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Effect of a Structured Dietary Plan on Body Mass Index of Inter-University Male Players of Haryana: A Pre–Post Study

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Abstract

The aim of the present study is to find out the impact of a specific dietary regimen on the Body Mass Index (BMI) of male inter-university athletes from Haryana. For the purpose of the research, twenty male participants were chosen as subjects. A pre-post experimental research design was adopted, where the participants followed a specific dietary program for a specific period. Anthropometric parameters, i.e., weight, height, and BMI, were calculated both prior to and after the intervention. The pre-test means for weight, height, and BMI were found to be 68.20 kg, 170.05 cm, and 23.76, respectively, while the post-test means for weight, height, and BMI were found to be 66.69 kg, 170.05 cm, and 22.75, respectively. The results showed that there is a statistically significant difference between the pre- and post-test values at the 0.05 level, i.e., $t(18) = 1.73$, with the mean difference being 1.01. This shows that the dietary intervention had an impact on the BMI of the participants. The results show that an appropriate dietary plan can significantly affect the BMI of the players.

Keywords: dietary plan, body mass index, players, nutrition, paired t-test

Introduction

Nutrition plays a crucial role in enhancing athletic performance and maintaining optimal body composition. In competitive sports such as , players require high levels of endurance, agility, and strength. Proper dietary management helps athletes maintain an ideal body weight and Body Mass Index (BMI), which directly influences their performance and recovery.

Body Mass Index is widely used as an indicator of body composition and health status. Athletes with balanced BMI levels tend to perform better because excess body fat may reduce speed and endurance, while inadequate body weight may reduce strength and energy reserves.

In recent years, sports nutrition has become an important component of athletic training programs. Structured dietary interventions help athletes maintain the required energy balance and body composition. Therefore, the present study was conducted to examine the effect of a planned dietary program on the BMI of inter-university male players in Haryana.

Objectives of the Study

1. To determine the pre-test values of weight, height, and BMI of inter-university male players.
2. To determine the post-test values of weight, height, and BMI after following a dietary plan.
3. To examine the effect of the dietary plan on BMI using a paired sample t-test.

Hypothesis

It was hypothesized that there would be a significant difference between pre-test and post-test BMI values of the players after following the dietary plan at the 0.05 level of significance.

Methodology

Participants

The study was conducted on **20 inter-university level male players from Haryana**. The subjects were selected using purposive sampling. All participants were active players and voluntarily participated in the study.

Research Design

A **pre-test and post-test experimental design** was used for the study. Anthropometric measurements were recorded before and after the dietary intervention.

Variables

- **Independent Variable:** Structured dietary plan
- **Dependent Variable:** Body Mass Index (BMI)

Measurement Tools

Weight (kg), Height (cm), and Body Mass Index (BMI) an anthropometric variables were measured.

BMI was calculated using the standard formula: **Weight (kg)/Height (m)^2**

Procedure

Before the implementation of the dietary program, the weight and height of the players were measured and BMI was calculated. The athletes adhered to a dietary protocol for a certain period of time. The diet ensured that the athletes had a consistent and balanced diet, increased their intake of water, dietary fibers, fruits, and vegetables, and reduced their intake of sugar-sweetened drinks and processed foods. The athletes also had to engage in at least an hour of moderate-to- vigorous physical activity, get enough sleep, and minimize their sedentary activities, such as

screen time. After the dietary protocol, the measurements were taken again to obtain post-intervention data.

Statistical Analysis

The collected data were analyzed using the statistical techniques namely Mean, Standard Deviation, and Paired Sample **t-test.** The level of significance was set at **0.05**.

Results

Table-1: Pre and Post Mean Values of Anthropometric Variables (Weight, Height, and BMI)

Variable	Pre-Test Mean	Post-Test Mean
Weight (kg)	68.20	66.69
Height (cm)	170.05	170.05
BMI	23.46	22.75

The results show that the mean body weight of the players decreased from **68.20 kg to 66.69 kg**, while height remained unchanged. The mean BMI also decreased from **23.46 to 22.75**, indicating improvement in body composition after following the dietary plan.

Figure-1: graphical representation of Pre and Post Mean Values of Anthropometric Variables (Weight, Height, and BMI)

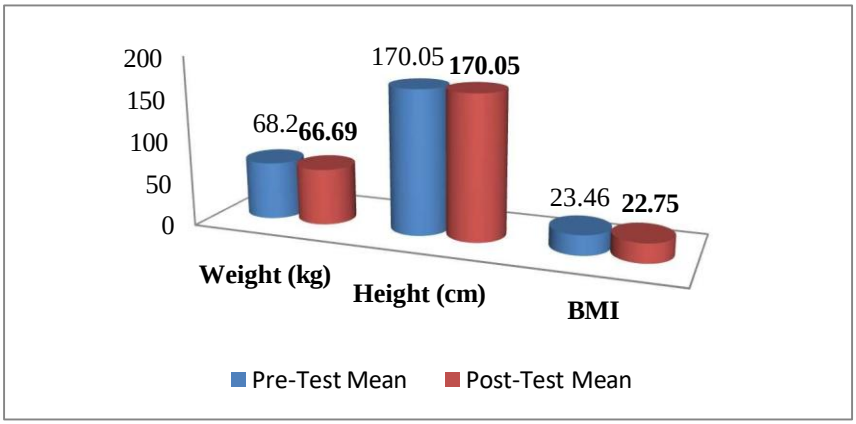

Table-2: Paired t-Test for BMI

Variable	Mean Difference	t-value	Level of Significance
BMI	1.01	1.73	$p < 0.05$

The paired t-test revealed a **significant difference between pre-test and post-test BMI values at the 0.05 level**, indicating that the dietary plan had a positive effect on the BMI of the players.

Discussion

The results of the present study indicate that the structured dietary plan had a significant effect on the BMI of inter-university players. The decrease in body weight and body mass index shows an improvement in body composition, which is desirable in sports. A balanced diet provides athletes with an optimum energy balance and helps them sustain their body weight to perform at their best in speed, agility, and endurance in [context]. This shows the importance of nutrition planning in sports training. The diet management and physical training of athletes must be integrated to enhance their performance.

Conclusion

The results from the study show that the dietary regimen resulted in an improved body mass index (BMI) for the inter-university male athletes. The reduction in weight and BMI is an indicator that nutritional management is effective in improving sports performance.

References (APA Style)

American College of Sports Medicine. (2016). *Nutrition and athletic performance*. Medicine & Science in Sports & Exercise, 48(3), 543–568.

Burke, L. M., & Deakin, V. (2015). *Clinical sports nutrition* (5th ed.). McGraw-Hill Education.

Jeukendrup, A., & Gleeson, M. (2019). *Sport nutrition: An introduction to energy production and performance* (3rd ed.). Human Kinetics.

Wilmore, J. H., Costill, D. L., & Kenney, W. L. (2018). *Physiology of sport and exercise* (7th ed.). Human Kinetics.