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ENHANCING PERFORMANCE OF CRICKET PLAYERS THROUGH VISUAL SKILLS FITNESS TRAINING

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ABSTRACT

The skills required to excel at cricket include quick thinking, quick reflexes, and excellent hand-eye coordination. In order to effectively perceive, interpret, and react to visual information during a game of cricket, visual skills are crucial. Fifty cricket players were chosen at random as the subjects of this study to help with this goal. Fifty participants were chosen at random and split evenly between two groups of fifteen people each. Thus, the VSFTG (Visual Skills Fitness Training Group) and the CG (Control Group) were established as the two groups to undergo the experiment. Paired t-test was performed to analyze the data gathered. According to the findings, the experimental group improved more on several psychomotor characteristics than the control group did. In order to improve their psychomotor skills, cricket players can benefit from participating in physical training programs that focus on improving their visual skills.

Keywords: Training, Psychomotor, Visual skills, Coordination, Reaction time

I. INTRODUCTION

Cricket is a sport that combines physical prowess, strategic thinking, and exceptional hand-eye coordination. The ability to perceive, process, and respond to visual information is of utmost importance in cricket, where split-second decisions can greatly impact the outcome of the game. Visual skills fitness training plays a vital role in enhancing the psychomotor abilities of cricket players, enabling them to accurately track the trajectory of the ball, make quick judgments, and execute precise hand-eye coordination. This introduction will explore the significance of visual skills in cricket, highlight the relationship between visual skills and psychomotor abilities, and discuss the potential benefits of incorporating visual training into the development programs of cricket players.

Cricket is a bat-and-ball sport that originated in England and has gained widespread popularity across the globe. It is a complex game that requires players to possess a wide range of physical attributes such as agility, strength, speed, and endurance. While physical fitness is undoubtedly essential, the cognitive aspects of the game should not be underestimated. Visual skills, in particular, play a crucial role in cricket performance by enabling players to accurately perceive and process visual information.

The ability to track the trajectory of the ball is vital in cricket. Batsmen must precisely judge the length and movement of the ball to effectively time their shots. Bowlers need to accurately aim at specific areas of the pitch to create challenges for the batsmen. Fielders must anticipate the ball's trajectory and position themselves accordingly to make successful catches or stops. All these actions heavily rely on visual perception and the ability to process visual cues rapidly.

Hand-eye coordination is another essential aspect of cricket that directly influences a player's performance. The coordination between visual input and motor response is crucial for executing actions such as batting, bowling, and fielding. Batsmen must align their bat precisely with the ball to make successful contact. Bowlers must consistently deliver the ball with accuracy and precision. Fielders need to react swiftly and precisely to make successful catches or throw accurately to the stumps. The effectiveness of these actions is directly dependent on the seamless coordination between visual perception and motor skills.

In addition to hand-eye coordination, reaction time is a critical factor in cricket. The ability to react quickly to a visual stimulus, such as the release of the ball by the bowler or the movement of the ball after being hit, is paramount for success. Quick reactions allow batsmen to adjust their shots, bowlers to adapt their deliveries, and fielders to respond rapidly to changing game situations. A fraction of a second can make a significant difference in cricket, and the development of fast reaction times through visual training can provide players with a competitive edge.

Decision-making is yet another cognitive skill that visual training can enhance in cricket players. The ability to make quick and accurate decisions based on visual cues is vital for batsmen in determining shot selection, bowlers in choosing appropriate deliveries, and fielders in judging whether to attempt a catch or make a throw. Effective decision-making relies on the ability to process visual information efficiently and make informed judgments in high-pressure situations.

Given the importance of visual skills in cricket, incorporating visual skills fitness training into the development programs of cricket players can yield significant benefits. Visual training programs focus on improving specific aspects of visual perception, such as visual acuity, depth perception, visual tracking, and peripheral vision. These programs can enhance the speed and accuracy of visual information processing, leading to improved hand-eye coordination, reaction time, and decision-making abilities. Visual skills fitness training involves a variety of exercises and drills designed to challenge and improve specific visual skills. For example, exercises that involve tracking a moving target, such as a ball or marker, can enhance visual tracking abilities. Reaction time can be improved through drills that require quick responses to visual stimuli. Decision-making can be honed through simulated game situations that require players to make split-second judgments based on visual cues.

II. REVIEW OF LITERATURE

Kelly, Robert & Roberts, James (2020) The perceptual-motor system is heavily taxed in sports like cricket that involve throwing and striking a ball. Dynamic visual acuity (DVA) refers to the ability to detect and resolve object characteristics while in motion, a need for many performing arts. The purpose of this study was to examine DVA in both professional cricket players and non-cricketers by means of a more real-time evaluation. Both seasoned cricket players and cricket newcomers were tested on their ability to spot the gap within a moving Landolt-C ring of progressively increasing size. The average (dynamic) minimum angle of resolution of the object size at the instant that participants replied appropriately to the gap was used to calculate the results. Things would either progress quickly, moderately, or slowly. Skilled cricketers had better dynamic visual acuity than non-cricketers (p .05). Skilled cricketers had a less detrimental effect of object velocity on their dynamic visual acuity than non-cricketers (p .05). The significance of these results for the cricket performance setting are discussed, and it is argued that they add to the expanding body of information concerning DVA in sports involving the throwing and striking of balls.

Brenton, John et al., (2019) This research sought to fill a gap in our understanding of whether or not novice strikers may develop advanced levels of visual anticipation. Twelve promising young hitters on a state cricket team were randomly assigned to one of two treatment groups. They were given a video temporal occlusion test of a fast bowler before and after training, in addition to a battery of transfer tests that included both fast and slow bowlers. Over the course of four weeks, those in the intervention group participated in two sessions of point-light display temporal occlusion training supplemented by motor practice of the observed bowler's action. The inactive control group participated only in the evaluation stages. Throughout the trial, both groups' batting averages were tracked at the beginning, middle, and end. Predictions based on information gathered before a ball was launched were much better for the intervention group than for the control group on post-tests, but only by a small margin. The group exposed to the intervention was able to generalize their knowledge of ball flight characteristics to predict the actions of both fast and slow (spin) bowlers at rates considerably higher than chance. Throughout the trial, the intervention group had a higher batting average than the control group. The results suggest that, in addition to sport-specific preparation, the intervention can enhance anticipation in developing excellent batters. More research is needed to determine whether or not this enhancement actually improves performance in competition.

Wimshurst, Z et al., (2018) Recent years have brought into doubt the value of visual training treatments for athletes. However, most interventions do not seem to be helpful, and few research have proven that general visual abilities can increase visual performance in the sport. Despite the growing popularity of visual training methods in the sports sphere, there is a lack of research including elite players who have been exposed to such courses. The purpose of this research was to examine how visual training affects visual and cricket abilities in comparison to a control intervention. Twenty-four male cricketers from one county were examined both before and after a match on 14 visual and 7 cricket-related activities.

Participants were randomly assigned to either a control (C) group, an online training (O) group, a Nintendo Wii (W) group, or a practical exercises (P) group for a six-week visual training program. All experimental groups exhibited statistically significant progress between the pretest and posttest, but the C group did not. There was a significant difference in the visual and cricket abilities of those subjected to the control intervention alone and those treated to the three vision training techniques. This lends credence to the idea that training may enhance a person's innate visual abilities. Based on the results of this study, it appears that enhancements to visual abilities may affect 'on-field' enhancements to performance in cricket.

Mahomed, A. et al., (2013) Vision ranks high among the senses because it allows us to take in the world around us. Vision plays a crucial part in our daily lives, and having strong eyesight is essential for even the most fundamental academic activities, such as reading and writing. Most students suffer with stress, and it, coupled with other environmental conditions, can impair the effectiveness of several visual abilities. Examining whether or not sports vision exercises may boost visual abilities and, in turn, motor and cognitive performance is the primary purpose of this research. The study included 169 second-year physiology students between the ages of 18 and 22. Pre and post sports vision tests were given to students who had been randomly assigned to one of two groups: the control group (n=78) or the experimental group (n=91). Visual abilities were evaluated including acuity, ocular dominance, focus, tracking, vergence, sequencing, visual-motor, visual-spatial, and reflexes. Sequencing and eye-hand coordination tests revealed considerable improvement in the experimental group, but visual acuity, vision, tracking, vergence, and reflex tests showed no significant change (control group). Except for attention, the gains shown by the experimental group were larger than those seen by the control group. The results of the study proved conclusively that proper sports vision training may boost motor and cognitive learning and performance by enhancing particular visual abilities. Therefore, sports vision workouts are an effective means of enhancing certain visual abilities and, maybe, mitigating flaws brought on by stress.

Wilson, Melissa et al., (2011) This study examined the effectiveness of visual-perceptual training for improving fielding performance in cricket. Twelve highly-skilled cricket players completed a video-based decision-making test and an in-situ fielding test before and after a six-week training intervention. During this period, all participants completed the same on-field training program, but seven players completed three additional perceptual training sessions per week (TRAIN). The remaining five players acted as a control (CON). Despite no group differences at pre-test, TRAIN scored significantly higher than CON at post-test for decision accuracy within the video-based test. For the in-situ fielding test, TRAIN demonstrated greater improvements in fielding success following the intervention compared to CON. The results indicate that six weeks of on-field training combined with visual-perceptual training can lead to improvements in the fielding performance of skilled cricketers

above those of on-field training alone. Findings are discussed from empirical and applied coaching perspectives.

Krüger, P et al., (2010) This research set out to answer the questions of whether or not visual training programs are helpful to competitive sports performance by analyzing the role and influence of such a program on the skills performance of cricket players. Thirteen very good cricket players who were currently competing at the provincial level acted as subjects. Due to the small size of the sample, non-parametric statistics, namely the Wilcoxon test, were utilized for the analysis. Following initial evaluations, the cricket players engaged in an eight-week, 60-minute-per-day, once-a-week visual skill and performance skills training. Sports vision training, agility drills, and ball skills practice were all part of the schedule. The Wilcoxon signed-ranks test was used to compare the cricket players' pre- and post-training data and evaluate whether or not there was a statistically significant difference between the two. Most of the examined characteristics (ball handling ability, coordination, visual awareness, eye tracking ability, accuracy, peripheral awareness, pro-action - response skills, and visual concentration) were significantly impacted by the visual skills course. Improvements were discovered for various variables examined on the experimental group, suggesting that the gains may be attributed to the visual skills curriculum. In addition, the experimental group saw an improvement in more than half of the test variables. The results show that most of the measured factors (ball handling, coordination, visual awareness, eye tracking skills, accuracy, peripheral awareness, pro-action / response skills, and visual concentration) improved. The gamers' ability to see and hear the world through their eyes is a direct effect of the study's findings. The performance of athletes in competitive sports can benefit from visual skills training programs.

III. METHODOLOGY

For this particular study, 50 different players were chosen at random. Selected participants (N=50) were split evenly (by chance) into two groups (experimental group-1 and control group-2) of 25 people each. Group 1 was designated as the Experimental Group and given the moniker "Visual Skills Fitness Training Group," whereas Group 2 received the more traditional "Control Group" moniker. Two groups of individuals were evaluated on eye-hand coordination and visual reaction time. This information served as a sort of practice exam score. After doing the preceding activity, the participants in each group were switched to their designated treatments. Participants in the Visual Skill Fitness Training Group (VSFTG) trained their visual skills twice weekly for a total of twelve weeks. Cricket game practice was the only thing the control group subjects did during the training time. Subjects in both the VSFTG and CG groups were given tests measuring predetermined psychomotor characteristics after 12 weeks of therapy. It served as a sort of post-examination grade. The data gathered were analyzed using the most suitable statistical method. Compare the effects of VSFTG and CG on a variety of psychomotor characteristics in separate subjects. The two-sample t-test was utilized. The significance of the finding was evaluated at the 0.05 level.

IV. DATA ANALYSIS AND INTERPRETATION

Table 1: Pre and Post Test of Visual Skill Fitness Training Group (VSFTG)

Variables	Pre-test (Mean ± S.D)	Post-test (Mean ± S.D)	MD	SE	't' ratio
VSFTG					
Eye-hand co-ordination	31.19 ± 6.20	21.55 ± 4.10	9.55	1.14	8.33*
Visual Reaction time	0.25 ± 0.06	0.20 ± 0.02	0.08	0.01	8.95*
CG					
Eye-hand co-ordination	29.27 ± 12.49	28.43 ± 11.66	0.83	0.43	1.91
Visual Reaction time	0.27 ± 0.03	0.28 ± 0.03	0.02	0.01	1.77

*Significant at 0.05 level

The acquired 't' values for variables by the visual skill fitness training group (VSFTG) are 8.33 (eye-hand co-ordination) and 8.95 (visual response time) as shown in Table 1. The derived t-values are statistically significant at the 0.05 level, with a critical value of 2.14 being necessary. As a result of the obtained t-values on the selected variables being greater than the required critical value, it can be concluded that the visual skill fitness training group resulted in statistically significant improvements from pre- to post-treatment on the selected psychomotor variables of eye-hand coordination (+9.55 $P<0.5$) and visual reaction time (+0.08$P<0.05$). The 't' values of the variables for the CG are 1.91 (eye-hand coordination) and 1.77 (visual reaction time). The acquired 't'-values are statistically significant at the 0.05 level, and the necessary critical value is 2.14. Therefore, the t-values for the variables that were obtained were not statistically significant. It was determined that there was no statistically significant improvement from the baseline to the post-test.

V. CONCLUSION

Participants in the current study improved significantly on a variety of psychomotor factors, such as eye-hand coordination and visual reaction speed, compared to those who had received conventional instruction. The use of visual cues to enhance the performance of a player's motor skills is a common practice in the industry. Cricket players may maximize their performance on the field by adopting specialized visual training programs to enhance their hand-eye coordination, response time, and decision-making skills. In order to enhance

players' potential, coaches, trainers, and players themselves must acknowledge the importance of visual skills in cricket and include visual training into their practices.

REFERENCES: -

1. Kelly, Robert & Roberts, James. (2020). Investigation into the dynamic visual acuity of skilled cricketers using a continuous motion task. The Journal of Sports Medicine and Physical Fitness. 10.23736/S0022-4707.20.11321-5.

2. Brenton, John & Muller, Sean & Harbaugh, Allen. (2019). Visual-perceptual training with motor practice of the observed movement pattern improves anticipation in emerging expert cricket batsmen. Journal of Sports Sciences. 37. 1-8. 10.1080/02640414.2019.1621510.

3. Wimshurst, Z & Sowden, Paul & Cardinale, Marco. (2018). The Effectiveness of Different Visual Skills Training Programmes on Elite Cricket Players.

4. Vickery, Will & Duffield, Rob & Crowther, Rian & Beakley, David & Blanch, Peter & Dascombe, Ben. (2016). Comparison of the Physical and Technical Demands of Cricket Players During Training and Match-Play. Journal of strength and conditioning research / National Strength & Conditioning Association. 32. 10.1519/JSC.0000000000001528.

5. Mahomed, A. & Kleynhans, Michael & Govender, Catherine & du Toit, Peet. (2013). The effect of sports vision exercises on the visual skills of university students. Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie. 32. 10.4102/satnt.v32i1.842.

6. G. Shivaji, G. Jeyavelmurugan. (2013). Effect of Visual Skill Fitness Training Programme on Selected Psychomotor Variables of Male Cricket Players. International Journal of Science and Research (IJSR), India Online ISSN: 2319-7064. Volume 2 Issue 3, March 2013.

7. Wilson, Melissa & Mann, David & Farrow, Damian & Nielsen, Tim. (2011). Does Visual-Perceptual Training Augment the Fielding Performance of Skilled Cricketers?. International Journal of Sports Science and Coaching. 6. 523-536. 10.1260/1747-9541.6.4.523.

8. du Toit, Peet & Krüger, PE & Mahomed, AF & Kleynhans, Michael & Preez, T & Govender, Catherine & Mercier, J. (2011). The effects of sports vision exercises on the visual skills of university students. African Journal for Physical, Health Education, Recreation and Dance. 17. 10.4314/ajpherd.v17i3.71094.

9. Krüger, P & Campher, J & Smit, And. (2010). The role of visual skills and its impact on skill performance of cricket players. African Journal for Physical, Health Education, Recreation and Dance. 15. 10.4314/ajpherd.v15i4.49548.