Rates fluctuated between a low of 10% in 2006 and a high of 16% in 2004. Overall, there were no statistically significant trends across the years.

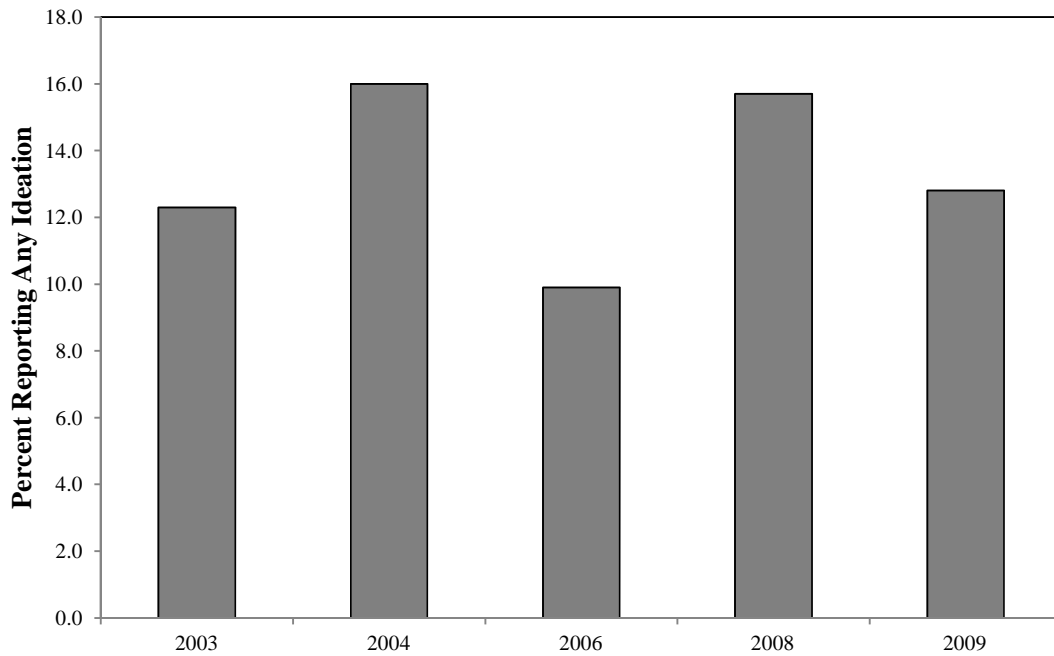


Figure 4. Suicidal Ideation

3.4.3 Behavioral Health Care Utilization

Table 3 displays adjusted rates of behavioral health care utilization among Soldiers screening positive for any mental health problem (depression, anxiety, or PTSD). Soldiers were asked if they had used any of the following types of mental health services: mental health professional from a military or civilian facility, general medical doctor from a military or civilian facility, and Chaplain or civilian Clergy. For years 2003 through 2006, rates were based on behavioral health care usage in the past month. For 2008 and 2009, rates are based on past 3 months usage, resulting in values that are most likely inflated compared to 2003-2006.

The most common type of mental health care used across all years is mental health professionals at military facilities. The use of mental health professionals from military or civilian facilities generally increased across the years, with the exception of 2008, when it decreased substantially. The use of general medical doctors at military and civilian facilities decreased, overall, with the exception of 2006, when it increased at military facilities. The use of Chaplain or Clergy care generally decreased across the years, although these rates were not statistically significant.

Table 3: Mental Health Service Utilization Rates

	2003	2004	2006	2008	2009
Did you receive mental health services from a mental health professional at a military facility?	22.1	18.1	32.5	20.8	28.6
Did you receive mental health services from a general medical doctor at a military facility?	9.5	8.3	15.6	5.1	6.3
Did you receive mental health services from a mental health professional at a civilian facility?	5.9	7.3	9.5	4.3	10.8
Did you receive mental health services from a general medical doctor at a civilian facility?	2.6	5.7	4.3	1.2	1.0
Did you receive mental health services from a Chaplain/Clergy?	15.1	14.9	12.3	3.9	7.9

3.5 Physical Health

3.5.1 Sick Call/ Medical Visits and Days Missed Due to Illness

Frequencies of sick call or medical visits were measured by asking respondents, “How often in the past month have you gone to sick call or visited a doctor or other medical professional for a physical condition?” Table 4 presents the adjusted rates of Soldiers reporting at least 3 or more visits in the past month. Rates of sick call visits increased across the years beginning with 15% in 2003 to nearly 21% in 2009.

Additionally, respondents were asked, “How many days of work did you miss due to illness in the past month?” The percentages of those missing 3 or more days did not significantly change across the years.

Table 4: Respondents Endorsing 3 or More Health Visits/Sick Calls in a Period of One Month

	2003	2004	2006	2008	2009
How often in the past month have you gone to sick call or visited a doctor or other medical professional for a physical condition	15.3	16.2	20.9	17.2	20.7
How many days of work did you miss due to illness in the past month	4.6	6.9	7.5	6.1	6.3

3.6 Other Behavioral Health Indices

3.6.1 Aggressive Behavior

Table 5 presents the adjusted rates of four types of aggressive behaviors. These rates represent respondents endorsing these behaviors at least once in the past 30 days. Overall across the years, there were slight decreases in rates of (1) getting angry with someone, kicking, smashing something, slamming the door, punching the wall, etc., (2) Threatening someone with physical violence, and (3) Getting into a fight with someone and hitting the person.

Table 5: Respondents Endorsing Aggressive Behaviors

	2003	2004	2006	2008	2009
Get angry at someone and tell or shout at them	75.2	76.1	73.1	70.4	73.1
Get angry with someone and kick or smash something slam the door punch the wall etc	42.3	43.3	42.6	42.1	38.1
Threaten someone with physical violence	36.3	38.3	36.5	34.1	31.7
Get into a fight with someone and hit the person	17.4	19.7	14.7	18.2	13.3

3.6.2 Alcohol Misuse

Five items related to alcohol misuse were asked in each year. Adjusted rates for respondents endorsing each at least once in the past month are presented in Table 6. Generally, rates of alcohol misuse have gone down between 2003 and 2009. For example, nearly half as many responded in 2009 (11.7%) that they felt they needed to cut down on their drinking, compared to 2003 (20.2%). Similar trends were reported for the items, “Did you drive after having several drinks,” and “Did you ride with a driver who had too much to drink.”

Illegal drug or substance misuse increased slightly up through 2008 (this item was not asked in the 2009 survey). There were no significant changes in rates of alcohol/drugs counseling or ASAP referrals across the years.

Table 6: Past Month Alcohol or Drug Misuse

	2003	2004	2006	2008	2009
Have you used alcohol more than you meant to	23.8	23.8	21.3	22.2	18.8
Have you felt you wanted or needed to cut down on your drinking	20.2	19.7	18.4	16.2	11.7
Did you drive after having several drinks	12.0	13.4	14.2	11.7	6.2
Did you ride with a driver who had too much to drink	13.7	13.7	12.2	10.8	5.9
Have you been late or missed work because you were drinking or hung over	4.6	4.8	4.9	6.7	3.4
Have you used any illegal drugs/substances	5.7	5.5	3.9	6.4	.
Have you had a problem with alcohol/drugs that resulted in counseling by your unit or referral to ASAP	3.9	3.7	5.2	6.7	5.5

3.6.3 Morale (Personal and Unit)

Adjusted rates of personal and unit morale are presented in Figure 5. Rates of those responding “high” or “very high” individual morale remained largely unchanged since 2003. Unit morale increased slightly across the years.

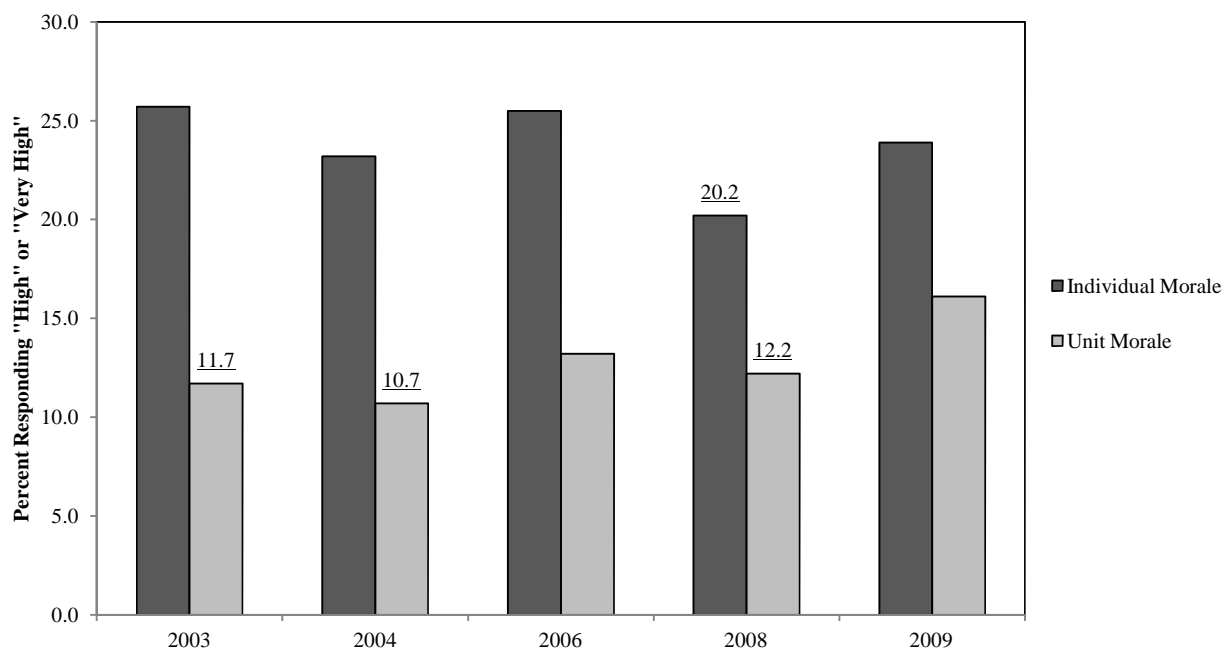


Figure 5. Morale

3.7 Marital Quality

Three items measuring marital quality were asked in each year. Table 7 presents adjusted values of respondents evaluating elements of their marriage. In 2009, a majority of Soldiers “agreed” or “strongly agreed” that they had a good marriage, that their relationship with their spouse was stable, and that they feel like a part of a team with their spouse. However, these rates are significantly lower compared to 2003 and 2004. Marital quality has steadily decreased across the years.

Table 7: Marital Quality: Percentage of "Agree" or "Strongly Agree" Responses

	2003	2004	2006	2008	2009
"I have a good marriage"	69.6	69.0	62.6	57.3	58.5
"My relationship with my spouse is very stable"	64.9	63.9	57.9	54.3	54.2
"I really feel like a part of a team with my spouse"	64.0	64.3	60.1	53.1	53.8

3.8 Stigma

Reducing perceived stigma about mental health care is an important component to improving Soldier resilience. Past research has indicated that Soldiers screening positive for a mental health problem are more likely to endorse stigma beliefs (Hoge et al., 2004). Table 8 presents adjusted rates across the years for Soldiers with mental health problems (i.e., depression, PTSD, or anxiety) who endorsed statements indicating stigma toward mental health care (such as “It would be too embarrassing” and

“My unit leadership might treat me differently.”) For comparison purposes, we also present adjusted rates of Soldiers without mental health problems.

Among Soldiers who screened positive for mental health problems, rates of stigma decreased between 2003 and 2009, with the exception of the item measuring levels of distrust of mental health professionals, which remained steady. Their most frequently reported concerns are that they would be seen as weak and that their unit leadership might treat them differently. Likewise, rates of stigma decreased among Soldiers without mental health problems.

Table 8: Mental Health Related Stigma: Percentage of "Agree" or "Strongly Agree" Responses

	Without Mental Health Problems					With Mental Health Problems				
	2003	2004	2006	2008	2009	2003	2004	2006	2008	2009
"I do not trust mental health professionals"	14.6	16.9	14.1	17.5	14.4	29.6	27.1	26.9	28.9	24.8
"It would be too embarrassing"	16.2	15.8	12.2	16.9	10.9	32.9	27.6	28.5	27.4	26.3
"It would harm my career"	16.9	16.4	12.8	13.9	9.2	40.3	36.2	24.3	27.8	27.4
"Members of my unit might have less confidence in me"	21.0	24.5	17.8	20.0	15.8	57.3	44.9	39.6	37.6	33.7
"My unit leadership might treat me differently"	25.7	26.9	20.9	21.7	16.2	62.8	54.5	45.9	41.8	38.4
"My leaders would blame me for the problem"	16.2	16.2	10.8	11.2	9.4	46.5	47.7	35.8	34.0	31.2
"I would be seen as weak"	23.1	24.6	21.1	21.9	17.4	61.3	47.7	46.7	42.3	32.8
"I would think less of a team member if I knew he/she was receiving mental health counseling"	7.7	9.5	5.4	5.4	3.5	14.0	12.7	8.9	6.7	6.5

3.9 Barriers to Care

Soldiers reporting mental health problems are also more likely to report organizational barriers to care (Hoge et al., 2004). Table 9 displays adjusted rates of organizational barriers to care for both those with and without mental health problems. The rates of each item generally decreased over time for both Soldiers with and without mental health problems.

Table 9: Barriers to Mental Health Care: Percentage of "Agree" or "Strongly Agree" Responses

	Without Mental Health Problems					With Mental Health Problems				
	2003	2004	2006	2008	2009	2003	2004	2006	2008	2009
"I do not know where to get help"	8.1	5.9	4.0	6.3	4.5	17.2	24.8	22.1	18.6	11.1
"It is difficult to get an appointment"	16.8	17.2	10.9	10.1	10.8	39.8	36.9	34.3	24.6	34.9
"There would be difficulty getting time off work for treatment"	17.7	21.0	12.9	18.7	15.2	45.2	48.3	33.3	38.3	35.3
"My leaders discourage the use of mental health services"	4.9	5.8	3.4	4.5	2.7	16.5	25.5	15.9	18.5	12.7

3.10 Work Environment

3.10.1 Career Intentions

Figure 6 displays the adjusted rates of respondents answering that they would “definitely” or “probably” leave the Army upon completion of their current obligations. Overall, intent to leave the Army decreased across the years. This trend was also seen for both junior enlisted Soldiers and NCOs.

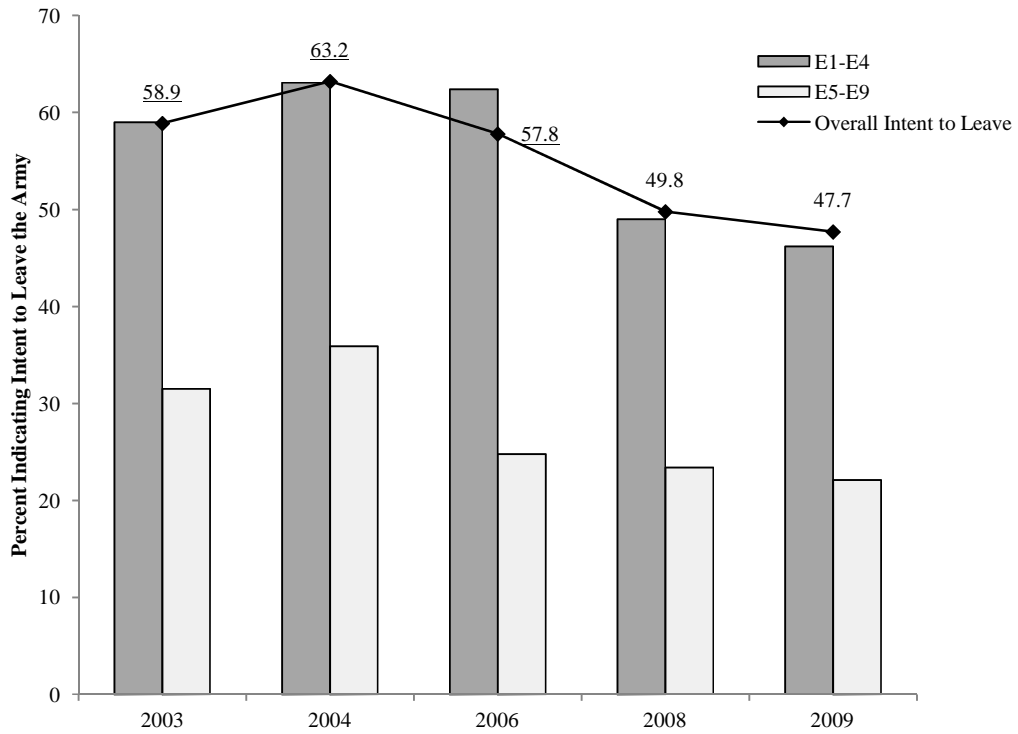


Figure 6. Career Intentions

3.10.2 Unit Cohesion

Adjusted rates of Soldiers' evaluations of unit cohesion across the years are presented in Table 10. Overall, rates of unit cohesion increased slightly across the years.

Table 10: Unit Cohesion: Percentage Responding with "Agree" or "Strongly Agree"

	2003	2004	2006	2008	2009
"The members of my unit are cooperative with each other"	37.7	30.9	37.7	32.7	40.9
"The members of my unit know that they can depend on each other"	36.6	31.5	38.1	33.1	40.9
"The members of my unit stand up for each other"	34.3	32.6	38.3	34.5	41.7

3.10.3 Leadership (NCO & Officer)

Adjusted rates for Soldiers evaluations of NCO and officer leadership are presented in Table 11. Overall, perceptions of both NCOs and officers improved across the years. Rates of positive perceptions increased significantly over the years. Rates of negative leadership perceptions declined across the years.

Table 11: NCO Behavior: Percentage responding "Often" or "Always"

	NCO Behavior					Officer Behavior				
	2003	2004	2006	2008	2009	2003	2004	2006	2008	2009
"In your unit NCOs/Officers tell Soldiers when they have done a good job"	19.0	16.4	22.0	21.8	22.6	23.2	20.9	33.6	32.1	36.0
"In your unit NCOs/Officers embarrass Soldiers in front of other Soldiers"	48.5	50.8	48.4	42.0	36.9	6.5	9.2	6.2	7.9	5.9
"In your unit NCOs/Officers try to look good to higher ups by assigning extra missions or details to Soldiers"	55.5	56.4	59.1	49.8	49.7	35.0	30.5	30.9	27.7	26.4
"In your unit NCOs/Officers exhibit clear thinking and reasonable action under stress"	26.6	24.1	30.4	27.1	28.6	34.9	33.9	35.7	35.2	44.9

3.10.4 Unit Deployment Readiness

Four items assessing unit deployment readiness were asked across the years (see Table 12). Overall, adjusted rates for Soldiers endorsing items of unit readiness declined significantly across the years. Soldiers endorsing the item "If we went to war tomorrow, I would feel good about going with my unit" dropped from 56% in 2003 to 35% in 2009.

Table 12: Deployment Readiness: Percent Responding "Agree" or "Strongly Agree"

	2003	2004	2006	2008	2009
"I think my unit would do/did a better job in combat than most US Army units/teams"	60.3	55.9	61.1	42.8	45.2
"I think the level of training in this unit is high"	58.2	53.9	54.4	44.5	51.1
"I have real confidence in my unit ability to perform its mission"	66.4	56.6	64.5	44.8	50.3
"If we went to war tomorrow I would feel good about going with my unit"	55.5	45.1	46.7	34.1	34.7

4 DISCUSSION AND RECOMMENDATIONS

4.1 Discussion

Numerous studies on the health and well-being of soldiers have been conducted since the start of OIF and OEF combat operations. Both post-deployment and in-theater assessments have highlighted the impact that military deployments have on behavioral health and work outcomes. This report compiles data collected over a six year period, providing a unique retrospective analysis on the changes and trends observed. This information will be helpful for military leadership interested in identifying trends in deployment-related risk factors, and adjusting resource allocation accordingly.

4.1.1 Behavioral Health Findings

The results of the behavioral health analyses from 2003 to 2009 revealed the following:

- Rates of depression increased between 2003 and 2008, but dropped in 2009, however, none of these changes were statistically significant;
- Anxiety increased from 2003 to 2008, but dropped in 2009, however, these changes were also not statistically significant;
- Rates of PTSD increased significantly between 2003 and 2008, but dropped in 2009 to near 2006 levels;
- Rates of suicidal ideation fluctuated between 10% - 16% with no overall statistically significant trends;
- Rates of alcohol misuse have decreased significantly between 2003 and 2009 and illegal drug or substance abuse increased slightly thru 2008;
- Individual morale remained consistent since 2003 while unit morale increased slightly across the years
- The use of mental health professionals from military or civilian facilities generally increased while the use of general medical doctors at military and civilian facilities decreased.

4.1.2 Risk Factor Findings

Soldiers who reported higher levels of combat exposure were consistently more likely to screen positive for mental health problems, aggression-related problems, and alcohol misuse. Marital problems were slightly higher for Soldiers reporting high combat in each year except 2003.

4.1.3 Resilience Factor Findings

Perceived stigma decreased between 2003 and 2009, except the item measuring distrust of mental health professionals, which remained steady. Likewise, organizational barriers to care also decreased in this time period. Perceptions of both NCOs and officers improved across the years, with increasing rates of positive perceptions and decreasing rates of negative perceptions. Additionally, rates of unit cohesion increased slightly through the time period. Deployment readiness, however, declined significantly.

4.2 Recommendations

- Behavioral health training that is tailored to specific risk factors detailed in this report should be administered.

Rates of depression, anxiety, and PTSD have increased since 2003, although rates of PTSD declined in 2009. High exposure to combat experiences is associated with poor behavioral health characteristics such as mental health problems, aggression, marital problems, and alcohol misuse.

- Engage in resilience training.

Training to improve resilience has been available since 2009 through the Comprehensive Soldier Fitness (CSF) program. One component of CSF is an integration of resilience training, which educates soldiers on how to build resilience following a deployment. Unit leaders should enroll in the Master Resilience Training programs, which run monthly at UPenn and Fort Jackson. Master Resilience Trainers can be utilized as an in-house resilience resource for their units.

- Continue risk-taking behavior training.

This study found that a significant proportion of soldiers reported risk-taking behaviors up through 2009, including alcohol misuse, illegal drug or substance abuse, and aggressive behavior. Although many of these behaviors have declined since 2003, over 6% still report driving after having drinks. Moreover, illegal drug or substance abuse rates have risen since 2003.

- Increase awareness and encourage the use of behavioral health services available to help soldiers and their families.

Given that up to a third of those with mental health problems report concerns about stigma, ensure that leaders and NCOs are aware of possible impediments to care and make efforts to have them cleared. Military One Source, Army Community Service, and Family Readiness Groups are existing programs aimed at helping Soldiers in need.

Appendix: References

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