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Abstract

Introduction: Non-battle injuries (NBI) have been an important cause of death in the on-going Army deployments for Operation Enduring Freedom (OEF) in Afghanistan and Operation Iraqi Freedom/New Dawn (OIF) in Iraq. During 2001 to 2009, fatal NBI accounted for 21 percent of all deaths. The overall fatal NBI rate was 0.11/100,000 deployed soldiers-years. Purpose: The objective of this investigation was to utilize routine casualty and safety surveillance data to provide an update on the incidence and causes of fatal NBIs among Army soldiers deployed in support of OEF (2001-2012) and OIF (2003-2012).

Methods: These electronic data sources were used to identify soldiers who sustained an NBI from 2001-2012: the Defense Casualty Information Processing System, the Army Safety Management Information System and the Armed Forces Medical Examiner System. Descriptive statistics (frequencies and percentages) were used to report the casualty type and cause of injury for soldiers with fatal NBI.

Results: Overall, there were 4,721 fatalities among soldiers in OEF (2001-2012). Among these fatalities, 79% (n=3,692) were battle injuries, 13% (n=614) were NBI, and 8% (n=335) were due to inter-service. Leading causes of fatal NBI included: motor vehicle accidents (OIF: 34%, OEF: 16%), non-battle suicide (OIF: 13%, OEF: 1%), and non-battle homicide (OIF: 6%, OEF: 3%). Intentional, self-inflicted NBI (30%), or other (27%), or unknown (20%).

Conclusion: Surveillance data show that NBIs are an important and under-recognized cause of mortality during military deployments. These findings highlight how valuable surveillance data are in providing the intelligence-gathering efforts on the leading causes of fatal NBI among soldiers deployed to a combat theater.

Introduction

Injuries are the most significant health problem for the U.S. Army. They are the leading cause of death, hospital admissions, and operational costs in recent deployments. In particular, NBI have been an important cause of death in the on-going Army deployments in Operations Enduring Freedom, Afghanistan (OEF) and Iraqi Freedom/New Dawn (OIF).

During 2001-2012, fatal NBI accounted for 21 percent of all deaths among deployed soldiers. During this timeframe, the overall fatal NBI rate was 0.11/100,000 deployed soldier-years. In addition, the leading causes of fatal NBI for OIF and OEF were motor vehicle accidents (26 percent), self-inflicted injuries (20 percent), and air transport accidents (16 percent).

Methods

The objective of this investigation was to describe the incidence and leading causes of fatal NBIs among soldiers deployed in support of Operations Enduring Freedom in Afghanistan (2001-2012) and Iraq (2003-2012).

Results

• From 2001-2012, there were 4,721 fatalities among Army soldiers deployed for OIF and OEF. The distribution of NBIs (n=335) by age, sex, and race (p<0.05) show that all races are represented and there is no significant difference in the numbers of NBI for both OIF and OEF.

• The annual rates for OIF and OEF are graphically presented in figure 2. Rates are calculated as the number of fatalities per 100,000 deployed soldier-years. Overall, soldiers deployed to OIF were 8.4 percent less likely to sustain a fatal NBI compared to soldiers deployed to OEF (136.0 vs. 151.1) per 100,000 soldier-years. OIF (OIF: 19%, OEF: 26%) and OEF (OIF: 6%, OEF: 3%) had the highest and lowest rate of fatal NBI, respectively.

• The demographic characteristics of soldiers who died from an NBI are presented in table 1. Distributions for gender, rank, and component were similar for OIF and OEF except for the 30-39 year age group. OIF had 19 percent, OEF: 20 percent. p=0.32. Additionally, for both OIF and OEF combined, enlisted soldiers sustained 80 percent of NBI.

• Table 2, Age, Gender, and Military Rank, and Component Distributions for Fatal Non-Battle Injuries from OIF and OEF, 2001-2012 provides the demographics for fatal NBI by age, gender, and military rank. The highest rate of fatal NBI was among males (271.3 per 100,000 deployed soldier-years) followed by females (46.4 per 100,000 deployed soldier-years). The lowest rate of fatal NBI was among officers (10.5 per 100,000 deployed soldier-years) followed by enlisted personnel (271.3 per 100,000 deployed soldier-years).

• Figure 3 displays the primary intent for fatal NBIs. For OIF and OEF combined, 60 percent of NBI fatalities were unintentional.

• The annual rate for OIF and OEF are shown graphically in figure 4. The distribution of the leading causes differenced between the two operations. There were significant differences in the frequency of fatal NBIs among motor vehicle accidents (OIF: 10, OEF: 22), air transport accidents (OIF: 13%, OEF: 1%), and handling weapons/apparatus (OIF: 3%, OEF: 8%).

Conclusion

• Non-battle injuries were a significant cause of mortality among troops deployed in support of OIF and OEF between 2001 and 2012.

• Significant differences between operations were seen for the percent of non-battle fatalities caused by motor vehicle accidents, air transport accidents and handling weapons/apparatus.

• Differences in the leading causes of fatalities between the two operations may be due to dissimilar terrain, environment, and military operations in Iraq (OIF) compared to Afghanistan (OEF).

• Non-battle injuries, both fatal and non-fatal, dominate the operational readiness of military units.

• Importantly, many of these injuries are potentially preventable and could be targeted for intervention.

• Additional research is needed to better understand the factors contributing to fatal non-battle injuries and the differences between operations.

References