



INFLUENCE OF HANDBALL SPECIFIC SKILL WITH IMAGERY TRAINING ON SKILL PERFORMANCE VARIABLES AMONG HANDBALL PLAYERS

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ABSTRACT

This study aimed to investigate the Influence of handball specific skill with Imagery training on skill performance variables among handball players. The primary objective was to enhance players skill development through a structured training program. A total of thirty (N=30) Male handball players from Department of physical education, Bharathiar University and Nehru Arts and Science College Coimbatore District, Tamil Nadu, India, aged between 18 to 23 years, were randomly selected subjects. They were equally divided into two groups: an experimental group and a control group, each comprising fifteen (n=15) players. The skill performance variables assessed were dribbling, passing, and shooting by using Zinc handball test. The collected Data were statistically analyzed by paired t test, which was used to find out the significant improvements on selected skill performance variables among selected hand ball players. Findings revealed that twelve weeks of hand ball specific skill training produced significant improvements in the experimental group compared to the control group. The results of the study indicated that the selected skill performance variables were improved due to the twelve weeks hand ball specific skill training.

KEY WORDS: Dribbling, Shooting, Specific with Imagery training.

INTRODUCTION

Handball is a dynamic and physically demanding team sport that requires a high level of technical skill, tactical awareness, and psychological preparedness. The performance of handball players is largely determined by their ability to execute sport-specific skills such as passing, dribbling, shooting, and defensive actions with precision and efficiency under competitive conditions (Werner Helsen et al., 2000). These skill performance variables play a crucial role in determining both individual and team success. In addition to physical and technical training, psychological factors have gained increasing importance in enhancing sports performance. Among various psychological techniques, imagery training has emerged as an effective method for improving motor skill performance. Imagery training, also referred to as mental practice or visualization, involves the cognitive process of creating or recreating experiences in the mind without physical execution (Richard A. Schmidt, 1993). This technique enables athletes to mentally rehearse skills and strategies, thereby enhancing neuromuscular coordination and execution.

Research Methods

The purpose of this experimental study was to examine the influence of handball specific skill training on selected skill performance variables among handball players. A total of thirty (N=30) male handball players from department of physical education, Bharathiar University and Nehru Arts and Science College Coimbatore District, Tamil Nadu, India, were randomly chosen subjects. Subjects were assigned in two groups, with fifteen (n=15) players in each group. The control group continued with their routine regular activity program, whereas the experimental group underwent a structured handball specific skill training intervention.

Training Session

The handball-specific skill practice session were conducted one and half hours three alternative days per week morning session for a period of twelve weeks. Each session lasted 90 minutes and included a 15-minute warm up, 60 minutes of handball specific skill training and a 15-minutes cool-down. To ensure overload progressive, the training intensity was gradually increased each week, with altering the difficulty of exercise and skill training. The overall training programme followed the principles of progression, specificity, and consistency, ensuring gradual improvement in skill performance variables. All sessions were conducted under proper supervision to maintain uniformity and adherence to the training protocol.



Sequence of Training

Each training session commenced with a 15- minute warm up and orientation, followed by 60 minutes hand ball specific skill performance to ensure a logical progression of skill development and performance enhancement among the handball players over the twelve-week training period. The programme was divided into four phases (Weeks I–III, IV–VI, VII–IX, and X–XII), with each phase emphasizing a gradual increase in intensity, complexity, and specificity of handball skills. During the initial phase, players focused on fundamental movements and basic skills such as running drills, simple passing, and stationary dribbling to establish a strong technical foundation. In the second phase, intermediate drills involving coordination, balance, and controlled movement-based skills were introduced to enhance motor control and efficiency. The third phase emphasized advanced skill execution, including dribbling, passing, shooting techniques, and small-group drills that simulated game situations. In the final phase, the training incorporated high-intensity, game-specific drills such as fast breaks, defensive movements, feints, and shooting under pressure, thereby preparing the players for competitive performance. Each training session followed a structured order consisting of warm-up, skill drills performed in sets and repetitions, and appropriate rest intervals to ensure recovery. For Group II, imagery training was incorporated at the end of each session, following the completion of physical drills. This involved guided visualization of skill execution and game scenarios, reinforcing the physical practice through mental rehearsal. The sequence of training was designed based on the principles of progression, specificity, and overload, ensuring optimal development of handball-specific skill performance variables.

Testing Procedure

The pre and post testing measurements were conducted on before and after training. The selected variables dribbling, passing, and shooting measured by Zinc handball (Zinc, 1981) Test.

Data Collection

The Subject was divided into two equal groups is control group and an experimental group. Pre-test was conducted prior to the intervention and the scores were recorded as baseline measurements, Following the completion of the twelve-week intervention, post-tests were administered to both groups to measure changes in the selected skill performance variables among handball players. The collected data were subsequently Subjected to statistical analysis to determine the influence of the handball specific skill training on selected skill variables dribbling, passing, and shooting among handball players.

Statistical Technique

Statistical analysis of the data was performed for each group using the mean, difference and standard mean error. Paired t test was used to compare the pre-test and post-test training values of lesser than 0.05 was accepted as indicating significant difference between the compared values. The derived results are discussed as follows Table 1.

Table-1 : Statistical analysis of pre-test and post-test scores and means on selected skill performance variables of the Experimental Groups and Control Groups

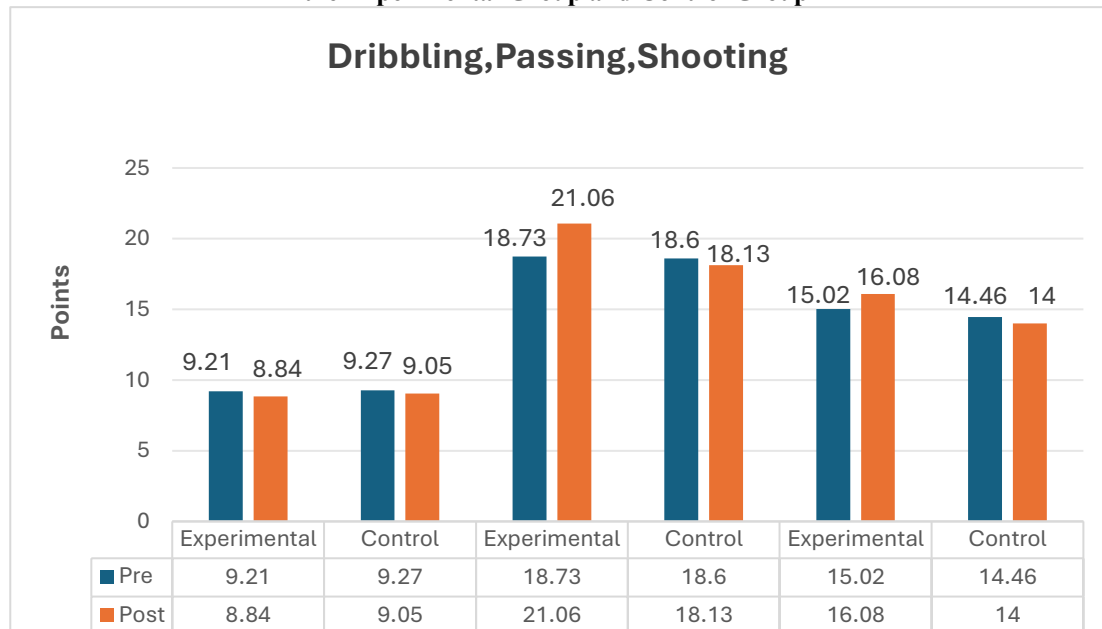
Group	Variables	Pre-Test Mean	Post-Test Mean	MD	SME	t
Experimental Group	Dribbling	9.21	8.84	0.37	0.17	3.26*
	Passing	18.73	21.06	2.33	0.30	6.7*
	Shooting	15.20	16.80	1.6	0.47	9.79*
Control Group	Dribbling	9.27	9.05	0.22	0.27	0.80
	Passing	18.60	18.13	0.47	0.51	1.2
	Shooting	14.46	14.00	0.46	0.53	1.20

Significance level at 0.05, with df 1 and 14 required table value is 2.14.

Table 1 presents the statistical analysis of pre-test and post-test mean scores on selected skill performance variables such as dribbling, passing, shooting revealed notable differences between the experimental group and control group. In the experimental group, significant improvement was observed in all three variables. In dribbling, the pre-test mean of 9.21 decreased to 8.84 in the post-test, with a mean difference of 0.37 and a *t*-value of 3.26, which is statistically significant. This reduction indicates improved dribbling efficiency. In passing, the mean score increased from 18.73 to 21.06, with a mean difference of 2.33 and a significant *t*-value of 6.7, reflecting considerable enhancement in passing accuracy and control. Similarly, in shooting, the mean score improved from 15.20 to 16.80, with a mean difference of 1.6 and a highly significant *t*-value of 9.79, indicating better shooting performance. The results of the study clearly indicate that the experimental group, which underwent combined physical and imagery training, demonstrated statistically significant improvements in all selected variables. The obtained *t*-values for dribbling (3.26), passing (6.7), and shooting (9.79) were found to be significant, indicating that the improvements were not due to chance. In contrast, the control group, which participated only in physical training, did not show significant improvements, as evidenced by the non-significant *t*-values for dribbling (0.80), passing (1.2), and shooting (1.20). Based on these findings, it can be concluded that the experimental training programme was effective in significantly improving the selected skill performance variables among handball player, whereas the control group showed no meaningful progress.



Figure: The bar diagram shows the mean pre-test and post-test values of skill variables dribbling, passing and shooting for the Experimental Group and Control Group1



DISCUSSION ON FINDINGS

The present study aimed to examine the influence of handball-specific skill training combined with imagery training on selected skill performance variables among handball players. The null hypothesis stated that there would be no significant difference between the experimental group and the control group in terms of improvement in dribbling, passing, and shooting performance. The results of the study clearly indicate that the experimental group, which underwent combined physical and imagery training, demonstrated statistically significant improvements in all selected variables. The obtained *t*-values for dribbling (3.26), passing (6.7), and shooting (9.79) were found to be significant, indicating that the improvements were not due to chance. In contrast, the control group did not show significant improvements, as reflected by the non-significant *t*-values for dribbling (0.80), passing (1.2), and shooting (1.20). Therefore, the null hypothesis was rejected. The superior performance of the experimental group may be explained through the principles of motor learning and mental practice. According to Richard A. Schmidt (1993), motor skill acquisition is enhanced when cognitive processes such as mental rehearsal are actively involved. Imagery training facilitates the activation of neural pathways associated with movement execution, thereby improving coordination and skill precision. Furthermore, Alan Richardson (1967) emphasized that mental practice significantly contributes to the improvement of motor skills, even in the absence of physical movement. Similarly, Denis M. Feltz and Landers (1983), through their meta-analysis, reported that imagery training has a positive effect on motor skill performance, particularly when combined with physical practice. In addition, Jean Cumming and Ramsey (2009) highlighted that imagery enhances concentration, confidence, and performance consistency in athletes. These psychological benefits may have contributed to the improved passing accuracy, dribbling control, and shooting efficiency observed in the experimental group. The findings of the present study are in agreement with earlier research, suggesting that the integration of imagery training with physical practice results in superior performance outcomes compared to physical training alone. The lack of significant improvement in the control group further supports the effectiveness of imagery as an essential component of sports training.

CONCLUSIONS

The study concludes that a twelve week program of Influence of handball specific skill with Imagery training on skill performance effectively enhances dribbling, passing and shooting ability. Moreover, these improvements were significantly greater in the Experimental group compared to the Control group, highlighting the efficacy of this training approach in enhancing dribbling, passing and shooting.

REFERENCES

1. Di Rienzo, F. (2025). Reinforcing the mind-muscle connection: Mental imagery as a tool for strength enhancement in athletes. *Biologie Aujourd'hui*, 219(3-4), 117-124.
(Di Rienzo, 2025)



2. Liu, Y., Zhao, S., Zhang, X., Zhang, X., Liang, T., & Ning, Z. (2025). *The effects of imagery practice on athletes' performance: A multilevel meta-analysis with systematic review*. Behavioral Sciences, 15(5), 685.
(Liu et al., 2025)
3. Volgemute, K., Vazne, Z., & Malinauskas, R. (2025). *The benefits of guided imagery on athletic performance: A mixed-methods approach*. Frontiers in Psychology, 16, 1500194.
(Volgemute et al., 2025)
4. McNeil, D. G., Lindsay, R. S., Worn, R., Spittle, M., & Gabbett, T. J. (2025). *Could motor imagery training provide a novel load management solution for athletes?* Sports Health, 17(1), 156–163.
(McNeil et al., 2025)
5. Frank, C., Guillot, A., & Vogt, S. (2024). *Imagery and motor learning: Neurocognitive mechanisms of imagery and motor practice*. Psychological Research, 88, 1785–1789.
(Frank et al., 2024)
6. Rhodes, J., Nedza, K., Maya, J., & Clements, L. (2024). *Imagery training for athletes with low imagery abilities*. Journal of Applied Sport Psychology, 36(5), 831–844.
(Rhodes et al., 2024)
7. Putra, A. N. P., & Asi, S. R. (2025). *A study on mental imagery: The effect of mental imagery on sports performance and injury recovery in athletes*. Jurnal Sains Keolahragaan dan Kesehatan, 10(1), 21–38.
(Putra & Asi, 2025)
8. Kapre, T. M. S., Alexander, J. O. R., & Palekar, T. J. (2025). *Effect of mental imagery skill training program on soccer passing and control skills in collegiate-level players*. International Journal of Human Movement and Sports Sciences, 13(4), 793–802.
(Kapre et al., 2025)
9. Yang, W. Y., & Chengdu Sport University (2026). *Mental imagery and performance in gymnastics: A systematic review*. Frontiers in Psychology, 17, 1803261.
(Yang, 2026)
10. Simonsmeier, B. A., et al. (2025). *Imagery practice dose-response in athletic performance: A Bayesian multilevel synthesis*. (Unpublished data summarized in Liu et al., 2025)
(Simonsmeier et al., 2025 as cited in Liu et al., 2025)