EFFECTS OF EIGHT WEEKS PRE-SEASON PREPARATION TRAINING PERIOD ON THE PHYSICAL AND PHYSIOLOGICAL PROPERTIES OF FOOTBALL PLAYERS

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ABSTRACT

This research was aimed to determine the effects of eight weeks pre-season preparation training period on the physical and physiological characteristics of football players. Thirty football players were acted as subjects for this study. Their ages were 19.5 ± 1.46 years old, and they had 4.3 ± 1.2 years of training. Their height was 167.7 ± 4.12 cm. The body weight, body fat percentage, flexibility, systolic/diastolic blood pressure, aerobic capacity, vertical jump, and speed of these players were tested twice; once at the beginning of the eight-week pre-season preparation training period and again at the end of the training period. Research data was evaluated statistically with paired-t test at a significance level of (p‹ 0.05). Significant changes were found in weight, body fat percent, systolic/diastolic blood pressure, aerobic capacity, anaerobic power, and vertical jump but no significant changes were found in elasticity and speed.

Key-Words: *Physiology, Football and preparatory Training.*

INTRODUCTION:

A pre-season preparation period covers the period from the beginning of team-training till the first official match. During this training period, physical conditioning should be composed mainly of games and exercises with a ball. The number of training sessions from the beginning of football season should be increased gradually (Bangsbo, 1994). From the beginning level higher levels, tasks during training should be increased gradually depending on the psychological and physical skills of each sportsman (Bompa, 1998).

Due to the improvements in the speed and skills of the football players, football has become more dynamic (Mangine, et al., 1990).

Body composition is an important physical component for football. Excess body fat makes the body move constantly against gravity and it is an unnecessary load for footballers (Reilly, 1996). Although there have been several studies that examined the seasonal changes in the body composition of elite sportsmen's (Siders, et al. 1994 & Morris and Payne, 1996); there are not enough studies on the effects of a pre-season preparation training period on the physical and physiological properties of footballers' performance, particularly in regards to body composition. This study aimed to determine and examine the physical and physiological changes that occur during eight-week pre-season preparation training period to football players.

METHODOLOGY:

The study was conducted on football players of Haryana Youngs Club, Hisar. Pre-testing was performed on the players after the holiday season and the post-testing was done after a pre-season preparation training period. The pre-season preparation training period lasted eight weeks with eighty training sessions and four practice matches played. The properties of the footballers who participated in this study are clearly tested pre and post the eight-week pre-season participation training period.

Body fat percent (BFP) was calculated utilizing a skin fold method and identified as percent mass (Adams, 1990). Systolic and diastolic blood pressure was recorded as mmHg utilizing a stethoscope and sphygmomanometer in a stable sitted position. In order to determine the aerobic capacity, a twenty meter shuttle run test was done on a grass field. The shuttle run test was utilized to measure maximum oxygen consumption VO_2 max and defined in ml/kg/min (Tamer, 1995). The vertical jump test was measured utilizing jump meter equipment and the sit and reach equipment was utilized to measure flexibility. The ten-meter and thirty-meter speed values were calculated on the grass field. Research data was evaluated by t-test utilizing a SPSS 15.0 statistical package program with significance level of ($p<0.05$).

FINDINGS:

Several physical and physiological properties of footballers' were measured in a pre and post testing protocol and the measurements were recorded and evaluated.

Values of footballers' physical and physiological condition
pre and post eight week pre-season preparation training periods

Variables	**N**	**Pre**	**Post**	**'t'**
Body weight	30	68.62 ± 4.63	70.35 ± 4.54	2.09
Body fat percent (%)	30	7.23 ± 1.47	6.44 ± 1.12	2.21
Vertical jump (cm)	30	54.35 ± 5.44	61.18 ± 5.67	2.41
10-meter (sc)	30	1.69 ± 0.37	1.63 ± 0.30	1.41
30-meter (sc)	30	4.37 ± 0.78	4.25 ± 0.10	1.05
Flexibility (cm)	30	38.17 ± 4.37	40.32 ± 4.02	1.07
VO_2 max (ml/kg/min)	30	49.65 ± 3.48	57.82 ± 3.82	3.45
Diastolic blood pressure (mmHg)	30	73.4.0 ± 5.02	70.1 ± 5.51	2.89
Systolic blood pressure (mmHg)	30	116.5 ± 6.38	110.4 ± 6.33	2.78

These findings show that after the eight-week pre-season preparation training period there were some statistically significant differences between the pre and post measurements in the values concerning body weight, body fat percent, systolic and diastolic blood pressure, anaerobic power, aerobic power, and vertical jump at a level of ($p<0.05$). The values of ten-meter speed, thirty-meter speed, and elasticity improved, but they were not statistically significant at a level of ($p<0.05$).

DISCUSSION:

In this study, the scores of the tests obtained through pre and post eight week pre-season preparation training period on Haryana Youngs Club football players were evaluated. The average age of the thirty players was 19.5 ± 1.46 years old, and they had 4.3 ± 1.2 years of training. Their height was 167.7 ± 4.12 cm.

There was a significant increase in body weight with a post-measurement of 70.35 ± 4.54 kilo grams. In a previous study on a first division league team in England, having a twenty-eight pre-season preparation training sessions lasting thirty-five days, showed an increase in the body weight of the players, with a pre-training period body weight measurement from 74.05 ± 9.2 kgs. to a post-training period body weight measurement of 77.6 ± 8.7 (Mercer et al.,1992).

In the pre-training period the body fat percent measurement was 7.23 ± 1.47 percent and in the post-training period body fat percent measurement decreased to 6.44 ± 1.12. This decrease was also statistically significant at a level of ($p<0.05$).

The pre-training vertical jump measurement was 54.35 ± 5.44cms and increased to 61.18 ± 5.67 cms. after the training period. This increase was also statistically significant at a level of ($p<0.05$).This increase in the vertical jump was also observed after a preparation training period of third league professional team players (Kocyigid, et al., 1996). Mercer, et al. (1992), Gunay (1994) and Acikada, et al. (1996) found similar results.

Speed is a motor characteristic that directly affects the success in football. The pre-training ten-meter speed measurement was 1.69 ± 0.37 seconds and the pre-training thirty-meter speed measurement was 4.37 ± 0.78 seconds. After the pre-season preparation training period the speed values were 1.63 ± 0.30 seconds for the ten-meter speed test and 4.25 ± 0.10 seconds for the thirty-meter speed test. This increase in speed was not statistically significant. In similar studies, Kartal and Gunay (1994) also showed increases in speed with no statistical significance. The differences between the levels are not statistically significant. The decrease in speed times may be due to the decrease in body weight and body mass index. As Ostojic and Zivaniz (2001)

stated, the decrease in the body mass index is related to the increase in the sprint time of football players.

The difference in flexibility was observed in pre and post test results (38.17 ± 4.37 and 40.32 ± 4.02 but it was not significant. The cause of this problem may be lack of sufficient stretching program at all levels.

The reason for the lowered blood pressure and lowered heart rate experienced by the sportsmen is due to sport specific adaptation the occurs after a long periods of regular training (Kandeydi, et al., 1984).

Some of the significant test results that occurred after the pre-season preparation training period can be explained as being successful in achieving the desired physical profile needed to compete in the challenging matches. This kind of testing and training can help in the building of tactics and techniques for training footballers.

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