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The Health of Kansas Veterans

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Soldier Motivates, Inspires

By Tywana Sparks, Irwin Army Community Hospital Public Affairs

A little more than year ago, Sgt. Seth Kotouc, Company B, Warrior Transition Battalion (WTB), was struck by tragedy during a rocket attack on Forward Operating Base Shank while deployed in Afghanistan.

"Shrapnel exploded in my right hand and lower half of my vertebrae; this resulted in the complete severing of my spinal cord," Kotouc said. "After the explosion I knew I couldn't feel my legs. At the time I just knew I was OK because I was still breathing."

According to his WTB nurse case manager, Leona Walker, this is where his story of resiliency begins.

Since the attack, Kotouc has focused on gaining strength, independence and knows his mission is to heal, Walker explained.

"By looking at him you would think his injury happened five years ago, not a year ago," Walker said. "That's how incredible he is. There is a light that shines from within and he is the epitome of what a wounded warrior should look like when they are finished with their transition."

The 32-year-old native of Mount Ayr, Iowa, is currently the only paraplegic at the WTB and the only paraplegic Walker has worked with during her six years at WTB.

He is the type of Soldier who constantly sets goals and accepts challenges, explained Staff Sgt. James Johnson, Co. B, WTB squad leader.

"We have fall drills where we take him out of his chair once a month to see how well he can get back into his chair," Johnson said. "He assists with clean up and does his part. He's had leadership positions where he directs traffic and makes things happen. He is an NCO (noncommissioned officer) and that has not changed."

Soldiers and cadre don't give Kotouc special treatment, Walker explained, because he isn't needy and does not want special treatment.

"One of his early goals was not to be a bother to his peers," Walker said. "He even goes to the hospital by himself without asking anyone to push him. He may get fatigued but he will take his breaks and move on."

He is extremely independent, organized and dedicated to every aspect of his care, Johnson explained.

"I don't feel like we're babysitting him," Johnson said. "I feel like we are assisting him in obtaining his goals."

An example of this is all soldiers at WTB are required to develop a plan for life post injury, which includes taking college courses or finding employment on Fort Riley. Kotouc sought employment on his own and currently works at Garrison Intelligence and Security. That just shows the level of commitment he has to his care, healing and transition."

Kotouc has served on active duty for four years as an intelligence analyst with assignments in South Korea and Germany.

His focus is to remain active and prepare for life after the military with a strong support system - his wife Laura.

"I'm trying to find new opportunities to participate in athletic events like biking, wheelchair basketball or even

golf," Kotouc said. "Mainly just working on keeping and gaining strength so I can move around on my own and not get tired going up and down the many hills on Fort Riley. As far as my future goals, I would like to stay in my military field on the civilian side and possibly work in Washington D.C."

Walker and Johnson both agree that Kotouc is a top notch soldier and will continue to be successful once his mission is complete at WTB.

"I'm just glad I have the opportunity to work with him because he makes my job worthwhile," Walker said.



Photo by Tywana Sparks

Sgt. Seth Kotouc, Company B, Warrior Transition Battalion, left, shares a moment with his squad leader Staff Sgt. James Johnson, Co. B, WTB. Kotouc was injured during a rocket attack in Afghanistan.

Executive Summary

All Kansans and Americans have benefited from the work of military personnel. Our safety and freedom depends on the sacrifices of current and former military personnel. Working for the military is not a typical job. Many veterans have faced risks and stresses that most of the public never experience.

In 2011 the Kansas Department of Health and Environment (KDHE) added the Centers for Disease Control and Prevention (CDC) optional questions on veterans health to the 2011 Kansas Behavioral Risk Factor Surveillance System (BRFSS). BRFSS is the world's largest, annual population-based telephone survey system, tracking health conditions and risk behaviors in the U.S. Veterans are defined as those who reported they had ever served on active duty in the U.S. Armed Forces, either in the regular military or in a National Guard or military reserve unit. This does not include training for the Reserves or National Guard but includes being activated. Veterans were then asked additional questions about their service and health.

This report describes the demographics of Kansas veterans and how their health and lives compare to other veterans and civilians. In this report veterans are separated into two categories, 1) veterans 18-64 years old and 2) those 65 years and older. These categories were used because health is largely influenced by health care and access, and older veterans like older Kansans have access to Medicare. Additionally older veterans faced much different circumstances in combat compared to younger veterans as military technology and tactics have changed.

The data showed that younger veterans (18-64 years old) are more diverse than older veterans. Younger veterans are less likely to be non-Hispanic white and more likely to be female. The health of veterans was different than civilians. Younger veterans had a higher prevalence of having health care coverage but also had a higher prevalence of many health issues including overweight/obesity, disability, depression, hypertension, coronary heart disease, diabetes and heart attack than civilians 18- 64 years old.

The health differences between senior veterans (65 and older) and senior civilians were much less pronounced. Senior veterans had a higher prevalence of the following conditions: cancer, coronary heart disease, diabetes, heart attack, overweight /obesity and stroke as compared to senior civilians.

More veterans 18 - 64 years old were diagnosed with depression, anxiety or post-traumatic stress disorder (PTSD) as compared to senior veterans. The percentage of veterans who have received psychological or psychiatric treatment in the past year was more than three times higher among younger veterans as compared to senior veterans.

As the battles the U.S. is involved in move around the world, the challenges, skills, demands and risks veterans must adapt to change. Improving veterans' health depends on the ability to describe veterans and understand what prevention strategies and resources to choose. This report is a first step at describing the health of this population in Kansas.

Kansas Veterans Demographics

All differences stated on the following page are statistically significant. Please note that all confidence intervals for this section can be found in Table 2.

Veterans 18 - 64 years old are demographically different than senior veterans 65 years and older.

Among senior veterans, 90 percent are non-Hispanic white. Among veterans 18 - 64 years old, 81 percent are non-Hispanic white; 8.6 percent are non-Hispanic African-American and 5.3 percent are Hispanic.

Women have greatly increased their presence in the military over time. About 2.6 percent of senior veterans are female, while 10.4 percent of veterans 18 - 64 years old are female.

Currently, the percentage of veterans with an annual household income of \$50,000 or more is higher among those 18 - 64 years old (47.4%) as compared to senior veterans (30.7%). The percentage of veterans with some college education or a college degree is higher among those 18 - 64 years old (66.2%) as compared to senior veterans (54.7%). Fewer veterans 18 - 64 years old currently live with a disability (29.8%) as compared to senior veterans (42.0%). Twice as many veterans 18 - 64 years old were divorced or separated (20.0%) as compared to senior veterans (8.9%).

Employment

One issue that soldiers face when returning from service is employment. Some veterans express concerns that skills developed for the military may not directly translate to civilian jobs. Most senior veterans are retired (81.6%) and most veterans 18 - 64 years old are employed (70.1%). When comparing veterans and civilians 18 - 64 years old, there was no difference in the percentage of those who were currently employed (70.1% vs. 68.8%). More veterans were retired (10.8%) or unable to work (8.8%) as compared to civilians (3.1%, 5.5% respectively). See Table 1 for 95% confidence intervals.

Table 1. Employment status among adults 18 - 64 years, by veteran status, Kansas 2011

| Employment | Veterans | | Civilians | |
|----------------------------------|------------|-------------|------------|-------------|
| | Weighted % | 95% CI | Weighted % | 95% CI |
| Employed for wages/Self-employed | 70.1% | 67.2%-73.0% | 68.8% | 67.7%-69.9% |
| Homemaker/Student | 3.6% | 2.2%-4.9% | 13.9% | 13.0%-14.8% |
| Unable to Work | 8.8% | 7.1%-10.5% | 5.5% | 5.0%-6.0% |
| Out of work (unemployed) | 6.7% | 5.1%-8.4% | 8.8% | 8.1%-9.5% |
| Retired | 10.8% | 9.1%-12.6% | 3.1% | 2.8%-3.3% |

Table 2. Selected demographic characteristics among veterans, by age group, Kansas 2011

| <i>Sex</i> | Veterans 18 - 64 years | | Veterans 65+ years | |
|---------------------------------------|-------------------------------|---------------|---------------------------|---------------|
| | <i>Weighted %</i> | <i>95% CI</i> | <i>Weighted %</i> | <i>95% CI</i> |
| Male | 89.6% | 87.9%-91.3% | 97.4% | 96.6%-98.2% |
| Female | 10.4% | 8.7%-12.1% | 2.6% | 1.8%-3.4% |
| <i>Race/Ethnicity Groups</i> | | | | |
| Non-Hispanic (NH) white | 81.3% | 78.3%-84.3% | 91.3% | 89.3%-93.4% |
| Hispanic | 5.3% | 3.6%-7.0% | 2.8% | 1.6%-4.1% |
| NH African-American | 8.6% | 6.2%-10.9% | 3.5% | 2.1%-4.9% |
| NH Other | 4.8% | 3.3%-6.3% | 2.3% | 1.3%-3.3% |
| <i>Annual Household Income</i> | | | | |
| Less than \$15K | 5.4% | 3.9%-6.9% | 4.9% | 3.6%-6.1% |
| \$15K to less than \$25K | 14.4% | 11.8%-16.9% | 19.8% | 17.3%-22.3% |
| \$25K to less than \$35K | 12.9% | 10.6%-15.3% | 21.8% | 19.1%-24.6% |
| \$35K to less than \$50K | 19.9% | 17.2%-22.7% | 22.8% | 20.0%-25.6% |
| More than \$50K | 47.4% | 44.0%-50.7% | 30.7% | 27.8%-33.6% |
| <i>Education</i> | | | | |
| High school graduate, GED or less | 33.8% | 30.7%-37.0% | 45.3% | 42.3%-48.3% |
| Some college or college graduate | 66.2% | 63.0%-69.3% | 54.7% | 51.7%-57.7% |
| <i>Disability Status</i> | | | | |
| Living without a disability | 70.2% | 67.3%-73.2% | 58.0% | 55.0%-61.0% |
| Living with a disability | 29.8% | 26.8%-32.7% | 42.0% | 39.0%-45.0% |
| <i>Employment</i> | | | | |
| Employed for wages or self employed | 70.1% | 67.2%-73.0% | 15.4% | 13.2%-17.5% |
| Retired | 10.8% | 9.1%-12.6% | 81.6% | 79.3%-84.0% |
| Homemaker or student | 3.6% | 2.2%-4.9% | --- | --- |
| Unable to work | 8.8% | 7.1%-10.5% | 1.6% | 0.9%-2.3% |
| Out of work (unemployed) | 6.7% | 5.1%-8.4% | 1.3% | 0.5%-2.0% |
| <i>Marital Status</i> | | | | |
| Married or member of unmarried couple | 66.4% | 63.2%-69.5% | 71.5% | 69.0%-74.0% |
| Divorced or separated | 20.0% | 17.4%-22.6% | 8.9% | 7.2%-10.5% |
| Never married | 11.2% | 8.8%-13.5% | 2.5% | 1.7%-3.4% |
| Widowed | 2.5% | 1.6%-3.4% | 17.1% | 15.1%-19.1% |

95% CI: 95% confidence interval; **Source:** 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, Kansas Department of Health and Environment

Health Outcomes of Kansas Veterans 18 - 64 years old

This report describes the health outcomes for veterans separately for those aged 18-64 years old and those 65 years and older. These categories were used because health is influenced by health care and access, and older veterans like older Kansans have access to Medicare. Furthermore, as described in the previous section, veterans in these two age groups are demographically different.

On average, within the 18 - 64 year old age group, veterans are older than civilians (mean age 47.3 years vs. 39.7 years, respectively). Because some behaviors and conditions are more common among older age groups, it is important to take age into account when making statistical comparisons between veterans and civilians. One method of controlling for age is age-adjustment. Age-adjustment is a statistical method for standardizing prevalence estimates for groups that have different underlying age distributions to make them more comparable. Age-adjusted prevalence estimates should be used to compare groups if the underlying population distribution is different, for example, when comparing estimates for veterans and civilians. Age-adjusted prevalence estimates should be understood as relative estimates, not as actual measures of burden.

In this section, unadjusted prevalence estimates are used to describe prevalence of health behaviors and conditions among veterans and civilians 18-64 years old while statistical comparisons are made based on age-adjusted prevalence estimates (data not shown). All differences stated in this section are statistically significant before and after adjusting for age, unless otherwise stated. The age groups used for age-adjustment are: 18-24, 25-44 and 45-64 years old. For more information about age-adjustment, please see Technical Notes. Please note that all confidence intervals for this section can be found in Table 3.

Overall Health

Veterans and civilians 18 - 64 did not show any differences in the prevalence of self-reported fair/poor health or the prevalence of 14 or more days of not good mental or physical health, after adjusting for age.

Mental Health

Veterans 18 - 64 years old have a higher prevalence of ever being diagnosed with depression as compared to civilians (20.4% vs. 16.6%). Veterans 18 - 64 years old had a lower prevalence of thinking about taking their own life in the past year as compared to civilians (age-adjusted prevalence estimates: 2.2% vs. 5.9%). There was no difference between veterans and civilians 18 - 64 years old in the prevalence of ever being diagnosed with an anxiety disorder.

Health Behaviors, Conditions and Care

Research has shown that health behaviors can have a large impact on health outcomes. In many health behaviors, veterans 18 to 64 years old did not differ much from civilians. However, veterans 18 - 64 years old had a higher prevalence of being overweight/obese as compared to civilians (76.3% vs. 63.1%) and currently smoking (31.1% vs. 24.2%). There were no differences between the percentage of veterans and civilians 18 - 64 years old who do not participate in leisure time physical activity, always wear a seatbelt or binge drink.

Table 3. Selected health outcomes and behavioral characteristics among adults 18 - 64 years, by veteran status, Kansas 2011

| | Veterans | | Civilians | | <i>Comparison based on age-adjusted rates*</i> |
|--|-------------------------|---------------|-------------------------|---------------|--|
| <i>Overall Health</i> | <i>Weighted Percent</i> | <i>95% CI</i> | <i>Weighted Percent</i> | <i>95% CI</i> | |
| Self-reported fair/poor health | 17.6% | 15.2%-20.0% | 12.3% | 11.6%-13.0% | NS |
| 14+ days mental health not good | 12.9% | 10.6%-15.3% | 11.1% | 10.4%-11.8% | NS |
| 14+ days physical health not good | 13.2% | 11.1%-15.3% | 9.0% | 8.4%-9.6% | NS |
| Living with a disability | 29.8% | 26.8%-32.7% | 19.9% | 19.0%-20.7% | H |
| Mental Health | | | | | |
| Ever diagnosed with depression | 20.4% | 17.7%-23.1% | 16.6% | 15.8%-17.4% | H |
| Ever diagnosed with anxiety | 13.8% | 8.8%-18.7% | 12.1% | 10.5%-13.6% | NS |
| Thought about taking own life in past 12 months | 3.2% | 1.6%-4.8% | 5.9% | 4.5%-7.2% | L |
| Health Behaviors | | | | | |
| No leisure time physical activity | 72.1% | 69.1%-75.0% | 75.2% | 74.2%-76.2% | NS |
| Current smoker | 31.1% | 28.0%-34.3% | 24.2% | 23.2%-25.2% | H |
| Overweight/Obese | 76.3% | 73.4%-79.3% | 63.1% | 61.9%-64.2% | H |
| Binge drinker | 18.4% | 15.6%-21.1% | 20.3% | 19.3%-21.3% | NS |
| Always uses seat belt | 81.1% | 78.4%-83.9% | 79.5% | 78.6%-80.5% | NS |
| Health Conditions (Ever diagnosed) | | | | | |
| Arthritis | 27.3% | 24.5%-30.1% | 16.3% | 15.6%-17.0% | H |
| Asthma | 7.0% | 5.5%-8.6% | 9.4% | 8.7%-10.1% | L |
| Cancer | 4.3% | 3.1%-5.4% | 4.1% | 3.7%-4.5% | NS |
| High Cholesterol | 43.5% | 40.1%-46.8% | 32.3% | 31.2%-33.4% | H |
| COPD† | 8.2% | 6.5%-9.8% | 5.2% | 4.7%-5.7% | NS |
| Coronary Heart Disease | 5.4% | 4.2%-6.6% | 2.2% | 1.9%-2.5% | H |
| Diabetes | 13.0% | 11.0%-15.0% | 6.6% | 6.1%-7.1% | H |
| Heart Attack | 5.7% | 4.4%-7.0% | 2.1% | 1.8%-2.4% | H |
| Hypertension | 36.4% | 33.4%-39.4% | 23.2% | 22.3%-24.1% | H |
| Stroke | 3.3% | 2.2-4.3% | 1.4% | 1.2%-1.7% | NS |
| Health Care | | | | | |
| Has health care coverage | 86.7% | 84.3-89.1% | 79.3% | 78.3%-80.3% | H |
| Could not see doctor because of cost in past 12 months | 12.7% | 10.3%-15.0% | 17.1% | 16.3%-18.0% | L |
| Ever had a pneumonia shot | 33.0% | 29.8-36.2% | 18.7% | 17.8%-19.7% | H |
| Had a flu shot in past 12 months | 50.6% | 47.3-53.9% | 34.6% | 33.6%-35.7% | H |

†COPD: Chronic obstructive pulmonary disorder. 95% CI: 95% confidence interval. *Statistical comparisons are based on age-adjusted prevalence estimates (data not shown) which were age-adjusted to the U.S. 2000 standard population. H: Veterans estimate significantly higher after age-adjustment, NS: No significant difference after age-adjustment, L: Veterans estimate significantly lower after age-adjustment. Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, Kansas Department of Health and Environment

Disparities between veterans and civilians 18 - 64 years old were observed for selected health conditions. Veterans 18 - 64 years old had at least twice the prevalence of ever being diagnosed with diabetes, heart attack, and coronary heart disease. Veterans 18 - 64 years old also had higher prevalence of ever being diagnosed with arthritis, high cholesterol and hypertension (high blood pressure). There were no differences between veterans and civilians 18 - 64 years old for prevalence of ever being diagnosed with asthma, cancer, stroke or chronic obstructive pulmonary disease.

More veterans 18 - 64 years old had health care coverage as compared to civilians in this age group. More veterans 18 - 64 years old had a flu shot in the past year or ever had a pneumonia shot. Fewer veterans 18 - 64 years old could not see a doctor because of cost in the past year as compared to civilians.

Health Outcomes of Kansas Senior Veterans 65+ years old

In this section, unadjusted prevalence estimates are used to describe prevalence of health behaviors and conditions among veterans and civilians 65 years and older. Unlike the previous section, statistical comparisons are made based on unadjusted prevalence estimates. All differences stated in this section are statistically significant. Please note that all confidence intervals for this section can be found in Table 4.

Many of the health disparities observed between veterans and civilians 18 - 64 years old were not apparent among senior veterans and civilians 65 years and older. Senior veterans and senior civilians did not show any differences in the prevalence of self-reported fair/poor health or the prevalence of 14 or more days of not good mental or physical health.

Mental Health

There were also no differences between senior veterans and senior civilians in the prevalence of anxiety or depression diagnosis, or thoughts about taking one's life in the past year.

Health Behaviors, Conditions and Care

Fewer senior veterans always wore a seatbelt as compared to senior civilians (81.5% vs. 85.9%). Senior veterans had a higher prevalence of being overweight/obese as compared to civilians (69.0% vs. 63.6%). There were no differences between senior veterans and senior civilians in the prevalence of no leisure time physical activity, current smoking or binge drinking.

One area of health that showed disparities between senior veterans and senior civilians was health conditions, especially those associated with cardiovascular health. Senior veterans had at least twice the prevalence of ever having a heart attack as compared to senior civilians. Senior veterans also had higher prevalence of ever being diagnosed with cancer, coronary heart disease and stroke as compared to senior civilians. Senior veterans were less likely to have ever been diagnosed with arthritis. There were no differences between senior veterans and senior civilians for ever being diagnosed with the following conditions: asthma, diabetes, high cholesterol, hypertension or chronic obstructive pulmonary disease.

Senior veterans and senior civilians did not have differing prevalence of health care coverage, not seeing a doctor due to cost in the past year, having a flu shot in the past year or ever having a pneumonia shot.

Table 4. Selected health outcomes and behavioral characteristics among adults 65+years, by veteran status, Kansas 2011

| <i>Overall Health</i> | Veterans | | Civilians | | Comparison based on unadjusted rates** |
|--|-------------------------|---------------|-------------------------|---------------|--|
| | <i>Weighted Percent</i> | <i>95% CI</i> | <i>Weighted Percent</i> | <i>95% CI</i> | |
| Self-reported fair/poor health | 27.4% | 24.6%-30.1% | 24.8% | 23.4%-26.2% | NS |
| 14+ days mental health not good | 4.5% | 3.3%-5.8% | 6.1% | 5.3%-6.9% | NS |
| 14+ days physical health not good | 16.6% | 14.3%-19.0% | 15.8% | 14.6%-16.9% | NS |
| Living with a disability | 42.0% | 39.0%-45.0% | 41.5% | 39.9%-43.1% | NS |
| <i>Mental Health</i> | | | | | |
| Ever diagnosed with depression | 9.6% | 7.8%-11.4% | 12.1% | 11.1%-13.1% | NS |
| Ever diagnosed with anxiety | 6.1% | 4.0%-8.2% | 8.1% | 6.8%-9.3% | NS |
| Thought about taking own life in past 12 months | 1.8% | 0.8%-2.8% | 1.5% | 0.9%-2.0% | NS |
| <i>Health Behaviors</i> | | | | | |
| No leisure time physical activity | 66.6% | 63.7%-69.5% | 64.7% | 63.1%-66.2% | NS |
| Current smoker | 10.6% | 8.6%-12.6% | 9.1% | 8.1%-10.1% | NS |
| Overweight/Obese | 69.0% | 66.2%-71.7% | 63.6% | 62.1%-65.1% | H |
| Binge drinker | 3.8% | 2.7%-5.0% | 2.8% | 2.2%-3.4% | NS |
| Always uses seat belt | 81.5% | 79.1%-83.8% | 85.9% | 84.8%-87.1% | L |
| <i>Health Conditions (Ever diagnosed)</i> | | | | | |
| Arthritis | 44.7% | 41.7%-47.7% | 51.7% | 50.1%-53.3% | L |
| Asthma | 5.4% | 4.0%-6.8% | 7.3% | 6.5%-8.1% | NS |
| Cancer | 22.6% | 20.1%-25.0% | 18.6% | 17.3%-19.8% | H |
| High Cholesterol | 54.6% | 51.6%-57.6% | 55.5% | 53.8%-57.1% | NS |
| COPD† | 12.6% | 10.6%-14.7% | 11.7% | 10.6%-12.7% | NS |
| Coronary Heart Disease | 21.0% | 18.5%-23.5% | 12.0% | 11.0%-13.1% | H |
| Diabetes | 23.6% | 21.1%-26.2% | 19.4% | 18.1%-20.6% | H |
| Heart Attack | 21.9% | 19.3%-24.4% | 11.0% | 10.0%-12.1% | H |
| Hypertension | 58.5% | 55.6%-61.4% | 60.9% | 59.4%-62.4% | NS |
| Stroke | 10.0% | 8.1%-11.8% | 7.2% | 6.4%-8.0% | H |
| <i>Health Care</i> | | | | | |
| Has health care coverage | 99.2% | 98.8%-99.7% | 98.8% | 98.4%-99.2% | NS |
| Could not see doctor because of cost in past 12 months | 3.2% | 2.1%-4.4% | 3.7% | 3.1%-4.3% | NS |
| Ever had a pneumonia shot | 73.1% | 70.4%-75.9% | 70.0% | 68.5%-71.5% | NS |
| Had a flu shot in past 12 months | 69.8% | 67.0%-72.6% | 67.0% | 65.5%-68.5% | NS |

†COPD: Chronic obstructive pulmonary disorder. 95% CI: 95% confidence interval. **Statistical comparisons are based on unadjusted prevalence estimates presented in Table 4. H: Veterans estimate significantly higher, NS: No significant difference, L: Veterans estimate significantly lower. Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, Kansas Department of Health and Environment

Kansas Veterans in Combat

All differences stated in this section are statistically significant. Please note that all confidence intervals for this section can be found in Table 5.

Veterans on the frontlines of war face dangers most people will never see in their lifetimes. These dangers increase the risk for injury and trauma. In 2011, the Veterans Health Module was included in the Kansas BRFSS to assess combat history and mental health status among veterans.

There was no difference between serving in a combat or war zone among veterans 18 - 64 years old (46.9%) and senior veterans (39.1%).

More veterans 18 - 64 years old were diagnosed with depression, anxiety or post-traumatic stress disorder (PTSD) (17.1%) as compared to senior veterans (6.2%).

Traumatic brain injuries (TBI) can have severe and permanent effects on the health of soldiers. Veterans did not show any differences of ever being diagnosed with TBI across age groups.

Speaking with a trained professional can help veterans coming back from service deal with possible issues and readjustment. The percentage of veterans who have received psychological or psychiatric treatment in the past year was more than three times higher among those 18 - 64 years old (13.1%) as compared to senior veterans (3.7%).



Photo by Staff Sgt. Kevin L. Moses Sr.

Table 5. Veteran-specific characteristics among adults 18 years and older, by age group, Kansas 2011

| Veteran-specific Questions | Veterans 18 - 64 years | | Veterans 65+ years | | |
|--|------------------------|-------------|--------------------|-------------|------------|
| | Weighted % | 95% CI | Weighted % | 95% CI | Comparison |
| Ever served in a combat or war zone | 46.9% | 40.7%-53.0% | 39.1% | 35.0%-43.1% | NS |
| Ever diagnosed with depression, anxiety, or post-traumatic stress disorder | 17.1% | 12.7%-21.5% | 6.2% | 4.1%- 8.4% | H |
| Ever diagnosed with a traumatic brain injury | 7.6% | 3.3%- 11.9% | 2.4% | 1.1%- 3.7% | NS |
| Received psychological or psychiatric treatment in past year | 13.1% | 8.9%-17.3% | 3.7% | 2.0%-5.3% | H |

95% CI: 95% confidence interval. H: Significantly higher, ND: No significant difference, ND: No significant difference

Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, Kansas Department of Health and Environment



Photo by Robin Shotola 10

Technical Notes

Behavioral Risk Factor Surveillance System (BRFSS)

BRFSS is the world's largest annual population-based survey system tracking health conditions and risk behaviors in the United States since 1984. It is coordinated by the Centers for Disease Control and Prevention (CDC) and is conducted in every state and several territories in the United States. The Kansas Department of Health and Environment (KDHE), Bureau of Health Promotion (BHP) conducted the first BRFSS survey in Kansas in 1990 as a point-in-time survey. Since 1992, BHP has conducted the Kansas BRFSS survey annually, thus providing the ability to examine the Kansas burden and monitor the trends of various diseases and risk factors/behaviors. BRFSS is the only source of population-based data for several public health indicators in Kansas. The 2011 Kansas BRFSS was conducted among non-institutionalized adults 18 years and older living in private residences with landline and/or cell phone service.

The Kansas BRFSS has assessed veteran status annually since 2003, while the Veterans Health Module was included for the first time in 2011. Veteran status was asked among all respondents with landline and/or cell phone service, while the Veterans Health Module questions were asked of approximately half of landline respondents who previously indicated they were a veteran (Questionnaire Split B). Due to changes in survey design and weighting methodology in 2011, comparisons cannot be made between the prevalence estimates generated for previous years and those generated for 2011. Prevalence estimates in this report should be viewed as a new baseline for subsequent years.

Several considerations should be taken into account when interpreting BRFSS estimates:

- The prevalence estimates from 2011 Kansas BRFSS are representative of non-institutionalized adults ages 18 years and older living in private residences with landline and/or cell phone service. Data analysis results conducted on six questions included in the Veterans Health Module are representative of non-institutionalized adults ages 18 years and older living in private residences with landline phone service.
- BRFSS estimates do not apply to individuals without telephone/cell phone service, those who reside on military bases or within institutions, or those who are unable to complete a telephone survey.
- BRFSS prevalence estimates are self-reported and are subject to bias due to respondents' inability or unwillingness to provide accurate information about their own behaviors or characteristics.
- Prevalence estimates are only reported when they are based on at least 50 denominator respondents and five numerator respondents.
- For more information on BRFSS methodology, visit www.kdheks.gov/brfss/technotes.html.

Veterans Health Module Questions and Response Options:

Have you ever served on active duty in the United States Armed Forces, either in the regular military or in a National Guard or military reserve unit? Active duty does not include training for the Reserves or National Guard, but DOES include activation, for example, for the Persian Gulf War.

- Yes, now on active duty

- Yes, on active duty during the last 12 months, but not now
- Yes, on active duty in the past, but not during the last 12 months
- No, training for Reserves or National Guard only
- No, never served in the military

The Veterans Health Module included the following questions:

1. Did you ever serve in a combat or war zone?

- Yes/No

2. Has a doctor or other health professional ever told you that you have depression, anxiety, or posts traumatic stress disorder (PTSD)?

- Yes/No

3. A traumatic brain injury may result from a violent blow to the head or when an object pierces the skull and enters the brain tissue. Has a doctor or other health professional ever told you that you have suffered a traumatic brain injury (TBI)?

- Yes/No

4. In the past 12 months, did you receive any psychological or psychiatric counseling or treatment?

- Yes/No

Age-adjustment

Age-adjustment is a statistical method for standardizing prevalence estimates for groups that have different underlying age distributions thus making them more comparable. Age-adjusted prevalence estimates should be used to compare groups if the underlying population distribution is different or changes over time (for example, comparing estimates for veterans and civilians). Age-adjusted prevalence estimates should be understood as relative indices, not as actual measures of burden, and should not be compared to unadjusted prevalence estimates.

In this report, unadjusted prevalence estimates are used to describe prevalence of health behaviors and conditions among veterans and civilians 18-64 years old while statistical comparisons are made based on age-adjusted prevalence estimates (data not shown). Prevalence estimates for veterans and civilians 65 years and older are all unadjusted.

All age-adjusted prevalence estimates in this report are computed using the direct method. Briefly, prevalence estimates are first computed within each age group stratum. The products of each age-specific rate multiplied by the proportion of the 2000 U.S. Standard Population in that age category are summed across the age group strata. The age groups used for age-adjustment are: 18-24, 25-44 and 45-64 years old.

Image Sources

Cover - Department of Defense. (2004). A North Carolina Army National Guard (NCARNG) Soldier, 210th Military Police Company (MP CO), hugs his children at Asheville, North Carolina (NC), after returning from a 15 month tour in Iraq. U.S. Airforce photo by TSGT Brian E. Christiansen (Released), 06/10/2004. Retrieved from <http://research.archives.gov/description/6664229>

Page 1 - Irwin Army Community Hospital (2013). Photo by Tywanne Sparks. Sgt. Seth Kotouc and Staff Sgt. James Johnson, Company B, Warrior Transition Battalion.

Page 9 - Department of Defense. (2005). On Dec. 23, 2005 soldiers from A Company 3/6 Field Artillery stationed at Camp Liberty, Iraq trained on Firing Points with the M119 Howitzer. The soldiers fired M913, 105MM projectiles from a fixed location. U.S. Army photo by STAFF SGT. Kevin L. Moses Sr. (Released), 12/23/2005. Retrieved from <http://research.archives.gov/description/6676312>

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