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COMPARISON OF SOME PHYSICAL, SKILL AND FUNCTIONAL ABILITIES OF FUTSAL AND OPEN FOOTBALL PLAYERS

Kareem Naeemah Rahan
Directorate of Misan Education, Ministry of Education of Iraq
Naimakareem88@gmail.com

Abstract
The importance of the research was evident in the study of some of the physical abilities and functional skills of the two teams of the Al-Manara University for Medical Sciences are (halls and open) to show the differences between them in the variables and what is the differentiation between the halls and open and from here the importance of the research to clarify the differences in order to correct the training process and choose exercises and training method to suit them to improve and develop the performance of the players and their abilities and physical, skill and functional capabilities. In regards to the issue of research, it aims to provide solutions for workers in the training field and players by identifying their weaknesses and strengths. This will enable them to address these weaknesses, continue their training, and understand the differences between futsal players and open field players. Additionally, the research highlights the lack of achievements in Iraqi university championships. The research attempted to discern the disparities in physical capacities, fundamental skills, and functional assessments between players of the halls and open. The researcher employed a descriptive strategy inside the survey method to address the research problem. The researcher determined that futsal players exhibit greater strength in their individual legs and explosive power compared to open players. However, open players demonstrate superiority over futsal players in functional indicators such as resting heart rate and breathing rate per minute.

Keyword: Comparison, Physical Skill, Functional Abilities, Football Players.

Introduction

To attain and secure sports championships, coaches must exert significant effort and possess extensive expertise in the theories and practical applications of sports training science (Hedlund et al., 2018). This entails utilizing several scientific disciplines, such as testing and physiology, to enhance athletic performance and achieve notable accomplishments in the field of sports (Kenney, Wilmore & Costill, 2021). Football, with its various forms such as open, futsal, beach, and others, is considered one of the most popular games in many countries worldwide due to its system of play and laws (Uehara et al., 2021; Uehara et al., 2018). The researcher focused on analyzing the physical abilities and functional skills of two teams from the Al-Manara University for Medical Sciences, specifically in the context of their performance in indoor halls and open spaces. The purpose of this research was to identify the differences between the two environments and their impact on various variables. By understanding these differences, the aim was to optimize the training process by selecting appropriate exercises and training methods that would enhance and develop the players' performance, as well as their physical, skill, and functional capabilities.

Search problem

By closely monitoring the training process and the resulting changes in sports teams and training staff, researcher aim to identify the factors that contribute to a decline in sports performance. Specifically, they seek to identify the differences and clear indications of specialized training programs for futsal and open football players. To address this, coaches must develop tailored training curricula that incorporate specific exercises, stressors, and training intensities that directly impact the players' physical abilities. The researchers observed

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a correlation and comparison between futsal and open football in terms of physical, skill, and functional aspects through various tests and measurements. These evaluations serve as tools to assess the training curriculum and determine its alignment with the intended goals. Therefore, the training process cannot be accurately adjusted and validated solely based on tests of physical abilities and skills. It is crucial to consider the functional responses, which are fundamental for achieving success. Therefore, the researcher opted to focus on the issue of training in order to provide solutions for workers in this field and players. The aim is to address weaknesses, enhance strengths, and improve training methods. Additionally, the researcher aims to highlight the differences between futsal players and open field players, as well as shed light on the lack of achievements in Iraqi university championships.

Research Objectives

The research aims at the following :

1. Identify the differences of some physical abilities, basic skills and functional measurements between futsal and open players.

Research hypotheses

1. The existence of significant differences in some physical abilities, basic skills, functional measurements between futsal and open players.

Research Areas

Human Areas: Al-Manara University for Medical Sciences players for halls and open for the academic year 2021-2022

Spatial Areas: Stadium of Al-Manara University for Medical Sciences / Misan .

Time Areas: from 15/10/2021 to 18/12/2021.

Methodology

Research Methodology and Field Procedures

The researcher employed the descriptive approach inside the survey methodology to effectively address the research problem. The curriculum is designed to gather data in order to empirically test hypotheses or address inquiries pertaining to the state of the sample (Abutabenjeh & Jaradat, 2018).

Research population and sample

The researcher intentionally chose a specific research sample, specifically the teams of Al-Manara University for Medical Sciences for Futsal and Open for the academic year 2021-2022. The research sample consisted of 13 players from the college futsal team, of which 8 players were purposefully selected. These 8 players were the most actively involved in competitions, accounting for 61.53% of the team. Additionally, there were 22 players in the open football team, and 10 players were deliberately chosen as they represented the main players of the team, making up 45.45% of the team. The researcher also assessed the homogeneity of the research sample.

Table 1: Shows the homogeneity of the research sample.

Variables	M	SD	Coefficient of variation
Length	170.6	4.25	2.49%
Weight	68.11	3.75	5.50%
Age	18.9	0.45	2.38%
Training age	3.79	0.52	13.72%

Table (1) shows the homogeneity of the sample in the measurements (age, height, weight, and training age). The values fall between (2.49%-13.72%) which is less than (30%).

Legss of collecting information

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First: Arab and foreign sources .
Second: The Internet.
Third: Tests and Measurements .

Devices and tools used:

1. Stopwatch (3).
2. Football (10).
3. Whistle .
4. Rotameter device .
5. Tape measure .
6. Laptop (HP) .
7. Signs (15).
8. Pressure gauge .
9. Football field.

Tests and measurements used in research

The researcher administered a series of tests and measures in various formats for each of the physical, skilled, and functional assessments to a panel of experts and specialists. The tests and measurements that achieved an 80% success rate were chosen as follows:

1. Stretch and bend the knees 20 seconds (Webright, Randolph & Perrin, 1997).
2. The speed characteristic force of the trunk (Barbado et al., 2016).
3. Stretching the power of the two legs (Yamaguchi & Ishii, 2005).
4. Strength extension of the trunk (Mueller et al., 2014).
5. The explosive power of the legs (Costill et al., 1968).

Skill tests

1. Running with the ball.
2. Zigzag running and ball control between the pillars.
3. Passing the ball towards a goal drawn on the ground.

Functional measurements

1. Measuring the number of heartbeats.
2. Measure the number of breathing times.

Exploratory experiment

The researcher conducted an exploratory experiment on 20-21/11/2021, involving two players from both halls and open. The participants were selected from a larger study sample and belonged to the same research community. The objective of the exploratory experiment was:

1. Ensure the safety and validity of the devices and tools used in the research.
2. Knowing the difficulties faced by the researcher when denying measurements and tests.

Main experience

The researcher conducted the main experiment for the research sample on November 24-25, 2021, starting at 9:00 am. The experiment included two days, with the first day dedicated to the futsal player sample and the second day to the open football sample.

According to the following sequence:

First: Functional measurements.
Second: Basic Skills.
Third: Physical Abilities.

Statistical Methods

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The researcher used the statistical bag (SPSS-23) to process the data obtained through the tests.

Results

Presentation and discussion of results

Presentation of differences between futsal and open players in the measurements under study

Table 2: Shows the differences between the measurements of physical, skill and functional abilities of futsal and open football players

Variables	Futsal Players		Open Players		T	Sig
	M	SD	M	SD		
The power characteristic of the speed of the legs	14.11	1.21	12.89	3.12	5.44	0.002
Speed characteristic force of the trunk	14.02	2.03	13.89	2.42	1.92	0.009
Stretched strength for legs	49.44	4.21	55.62	6.81	4.81	0.004
Strength extension of the trunk	53.02	5.13	56.28	7.87	1.23	0.008
The explosive power of the legs	2.11	0.50	2.40	0.88	6.04	0.003
Running with the ball	7.21	0.28	8.22	2.45	1.88	0.009
Running between signs	4.05	0.25	7.31	2.12	4.23	0.002
Scroll	14.82	2.34	12.25	3.81	4.6	0.003
Heart rate	66.06	5.78	63.22	15.23	3.4	0.004
Number of breaths	16.68	3.22	14.22	2.08	4.21	0.003

*df the significance level (0.05)

Table (2) demonstrates that the arithmetic legs of testing the strength characteristic of the speed of the two men for futsal players have significant differences in favor of futsal players. As for the arithmetic legs in the test of strength characteristic of the speed of the futsal players' trunk muscles, there are no significant differences between the halls and open. As for the arithmetic mean of the strength extension test for the two legs for futsal players, there are significant differences in favor of futsal players. As for the arithmetic legs of the strength stretching test for the trunk muscles, there are no significant differences between futsal and open players. As for the arithmetic legs of the ball running test, there are no significant differences between the futsal and open players. As for the arithmetic legs of the explosive power of the legs by jumping, there are significant differences in favor of futsal players. As for the arithmetic mean of the ball running test between the signs, there are significant differences in favor of futsal players. As for the arithmetic legs of the ball scoring test, there are significant differences in favor of futsal players. As for the arithmetic legs of the pulse test, there are significant differences in favor of the open players. As for the arithmetic legs of the breath test, there are significant differences in favor of open players.

Discuss and analyze the results of physical abilities

Table (2) indicates significant statistical disparities in the test results, specifically in terms of the speed and explosive power of both legs, between the two groups (futsal and open). The findings favor the indoor halls, as the researchers believe that the confined space in futsal leads to a game that heavily relies on quick movements, strength, and high frequencies. The term "strength endurance" refers to the capacity of a muscle or set of muscles to resist exhaustion during repeated contractions or to withstand external resistance over an extended duration (Anders & Schönau, 2022; Spiering et al., 2021). The unique power of speed is correlated with the level of expertise in skill execution, which enables the player to reach optimal levels and successfully accomplish the desired skill or movement objective" (Arainru, 2022). The table above clearly shows notable disparities in the strength test results between the two legs, favouring open players. The researcher believes

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that the time aspect of open football is greater than that of futsal, as well as the number of opponents and the playing area. This necessitates a greater capacity for strength stretching in open football players, enabling them to handle various playing situations such as friction with opponents, striking the ball, and executing maneuvers. Additionally, factors such as player weight, pitch conditions, and other elements that arise during competitions and endure for extended periods contribute to the need for enhanced strength stretching ability.

Discuss and analyze the results of differences for basic skills

The data presented in Table (2) clearly indicates that there are statistically significant differences in the test measuring the competence of running with the ball between the signs and scoring, favoring the halls over the futsal and open players. The researcher posits that the utilization of scoring ability as a ratio between futsal and open players is higher in indoor halls due to the shorter playing distance, which enables repeated access to the opposing team's goal and facilitates scoring. This also provides an opportunity to enhance scoring skills, unlike in open play where scoring often relies on individual players rather than teamwork. Furthermore, the ability to navigate between the markers is a distinct advantage for futsal players due to the specific demands of the sport. The competition necessitates quick motor skills in confined areas, with the presence of opponents and the added pressure component. Additionally, rapid response times are crucial for success. The enhancement of skill performance is directly linked to the enhancement of physical abilities. This fundamental principle forms the basis of performance, particularly in endurance-based games that demand speed, strength, strategic thinking, and precise execution. A player's high physical abilities enable them to effectively carry out the tasks required in a match, such as in football, where mastery of skills and execution of tactical responsibilities are essential for elevating performance and securing victory. Training physical abilities is a significant factor in enhancing performance. Motor skill development relies on physical abilities. The higher the quality of these abilities for a specific activity, the greater the level of performance (Farley et al., 2020). Ashford, Abraham, and Poolton (2021) highlight that the athlete's development of a multitude of motor skills and physical talents serves as a foundation for enhancing both response speed and decision-making speed. Passes are a fundamental aspect of the game of football, as the ability to execute passes well allows a team to infiltrate the defensive lines of the opposing team with minimal effort and in the shortest amount of time. Mastering the physical traits required for passing is essential for achieving this competency (JR, 2018). Muscular strength, particularly, plays a crucial role in developing other physical traits and enhancing skill performance, ultimately leading to achieving a high degree of sports proficiency (Suchomel et al., 2018).

Discussion and analysis of the differences of functional indicators between futsal and open players

Table (2) indicates that there were variations in the measurements of heart rate and breathing frequency between futsal and open players, favoring the open players. The researcher believes that this is reasonable considering the nature and characteristics of the matches, which involve continuous running for 90 minutes and require active participation in attacking, defending, and controlling opponents. These activities keep the players in constant motion and enhance their aerobic functional efficiency, thereby improving the performance of both the heart muscle and lungs. The intensity of physical exercise affects heart rate, and this effect is influenced by factors such as the level of intensity, the magnitude of the activity, the type of exercise, and the timing of muscle contractions (Kaufmann, 2023). Colosio et al. (2018) found that participating in sports and events leads to higher respiratory rates, whereas playing open football results in increased energy expenditure. Additionally, they observed that both heart rate and the strength of the heart muscle are elevated during these activities.

Conclusions

The most important conclusion of the researcher is the following :

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1. The superiority of futsal players over open players in the distinctive strength of the two legs and the explosive power of the two legs .
2. The superiority of the open players over the futsal players in the strength table.
3. The superiority of futsal players over open players in basic skills (running between signs and scoring).
4. The superiority of the open players over the futsal players in the functional indicators (heart rate and breathing rate per minute during rest).

Recommendations

The most important recommendations of the researcher are the following :

1. Emphasis on building training curricula that contain various exercises for futsal and open football.
2. Emphasis on exercises of physical abilities and skills for each game .
3. Increasing the content of competition exercises because they further improve the level of job performance and physical and skill abilities.
4. Using exercises that improve the work of functional equipment for futsal and open football players .
5. Conducting research on other variables and indicators on futsal and open players.

Reference

1. Abutabenjeh, S., & Jaradat, R. (2018). Clarification of research design, research methods, and research methodology: A guide for public administration researchers and practitioners. Teaching Public Administration, 36(3), 237-258.
2. Al Behadili, H. J. H., & Kasim, M. A. (2022). Developing Ball Dribbling And Passing Skills Using The Integrative And Reciprocal Methods Of Emerging Footballers. Eurasian Journal of Humanities and Social Sciences, 11, 76-82.
3. Al Behadili, H. J. H., & Kasim, M. A. (2022). Effects Of A Training Program For The Plyometric On The Harmonic Abilities And Muscular Ability Of Football Players. European Journal of Interdisciplinary Research and Development, 6, 60-69.
4. Al Behadili, H. J. H., & Kasim, M. A. (2022). The Implications For Learning Of Transferring On Passing Skills In Junior Football Players. Open Access Repository, 8(9), 39-49.
5. Anders, C., & Schönau, T. (2022). Spatiotemporal characteristics of lower back muscle fatigue during a ten minutes endurance test at 50% upper body weight in healthy inactive, endurance, and strength trained subjects. Plos one, 17(9), e0273856.
6. Arainru, G. E. (2022). The Skill Related Physical Fitness Profile As Determinants Of Nigerian Basketballers Playing At Different Levels. ADPEBI International Journal of Business and Social Science, 2(1), 29-35.
7. Ashford, M., Abraham, A., & Poolton, J. (2021). Understanding a player's decision-making process in team sports: a systematic review of empirical evidence. Sports, 9(5), 65.
8. Barbado, D., Barbado, L. C., Elvira, J. L., van Dieën, J. H., & Vera-Garcia, F. J. (2016). Sports-related testing protocols are required to reveal trunk stability adaptations in high-level athletes. Gait & Posture, 49, 90-96.
9. Colosio, A. L., Pedrinolla, A., Da Lozzo, G., & Pogliaghi, S. (2018). Heart rate-index estimates oxygen uptake, energy expenditure and aerobic fitness in rugby players. Journal of sports science & medicine, 17(4), 633.
10. Costill, D. L., Miller, S. J., Myers, W. C., Kehoe, F. M., & Hoffman, W. M. (1968). Relationship among selected tests of explosive leg strength and power. Research Quarterly. American Association for Health, Physical Education and Recreation, 39(3), 785-787.

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https://proximusjournal.com/index.php/PJSSPE
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11. Farley, J. B., Stein, J., Keogh, J. W., Woods, C. T., & Milne, N. (2020). The relationship between physical fitness qualities and sport-specific technical skills in female, team-based ball players: a systematic review. Sports medicine-open, 6, 1-20.
12. Hedlund, D. P., Fletcher, C. A., Pack, S. M., & Dahlin, S. (2018). The education of sport coaches: What should they learn and when should they learn it?. International Sport Coaching Journal, 5(2), 192-199.
13. JR, A. L. S. (2018). Exploring Passing Networks and Football Teams Performance During the European Championship (2016) (Doctoral dissertation, Universidade de Tras-os-Montes e Alto Douro (Portugal)).
14. Kaufmann, S., Gronwald, T., Herold, F., & Hoos, O. (2023). Heart rate variability-derived thresholds for exercise intensity prescription in endurance sports: a systematic review of interrelations and agreement with different ventilatory and blood lactate thresholds. Sports Medicine-Open, 9(1), 59.
15. Kenney, W. L., Wilmore, J. H., & Costill, D. L. (2021). Physiology of sport and exercise. Human kinetics.
16. Mueller, J., Mueller, S., Stoll, J., Baur, H., & Mayer, F. (2014). Trunk extensor and flexor strength capacity in healthy young elite athletes aged 11–15 years. The Journal of Strength & Conditioning Research, 28(5), 1328-1334.
17. Spiering, B. A., Mujika, I., Sharp, M. A., & Foulis, S. A. (2021). Maintaining physical performance: the minimal dose of exercise needed to preserve endurance and strength over time. The Journal of Strength & Conditioning Research, 35(5), 1449-1458.
18. Suchomel, T. J., Nimphius, S., Bellon, C. R., & Stone, M. H. (2018). The importance of muscular strength: training considerations. Sports medicine, 48, 765-785.
19. Uehara, L., Button, C., Araújo, D., Renshaw, I., & Davids, K. (2018). The role of informal, unstructured practice in developing football expertise: the case of Brazilian Pelada. Journal of Expertise, 1(3), 162-180.
20. Uehara, L., Falcous, M., Button, C., Davids, K., Araújo, D., de Paula, A. R., & Saunders, J. (2021). The poor "wealth" of Brazilian football: How poverty may shape skill and expertise of players. Frontiers in Sports and Active Living, 3, 635241.
21. Webright, W. G., Randolph, B. J., & Perrin, D. H. (1997). Comparison of nonballistic active knee extension in neural slump position and static stretch techniques on hamstring flexibility. Journal of Orthopaedic & Sports Physical Therapy, 26(1), 7-13.
22. Yamaguchi, T., & Ishii, K. (2005). Effects of static stretching for 30 seconds and dynamic stretching on leg extension power. The Journal of Strength & Conditioning Research, 19(3), 677-683.