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Analytical Study of Physical Fitness Components for Football Juniors in Some Clubs in DhiQar Governorate

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Abstract: Purpose of physically training adolescents in sports clubs is to get them ready for physical and technical effort by boosting their physical and psychological levels. Modern football is a game that takes a significant deal of physical effort and fitness, thus it has become vital to train youngsters physically throughout the preparation and formation stage, since this is the basic stage that prepares the player physically for matches and tournaments. Thus, the research problem is defined in "An Analytical Study of Physical Fitness Components for Football Juniors in Some Clubs in Dhi Qar Governorate" during the preparation process phase, the lack of a clear methodology or general vision for physical preparation programs and plans for football juniors in sports clubs, Particularly when they represent governmental institutions that specialize in training a big proportion of young people to contribute to the clarity of current information based on scientific principles and grounds that allow for greater development of physical capacities. This encouraged the researcher to identify current training material and its link to physical ability levels throughout the preparation phase.

Keywords: Physical Fitness, Football Juniors, Sports Clubs, DhiQar Governorate, Preparation Process Phase

Introduction

Football sports the popular develops all over the world day after day, the most important reasons that lead to this is that the employees in its field follow the scientific style as a method or them either in training field or in management or medical treatment or natural or in any other field that's connected to working for developing the standard of players and the team.

So football has great popularity locally, internationally that's why all scientific efforts experiences gathered towards the developing techniqual standard or this game. We see the team standard rise day after day, skills performances has become Strength , speed and to achieve them in team work form highly in understanding perfecting to achieve this standard to keep up with, we have to know the right way, limit the means, the right content according to what world matches require. According to that, players preparing has been done since early age in quality, quantity that qualities him to be an efficient player with skills, plans that enables him to a chieve team and individual duties and good be haviour to take a decision quickly during different situations along the match time.

"Analysis in sports activities is of paramount importance. It plays a crucial role in identifying outcomes, evaluating the effectiveness of programs, methods, and techniques

employed, as well as assessing overall training processes. It serves as a cornerstone for the training process, allowing us to determine the extent to which the set objectives have been achieved, and how well the final results align with the efforts exerted, available resources, and methods used. This enables the identification of both positive and negative aspects and their underlying causes, making evaluation a diagnostic, preventive, and therapeutic process aimed at achieving desired goals

The research gap identified in this study is the absence of a standardized and scientifically grounded methodology for physical preparation programs among youth football clubs in Dhi Qar Governorate.

The researcher's observations in the field highlighted the need for a clearer framework to enhance the physical capabilities of young athletes. The primary objective of this study is to examine the existing training content of these clubs and its correlation with the development of physical fitness levels during the preparatory phase.".

Research Objectives:

1. To identify the time allocation of physical training content during the preparatory period for youth football players in the studied clubs of Dhi Qar.
2. To determine the dynamic development of physical fitness levels, including aerobic (aerobic endurance) and anaerobic (speed, speed endurance, explosive strength, agility, flexibility) capacities, in youth football players during the preparatory period.
3. To ascertain the percentage of improvement in the studied physical fitness levels of youth football players during the preparatory period.

Research Hypotheses:

There are differences in the time allocation of physical training content during the preparatory period for youth football players in the studied clubs of Dhi Qar.

The researcher employed a descriptive research design using pre-test, mid-test, and post-test to suit the nature of the research problem. The research population was determined to be youth football players training at specialized youth and sports centers in Dhi Qar Governorate, totaling 67 players. A purposive sampling technique was used to select a sample size of 100%. The exercises followed by the coach were applied, and based on the obtained results, the researcher concluded a set of findings, the most important of which were:

There are differences in the time allocation of the training content of physical preparation programs during the preparatory period for youth football players in youth centers.

There are significant differences between the mean scores of pre-test, mid-test, and post-test measurements for physical fitness tests of youth football players during the preparatory period in youth centers.

Research Definition

Introduction and Importance of the Research:

Physical preparation is considered one of the primary and initial elements of preparation. It primarily aims to develop fitness levels, enhance the efficiency of body organs and functional systems, and integrate their performance through preparation processes. These processes aim to acquire general and specific physical and functional foundations for the type of sports activity, to build high levels, and to achieve adaptation to the demands of competitions through training with quantities and qualities that are appropriate to the level and age of the players. This training continues throughout the entire training year. The importance of the research lies in identifying the training content for youth football players in Dhi Qar clubs.

Study Problem:

Based on the researcher's specialization and work in the training field in the Republic of Iraq, and the lack of a clear methodology or overall vision for physical preparation programs and plans for youth football players, the researcher conducted an analytical study of some specific physical fitness elements for youth football players in some clubs of Dhi Qar during the preparation process Phase. This was done to contribute to a clear content based on scientific principles that allow for better development of physical abilities. This motivated the researcher to identify the existing training content and its relationship to the level of physical abilities during the preparatory period for youth football players in some clubs in Dhi Qar Governorate.

Research Objectives:

To identify the time allocation of physical training content during the preparatory period for youth football players under study.

To determine the dynamic development of physical fitness levels, including aerobic (aerobic endurance) and anaerobic (speed, speed endurance, explosive strength, agility, flexibility) capacities, in youth football players during the preparatory period.

Research Hypotheses:

There are differences in the time allocation of physical training content during the preparatory period for youth football players in the studied clubs.

There are differences in the rates of improvement in physical fitness levels among youth football players during the studied preparatory period.

Research Scope:

Human Subjects: Youth football players from youth and sports centers.

Time Frame: June 18, 2016, to July 15, 2016.

Location: Youth and sports center fields in Dhi Qar for youth.

Methodology

A descriptive research design with a survey approach was employed, as it is suitable for the nature of this study and its objectives.

Research Population and Sample:

The research population consisted of youth football players training at youth and sports centers in Dhi Qar Governorate, totaling 67 players aged 14-16 years. A purposive sampling technique was used to select a sample size of 100%. Since there is no other training center in Dhi Qar Governorate with the same level of players and for the same age groups, the entire population was included in the study.

Homogeneity

To control for variables that could affect the accuracy of the research results and to attribute differences solely to the independent variable, the homogeneity of the sample was ensured in terms of height, weight, and age. Researchers used the coefficient of variation to assess the homogeneity of the research sample, as shown in Table 1.

Key improvements in this translation

- Clarity and conciseness: The language is clear and concise while maintaining the original meaning.
- Academic tone: The translation uses more academic language, such as "human subjects" instead of "players".
- Consistency: Terminology is consistent throughout the translation.
- Accuracy: The translation accurately reflects the meaning of the original text.
- Specificity: The translation provides more specific details, such as the age range of the participants.

Table 1. Variables, Unit of measurement, Mean, Standard deviation, and Skewness

Variables	Unit of measurement	Mean	Standard deviation	Skewness
Height	Cm	160.86	6.49	1.265
Weight	Kg	51.91	6.54	0.060
Age	months	14.55	0.73	0.942

Homogeneity

All skewness values were less than 30%, indicating homogeneity of the sample in the above variables.

Research Instruments and Equipment:

Data Collection Methods:

Arabic and foreign sources, tests and measurements, questionnaires, the internet, personal interviews, observation, and experimentation.

Instruments and Equipment

20 CDs, whistle, magnesium powder, stand camera, 1 flash drive, 2 platforms, SONY calculator, HP laptop with accessories, 1 PANASONIC photographic camera, 1 SONY video camera, soccer balls, measuring tape, markers, football field, ruler, dynamometer.

Research Tests

30m sprint from a standing start to measure sprint speed.
30m x 5 repetitions to measure speed endurance.
Vertical jump to measure explosive power.
Shuttle run for agility.
Trunk flexion from a standing position to measure flexibility.
12-minute run (Cooper test) to measure aerobic endurance.

Result and Discussion

The research required conducting the aforementioned tests. These tests were presented to a number of experts and specialists, who unanimously approved them, thus ensuring the face validity of the tests. However, the researchers conducted a pilot study on a sample of 19 players from the original population to verify the reliability of the tests by applying them to the research sample. Additionally, the objectivity of the tests was ensured by having two raters record the test scores, and then calculating the correlation coefficient between them.

Pre-tests

The researchers conducted pre-tests for physical fitness on two days to assess aerobic endurance, speed, speed endurance, explosive strength, agility, and flexibility. These tests were conducted between June 18, 2016, and June 20, 2016. The researchers ensured that the conditions for the tests, such as location, time, and execution method, were consistent or as similar as possible to the post-tests.

Mid-tests

There seems to be a repetition here. The description of the mid-tests is identical to the pre-tests. Please verify if this is intentional. If not, please provide the correct information for the mid-tests

Field Observation Form for the Preparation process Phase

- The researcher extracted the essential components of a daily training unit from specialized references.
- The axes and qualitative interpretations of the form (training variables) were determined.

- The form was applied in a pilot study from June 4, 2016, to June 18, 2016.
- The final form was determined based on the data from the pilot study and included:
- The basic components of a daily training unit (preparatory part, main part, final part).
- Qualitative interpretations of training variables, such as the duration of parts of the training unit, actual time for each exercise, number of repetitions for each exercise, rest intervals, and notes on intensity level.

Post-tests

The researchers conducted post-tests for physical fitness on two days to assess aerobic endurance, speed, speed endurance, explosive strength, agility, and flexibility. These tests were conducted between July 16, 2016, and July 18, 2016. The researchers ensured that the conditions for the tests, such as location, time, and execution method, were consistent or as similar as possible for all participants in the sample. The researchers provided similar conditions and requirements as those used for the pre-tests.

Statistical Methods:

The Statistical Package for the Social Sciences (SPSS) was used to analyze the research data. The following statistical methods were employed: mean, standard deviation, percentage, skewness, Pearson correlation coefficient, t-test for independent samples.

- Physical Fitness: The specific physical abilities being measured
- Tests the specific tests used to measure the physical abilities
- Source of Variation: The factors contributing to the overall variation in the data
- Degrees of Freedom: A statistical concept related to the number of independent observations in a data set
- Sum of Squares: The sum of the squared deviations from the mean
- Mean Square: The sum of squares divided by the degrees of freedom
- F-value: The test statistic used to determine if there are significant differences between groups
- Significance Level: The probability of observing a test statistic as extreme as, or more extreme than, the one actually observed, assuming that the null hypothesis 1 is true

Table 2. Analysis of Variance (ANOVA) among the Three Measurements (Pre-test, Mid-test, and Post-test) for the Experimental Group in Physical Fitness Tests (n = 48)

Significance Level	F-Value	Mean Squares	Sum of Squares	Degrees of Freedom	Source of Variation	Tests	Physical Abilities
0.000	10.577	1.669	3.337	2	Between Groups	30m Sprint from	**Transitional Speed**
		0.158	16.565	105	Within Groups		

Significance Level	F-Value	Mean Squares	Sum of Squares	Degrees of Freedom	Source of Variation	Tests	Physical Abilities
			19.902	107	Total	Standing Start	
0.044	3.226	0.551	1.102	2	Between Groups	30m x 5 Repetitions	**Speed Endurance**
		0.171	17.933	105	Within Groups		
			19.035	107	Total		
0.787	0.240	2.787	5.574	2	Between Groups	Vertical Jump	**Power Characterized by Speed**
		11.594	121.417	105	Within Groups		
			1222.991	107	Total		
0.007	5.194	0.780	1.561	2	Between Groups	Running Around Cones or Poles	**Agility**
		0.150	15.776	105	Within Groups		
			17.336	107	Total		
0.166	1.824	13.120	26.241	2	Between Groups	Standing Trunk Flexion	**Flexibility**
		7.193	755.278	105	Within Groups		
			781.519	107	Total		
0.243	1.432	0.307	0.614	2	Between Groups	Minute Run (Cooper)Test	**Aerobic Endurance**
		0.214	22.494	105	Within Groups		
			23.108	107	Total		

The tabulated value of (F) at degrees of freedom (2, 105) and significance level (0.05) is 3.08, and at significance level (0.01) is 4.81.

"The results of the analysis of variance, as shown in Table 15, indicate that the calculated F-values for the physical fitness tests (speed, agility, and speed endurance) are greater than the critical F-value at the 0.05 significance level. This suggests that there are statistically significant differences among the mean scores of the research sample across the three measurements (pre-test, mid-test, and post-test) during the preparation process Phase for youth soccer players in youth centers.

However, the results of the analysis of variance did not reveal any significant differences among the three measurements (pre-test, mid-test, and post-test) in the tests for explosive strength, flexibility, and aerobic endurance.

To further investigate the trends in the differences between the three measurements (pre-test, mid-test, and post-test) in the physical fitness tests for youth soccer players in youth centers, the Scheffé test for multiple comparisons was used, as shown in Table 4."

Table 3. Mean, Standard Deviation, and Scheffé Post-Hoc Test Results Comparing Pre-test, Mid-test, and Post-test Scores on Physical Fitness Tests for Youth Soccer Players in Youth Centers

Significance Level	**"scheffe Test" Post**	**Inter.**	**Pre**	**Standard Deviation**	**Arithmetic Mean**	**Measurements**	**Tests**	**Physical Abilities**
0.021	0.430	0.219		0.290	6.924	Pre	30m Sprint from Standing Start	**Transitional Speed**
	0.211			0.396	6.705	Intermediate		
				0.481	6.493	Post		
0.002	0.294	0.148		0.404	13.348	Pre	30m x 5 Repetitions	**Speed Endurance**
	0.145			0.389	13.199	Intermediate		
				0.367	13.053	Post		
0.490	0.555	0.250		3.080	25.222	Pre	Vertical Jump	**Power Characterized by Speed**
	0.305			3.384	25.472	Intermediate		
				3.719	25.777	Post		
0.040	0.240	0.170		0.392	4.835	Pre	Running Around Cones or Poles	**Agility**
	0.069			0.460	4.664	Intermediate		
				0.381	4.595	Post		
0.238	1.194	0.444		2.718	13.250	Pre	Standing Trunk Flexion	**Flexibility**
	0.750			2.516	13.694	Intermediate		
				2.802	14.444	Post		
0.109	0.163	0.155		0.421	4.638	Pre	Minute Run	**Aerobic Endurance**
	0.008			0.467	4.794	Intermediate		

	0.496	4.802	Post	(Cooper
				(Test

Table 3 presents the results of Scheffé's post-hoc test, which was conducted to determine significant differences among the pre-test, mid-test, and post-test scores of the experimental group on various physical fitness tests. The results indicate the following:

- Differences between pre-test and mid-test scores: Significant differences were found between the pre-test and mid-test scores, ranging from 0.148 to 0.444. Specifically, the tests for speed, agility, and speed endurance showed significant improvements from the pre-test to the mid-test at the 0.05 level.
- Differences between pre-test and post-test scores: There were also significant differences between the pre-test and post-test scores, ranging from 0.163 to 1.194. Similarly, the tests for speed, agility, and speed endurance showed significant improvements from the pre-test to the post-test at the 0.05 level.
- Differences between mid-test and post-test scores: Significant differences were found between the mid-test and post-test scores, ranging from 0.008 to 0.750. Again, the tests for speed, agility, and speed endurance showed significant improvements from the mid-test to the post-test at the 0.05 level.
- No significant differences: While there were differences observed in the tests for explosive strength, flexibility, and aerobic endurance between the pre-test, mid-test, and post-test, these differences were not statistically significant."

Discussion

Tables 4.3 demonstrate statistically significant differences between the pre-test, mid-test, and post-test scores in the tests of speed, agility, and speed endurance, favoring the post-test. This indicates an improvement in the athletes' performance in these variables and serves as an indicator of the program's effectiveness.

Abdul Aziz Al-Nimer and Nariman Al-Khatib (1996) suggested that a successful training program is based on a suitable progression of training units and a thorough understanding of youth training. This aids in designing effective experimental programs.

The researcher attributes the positive results to the use of active recovery between training sessions, which contributed to the athletes' improvement. During active recovery, athletes perform stretching and flexibility exercises to aid in recovery and reduce the effects of fatigue. Additionally, performing light exercises during recovery helps in faster recovery to the normal state after strenuous loads and supports the immune system in coping with the stresses caused by intense training.

As evident from Table 3, there were no significant differences between the three measurements for flexibility. This could be attributed to the lack of sustained flexibility training throughout the preparation process Phase and the lack of a connection between flexibility training and the development of strength in the joints. Furthermore, the range of motion in flexibility exercises may not have been sufficient. Amr Allah Al-Basati (2016) emphasized the importance of daily flexibility exercises in the preparatory phase, with a

focus on variety. These exercises should be performed to the full range of motion in the joints, even to the point of slight discomfort. Additionally, strength training for the joints should be incorporated.

Table 3 also shows no significant differences in the scores for explosive strength tests. The researcher attributes this to the insufficient duration of explosive strength training. Ali Al-Bik (2015) suggested that the intensity of explosive strength training should be between 70-80% of maximum strength, performed at high speed, and last for six weeks, with 6-7 repetitions per set and 4-6 sets, performed 3-4 times per week.

Progressive overload is one of the most influential principles in training programs. As noted by Hanfi Mukhtar (1994), the training load should be increased gradually over 2-3 weeks, followed by a week of reduced load to allow the body to recover and replenish energy. This cyclical pattern challenges the athlete to continually adapt and improve.

During the first three weeks of training, the load is gradually increased week by week, pushing the athlete to their maximum adaptation level by the end of the third week. At this point, fatigue levels are high, and the load is slightly reduced to allow for recovery and consolidation. This cycle is repeated, with the training demands gradually increasing each time. A constant load will eventually lose its training effect and fail to produce the desired improvements in physical fitness or motor skills. Once an athlete adapts to a particular load, it becomes ineffective and must be replaced with a new, more challenging load.

Therefore, the gradual increase in training load is a fundamental principle of training. Table 3 shows that there were no significant differences between the three measurements in the results of the aerobic endurance tests. The researcher attributes this to the fact that the aerobic training in the studied clubs in Dhi Qar Governorate was limited to 3 sessions per week, with each session lasting between 5 and 30 minutes. This duration is insufficient to induce the desired improvements.

There are differences in the dynamics of developing anaerobic capacities (speed, speed endurance, explosive strength, agility, and flexibility) and aerobic capacity (aerobic endurance) in young soccer players during the preparation process Phase in some clubs in Dhi Qar Governorate.

Conclusion

There are differences in the temporal distribution of the training content in physical preparation programs for youth soccer players in Dhi Qar Governorate clubs. There were no significant differences between the three measurements (pre-test, mid-test, and post-test) in the tests of explosive strength, flexibility, and aerobic endurance among youth soccer players in Dhi Qar Governorate clubs.

Recommendations:

Prioritize youth soccer players in Dhi Qar Governorate clubs, as they form the foundation for developing a new generation of football players. Invest in training programs in these clubs and ensure the presence of qualified coaches to guide these young athletes towards achieving high performance levels.

References

Abramova, T.F. (2019). Physical condition of 6-10 year-old children in light of organization of their motor activity. Teoriya I Praktika Fizicheskoy Kultury, 2019(12), 73-75, ISSN 0040-3601

Abramova, T.F. (2020). Features of physical development and physical fitness of junior footballers and cyclists (BMX) aged 6-10 years. Teoriya I Praktika Fizicheskoy Kultury, 2020(2), 60-62, ISSN 0040-3601

Ali Fahmy Al-Bik (2015): Fundamentals of Football Player Preparation, Al-Maaref Establishment, Alexandria.

Amr Allah Ahmed Al-Basati (2015): Sports Training (Theories and Applications), King Saud University Press, Saudi Arabia.

Bennett, H. (2022). The association between Y-balance test scores, injury, and physical performance in elite adolescent Australian footballers. Journal of Science and Medicine in Sport, 25(4), 306-311, ISSN 1440-2440, https://doi.org/10.1016/j.jsams.2021.10.014

Chan, E. & Av, E. &.2003: Relation among physical activity, physical fintnes .Howley Edward & Franks Dom 1997: Health fitness in struction' shand book, third edition human kinetics chanpaign:

Daga, F. Abate (2024). Coaches' Subjective Perceptions and Physical Performance: Key Factors in Youth Football Talent Identification—An Exploratory Study. Education Sciences, 14(12), ISSN 2227-7102, https://doi.org/10.3390/educsci14121400

Farley, J.B. (2022). Physical fitness profiles of female Australian football players across five competition levels. Science and Medicine in Football, 6(1), 105-126, ISSN 2473-3938, https://doi.org/10.1080/24733938.2021.1877335

Farley, J.B. (2024). Relationships between physical fitness characteristics, technical skill attributes, and sports injury in female Australian football players. Plos One, 19(2), ISSN 1932-6203, https://doi.org/10.1371/journal.pone.0298267

Geeson-Brown, T. (2020). Body composition differences by age and playing standard in male rugby union and rugby league: A systematic review and meta-analysis. Journal of Sports Sciences, 38(19), 2161-2176, ISSN 0264-0414, https://doi.org/10.1080/02640414.2020.1775990

Hassan El-Sayed Abu Abda (2015): Modern Trends in Football Planning and Training, Al-Ishraq Technical Library, Alexandria.

Hisham Mohamed Abdullah Al-Mowafi (2010): Evaluation of the Reality of Sports Training for Some Sports Activities, Master's Thesis, Faculty of Physical Education for Boys, Alexandria University.

Howley, E. T., & Franks, D. B. (1997). Health fitness instructor's handbook (3rd ed.). Human Kinetics.

Jones, S.C. (2020). Combining physical performance and Functional Movement Screen testing to identify elite junior Australian Football athletes at risk of injury. Scandinavian Journal of Medicine and Science in Sports, 30(8), 1449-1456, ISSN 0905-7188, https://doi.org/10.1111/sms.13686

Kostyunina, L.I. (2021). Differentiated approach to build key motor-coordination qualities in junior footballers. Teoriya I Praktika Fizicheskoy Kultury, 2021(2), 59-61, ISSN 0040-3601

Millir.Band; pereloplingathlelcethronah the process of depth jumping track and field , review , vol , 19812:

Mukhlif, M.M. (2019). The effect of using competitive exercise in motor fitness and speed of transition for football players (Junior class). Indian Journal of Public Health Research and Development, 10(10), 2410-2414, ISSN 0976-0245, https://doi.org/10.5958/0976-5506.2019.03221.2

Păun, D.G. (2022). Circuit Football Training Customized for Young Players during and after the COVID Period. Sustainability Switzerland, 14(24), ISSN 2071-1050, https://doi.org/10.3390/su142416611

Purba, R.H. (2020). IMT and VO2MAX analysis on junior athletes, futsal and football branches: Literature scopus. Systematic Reviews in Pharmacy, 11(10), 859-867, ISSN 0975-8453, https://doi.org/10.31838/srp.2020.10.129

Purba, R.H. (2021). IMT and VO2max analysis on junior athletes, futsal and football branches: Literature Scopus. Journal of Human Sport and Exercise, 16, 508-521, ISSN 1988-5202, https://doi.org/10.14198/jhse.2021.16.Proc2.35

Rizescu, A.M. (2022). Study on the errors of the diagonal attack to the right and their correction by physical education and sports in the game of football-tennis in senior women. Journal of Physical Education and Sport, 22(8), 1955-1961, ISSN 2247-8051, https://doi.org/10.7752/jpes.2022.08248

Schimpchen, J. (2024). Sensitivity of Minimally Invasive Protocols to Monitor Changes in Endurance Performance in Elite Junior Football (Soccer) Players. International Journal of Sports Physiology and Performance, 19(12), 1409-1416, ISSN 1555-0265, https://doi.org/10.1123/ijspp.2024-0199

Till, K. (2017). Anthropometric and Physical Qualities of Elite Male Youth Rugby League Players. Sports Medicine, 47(11), 2171-2186, ISSN 0112-1642, https://doi.org/10.1007/s40279-017-0745-8

Woods, C.T. (2018). The association between fundamental athletic movements and physical fitness in elite junior Australian footballers. Journal of Sports Sciences, 36(4), 445-450, ISSN 0264-0414, https://doi.org/10.1080/02640414.2017.1313996

Zarani, F. (2021). Exercise is medicine: Identification of the views and attitudes of high school pupils. Archives of Hellenic Medicine, 38(4), 517-523, ISSN 1105-3992