

# EFEKTI PROGRAMIRANOG TRENAŽNOG PROCESA NA TRANSFORMACIJU ANTROPOLOŠKIH OBILJEŽJA I RAZINE USVOJENOSTI TEHNIČKIH ELEMENATA KOŠARKAŠKE IGRE

## Sažetak

Svaki trenažni proces u bilo kojoj grani sporta, pa i košarci ima za cilj unaprijediti sve antropološke performanse igrača. U tom području konstatno se događaju promjene i eksperimenti čija je zadaća unapređenje antropološkog statusa igrača i kvalitete rada.

Ovo istraživanje predstavlja nastavak istraživačkog kontinuiteta autora u prostoru košarkaške igre, u smislu procjene utjecaja primjene eksperimentalnog programa trenažnog rada, na poboljšanje sveukupnog antropološkog statusa košarkaša kao i podizanje razine usvojenosti elemenata košarkaške igre košarkaša mlađih dobnih skupina. Istraživanje je provedeno na 144 košarkaša uzrasta od 13 do 15 godina, koji su bili podijeljeni na dva subuzorka od po 72 ispitanika kontrolne i eksperimentalne grupe.

Cilj ovog istraživanja je bio da se utvrde efekti primjenjenog planiranog i programiranog trenažnog rada na transformaciju morfoloških karakteristika, motoričkih sposobnosti, strukture tijela i razine usvojenosti tehničkih elemenata košarkaške igre.

Za istraživanje je korištena baterija od 37 testova po sljedećem: 15 varijabli za procjenu bazične motorike, 5 varijabli za procjenu razine usvojenosti elemenata košarkaške igre, 12 varijabli za procjenu morfoloških karakteristika i 5 varijabli za procjenu strukture tijela.

Za obradu podataka je primjenjeno pet statističko-matematičkih analiza.

Karakteristike i veličina izabranog uzorka ispitanika, a posebno postavljene hipoteze istraživanja odredile su osnovne metode za obradu podataka koji su dobiveni ovim istraživanjem pomoću programskih paketa za multivarijantnu analizu podataka.

Analiza je urađena programom SPSS 17.0. Za obradu podataka je primjenjeno pet statističko-matematičkih analiza. Izračunati su centralni i disperzijski parametri za svaku istraživanu varijablu, kod svih ispitanika (kontrolne i eksperimentalne grupe).

Primjenjena je Faktorska analiza u svrhu utvrđivanja prisutnosti i razine kvalitativnih promjena unutar istraživanih prostora pod uticajem redovitog i eksperimentalnog trenažnog programa rada. Sa ciljem praćenja kvantitativnih promjena unutar istraživanih prostora, pojedinačno za svaku skupinu ispitanika primjenjen je T-test za nezavisne uzorke.

Za utvrđivanje značajnosti razlika među grupama ispitanika, po zadatim odlikama, kao i utvrđivanje značajnosti doprinosa primjenjenih varijabli za provedena razvrstavanja (multivarijantni i univarijantni f- test) primjenjena je metoda višestruke analize- (MANOVA.)

Da bi se utvrdile kvantitativne razlike primjenjena je Diskriminativna kanonička analiza u manifestnom prostoru.

Rezultati istih su potvrdili da je došlo do statistički značajnih promjena u istraživanim antropološkim prostorima, te da su te promjene statistički značajnije u korist eksperimentalne grupe ispitanika. Samim tim je i potvrđena značajnost primjene ovakvih programa trenažnog rada. Sve postavljene hipoteze su u cjelosti potvrđene.

Na osnovu dobivenih rezultata istraživanja, opravdano možemo pretpostaviti i kazati da je ovaj eksperimentalni program trenažnog rada znatno unaprijedio sve istraživane antropološke performanse kod istraživanog uzorka košarkaša uzrasta od 13 do 15 godina.

**Ključne riječi: Trening, transformacioni procesi, antropološk status, elementi košarkaške tehnike.**

# **THE EFFECTS OF THE PROGRAMMED TRAINING PROCESS ON THE TRANSFORMATION OF ANTHROPOLOGICAL CHARACTERISTICS AND THE LEVEL OF ADOPTION OF THE TECHNICAL ELEMENTS OF THE BASKETBALL GAME**

## **Abstract**

Every training process in any branch of sports, including basketball, aims to improve all anthropological attributes of the players. In this area, changes and experiments are constantly taking place with the objective of enhancing the anthropological status of the players and the quality of training.

This research represents a continuation of the author's research continuity in the field of basketball, in terms of evaluating the impact of applying an experimental training program on the overall anthropological status of basketball players and improving the proficiency of basketball game elements among younger age groups. The study was conducted on 144 basketball players aged between 13 and 15 years, who were divided into two sub-samples of 72 participants each, comprising a control and an experimental group.

The aim of this research was to determine the effects of the applied planned and programmed training on the transformation of morphological characteristics, motor abilities, body composition, and the level of proficiency in basketball technical elements.

A battery of 37 tests was used in the research, including the following: 15 variables for the assessment of basic motor skills, 5 variables for the assessment of the level of proficiency in basketball game elements, 12 variables for the assessment of morphological characteristics, and 5 variables for the assessment of body composition

Five statistical-mathematical analyses were applied for data processing. The characteristics and size of the selected sample of participants, and especially the hypotheses set in the research, determined the basic methods for processing the data obtained from this research using software packages for multivariate data analysis.

The analysis was performed using the SPSS 17.0 program. Central and dispersion parameters were calculated for each investigated variable across all participants (both control and experimental groups).

Factor analysis was applied to determine the presence and level of qualitative changes within the investigated areas under the influence of regular and experimental training programs. In

order to monitor quantitative changes within the investigated areas, a T-test for independent samples was applied individually for each group of participants.

To determine the significance of differences between groups of participants based on given characteristics, as well as to determine the significance of the contribution of applied variables for the conducted classifications (multivariate and univariate F-tests), the method of multiple analysis of variance (MANOVA) was applied.

To identify quantitative differences, Discriminant Canonical Analysis was applied in the manifest space. The results confirmed that statistically significant changes occurred in the investigated anthropological areas and that these changes were statistically more significant in favor of the experimental group of participants. Thus, the importance of applying such training programs was confirmed, and all set hypotheses were fully validated.

Based on the research results, we can reasonably assume and state that this experimental training program significantly improved all the investigated anthropological attributes in the studied sample of basketball players aged 13 to 15 years.

**Keywords: Training, transformation processes, anthropological status, elements of basketball technique.**