Relationship Of The Training Based On The Game Of The Simple Rotation In Indoor Soccer With The Completion In The Defense-Attack Transition

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Summary

This research paper addresses the relationship between game-based training of simple rotation and completion in the defense-attack transition in the sport of indoor soccer. To this end, an experimental study was carried out in which a training program based on simple rotation was implemented. The sample was composed of 15 athletes of single category of the SUCARS team of the Pamplona transport guild, aged between 18 and 35 years.

The training program consisted of 12 sessions, lasting 60 minutes each. During the program, the simple rotation was worked on, that is, the rapid change of position on the field of play was practiced to take advantage of the spaces and increase the chances of completion in the defense-attack transition. Pre and post-training tests were carried out to evaluate the performance of the

athletes in the technical and tactical aspects related to the completion in the defense-attack transition.
The results obtained show a significant improvement in the technical and tactical aspects related to completion in the defense-attack transition, suggesting that training based on simple rotation can be an effective strategy to improve performance in this aspect of the game. These findings have important implications for the practice of indoor football and suggest the need for further research along these lines to determine whether training based on simple rotation can be an effective long-term strategy to improve the performance of athletes on the field of play.

Keywords: Simple rotation, Defense-attack transition Finishing in indoor football.

1. Introduction

For years, training has been the basis of any structured procedure in the sports field, as Carrasco (2003) explains in his work: "Theory and Practice of Sports Training". Training periods and standards should be structured according to needs, in addition to having a scope throughout the preparatory period and applying it for the achievement of sporting achievements.

Similarly Cortés (2001) in the dynamics of the training process, today it is not enough to know what to do. The question should revolve around how to do it and that is where the importance of tactics comes into effect. That is why in this work we will also address issues related to the tactical aspect in different situations.

The rotations in a collective sport such as indoor football are fundamental since the tactical appropriation within the field of play, knowing how to move correctly and manage the spaces according to the disposition and the need allow a clarity in what refers to game situations as explained by Álvarez (2002) "Tactics is the process in which all physical possibilities are combined, technical, theoretical, psychological and others, to give an immediate solution to the dissimilar unforeseen and changing situations that are created in conditions of opposition" (p.1). Likewise, Mahlo (1984) states that

tactical thinking, as an intellectual process, enables the analysis and solution of specific action and allows the athlete to make decisions to solve game situations.

In this case, we implemented the simple rotation that allows those involved to have basic notions of the dynamics of the game without saturating the movements. Given the circumstances, most of the athletes studied in this research lack concepts and skills for the practice of this sport in a competitive way and use it as a means of physical activity in their free time. But by involving them in the problem and beginning to investigate the possibility of participating in events progressively allows to continue with processes such as completion (approach, possibility or even goal) in the different meetings where there would be the possibility of influencing.

The completion in this case is to conclude the game situation respecting the transitions of both attack and defense, being clear that the farther away the location of the ball from our goal will be more satisfactory for the defensive organization and in turn the closer or even marking in opposing goal in essence would be the ideal in attack. As explained by Ardá, Casal and Anguera (2002), the fundamental objective of football is to achieve an advantageous situation over the opposing team, to cause an imbalance on the rival that allows to take a team to a situation of completion and obtain a goal.

The SUCARS team of the transport guild of Pamplona free category is a group of players with tactical needs, playing without rotation and without a common purpose (individualism), they lacked collective game identity, highlighting players in each factor, but to generate the characteristic collectivity of the sport they had shortcomings.

Presenting the work with a training based on the game of simple rotation, for the members of SUCARS, in order to contrast the positive hypothesis relating the tactics with the performance in the competitions to participate. r.

To visualize training based on the game of simple rotation, the period of three training mesocycles is taken into account. During the practice of training, pertinent adjustments will be made according to the results given

by the instrument (SPS), acquiring both negative and positive technical and tactical aspects. It is proposed to relate the type of rotation and its influence on the decisive thinking of each athlete, also counting on the integration of the technique in the completion of sporting events.

2. Objectives

2.1 General objective

Identify the relationship of training based on the game of simple rotation with the completion in the defense-attack transition of indoor soccer in athletes unique category of the SUCARS team of the Pamplona transporter guild.

2.2 Specific objectives

- Determine the tactical and physical conditions of the completion in the defense-attack transition in athletes unique category of the SUCARS team of the Pamplona transporter guild
- Design a tactical training program based on the game of simple rotation focused on the completion in defense-attack transition in athletes unique category of the SUCARS team of the Pamplona transporter guild.
- Apply the training program based on the game of the simple rotation focused on the completion in defense-attack transition in athletes unique category of the SUCARS team of the Pamplona transporter guild.
- Establish the level of relationship of training based on the game of simple rotation in indoor soccer with the completion in the defense-attack transition

3. Hypotheses

- Training based on the game of simple rotation will be related to completion in the defense-attack transition of indoor soccer.

- The game-based training of the simple rotation will have no relation to the completion in the defense-attack transition of indoor soccer.

4. Methodology

4.1 Epistemological approach

Starting from the currents of positivism is oriented a research from the rational-realistic approach, this takes interpretations of reality which seeks to understand through mathematical logic, this will be carried out by raising premises about the observed reality and submits them to their acceptance or negation reaching a conclusion that will be found in the conceptual theory of the interpretation of reality itself (Berríos et al., 2009). The rational-realist approach underlies the rational-deductive rationalism, which is based on the deduction of realities through the scientific method by establishing previous scientifically based hypotheses, which pose possible effects that are subjected to the scientific process of approval to negation (Padrón G, 2000).

4.2 Research design

4.2.1 Type of research

The present research is quasi-experimental. This is because it lacks total control of all variables that can significantly influence the results, being the control of variables an indispensable characteristic in pure experimental research. Therefore, it is the manipulation of the independent variables, the training program and the existence of two comparison groups, elements that meet the criteria of the quasi-experimental method. However, the level does not go deep enough given the homogeneous characteristics and random selection, since this process was carried out with the groups available and with the intention of approval in the participation on a voluntary basis (Cambell & Stanley, 1995).

4.2.2 Type of research design

The non-equivalent control group research design is used when we do not have enough population to perform two groups therefore an experimental equivalent sample is not performed, these groups are formed by natural association of each. In this case, the groups will be made

up of two indoor soccer teams from the city that approved their participation in the experiment. They are divided into two groups, one to which the program (X) of rotation games in completion (GRF) is applied and the control that does not apply intervention and is another equipment (GC), both will be performed the pre-test and post-test evaluation instrument GPAI (O).
The experimental design is shown graphically below:

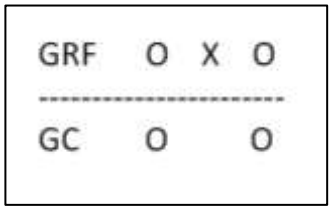


Figure 1. Graphic design of the experiment

4.2.3 Methodological design

Figure 2. Methodological design of the research
Source: Authors.

4.3 Population and sample

The population of this study is made up of a total of 250 indoor soccer players of the single category (senior), belonging to the transport guild of the city of Norte Santander. The population is made up of all the players in the sector who participate in the senior category and who belong to sports clubs in the city of Pamplona that remain in active competition within the town.

4.3.1 Sample

The sample is a subset of the population that possesses and represents the characteristics of the population under study. The study takes as a sample 15 male indoor soccer athletes who voluntarily participated in the research process.

4.3.2.1 Type of sampling:

Non-probabilistic method

4.3.2.2 Form of sample:

Convenience sampling.

4.3.2.3 Sample size:

The study will take into account the inclusion and exclusion criteria for the participation of the sample in the study.

Inclusion criteria:

- Active players in competition of the SUCARS team of the city of Pamplona
- Players who maintain a minimum weekly frequency of three.

Exclusion criteria:

- Players who have an injury that prevents the normal development of practice.
- Players who have an illness that prevents them from performing the demands of practice at high demands.
- Players who train or belong to other sports clubs or compete with other teams in alternate tournaments.
- Players who do not complete 90% attendance at the intervention.

  The sample size is determined based on the experimental design of non-equivalent groups where one is the SUCARS team and the other the PEQUES team which met the criteria described above. The assignment of experimental and control groups was randomized.

4.4 Methods

4.4.1 Training plan and mesocycle

A training plan is established with a systematic and detailed model to determine the activity of indoor football according to the characteristics of the athletes. With 2 months of intervention establishing the training mesocycles that aim to achieve objectives of the global processes (real situations), representing relatively homogeneous stages whose duration is 4 weeks and established by a set of microcycles (Llana, 2014).

It is important to remember that the key to established training is to improve performance, in this case the objective is raised as the main pillar in the microcycle (Pérez, 2004), varying the stimuli to athletes, programming the intensities and with a volume of 20 minutes per session, thanks to this a sports setback will be avoided.

The training sessions established in the microcycles of the mesocycle address the guidelines taught with a focus on real situation exercises to strengthen rotation and implement this model with training in real situations expanding technical, tactical, cognitive and physical training.

PLAN DE ENTRENAMIENTO										
MES	OCTUBRE					NOVIEMBRE				
RECUENCIA TRABAJ	2	2	2	2	2	2	2	2		
Volumen	TEST T	40 minutos	40 minutos	40 minutos	40 minutos	40 minutos	40 minutos	40 minutos	40 minutos	TEST T
Periodos		Preparatorio	Preparatorio	Preparatorio	Preparatorio	Competitivo	Preparatorio	Preparatorio	Trasn	
Etapas		Especifica	Especifica	Especifica	Especifica	Especifica	Recuperacion	Especifica	General	
Microciclos		Ajuste	Carga	Carga	Ajuste	Impacto	Carga	Activacion	Ajuste	
		1	2	3	4	5	7	8	9	
INTENSIDAD										
100%										
95%										
90%										
85%										
80%										
75%										
70%										
65%										
60%										
55%										
50%										
45%										
40%										
35%										
30%										
25%										
20%										
15%										
10%										
5%										

Figure 3. Setting up the training macrocycle
Source: Authors.

MESOCICLO N°1					
MESES	OCTUBRE				
FECHAS	05 y 08		12 y 15	19 y 22	26 y 29
MICROCICLO	1		2	3	4
PORCENTAJE	100%	60%	80%	75%	60%
Rotaciones	Test	Rotacion sencilla	Rotacion sencilla	Rotacion sencilla	Rotacion sencilla
Situaciones de juego		1 vs 1	1 vs 1	2 vs 2	4 vs 4
			2 vs 2	3 vs 3	5 vs 5

MESOCICLO N°2					
MESES	NOVIEMBRE				
FECHAS	02 y 05	09 y 12	16 y 19	23 y 26	
MICROCICLO	5	6	7	8	
PORCENTAJE	95%	50%-75%	85%	65%	100%
Rotaciones	Rotacion sencilla	Rotacion sencilla	Rotacion sencilla	Rotacion sencilla	Test
Situaciones de juego	5 vs 4	Recuperacion	Circuito 2 vs 1	5 vs 2	
	Partido	4 vs 3	4 vs 4		

Figure 4. Mesocycle 1 and 2
Source: Authors.

5. Research results

5.1 Plays and practical applications

Rotation in indoor football is a fundamental strategy in the game that allows players to quickly change positions on the field, generate spaces for attack and maintain a high pace of play. The application of a specific training program can significantly improve the effectiveness in the completion of plays, the ability to regain possession of the ball and strengthen relationships between players. Therefore, rotation training in indoor soccer is recommended as an effective practice to improve team performance on the field.

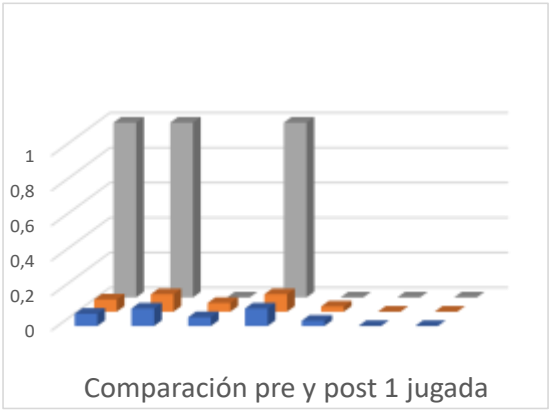
Research has shown that rotation training in indoor soccer can be a valuable tool for improving team performance in the game. The results show that teams that apply a rotation-specific training program have greater effectiveness in completing plays and a greater ability to regain possession of the ball. In addition, it has been found that rotation training in indoor football may have additional benefits, such as improving team cohesion and player motivation.

The training program of the rotation in indoor soccer should include specific exercises that focus on coordination and communication between players, speed and physical endurance, as well as the ability to make quick and accurate decisions during the game. It is important that the exercises are varied and challenging, to maintain the interest and motivation of the players.

Regarding the research methodology, an experimental design was used with an intervention group compared to the control group. Importantly, the implementation of the rotation training program in indoor soccer should be gradual and adapted to the needs and abilities of the players. In addition, supervision by a specialized trainer who can provide feedback and adjust the program as needed is recommended. Regarding the limitations of the research, it should be noted that the sample of players used was small and specific. Therefore, it is suggested to replicate the study with a larger and more diverse sample of players to validate the results obtained. In addition, other variables that could influence the effectiveness of rotation in indoor football can be explored, such as player experience and level of competition.

5.1.1 Move 1

Jugada 1	Pre-Test				Jugada 1	Post- Test		
Acciones	Aspectos Técnicos	Aspectos Tácticos	2 Buena, 1 Imparcial, 0 Mala		Acciones	Aspectos Técnicos	Aspectos Tácticos	2 Buena, 1 Imparcial, 0 Mala
Control	0,02	0,02	0		Control	0,07	0,07	1
Pase	0	0,03	0		Pase	0,1	0,1	1
Conducción	0	0	0		Conducción	0,05	0,05	0
Movimiento	0,02	0,2	0		Movimiento	0,1	0,1	1
Decisión	0,02	0,02	0		Decisión	0,03	0,03	0
finalización	0	0	0		finalización	0	0	0
Gol	0	0	0		Gol	0	0	0

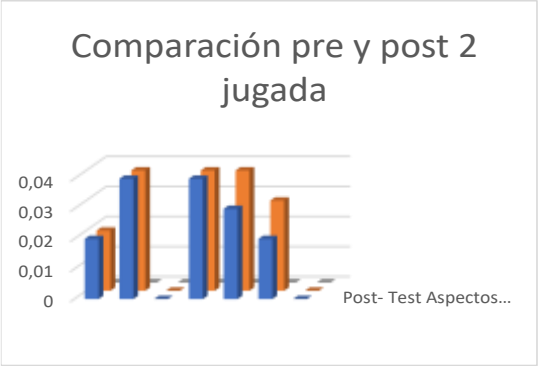


En el análisis estadístico realizado, se aplicaron pruebas como el test de Wilcoxon y el test de Kruskal-Wallis para evaluar la significancia de los resultados. Los resultados del test de Wilcoxon mostraron una diferencia significativa en los aspectos técnicos, indicando una mejora después de la intervención. Sin embargo, no se encontraron diferencias significativas en los aspectos tácticos. Por otro lado, el test de Kruskal-Wallis reveló una diferencia significativa en las observaciones realizadas. Estos hallazgos sugieren que el plan de entrenamiento implementado tuvo un impacto positivo en los aspectos técnicos y en las observaciones del equipo.

Figure 5. Move 1
Source: Authors.

5.1.2 Move 2

Jugada 2	Pre-Test				Jugada 2	Post- Test		
Acciones	Aspectos Técnicos (1,0)	Aspectos Tácticos (1,0)	2 Buena, 1 Imparcial, 0 Mala		Acciones	Aspectos Técnicos (1,0)	Aspectos Tácticos (1,0)	2 Buena, 1 Imparcial, 0 Mala
Control	0,04	0,02	0		Control	0,02	0,02	0
Pase	0	0,02	0		Pase	0,04	0,04	0
Conducción	0	0	0		Conducción	0	0	0
Movimiento	0	0	0		Movimiento	0,04	0,04	0
Decisión	0	0,04	0		Decisión	0,03	0,04	0
finalización	0	0	0		finalización	0,02	0,03	0
Gol	0	0	0		Gol	0	0	0



En el análisis estadístico, se utilizaron el test de Wilcoxon y el test de Kruskal-Wallis para evaluar los resultados obtenidos. Los resultados del test de Wilcoxon indicaron una diferencia significativa en los aspectos técnicos después de la intervención, lo cual sugiere una mejora en este aspecto. Sin embargo, no se encontraron diferencias significativas en los aspectos tácticos. Por otro lado, el test de Kruskal-Wallis reveló una diferencia significativa en las observaciones realizadas. Estos resultados respaldan la efectividad del plan de entrenamiento en el desarrollo de habilidades técnicas y en las observaciones del equipo.

Figure 6. Move 2
Source: Authors.

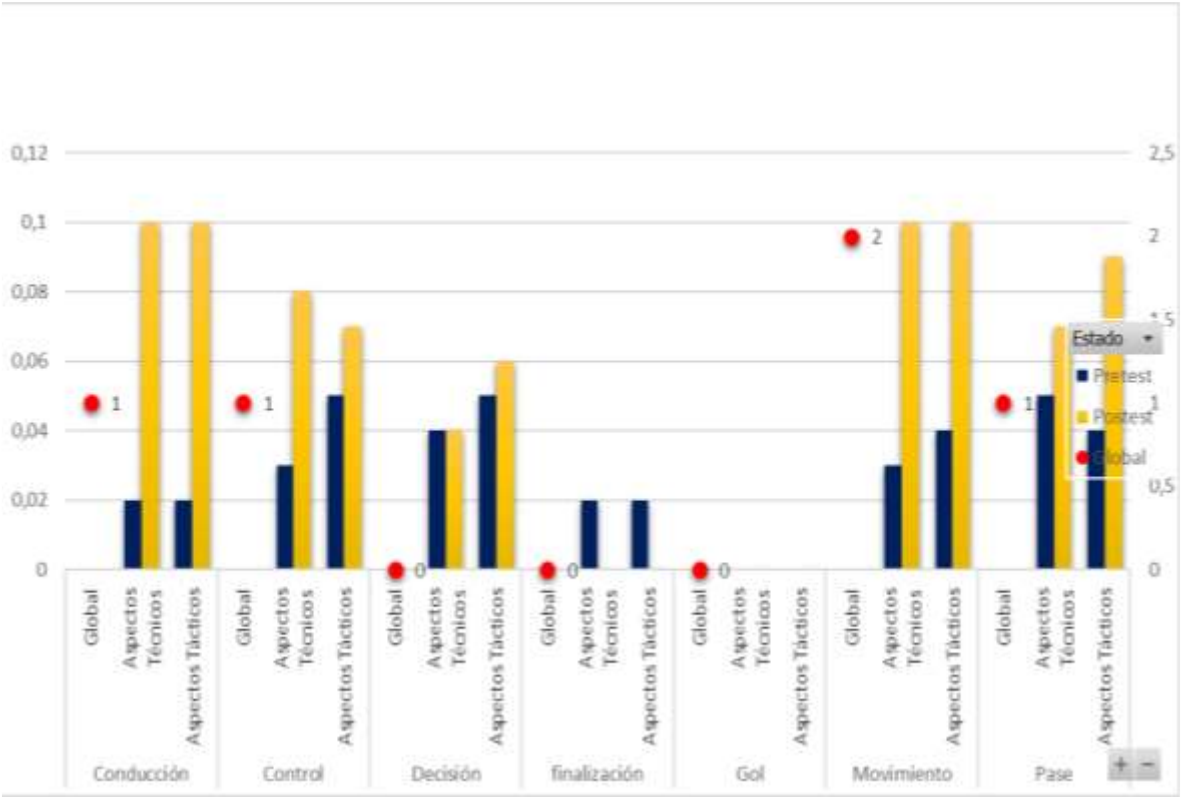
5.1.3 Move 3

Jugada 3	Pre-Test				Jugada 3	Post- Test		
Acciones	Aspectos Técnicos (1,0)	Aspectos Tácticos (1,0)	2 Buena, 1 Imparcial, 0 Mala		Acciones	Aspectos Técnicos (1,0)	Aspectos Tácticos (1,0)	2 Buena, 1 Imparcial, 0 Mala
Control	0,03	0,05	0		Control	0,08	0,07	1
Pase	0,05	0,04	0		Pase	0,07	0,09	1
Conducción	0,02	0,02	0		Conducción	0,1	0,1	1
Movimiento	0,03	0,04	0		Movimiento	0,1	0,1	2
Decisión	0,04	0,05	0		Decisión	0,06	0,07	1
finalización	0,02	0,02	0		finalización	0,06	0,07	1
Gol	0	0	0		Gol	0,1	0.1	2

En el análisis estadístico, se aplicaron pruebas como el test de Wilcoxon y el test de Kruskal-Wallis para evaluar la significancia de los resultados. Los resultados del test de Wilcoxon mostraron una mejora significativa en los aspectos técnicos después de la intervención, lo cual es un indicativo positivo del impacto del plan de entrenamiento. Además, se observaron cambios significativos en los aspectos tácticos mediante el test de Kruskal-Wallis, lo que demuestra que el equipo logró desarrollar nuevas estrategias y tácticas efectivas en sus partidos. Estos hallazgos respaldan la eficacia del plan de entrenamiento tanto en el aspecto técnico como en el táctico del equipo.

Figure 7. Move 3
Source: Authors.

5.1.4 Global plays

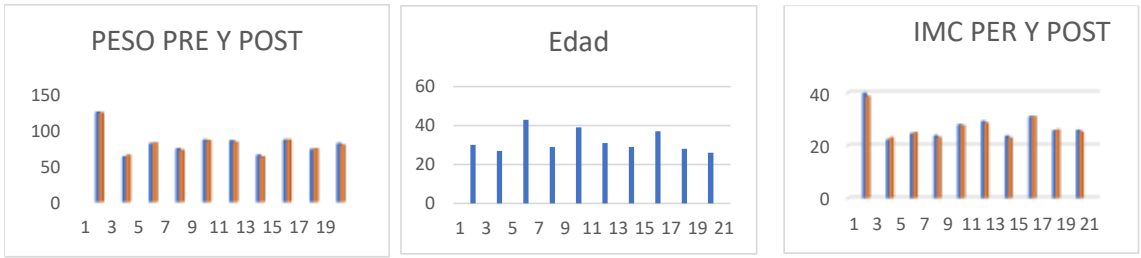


Desde el punto de vista estadístico, los resultados obtenidos revelan una mejora significativa en los aspectos técnicos del equipo de fútbol de salón SUCARS después de la intervención. Esto indica que el plan de entrenamiento implementado tuvo un impacto positivo en el desarrollo de las habilidades técnicas de los jugadores. Sin embargo, no se observaron diferencias significativas en los aspectos tácticos, lo que sugiere que el plan de entrenamiento puede no haber tenido un impacto directo en la planificación y ejecución de estrategias durante los partidos. Es importante destacar que estos resultados se basan en el análisis estadístico realizado y no tienen en cuenta otros factores o variables que podrían haber influido en los resultados. Además, considerando la duración del período de intervención, es posible que los cambios esperados en los aspectos tácticos requieran un tiempo más prolongado para manifestarse de manera significativa.

Figure 8. Global plays
Source: Authors.

5.1.5 BMI

Peso e IMC (Pretest y postest)



En el estudio se intentó recopilar datos relacionados con el peso, edad, talla y el índice de masa corporal (IMC) como referencia para evaluar posibles cambios en un periodo de 2 meses. Sin embargo, desde el punto de vista estadístico, estos datos resultaron irrelevantes debido a que es poco probable que se produzcan cambios significativos en estas variables en un corto período de tiempo. Además, es importante considerar que existen múltiples factores que pueden influir en los cambios en el peso y el IMC, como la genética, la composición corporal inicial, la dieta, el ejercicio y otros hábitos de estilo de vida. Por lo tanto, los resultados relacionados con estos datos no aportan información significativa al análisis estadístico y no deben ser considerados como indicadores válidos de los efectos de la intervención en el periodo de tiempo estudiado.

Figure 9. BMI
Source: Authors.

5.1.6 Discussion

According to the present research, "Relationship of training based on the game of simple rotation in indoor football with the completion in the defense-attack transition in athletes single category of the SUCARS team of the Pamplona transporter guild" (Carvajal Portilla, 2023), the importance of decision-making and completion during the defense-attack transition in indoor football is highlighted. This research focuses on the impact of game-based training of simple rotation on the performance of single-category SUCARS team athletes.

The study proposes the use of the GPAI as an evaluation instrument to measure the tactical performance and decision-making of players in this specific context (Carvajal Portilla, 2023). When implementing this type of

training, significant improvements were observed in the tactical performance and decision-making of players during the defense-attack transition in indoor soccer.

On the other hand, the work carried out by Javier Aguilar Sánchez in 2016 highlights the importance of decision-making in sports performance in general. Aguilar Sánchez highlights that cognitive and emotional factors influence the performance of players in team sports. In addition, he points out that the teaching of decision-making has been underestimated compared to the technical and physical aspects in sports training (Aguilar Sánchez, 2016).

The present research coincides with Aguilar Sánchez on the importance of objectively evaluating and quantifying tactical decision-making in sports performance. Therefore, the GPAI was used as an evaluation instrument to measure tactical performance and decision-making in the context of futsal (Carvajal Portilla, 2023).

Through this study, knowledge in the field of teaching and performance in indoor football is expanded by exploring how training based on simple rotation can influence completion during the defense-attack transition. This work provides relevant information for teachers and coaches of this sport by proposing a training methodology that integrates tactical aspects and decision making.

In summary, the current study highlights the importance of decision-making and completion during the defense-attack transition in indoor soccer. Through the game-based training of simple rotation, a significant improvement in tactical performance and decision making of players is observed. This work is complemented by the approach of Aguilar Sánchez, who highlights the importance of evaluating and teaching decision-making in team sports. Both studies agree on the need to prioritize the teaching and evaluation of decision-making in sports performance. Both authors highlight that cognitive and emotional factors are key elements in the performance of athletes in team sports.

Current research proposes game-based training of simple rotation as an effective methodology to improve completion during the defense-attack transition in indoor soccer. This approach provides athletes with realistic and

challenging game situations, which encourage the development of technical and tactical skills as well as the ability to make sound decisions at crucial moments of the game.

For his part, Aguilar Sánchez highlights the importance of using valid and reliable evaluation instruments to measure and quantify the tactical performance and decision-making of players. In this sense, both works agree on the use of the GPAI as an evaluation instrument that allows to objectively evaluate the performance in the game.

While the current study focuses on indoor football and the defense-attack transition, the ideas presented by Aguilar Sánchez are applicable to different team sports. Both works contribute to the advancement of knowledge in the field of tactical decision-making in sports performance, providing tools and approaches that can be used by teachers, coaches and athletes.

In conclusion, the current research and study of Aguilar Sánchez, provide valuable knowledge about the importance of decision-making in sports performance. The specific focus on indoor football and the implementation of game-based training of simple rotation offers a practical and applicable perspective to improve the performance of players in the defense-attack transition. On the other hand, Aguilar Sánchez highlights the need to effectively evaluate and teach tactical decision-making in team sports, providing the GPAI as an evaluation tool. Both works complement each other and contribute to the advancement of knowledge in the field of tactical decision-making in sports performance.

6. Conclusions

The tactical and physical conditions that influence the completion during the defense-attack transition in the single-category athletes of the SUCARS team of the Pamplona transporter guild have been identified. These factors include player position and movement, coordination between attack and defense, quick and accurate decision-making, effective communication between team members, as well as physical endurance

and the ability to execute finishing techniques under pressure.

A specific tactical training program has been designed based on the game of simple rotation, with the aim of improving the completion during the defense-attack transition in the single category athletes of the SUCARS team of the Pamplona transporter guild. This program includes exercises and practices that allow players to develop decision-making skills, improve coordination among team members, perfect finishing techniques, and increase the physical endurance needed to execute these actions effectively during play.

The training program based on the game of simple rotation, designed to improve completion during the defense-attack transition, has been successfully applied in the single category athletes of the SUCARS team of the Pamplona transporter guild. During the implementation of the program, significant improvements were observed in players' ability to make quick and accurate tactical decisions, as well as their ability to execute finishing techniques more effectively and accurately.

After analyzing the results obtained during the application of the training program, a significant relationship was established between the training based on the game of the simple rotation and the improvement in the completion during the defense-attack transition in the athletes of the SUCARS team. Players who participated in the program experienced an increase in their ability to make sound tactical decisions and conclude offensive actions effectively in defense-attack transition situations. This finding supports the efficacy of the training approach based on simple rotation to improve tactical performance and decision-making in the specific context of indoor football.

In conclusion, through this study it was possible to identify the relationship between the training based on the game of the simple rotation and the completion in the defense-attack transition in indoor football. The specific objectives set allowed to obtain detailed information on the tactical and physical conditions of completion, design an adequate training program, apply it to the SUCARS

team athletes and establish the relationship between training and improvement in performance.

7. Recommendations

For future research related to the topic addressed, it is recommended to consider the following aspects:

Expand the sample: To obtain more robust and generalizable results, it is suggested to expand the sample of participants, including athletes of different categories and skill levels. This will allow a more complete and representative view of the relationship between training based on simple rotation and completion in the defense-attack transition in indoor football.

Evaluate other variables: In addition to tactical and physical conditions, other variables that could influence completion in the defense-attack transition can be explored, such as psychological aspects (confidence, concentration), technical aspects (passing accuracy, dribbling skills) or even the analysis of biomechanical data to better understand technical movements and gestures during the transition.

Consider different contexts and game scenarios: It is advisable to investigate the relationship between training based on simple rotation and completion in the defense-attack transition in different contexts and game scenarios. For example, teams from different geographical regions, leagues or specific competitions can be analyzed, which would allow for a broader and richer perspective.

Use mixed methodologies: Combining quantitative and qualitative approaches can provide a deeper and more holistic understanding of the phenomenon studied. In addition to collecting numerical data, interviews, observations, or qualitative analyses can be conducted to capture the perspective and experiences of athletes and coaches.

Explore other sports modalities: Although this study focused on indoor football, it can be considered to investigate the relationship between training based on simple rotation and completion in the defense-attack transition in other similar sports modalities, such as football or futsal.

By addressing these aspects in future research, it will be possible to obtain a greater knowledge and understanding of the relationship between training based on simple rotation and completion in the defense-attack transition in futsal, which will contribute to the advancement and development of this sport discipline.

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