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PHYSICAL SELF-CONCEPT AND SERVE ACCURACY AND THEIR ASSOCIATION WITH TRAINING EXPERIENCE AMONG SPECIALIZED VOLLEYBALL SCHOOL PLAYERS IN BASRAH

Farqad Farhan Hameed[1,*], Riyadh Ali muhsin[2]

[1,2] General Directorate of Education in Basrah, Ministry of Education, IRAQ
[1] alhijajf@basrahaoe.iq*; [2] riyadsport2017@gmail.com

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ABSTRACT

Background. The concept of physical self-concept represents a psychological construct that reflects an athlete's perceptions of their physical abilities and motor skills. Psychological literature affirms that this concept directly influences athletic behavior and skill acquisition. Objectives. This study aimed to examine the relationship between physical self-concept and serve accuracy, and their association with training experience among players at the specialized volleyball school in Basrah. Research methods. The researcher adopted the descriptive correlational method. The sample consisted of 12 players, divided into three groups based on their years of training experience (3 years, 2 years, and 1 year). A physical self-concept scale was developed according to sport psychology literature, and the Serve Accuracy Test (Costa et al., 2024) was utilized. Results. The results indicated a strong and statistically significant positive correlation between physical self-concept and serve accuracy. Moreover, a one-way ANOVA revealed significant differences in both variables according to players' training experience. Conclusion. Players with greater experience three years scored higher in both physical self-concept and serve accuracy, confirming the cumulative impact of training experience on enhancing physical and technical performance. The study recommends incorporating physical self-concept assessment into training programs due to its role in enhancing skill performance.

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Kata kunci
Konsep Diri Fisik, Layanan Bola Voli, Pengalaman Latihan.

ABSTRAK

Latar Belakang. Konsep konsep diri fisik merupakan konstruksi psikologis yang mencerminkan persepsi atlet terhadap kemampuan fisik dan keterampilan motorik mereka. Literatur psikologis menegaskan bahwa konsep ini secara langsung mempengaruhi perilaku atletik dan penguasaan keterampilan. Tujuan. Studi ini bertujuan untuk mengkaji hubungan antara konsep diri fisik dan akurasi servis, serta hubungannya dengan pengalaman latihan di antara pemain di sekolah voli khusus di Basrah. Metode penelitian. Peneliti menggunakan metode korelasi deskriptif. Sampel terdiri dari 12 pemain, dibagi menjadi tiga kelompok berdasarkan pengalaman latihan mereka (3 tahun, 2 tahun, dan 1 tahun). Skala konsep diri fisik dikembangkan berdasarkan literatur psikologi olahraga, dan Tes Akurasi Servis (Costa et al., 2024) digunakan. Hasil. Hasil menunjukkan korelasi positif yang kuat dan signifikan secara statistik antara konsep diri fisik dan akurasi servis. Selain itu, analisis ANOVA satu arah menunjukkan perbedaan signifikan pada kedua variabel tersebut

berdasarkan pengalaman latihan pemain. Kesimpulan. Pemain dengan pengalaman latihan tiga tahun memperoleh skor lebih tinggi pada kedua variabel, yaitu konsep diri fisik dan akurasi servis, yang mengonfirmasi dampak kumulatif pengalaman latihan dalam meningkatkan kinerja fisik dan teknis. Studi ini merekomendasikan untuk memasukkan penilaian konsep diri fisik ke dalam program latihan karena perannya dalam meningkatkan kinerja keterampilan.

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INTRODUCTION

Sport is widely recognized as one of the most influential domains for holistic personality development. Its benefits extend beyond physical growth to encompass psychological, cognitive, and social dimensions (Frey & Gullo, 2021). Volleyball, in particular, is a team sport that requires a dynamic interaction among a player's physical, technical, mental, and psychological capabilities especially in the execution of fundamental skills such as serving, which constitutes a cornerstone of competitive excellence (Wibowo et al., 2022).The concept of physical self-concept represents a psychological construct that reflects an athlete's perceptions of their physical abilities and motor skills (Zhang et al., 2022). Psychological literature affirms that this concept directly influences athletic behavior and skill acquisition (Cronin et al., 2022).

Moreover, training experience plays a crucial role in reinforcing players' self-confidence and perceived competence, which in turn enhances the precision of skill performance (Miguel et al., 2021). From this perspective, the current study seeks to explore the relationship between physical self-concept and the accuracy of serving performance, while also analyzing the impact of years of training experience in this context. The aim is to provide scientific indicators that may contribute to the development of training programs for junior players in specialized volleyball schools.

Through the researchers' field observations and their review of several training records, a clear disparity was noted in the accuracy of overhead volleyball serves among players in specialized volleyball schools, despite their similar ages and participation in the same training programs. This observation raises important questions about the underlying causes of this variation. Some studies have suggested that such discrepancies may be linked to psychological factors—most notably, the concept of physical self-concept. Athletes who hold a positive perception of their bodies tend to exhibit greater confidence in their performance and are more capable of executing precise skills under pressure (Mahedero et al., 2021).

Moreover, it is possible that years of training experience may play a role in modifying or reinforcing this relationship. Experience provides more opportunities for adapting to performance demands and contributes to the development of self-awareness and improved performance regulation (de Oliveira Castro et al., 2022). Accordingly, the research problem can be formulated in the following question: What is the nature of the relationship between physical self-concept and the accuracy of overhead serve performance among players in specialized volleyball schools, and does this relationship vary according to years of training experience?

The study aims to identify the level of physical self-concept among volleyball players in the specialized school in Abu Al-Khasib District, Basrah Governorate. To measure the

accuracy of overhead serve performance among the study sample. To examine the relationship between physical self-concept and the accuracy of the overhead serve. To analyze the effect of training experience (years) on this relationship.The researchers assume There is a statistically significant correlation between physical self-concept and the accuracy of overhead serve performance. The accuracy of the overhead serve varies depending on the level of physical self-concept. Training experience influences the nature of the relationship between physical self-concept and skill accuracy.

METHOD

Participant

The research population consists of volleyball players from the specialized school in Basrah Governorate, aged between 15 and 17 years, totaling 25 players for the academic year 2024–2025. A purposive sample of 12 players was selected, representing 48% of the total population. The selection ensured balance in training experience to align with the research objectives, as shown in Table (1), which allows for studying the effect of experience on the investigated relationship.

Table 1. Distribution of the Sample by Age and Training Experience

Player	1	2	3	4	5	6	7	8	9	10	11	12
Age (years)	17	17	17	16	17	17	16	16	16	15	15	16
Training Experience (years)	3	3	3	3	2	2	2	2	1	1	1	1

Research Design

The researchers adopted the descriptive method using the correlational approach, as it suits the nature of the study which aims to determine the relationship between physical self-concept and the accuracy of overhead serve performance among players in the specialized volleyball school in Basrah Governorate, in addition to analyzing the effect of training experience. This approach is considered appropriate for analyzing relationships among variables (Oliinyk et al., 2021).

Research Tools

The researchers used the following tools: Physical Self-Concept Scale (developed by the researchers) appendix 2. Overhead Serve Accuracy Test (based on validated scientific sources). Data form (player name, age, years of experience). SPSS software for statistical analysis.

Design of the Physical Self-Concept Scale

First: Item Construction. The researchers developed a scale specifically for physical self-concept based on relevant literature (Appendix 2), particularly the models by (Yang et al., 2022) and (Gueta & Janer, 2021). The scale was adapted to fit the Iraqi context and the age group of the study sample. It consists of 15 items divided into three dimensions: Cognitive Dimension: 5 items. Affective Dimension: 5 items. Behavioral Dimension: 5 items. A five-point Likert scale was used (1 = Strongly Disagree… 5 = Strongly Agree).

Second: Face Validity. The scale (Appendix 1) was reviewed by five experts (Appendix 3) in sports psychology, motor learning, and sports training. Based on their constructive feedback, the following adjustments were made: Item 2: Reworded for greater clarity and accurate reflection of the cognitive dimension. Item 4: Rephrased to suit the age characteristics of the sample. Item 8: Adjusted to ensure clearer meaning and reduced linguistic ambiguity.

After these revisions, the final version of the scale was approved by the expert panel as suitable for application.

Third: Discriminant Validity. The scale was administered to the study sample, and Pearson's correlation coefficient was calculated between each item and the total score. All items were statistically significant at the 0.05 level except for Item (13)"I assess my physical performance after each training session to ensure progress." Though not statistically significant it was retained for its theoretical importance ($r = 0.348$, $p = 0.266$).

Fourth: Reliability. The split-half method was used, yielding a reliability coefficient of 0.81, which indicates a good level of internal consistency (Kerlinger, 1973, p. 547).

Overhead Serve Accuracy Test

Test Name: Volleyball Serve Accuracy Test. Purpose: To assess the accuracy of volleyball serve performance by directing the ball toward a designated target on the court, with scores assigned based on the landing position. Required Equipment: Standard volleyball court, adhesive tape to mark the target and surrounding area, official volleyballs, scoring form, and stopwatch to regulate intervals. Target Description and Scoring Zones: A circular target is placed in the center of the opposite court (Zone B), 4 meters from the net, consisting of four concentric circles with diameters of 1m, 2m, 3m, and 4m. Points are awarded as follows: Center (1m): 22 points. Second ring (2m): 20 points. Third ring (3m): 18 points. Fourth ring (4m): 16 points. Triangle inside the court: 14 points. Hit the net and landed toward the target: 12 points. Inside court but outside triangle: 10 points. Hit the net but did not go toward the target: 8 points Out of bounds: 6 points. Landed in Zone A inside triangle: 4 points. Zone A outside triangle: 2 points. (Refer to Figure 1 for layout).

Performance Instructions: Player stands in the designated serving area and performs an overhead serve toward the target. The serve must be executed with feet on the ground or using the player's usual method without jumping. Crossing the service line is not allowed. After each serve, the ball's landing point is recorded and scored accordingly. Each player performs 10 consecutive trials. A rest interval of 6–8 seconds is given between attempts to avoid fatigue and ensure consistent performance (Sumantri et al., 2023).

Scoring Method

Points are recorded for each attempt. Total score is calculated by summing the results of all 10 attempts (Maximum score = 220 points) (Septiana & Supriadi, 2022).

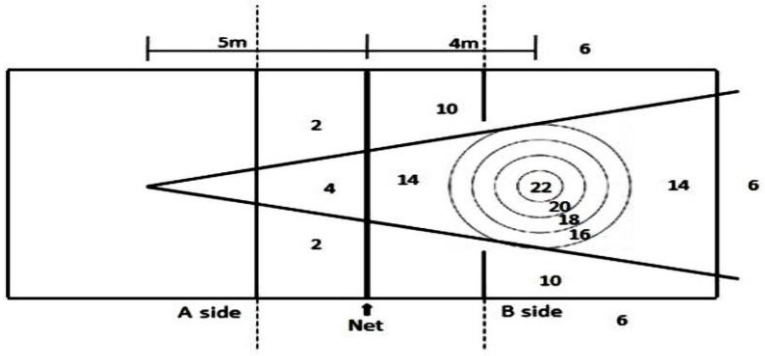


Figure 1. illustrates the overhead front serve test in volleyball.

Field Procedures

On Thursday, December 12, 2024, official approval was obtained from the administration of the specialized school, and the schedule for test implementation was coordinated with the coaching staff. The research objectives and instructions for completing

the scale and test were explained directly to the participants to ensure clarity and cooperation. On December 20, 2024, the Physical Self-Concept Scale was distributed within the administration of the specialized school (Indoor Halls Complex). On December 21, 2024, the Overhead Serve Accuracy Test was conducted in the official court of the specialized school (Indoor Halls Complex). Data were collected and organized in preparation for statistical analysis.

Statistical Methods

The researchers used SPSS software, version 26, for data analysis. The following statistical tools were employed mean, Standard deviation, Pearson correlation coefficient, One-way analysis of variance (ANOVA) to study the effect of training experience.

RESULT AND DISCUSSION

Result

Results of Physical Self-Concept Scale and Serve Accuracy Test

Table 2**.** Distribution of sample according to years of experience, and their scores on the Physical Self-Concept Scale and the Serve Accuracy Test:

Player	1	2	3	4	5	6	7	8	9	10	11	12
Training Experience (years)	3	3	3	3	2	2	2	2	1	1	1	1
Self-Concept Score	68	70	73	66	62	64	63	65	61	55	53	61
Serve Accuracy Score	194	198	204	188	174	186	176	186	140	132	132	146

Tabel 3. Correlation Between Physical Self-Concept and Serve Accuracy

Variable 1	Variable 2	Pearson's r	p-value	Interpretation
Physical Self-Concept	Serve Accuracy	0.932	0.0000	Strong, positive, and statistically significant correlation

The results in Table 2 show a very strong and statistically significant positive correlation between physical self-concept and serve accuracy ($r = 0.932$, $p < 0.01$). This indicates that players who perceive themselves more positively in terms of physical abilities, confidence, and self-image are more likely to achieve higher accuracy in performing the overhead serve. The strength of the correlation suggests that psychological factors play a crucial role in technical performance.

Table 4. One-Way ANOVA Results for Physical Self-Concept According to Years of Training Experience

Source of Variation	F-value	p-value	Interpretation
Training Experience	23.41	0.00027	Significant differences among groups; physical self-concept increases with more years of experience

Table 4 demonstrates that there were significant differences in physical self-concept among players with different years of training experience ($F = 23.41$, $p < 0.001$). These results indicate that players with longer training experience (three years) have a stronger and more positive physical self-concept compared to those with two years or only one year of training. This finding suggests that consistent training not only enhances physical ability but also strengthens self-perception, confidence, and motivation.

Table 5. One-Way ANOVA Results for Serve Accuracy According to Years of Training Experience

Source of Variation	F-value	p-value	Interpretation
Training Experience	83.09	0.0000016	Highly significant differences among groups; players with 3 years of experience outperform others

Table 5 shows that serve accuracy was significantly influenced by training experience ($F = 83.09$, $p < 0.001$). Players with three years of training experience achieved the highest accuracy scores, followed by those with two years, while players with only one year of experience recorded the lowest performance. This result highlights the decisive role of accumulated practice and training exposure in refining technical skills such as the overhead serve, where repetition and experience directly translate into improved execution and performance outcomes

Discussion

The results of the current study indicate a strong and statistically significant positive correlation between physical self-concept and the accuracy of overhead serve performance among the study sample. This finding aligns with the conclusions of de Azevedo Sodré Silva et al., (2023), who emphasized that a positive perception of one's physical self is a fundamental determinant of athletic performance, enhancing self-efficacy and reducing hesitation during the execution of precise skills. Additionally, the results showed that players with longer experience (three years) achieved the highest scores on both the physical self-concept scale and the serve accuracy test. (Dupri et al., 2021) This supports the findings which noted that accumulated experience and continuous exposure to competitive training situations contribute to a more positive evaluation of physical self-concept, which in turn enhances performance quality (Cruz, 2024).

The serve accuracy results also revealed that players with moderate experience (two years) outperformed those with only one year of experience, although they did not reach the level of the three-year group (Naser, 2019). This confirms that increasing experience is associated with gradual improvement in skill execution, such as the overhead serve (Zainudin et al., 2024). This finding is also supported by suggested that physical self-concept develops cumulatively alongside improvements in motor skill capabilities (Ihsan et al., 2023).

The strong correlation between physical self-concept and serve accuracy can be further understood in light of the nature of the skill itself (Akintuyi, 2024). The overhead serve requires high levels of self-confidence and precise bodily control, especially during the toss, timing, and directional execution attributes closely tied to components of physical self such as physical competence and motor awareness (Wulandari et al., 2021). This also highlights the importance of self-perception in enhancing technical performance: the more confident a player feels in their body and abilities, the higher their likelihood of success in executing precise motor skills (Klocek, 2023). This is consistent with the view of Al-Krizi, who argued that psychological variables are no less important than motor skills in achieving successful execution (Al-Krizi, 2025).

CONCLUSION

There is a strong, statistically significant positive correlation between physical self-concept and the accuracy of overhead serve performance. Players with greater experience three years scored higher in both physical self-concept and serve accuracy, confirming the cumulative impact of training experience on enhancing physical and technical performance. The Physical Self-Concept Scale can be used as a supportive tool for predicting the level of skill accuracy. The researchers recommend to foster the development of physical self-concept among junior players through targeted training and psychological programs. Incorporate the Physical Self-Concept Scale as part of routine assessments in specialized volleyball schools. Encourage coaches to integrate both skill-based and psychological assessments into their training plans. Conduct future studies focusing on other psychological variables related to athletic performance.

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