Introduction

- Mild Traumatic Brain Injury (mTBI) results from trauma to the head, such as that occurring from motor vehicle or industrial accidents, or sports injuries
- United States Air Force members (Airmen) and other individuals with mTBI may suffer from cognitive deficits placing them at increased risk for subsequent mishaps

Background

- mTBI is an important concern among US service members who are exposed to such hazards as blast injuries, sports injuries, and trauma associated with motor vehicle accidents
- mTBI is often diagnosed among troops serving in Iraq and Afghanistan
- Even mild brain trauma may lead to long-term mechanical and biomechanical damage that can negatively impact performance
- The study objective was to determine if Airmen with mTBI were at greater risk for subsequent mishaps that may be indicative of decreased cognition as a result of the mTBI injury

Methods

- This study included Airmen who had served on active duty for at least six months between Oct 1, 2001- Sep 30, 2008 and whose electronic personnel data was linked to medical and safety center data, also in electronic format
- Airmen were excluded if they had been diagnosed with an mTBI or an unspecified head injury within 2 years prior to entrance into the study
- Exposed individuals were Airmen with an ER-diagnosed mTBI during the study period
- Study outcomes were restricted to mishaps occurring more than two days post-mTBI or injury, to ensure proper temporal relationship and exclude same-event diagnoses
- Comparison groups included all other study members without a head injury, and an ER-diagnosed injured comparison group that was used to reduce possible biases associated with entry into the medical system as a result of an mTBI
- Statistical analyses included univariate methods to determine differences in demographic and military specific data, and Cox's proportional hazards modeling to calculate adjusted hazard ratios and 95% confidence intervals while controlling for varying lengths of follow-up

Results

- There were 522,880 Airmen who met study criteria, and 3,660 with an ER-diagnosed mTBI
- 100 individuals had sustained both an mTBI and a subsequent mishap during the study period
- Compared to those without mTBI, Airmen with an mTBI were more likely to be male, white (non-Hispanic), never married, enlisted, and born during or after 1976 (Table 1)