

Weight Loss Outcomes Associated With the Use of the Army H.E.A.L.T.H. Weight Management Program in Overweight Military Service Members and Veterans

Daniel A. Blaz, LTC, DNP, FNP-C, and Jane Peterson, PhD, FAANP

ABSTRACT

The purpose of this study was to provide a weight management intervention using the Army Healthy Eating Activity Lifestyle Training Headquarters (H.E.A.L.T.H.) program and determine its impact on weight loss in 32 overweight military members and veterans. Results show that individuals who participated in the Army H.E.A.L.T.H. project did lose weight (average weight loss 3.25 lbs., 95% confidence interval -1.09 to 7.59 lbs.). Body fat percent decreased by an average of 1.23% (95% confidence interval 0.10 to 2.36, $p = .034$). Weight management intervention using this web-based/mobile technology proved effective in producing modest weight loss.

Keywords: military personnel, obesity, overweight, veterans, weight management

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INTRODUCTION

Physical activity and healthy behaviors are instrumental components in helping to maintain a fit and properly prepared United States military.^{1,2} In the 2008 Survey of Health Related Behaviors, nearly 61% of Army soldiers were found to have a body mass index (BMI) of ≥ 25 , placing them in the overweight category.³ The overweight and obesity epidemic only worsens when military personnel transition out of military service, with approximately 70% of current veterans having a BMI ≥ 25 .⁴ On a daily basis, nurse practitioners (NPs) in the Military Healthcare System (MHS) and Veteran Affairs (VA) health care system manage obesity-associated conditions. NPs in primary care continue to struggle with treating overweight and obesity, despite the VA/Department of Defense Management of Obesity and Overweight Clinical Practice Guideline currently in place.⁵ Weight management in the outpatient setting has significant implications and there is an urgent need for effective weight management interventions that are straightforward and simplistic.⁶ Therefore, the purpose of this study was to provide a weight

management intervention using the Army Healthy Eating Activity Lifestyle Training Headquarters (H.E.A.L.T.H.) web/mobile-based program and to determine its impact on weight loss in overweight military service members and veterans.

METHODS

Design

The project design was based on an evaluation and re-evaluation strategy that involved the interactive use of a web-based/online weight management program (Army H.E.A.L.T.H.). An initial health screening was completed where baseline body composition (weight, BMI, and body fat percent) was measured using the InBody 720[®] exam and then remeasured at 12 weeks. The participants were then registered for the Army H.E.A.L.T.H. online tool and educated on the interactive capabilities for tracking fitness and other wellness parameters.

Setting and Sample

This project was advertised at the Naval Support Activity (Bethesda, Maryland) campus for service members and veterans as part of a weight

management health screening. Inclusion criteria for the project were: male or female active duty service member or veteran with a BMI \geq 25; age range 18-65 years; not currently enrolled in a research weight management or weight-loss study; and an military service member or veteran eligible for care in a military facility. Exclusion criteria for the project were: a temporary or permanent change of duty status; enrolled in the military services weight control program; participating in another research protocol; or with a BMI \geq 40 (morbidly obese).

Intervention

Army H.E.A.L.T.H. is an online weight management tool that provides an innovative strategy to military service members and veterans to achieve weight loss through web-based and mobile technology.⁷ The Army H.E.A.L.T.H. website/mobile app allows the user to track calories, physical fitness/activity, and provide interactive ways to monitor wellness goals and objectives. Participants were encouraged to use the Army H.E.A.L.T.H. application on a daily basis to track their nutrition and fitness activity.

Data Analysis

The de-identified body composition (BC) and demographic data were documented in a password-protected database. Microsoft Excel was used to maintain participants' data and was maintained by the lead project educator. The data were coded according to the variable coding plan and analyzed using SPSS, version 22. Descriptive statistics were used to analyze the demographic data and paired *t* tests were used to analyze the initial and post-BC elements.

RESULTS

A convenience sample of 32 participants (25 military service members, 7 veterans) met the criteria with 20 participants completing both initial and post-BC assessments (15 military service members, 5 veterans). Participants who did not complete the final BC assessment were considered non-completers and the BC data from these individuals were removed from analysis (12 non-completers). None of the participants were enrolled in the military services BC programs, but most had tried multiple weight-loss

attempts (mean = 4.92). Table 1 displays the participants' BC ranges. Benchmark data provided a goal 6-lb. weight loss or 5% weight loss of initial body weight. The benchmark data was in line with current guidelines of 5%-10% body weight loss or 4-5 lbs. per month.^{8,9} Table 2 shows the statistical analysis for weight, BMI, and body fat percent. The 20 participants who completed the program had an average weight loss of 3.25 lbs. [95% confidence interval (CI) -1.09 to 7.59 lbs.]. The average weight decreased from a mean of 187.4 lbs. at baseline (SD = 33.4) to a mean of 184.2 lbs. at 12 weeks (SD = 29.5), although this difference was not statistically significant ($P = .134$, paired *t* test). Three participants were considered outliers, with a weight loss of > 20 lbs. The average BMI decreased by 0.4 point, with baseline BMI 28.6 (SD = 2.9) to 28.2 (SD = 2.7) at 12 weeks, but this difference was not statistically significant ($P = .148$, paired *t* test). The change in body fat percent for all completers was statistically significant ($P < .034$, paired *t* test) and was reduced by an average of 1.23 percentage points (95% CI 0.10-2.36) at 12 weeks. The average number of days that participants accessed the Army H.E.A.L.T.H. tool was 6.59 days over 12 weeks.

DISCUSSION

In this project we found that individuals who were made aware of their current BC, provided weight management education via Army H.E.A.L.T.H., and used its web-based/mobile application did lose weight. The introduction of the Army H.E.A.L.T.H. program and interactive website resources by the NP provided a foundation for weight management and focus on a healthier lifestyle. The results suggest that, given directed weight management tools using web-based/mobile technology, will promote weight

Table 1. The Army H.E.A.L.T.H. Program Participant Body Composition Ranges

	Mean	Range
Age (years)	42.4	23-62
Initial weight (lbs.)	187.4	146.9-280.3
Initial BMI	28.7	25.1-37.0
Initial body fat (%)	31.8	18.6-47.3

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