ISSN: 03875547
Volume 46, Issue 06, June, 2023

THE CORRELATION BETWEEN LENGTH AND INTENSITY OF MILITARY STUDENT TRAINING ACTIVITIES AND SPORTS INJURIES IN A MILITARY CAMPAIGN IN SAUDI ARABIA

Meshal A. Alomari[1*], Mahmoud Abdulrahman[2], Naif A. Alomari[3]

Orthopedic Surgery Consultant, Security Forces Hospital and King Fahad Security College, Riyadh, Kingdom of Saudi Arabia[1]
Preventive Medicine Consultant, College of Medicine, Imam Mohammed Ibn Saud Islamic University, Riyadh, Kingdom of Saudi Arabia[2]
Family Medicine Consultant, King Saud Medical City, Riyadh, Kingdom of Saudi Arabia[3]

Corresponding Author: 1*

Keywords:
military campaigns, military students, physical training, sports injury, training-related injuries.

ABSTRACT

Musculoskeletal exercise and physical training are important activities with multiple health advantages; nonetheless, injuries sustained during physical training are a major issue in the military. Injuries significantly impact society and people serving in the military because they prevent people from going to work, participating in training, preparing for battle, and doing regular tasks. To examine the potential link between the duration and intensity of physical exercise and sports injuries among Saudi Arabian military students. Authors surveyed the military students of the year 2021 as part of a cross-sectional observational study. SPSS was used for the data analysis. Stress fractures in the pelvic and thigh regions were among the injuries assessed in a study of 73 military students. The study was approved in 2022 by the King Fahad Security College Studies and Research Centre, with approval number A-1-43. The study found no significant relationship between course duration and fracture type ($p = .165$), indicating that the type of physical activity was the main effect. Also, each kilogram increase in weight at the date of seeking treatment increased the likelihood of the participant having a stress fracture in the pelvic region and thigh by 1.174 times compared with a stress fracture in the lower leg. The type of physical activity might have a major role in determining the types of injuries, while the duration of the activity had no effect. We recommend future research to examine other risk factors for fractures and include other military schools.

1. INTRODUCTION

A sports injury is diagnosed as a functional or structural loss detectable during a clinical examination. ‘Sports trauma’, on the other hand, is an acute experience of pain, discomfort or loss of function, which is the subject of self-evaluations by athletes [1]. Standard language is needed to report health concerns related to sports and exercise. People are not required to perform military service because sports are the most popular form of exercise in military academies. Over half of all injuries sustained by military personnel each year result from physical training, exercise or sports [2], [3]. To reduce the frequency and severity of these injuries, the military must find a way to regulate the frequency and duration of their activities. To successfully address the issue of injuries, it is crucial to answering the following questions: (1) How large is the problem? (2) What is the problem, and why do you think it will happen? (3) Can any of the contributory factors be changed? (4) What are some potential solutions to this issue?. Key factors that increase the risk of injury during exercise and training are (1) the amount of training, (2) the types of training, (3) the fitness level of the persons undertaking the training, and (4) their risky behaviors [4].

Many soldiers who serve around the world return home safely and physically fit for duty. However, injuries sustained by soldiers during training or by civilian employees in the military can prevent them from serving in the future. Therefore, the well-being and security of troops who serve abroad must be prioritized at all times. Furthermore, experiencing a musculoskeletal injury increases the chance of suffering from another [4]. Additionally, footwear significantly impacts your gait and performance and can increase your risk of injury. As soon as an athlete experiences pain, discomfort or a loss of function following a sports injury, they conduct an assessment. An injury sustained while participating in sports results in a detectable loss of function or structure during a clinical examination [5- 7]. Hospitalization rates for injuries decreased across the board between 1980 and 1992 [8]. When broken down by branch of service in 1992, the Army had the highest rate of injuries, at 15.6 per 1,000 person-years, followed by the Navy at 8.3 and the Air Force at 7 [7], and musculoskeletal diseases led to greater hospitalization rates (28.1%, 9.7% and 12.0%) across all three services, respectively [8]. A study concluded that military hospital discharge databases are more comprehensive and thus a better resource for learning about severe injuries than civilian databases. Military hospital discharge databases contain in-depth data about injuries that can be utilized for injury tracking and prevention and for evaluating the effectiveness of various strategies for reducing injury rates. For example, the data can be used to identify high-risk communities or threats, allowing prevention efforts to be directed where they will have the greatest impact. Risk of injury is likely to vary based on a person's length of service, their level and the nature of their profession [8]. A study published in April 2000 examined (1) the prevalence of musculoskeletal injuries (MSIs) in the medical literature, (2) the nature of the injuries sustained and their locations, and (3) the risk factors that put military personnel at risk [5]. The study also provided strategies for injury reporting and prevention. To assess and analyze the scope of the injury problem, identify risk factors and test preventative interventions, the authors of another study examined previously conducted epidemiologic research in both the military and the general population [9]. Much of the data used in military studies was initially obtained from fresh Marine and Army enlistees, as well as Army Infantry and Naval Special Warfare hopefuls. However, as more research was conducted among operational forces, it became clear that injuries were a major issue among this population. Each month, between 6 and 12 male recruits out of every 100 are injured during basic training. Thirty percent of enlistees fail to graduate from Naval Special Warfare training. Low levels of physical fitness and prior occupational and leisure-time physical activity, a history of injuries, a high number of running miles and exercise sessions per week, smoking, age and biomechanical characteristics all contribute to a wide range of injury rates (different types of age data exist).

To our knowledge, this study is the first to examine the potential link between the duration and intensity of physical exercise and sports injuries among Saudi Arabian military students.

2. Materials and Methods

2.1 Study Design

This study used a cross-sectional, observational study design to analyze the relationships between many variables.

2.2 Settings

This study was conducted at King Fahad Security College.

2.3 Sampling Strategy

The sample of this study comprised military students from the 2021 military campaign, which included two divisions, all males with an age range between 19 to 25 (the first division of university graduates who must spend nine months in the campaign and the second division of secondary school graduates who must spend three years in the campaign).

2.4 Study Period

The study started on 1 June 2020 and lasted 18 months that the data covered.

2.5 Sample Size

Data were collected from 73 King Fahad Security College students who reported physical injuries related to fractures out of the total number of students 1,834 during the year 2020–2021. The total number is divided to 1,391 nine-month period students and 443 number of three-year period students.

2.6 Data Collection, Measurements, and Statistical Analyses

The data were collected from King Fahad Security College's data warehouse, which was contained and diagnosed by a physician in the military school clinic in the Ministry of the Interior. We used the International Classification of Diseases, 10th Revision (ICD-10) to translate the diagnoses of fractures. Data were collected in table format and entered into SPSS statistical package 27. All data in the form of numbers and percentages were presented as descriptive statistics, and a chi-square test was performed to determine the correlations as inferential statistics.

3. Results

Among 1,834 students, 73 participants reported physical injuries in 2020–2021. The participants' mean age was 21.86 (± 02.05) years, their mean weight was 73.02 kg (± 10.33), and their mean height was 174.62 cm (± 04.33). Mean body mass index (BMI) pre- and post-training were 23.92 (± 03.24) and 23.09 (± 01.78), respectively, with a 0.84 (± 03.17) statistically significant difference. Table 1 lists the participants' demographic variables.

Table 2 shows the training course duration and Table 3 provides the relationship between the course duration and fracture type. The results of Fisher's exact test (non-parametric test of chi-square) showed that no significant relationship existed between course duration and fracture type (p = .165).

Using simple logistic regression to predict fracture type according to ICD-10 are shown in Table 4, weight at the date of seeking treatment (post) was statistically significant with fracture type (p = .037). The weight at the date of seeking treatment explains 11% (Nagelkerke R2) of the variation in fracture type, as shown in table 5. Each kilogram increase in weight at the date of seeking treatment increased the likelihood of the participant having a stress fracture in the pelvic region and thigh by 1.174 times compared with a stress fracture in the lower leg. However, none of the following variables predicted fracture type: age (p = .083), height pre (p = .432), BMI pre (p = .882), BMI post (.055), weight difference (p = .245), BMI difference (p

= .295) or duration from starting data until seeking care (p = .171).

When studying the medical intervention for these injuries, it was noted that each kg increase in weight at the date of seeking treatment increased the likelihood of the participant having a stress fracture in the pelvic region and thigh by 1.174 times, with a statistical significance of p = .026. The omnibus model coefficient tests showed a significant relationship between step, block and model in the physical exercises, as shown in Table 6. The study variables are not in the equation, revealing that height does not affect physical activity intensity (p = .26). However, BMI (representing total body weight) significantly affected the intensity of physical activities and injuries during military physical sports. Table 7 shows a significant correlated effect, with a significance of p = .42.

The results in Table 8 show that the weight difference showed no significant effect on the physical exercises and had no impact on reducing injuries (p = .24). In addition, the duration from starting training until seeking care had no significant effect on reducing injuries resulting from intense physical exercise (p = .171 and p =.176, respectively) in Table 9.

4. Discussion

Anxiety and stress can lead to various health problems, and the military is a major source of both [10]. Numerous factors affect the overall prevalence rate of injuries from physical training, which vary by injury type [11]. Nearly four percent (3.9%) of the 1,834 students in this study reported experiencing a physical injury; this high number highlights the need to investigate the causes of such incidents and identify effective and efficient treatments. This high percentage may reflect the extended period between when the military students were enlisted and when the study was conducted [12]. Nonetheless, the percentage of participants in the study was not insignificant.

The military personnel sustained 212 injuries, which led to the loss of 1,764 full-service days. Most injuries were diagnosed as musculoskeletal discomfort, followed by strains, sprains and cold-related ailments [13]. This equates to a rate of 142 injuries per 100 troops per year (an individual may sustain more than one type of injury. Injuries were less common among older military personnel, while those with poorer fitness levels (as measured by a shorter two-mile run speed and fewer sit-ups) had a higher risk of MSIs. This finding supports data concerning the United States as a whole, which shows a yearly injury rate of 33 injuries per 100 males aged 15–24 and 25 injuries per 100 males aged 25–44. [14] claimed that 'musculoskeletal injuries cause significant morbidity among military troops'. When it comes to military service-related MSIs, the top two causes of injuries leading to limited duty days (LDDs) are physical training and occupational duties. Recent research has linked non-steroidal anti-inflammatory drugs (NSAID) use to an increased risk of MSIs. Bone musculoskeletal injuries (MSIs) are common in training, and recent advances in imaging technology, such as high-resolution peripheral quantitative computed tomography, have been utilized to evaluate bone development in service members. Monitoring and educating evidence-based strategies to avoid MSIs and monitoring physical activity and machine learning have major uses, and stated, 'Despite many years of research, MSIs continue to have a high frequency among military people'.

Our findings showed that the students' mean BMI dropped from 23.92 (03.24) to 23.09 (01.78) after military training, with a difference of 0.84 (03.17). This finding is consistent with those of [15], who found substantial evidence that weight management programs work, particularly when it comes to weight loss. [16] determined that the average age and BMI of the participants in their study were 24.0 (6.7) years and 25.8 (5.8) kg/cm^2, respectively. Of those participants, 63% (n = 330) exercised regularly, 45% reported doing regular warm-ups (n = 236) and 44% (n = 228) suffered an injury due to sports or physical activity over the previous 12 months.

The multivariate logistic regression analysis indicated no significant association between sports injury and warm-ups [0.73 (0.41, 1.31)], and those aged 31–50 years had 2.06 (95% confidence interval [CI]: 1.15-3.69) times greater odds of injury compared to those aged 16–25 years. The odds ratio was 2.04 (95% CI, 1.28-3.24) for those in the lowest income bracket (5,000 SAR) compared to those in the highest bracket (10,000 SAR) [16].

Participants on a weight loss diet plan had a greater likelihood of reporting a sports injury than those not on a diet plan (1.61 [95% CI: 1.06-2.43]). After controlling for BMI, we observed that the rates of sports injuries reported in our study were similar to those reported for Scotland and the United Kingdom (43.4% vs 42%), but lower than those reported in Jeddah (72%) [16]. Age range and geographical location likely played a role in this disparity. The study participants in Riyadh City were young adults who frequented fitness centers, while in Jeddah, the participants ranged in age from 10 to 40 years who frequented both government and private facilities. Saudi Arabia's injury rates are lower than those reported in other Middle Eastern countries, as the country has only recently begun prioritizing sports, particularly health club workout programs. A study of this kind in Kuwait indicated that, among male athletes aged 15 and above, the overall prevalence of sports injuries was 73.8% for the previous 12 months and 89.8% for all previous years of life [17].

Due to the nature of the research (a military campaign), only male participants were included. However, in discussing the gender effect, [18] found that 'overall, the number of men and women showed non-significant number differences in family, friend, and alone groups, but the number of men was almost four times higher than that of women in the club member group. There were more participants in the under-50 age group across all participation modes than in the over-51 age group, but this difference was not statistically significant ($p > .05$), leading the researchers to conclude that 'there is a significant difference in injury occurrence in different participation modes'. Unlike physical activity (PA) duration, the PA's intensity directly correlates with injury risk. As such, the results of the current study demonstrate the importance of paying close attention to variables such as gender, PA intensity and duration as they relate to injury prevention strategies [18].

Stress fractures of the pelvic region and thigh were selected for this study because they are the most common physical injuries in the military and may have an impact on normal daily activities.

'The most prevalent injuries were muscular strains, sprains, and overuse knee problems', as reported by [6], [17].

Age, smoking, lack of prior occupational and physical activity, and a lack of pre-Army running frequency, flexibility, physical fitness, and physical fitness during unit training (high running mileage) have all been recognized as risk factors for injury [19]. In [20] retrospective cohort analysis, the overall incidence and specific types of knee injuries were analyzed and estimated for each military hospital. The military population had the highest rate of ACL injuries (45.7%, n = 2,230). The incidence of meniscus tears was also high (24.9%; n = 2,230). Each hospital's unique incidence rate and three key incidence rates were calculated. Severe knee injuries were also identified among service members aged 18–60 years. However, in the current study, age was not found to be a factor in the occurrence of knee injuries. Chi-square testing also revealed a correlation between knee injuries and their reported causes [21].

The study participants were divided into two groups: those who had served for nine months (73.97%) and those who had served for three years (26.03%). Of the 73 participants, 16.44% suffered some sort of injury during their time in the military. More longitudinal studies are needed to show the effectiveness of programs that improve food and exercise habits and identify the most crucial components [22]. This contradicts the findings of [23], who found that the 'attrition rate was identical between 28-day and 80-day courses'. The 28-day course showed a lower injury rate than the 80-day course but more injuries per person-year and a greater risk of fitness test failure. These results show that baseline fitness levels should be considered when planning the content of any course, especially those relatively brief in duration. Evidence from scientific research links a lack of physical fitness to injury risk [23].

Stress fractures of the lower leg were predicted for all students in this study; however, none of the study variables, including age (p = .083), height before injury (p = .432), BMI before injury (p = .882), BMI after injury (p = .055), weight difference (p = .245), BMI difference (p =.295), or time from initial data to seeking care (p = .171), were able to predict fracture type. Depending on the location and likelihood of the injury progressing to a full fracture, stress fractures can be classified as low-risk or high-risk. [24] developed a novel injury model that prioritizes risk factors and identifies 57 possible risk factors. In the context of developing intervention plans for military units, this model may shed light on the types of risk factors to address and the sequence in which they should be handled. Areas for future research include quantifying exposure when determining MSI risk, understanding associations between health-related components of physical fitness and MSI occurrence and applying innovative physical activity monitoring and data analysis techniques for MSI prevention and return to duty [14]. This study has several limitations, including the small sample size and the inclusion of only one military school. Many other risk factors for bone fractures and physical defects must be examined.

5. Conclusion

This study found that physical training and activities during military service cause many types of MSIs, such as stress fractures in the pelvic and thigh regions, and reflect a significant problem in military services. The results showed that the type of physical activity might have a major role in determining the types of injuries, while the duration of the activity had no effect.

Recommendation

We recommend future research to examine other risk factors for bone fractures and physical defects and include other military schools.

Acknowledgments

We want to acknowledge my institute that supported the authors with data collection and during the research process. We want to thank the biostatistician for his assistance with the data analysis of this research.

Conflict of Interest

There is no conflict of interest.

Financial support and sponsorship

This study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Ethical approval

The study was approved in 2022 by the College Studies and Research Centre, with approval number A-1-43. All records were kept confidential, and no names or any sort of identification were used.

6. References

[1] Almeida SA, Williams KM, Shaffer RA, Brodine SK. Epidemiological patterns of musculoskeletal

injuries and physical training. Medicine and Science in sports and Exercise. 1999 Aug 1;31(8):1176-82.

[2] Cowan DN, Bedno SA, Urban N, Yi B, Niebuhr DW. Musculoskeletal injuries among overweight army trainees: incidence and health care utilization. Occupational medicine. 2011 Jun 1;61(4):247-52.

[3] Schyogolev VA. Physical training in US military educational systems. Theory and practice of physical culture. 2014(9):15.

[4] Jones BH, Hauschild VD. Physical training, fitness, and injuries: lessons learned from military studies. The Journal of Strength & Conditioning Research. 2015 Nov 1;29:S57-64.

[5] Kaufman KR, Brodine S, Shaffer R. Military training-related injuries: surveillance, research, and prevention. American journal of preventive medicine. 2000 Apr 1;18(3):54-63.

[6] Jones BH, Cowan DN, Tomlinson JP, Robinson JR, Polly DW, Frykman PN. Epidemiology of injuries associated with physical training among young men in the army. ARMY RESEARCH INST OF ENVIRONMENTAL MEDICINE NATICK MA; 1993 Jan 1.

[7] Swedler DI, Knapik JJ, Williams KW, Grier TL, Jones BH. Risk factors for medical discharge from United States Army basic combat training. Military medicine. 2011 Oct 1;176(10):1104-10.

[8] Timpka T, Jacobsson J, Bickenbach J, Finch CF, Ekberg J, Nordenfelt L. What is a sports injury?. Sports medicine. 2014 Apr;44:423-8.

[9] Smith GS, Dannenberg AL, Amoroso PJ. Hospitalization due to injuries in the military: evaluation of current data and recommendations on their use for injury prevention. American journal of preventive medicine. 2000 Apr 1;18(3):41-53.

[10] Williamson V, Harwood H, Greenberg K, Stevelink SA, Greenberg N. Impact of military service on physical health later in life: a qualitative study of geriatric UK veterans and non-veterans. BMJ open. 2019 Jul 1;9(7):e028189.

[11] Heinrich KM, Streetman AE, Kukić F, Fong C, Hollerbach BS, Goodman BD, Haddock CK, Poston WS. Baseline physical activity behaviors and relationships with fitness in the army training at high intensity study. Journal of Functional Morphology and Kinesiology. 2022 Mar 8;7(1):27.

[12] Rosendal L, Langberg H, Skov-Jensen A, Kjær M. Incidence of injury and physical performance adaptations during military training. Clinical Journal of Sport Medicine. 2003 May 1;13(3):157-63.

[13] Knapik JJ, Montain SJ, McGraw SM, Grier T, Ely MR, Jones BH. Risk factors for stress fractures in basic combat training. Int J Sports Med. 2012;33:940-6.

[14] Lovalekar M, Hauret K, Roy T, Taylor K, Blacker SD, Newman P, Yanovich R, Fleischmann C, Nindl BC, Jones B, Canham-Chervak M. Musculoskeletal injuries in military personnel—Descriptive epidemiology, risk factor identification, and prevention. Journal of Science and Medicine in Sport. 2021 Oct 1;24(10):963-9.

[15] Malkawi AM, Meertens RM, Kremers SP, Sleddens EF. Dietary, physical activity, and weight management interventions among active-duty military personnel: a systematic review. Military Medical Research. 2018 Dec;5(1):1-2.

[16] Alaqil S, Alzahrani A, Alahmari S, Alqarni F, Alqahtani S, Kazi A. Prevalence of sports injury and its association with warm-up in males visiting the fitness centers in Riyadh, Saudi Arabia. Journal of Nature and Science of Medicine. 2021 Jan 1;4.

[17] Marwan Y, Behbehani A, Al-Mousawi A, Mulla-Juma'a A, Sadeq H, Shah N. Sports injuries among professional male athletes in Kuwait: prevalence and associated factors. Medical principles and practice. 2012;21(2):171-7.

[18] Choe JP, Kim JS, Park JH, Yoo E, Lee JM. When do individuals get more injured? relationship between physical activity intensity, duration, participation mode, and injury. International journal of environmental research and public health. 2021 Oct 15;18(20):10855.

[19] Jacobs JM, Cameron KL, Bojescul JA. Lower extremity stress fractures in the military. Clinics in sports medicine. 2014 Oct 1;33(4):591-613.

[20] Albishri SF, Ahmad R, Al Zahrani EM, Jebakumar AZ, Woodman A. Incidence and risk factors associated with knee injuries among active-duty military personnel in Saudi Arabia.

[21] Najafi Mehri S, Sadeghian M, Tayyebi A, Karimi Zarchi A, Asgari A. Epidemiology of physical injuries resulted from military training course. Journal Mil Med. 2010 Jul 19;12(2):89-92.

[22] Schram B, Pope R, Orr R. Injuries in Australian Army full-time and part-time personnel undertaking basic training. BMC musculoskeletal disorders. 2019 Dec;20(1):1-9.

[23] Orr RM, Cohen BS, Allison SC, Bulathsinhala L, Zambraski EJ, Jaffrey M. Models to predict injury, physical fitness failure and attrition in recruit training: a retrospective cohort study. Military medical research. 2020 Dec;7(1):1-0.

[24] Sammito S, Hadzic V, Karakolis T, Kelly KR, Proctor SP, Stepens A, White G, Zimmermann WO. Risk factors for musculoskeletal injuries in the military: a qualitative systematic review of the literature from the past two decades and a new prioritizing injury model. Military Medical Research. 2021 Dec;8(1):1-40.

Table 1 Demographic data of the study sample

Variable	Mean	Standard Deviation	Minimum	Maximum
Age	21.86	2.05	18.00	24.00
Weight (kg) PRE	73.02	10.33	55.75	95.00
Height (cm) PRE	174.62	4.33	168.00	185.7
BMI (kg/cm^2) PRE	23.92	3.24	19.30	31.20

Weight (kg) POST	70.04	4.63	57.00	84.60
Height (cm) POST	174.62	4.33	168.00	185.7
BMI (kg/cm^2) POST	23.09	1.78	19.50	31.10
Weight difference (kg)	2.98	9.32	-15.35*	23.90
Height difference (cm)	0.00	0.00	0.00	0.00
BMI difference (kg/cm^2)	0.84	3.17	-6.40**	8.00
Duration from starting training until seeking care (days)	42.05	33.66	13	147

* The minus sign here indicates an increase in weight at the training of seeking treatment.
** The minus sign here means an increase in BMI at the date of seeking treatment.
cm: centimetre, kg: kilogram

Table 2 Types of training course duration in the Military School and Types of training related fractures.

		Count	**%**
Military course duration	Nine months	54	73.97%
	Three years	19	26.03%
Type of fracture according to ICD-10	(M84.35): Stress fracture, not elsewhere classified, pelvic region and thigh	12	16.44%
	(M84.36): Stress fracture, not elsewhere classified, lower leg	61	83.56%

Table 3 Relationship between the course duration and fracture type

	Type of Fracture According to ICD-10	
Course duration	**(M84.35): Stress fracture, not elsewhere classified, pelvic region and thigh n (%)**	**(M84.36): Stress fracture, not elsewhere classified, lower leg n (%)**
Nine months	11 (91.67%)	43 (70.49%)
Three years	1 (8.33%)	18 (29.51%)

Table 1 The prediction of other types of injuries in this study

Classification Table[a,b]

Observed Predicted

			Type of fracture according to ICD-10: (M84.36): Stress fracture, not elsewhere classified, lower leg	Type of fracture according to ICD-10: (M84.35): Stress fracture, not elsewhere classified, pelvic region and thigh	Percentage Correct
Step 0	Type of fracture according to ICD-10	(M84.36): Stress fracture, not elsewhere classified, lower leg	61	0	100.0
		(M84.35): Stress fracture, not elsewhere classified, pelvic region and thigh	12	0	.0
	Overall Percentage				83.6

a. The constant is included in the model.

b. The cut-off value is .500.

Table 5 Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	60.951[a]	.057	.097

a. The estimation terminated at iteration number 5 because the parameter estimates changed by less than .001.

Table 6 Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4.924	1	.026
	Block	4.924	1	.026
	Model	4.924	1	.026

Table 7 Study Variables Not included in in the Equation.

	Score	df	Sig.

Step 0	Variables	Height (cm) PRE	.650	1	.420
	Overall Statistics		.650	1	.420
	Variables		BMI (kg/cm^2) PRE	.022	1
	Overall Statistics		.022	1	.882
	Variables		BMI (kg/cm^2) POST	4.654	1
	Overall Statistics		4.654	1	.031
	Variables		BMI difference (kg/cm^2)	1.117	1
	Overall Statistics		1.117	1	.291

df: Degrees of freedom; Sig: statistical significance; PRE: Mean before starting military training; POST: Mean after starting military training

Table 8 Study Variables Not included in the Equation.

			Score	df	Sig.
Step 0	Variables	Weight Difference (kg)	1.381	1	.240
	Overall Statistics		1.381	1	.240

Table 9 Study Variables that included in the Equation

		B	SE.	Wald	df	Sig.	Exp(B)
Step 1[a]	Duration from starting training until seeking care	-.023	.017	1.871	1	.171	.977
	Constant	-.812	.600	1.833	1	.176	.444

a. Variable(s) entered in step 1: Duration from starting training until seeking care.
SE: The standard error; Wald Test; B: Beta coefficient