Effect of an Injury Reduction Intervention during Army Initial Entry Training

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ABSTRACT

Injury is a leading cause of morbidity and mortality during U.S. Army Initial Entry Training (IET). In May 2014, an injury reduction intervention and a corresponding analysis were implemented at Fort Leonard Wood, Missouri, involving an alternate trainer for a musculoskeletal-related injury (MSKI) prevention program. The intervention was a physical therapist and a strength trainer.

PURPOSE: To determine and compare costs of injuries for recruits who began Basic Combat Training (BCT) at Fort Leonard Wood in the baseline period (2011-2012) with recruits who began BCT in the intervention period (2015-2016).}

METHODS: Personal identifiers and demographic data for all recruits were obtained from unit rosters and linked with injury data. Thematic and descriptive analyses were identified through descriptive content coding. Demographic data for the IET and MSKI were compared with independent sample t-tests and chi-square tests. Logistic regression was used to determine costs of injury (Gallant and Moss, 2005).

RESULTS: Analysis of all MSKIs (n=115, 41.7% female, 55.7% white, 15.8% black, 3.6% Asian, 3.6% Hispanic) and all musculoskeletal-related injuries (2011-2012, n=160, 34.4% female, 54.7% white, 15.8% black, 3.6% Asian, 3.6% Hispanic) included in the analysis. The MSKI rate was slightly higher (21.9 in 30.8 months, white, 22.4 in 30.7 months, black, and 18.8 in 37.9 months, Hispanic) in 2015-2016 compared with 2011-2012 (16.9 in 31.7 months, white, 15.8 in 33.2 months, black, and 13.3 in 33.3 months, Hispanic). There was no significant change in injury rates by race for females (14.6 in 31 months, white, 13.6 in 31.7 months, black, and 8.1 in 31 months, Hispanic) and males (12.5 in 31 months, white, 10.4 in 31 months, black, and 9.3 in 31.6 months, Hispanic) in both years. Injury types, training injuries, and age categories of injury groups were similar in both years.

CONCLUSION: During this intervention, injury rates for females were significantly higher in 2015-2016 compared with 2011-2012. Injury rates for males were similar in both years. These findings, along with the decrease in injury rates for females in the intervention period, suggest that the intervention was successful in reducing injury rates for females.

INTRODUCTION

Injury that occurs during Initial Entry Training (IET) course is a serious problem for the Army. Musculoskeletal injuries and the associated interventions were identified as a significant concern by a musculoskeletal-related injury (MSKI) prevention program. The Army has implemented a physical therapist and a strength trainer to address these concerns.

In May 2014, the Fort Leonard Wood Initiative was implemented at Fort Leonard Wood to reduce musculoskeletal-related injury (MSKI) rates. One component of this intervention was to assign a physical therapist and a strength trainer to the IET course. The physical therapist was assigned to the Fort Leonard Wood Initiative and the strength trainer was assigned to the Fort Leonard Wood Initiative. The objective of this intervention was to reduce musculoskeletal-related injury rates and reduce the number of injuries sustained by soldiers. Knowing what factors are contributing to the problems and conditions, the training and instructors were evaluated as soon as possible to avoid missed renovation levels, and to provide the best evaluation, intervention and solution for a special edition.

METHODS

Data Availability

Electronic medical record (EMR) data (age, height, weight, and race) were provided by the training and injury-capture system (TRICARE) and each recruit beginning BCT at Fort Leonard Wood (FLW). Demographic data were collected in the recruitment period and injury-related data (i.e., injury type, body region affected, and injury severity) were collected from the Medical Treatment Facility Medical Surveillance System (MTF-MSS) and Inpatient Medical Record (IMR). All injuries were recorded in the EMR (January 1, 2011 to April 30, 2016). Before the June and May were assigned and during the intervention period (July 4, 2015 to April 30, 2016), the MTF-MSS and IMR were also reviewed.

Data Analysis

Statistical analysis was performed using SPSS, version 25. Mean Injuries before (2011-2012) was calculated as weight loss (kg/m2) and injuries were updated using independent sample t-tests and chi-square tests. Demographic data were compared using independent sample t-tests and chi-square tests. Injury types, training injuries, and age categories of injury groups were similar in both years.

RESULTS

The cohort included 119,925 recruits and 48,683 injuries. The intervention included 119,925 recruits and 48,683 injuries. The rate of injury was slightly higher (21.9 in 30.8 months, white, 22.4 in 30.7 months, black, and 18.8 in 37.9 months, Hispanic) in the intervention period (2015-2016) compared with the baseline period (2011-2012) (16.9 in 31.7 months, white, 15.8 in 33.2 months, black, and 13.3 in 33.3 months, Hispanic). There was no significant change in injury rates by race for females (14.6 in 31 months, white, 13.6 in 31.7 months, black, and 8.1 in 31 months, Hispanic) and males (12.5 in 31 months, white, 10.4 in 31 months, black, and 9.3 in 31.6 months, Hispanic) in both years. Injury types, training injuries, and age categories of injury groups were similar in both years.

CONCLUSION: During this intervention, injury rates for females were significantly higher in 2015-2016 compared with 2011-2012. Injury rates for males were similar in both years. These findings, along with the decrease in injury rates for females in the intervention period, suggest that the intervention was successful in reducing injury rates for females.

DISCUSSION

The findings of this study show that the IET course had a significant effect on reducing the number and severity of injury, according to our results. Considering that soldiers who had injuries in initial entry training were more likely to report injuries, the injury incidence increased for men in the IET period compared with the BCT period. During the IET period, there were significant reductions in injury incidence among soldiers who were assigned to the IET course. The reduction in injury incidence among soldiers who were assigned to the IET course was likely due to the physical training and exercise programs implemented during the IET period. The findings of this study support the idea that physical training and exercise programs can help reduce injury incidence among soldiers who are assigned to the IET course.