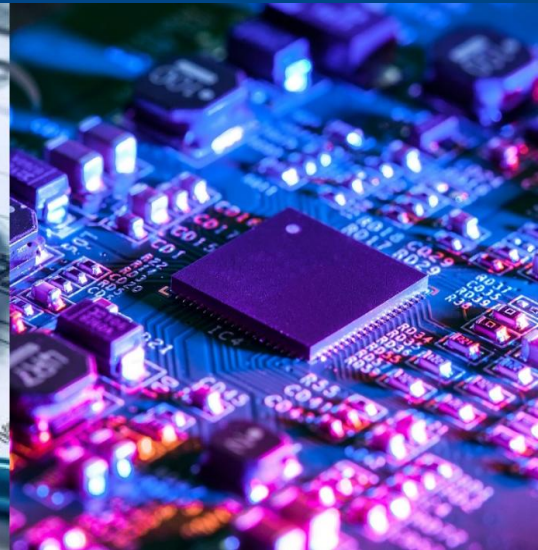
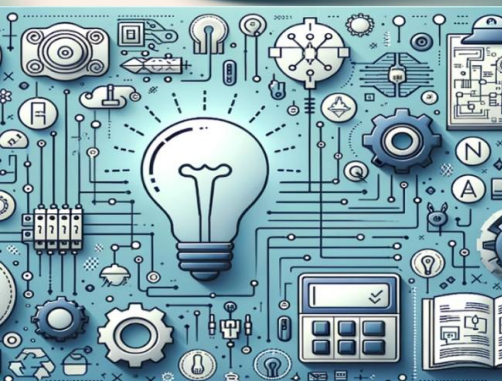




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Effect of Selected Yogic Practices on Visual Memory of Softball Players

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ABSTRACT: The purpose of this study was to investigate the effect of selected yogic practices on visual memory among softball players. Visual memory is an important cognitive ability that helps athletes retain, process, and recall visual information during sports performance. Thirty male softball players aged between 18 and 25 years from Bharati Vidyapeeth (Deemed to be University) College of Physical Education, Pune, were selected for the study. The subjects participated in a 6-week yogic training programme consisting of selected asanas, pranayama, Trataka, and meditation practices designed to improve concentration, mental focus, and cognitive functioning. Visual memory was assessed before and after the training programme using a standardized visual memory test. The collected data were analysed using appropriate statistical techniques such as mean, standard deviation, and paired 't' test. The findings of the study revealed a significant improvement in visual memory among softball players following the yogic intervention. The study concluded that selected yogic practices positively influence visual memory and cognitive performance and may be effectively incorporated into sports training programmes to enhance mental efficiency and athletic performance.

I. INTRODUCTION

Yoga is a comprehensive system of physical, mental, and spiritual practices that originated in ancient India. It includes physical postures (asanas), breathing techniques (pranayama), meditation, and concentration practices that aim to create harmony between body and mind. In recent years, yoga has gained worldwide recognition not only as a health-promoting activity but also as an effective supportive practice in sports training and performance enhancement.

Sports performance is influenced not only by physical fitness but also by psychological and cognitive abilities. Among these cognitive abilities, visual memory plays a significant role in games that require quick decision-making, accurate movement, and rapid response to visual stimuli. Visual memory refers to the ability to store, retain, and recall visual information such as shapes, positions, movements, and patterns. In sports like softball, visual memory is essential for recognizing ball trajectory, remembering field positions, judging movement patterns, and reacting quickly during gameplay.

Softball is a fast-paced sport that demands high levels of concentration, hand-eye coordination, reaction ability, and visual processing. Players must quickly interpret visual information and respond accurately in situations such as batting, fielding, catching, and throwing. Strong visual memory helps players anticipate movement, improve timing, and execute technical skills efficiently.

Yoga has been found to positively influence cognitive functions such as concentration, attention, mental clarity, and memory. Yogic practices like Trataka, meditation, pranayama, and selected asanas help calm the mind, improve focus, reduce stress, and strengthen the connection between mind and body. These practices stimulate the nervous system and may contribute to enhanced visual processing and memory retention.



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Several studies have reported the beneficial effects of yoga on mental functions and cognitive performance. Yogic concentration techniques have been shown to improve attention span, reaction time, and memory-related abilities. Therefore, integrating yogic practices into sports training may provide cognitive benefits in addition to physical improvements.

The present study focuses on examining the effect of selected yogic practices on visual memory among softball players. The findings of this study may help coaches, physical educators, and athletes understand the importance of yoga in enhancing cognitive performance and sports efficiency.

II. ASHTANGA YOGA

Ashtanga Yoga refers to the eightfold path of yoga described by Patanjali in the Yoga Sutras. These eight limbs are:

- Yama – Moral discipline
- Niyama – Self-discipline
- Asana – Physical postures
- Pranayama – Breathing control
- Pratyahara – Withdrawal of senses
- Dharana – Concentration
- Dhyana – Meditation
- Samadhi – State of deep concentration and self-realization

Visual Memory

Visual memory refers to the ability to retain and recall visual information after the original image or stimulus is no longer present. It involves remembering shapes, colors, positions, movements, symbols, and visual patterns.

Visual memory is an important cognitive skill in sports because athletes constantly process visual information during gameplay. In softball, players rely on visual memory to judge ball movement, recognize patterns, remember positioning, and respond effectively to rapidly changing situations.

Strong visual memory contributes to:

- Faster reaction time.
- Better decision-making.
- Improved hand-eye coordination.
- Accurate skill execution.
- Enhanced concentration.
- Better sports performance.

Yoga practices involving concentration and controlled breathing may help strengthen visual memory by improving attention span, mental calmness, and nervous system efficiency.

Softball Players

Softball players are athletes who participate in the game of softball, a bat-and-ball sport similar to baseball. The game requires physical fitness, coordination, concentration, quick reflexes, and mental alertness.

Softball players need:

- Hand-eye coordination
- Reaction ability
- Mental concentration
- Speed and agility
- Decision-making ability
- Visual tracking skills

Visual memory is especially important in softball because players must constantly observe, remember, and respond to visual information during batting, fielding, throwing, and catching.



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III. METHODOLOGY

3.1 Research Design

The present study employed an experimental research design using pre-test and post-test methods to investigate the effect of selected yogic practices on visual memory among softball players. An experimental research design is considered one of the most suitable methods for determining the cause-and-effect relationship between variables because it allows the researcher to introduce a specific treatment or intervention and observe its impact on the selected dependent variable under controlled conditions. In this study, the selected yogic practices served as the independent variable, while visual memory was considered the dependent variable. The primary purpose of adopting this design was to determine whether regular participation in yogic practices could bring significant improvement in the visual memory of softball players. The pre-test and post-test method was used to measure the level of visual memory before and after the administration of the yogic training programme. Initially, all selected participants underwent a pre-test to assess their baseline visual memory levels. The pre-test helped the researcher identify the existing cognitive performance of the participants before the commencement of the experimental treatment. After conducting the pre-test, the experimental group participated in a structured yogic training programme for a specific duration, while the control group continued with their regular activities without receiving any yogic intervention. The yogic training programme included selected asanas, pranayama, Trataka, and meditation practices aimed at improving concentration, mental focus, visual attention, and cognitive functioning. Upon completion of the training period, a post-test was administered to both groups using the same testing procedures and conditions as used during the pre-test. The post-test scores were then compared with the pre-test scores to determine the extent of improvement in visual memory among the participants. The use of pre-test and post-test methods enabled the researcher to evaluate the effectiveness of the yogic practices accurately by observing the changes that occurred after the intervention. This design also helped minimize errors and provided objective and reliable results regarding the influence of yoga on visual memory among softball players.

Selection of Subjects

Thirty male softball players aged between 18 and 25 years were selected from Bharati Vidyapeeth (Deemed to be University) College of Physical Education, Pune.

Selection of Variables

Independent Variable

- Selected Yogic Practices

Dependent Variable

- Visual Memory

Criterion Measures

Visual memory was assessed using a standardized Visual Memory Test called memory drum.

Training Programme

The experimental group underwent selected yogic practices for 6 weeks, five days per week.

- **Selected Yogic Practices Included:**
 - Tadasana
 - Vrikshasana
 - Paschimottanasana
 - Bhujangasana
 - Anulom Vilom
 - Bhramari
 - Trataka
 - Meditation

Duration of Training

- 45–60 minutes per session
- 5 days per week
- 6 weeks duration



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3.6 Statistical Technique

The collected data were analyzed using:

- Mean
- Standard Deviation
- Paired 't' test

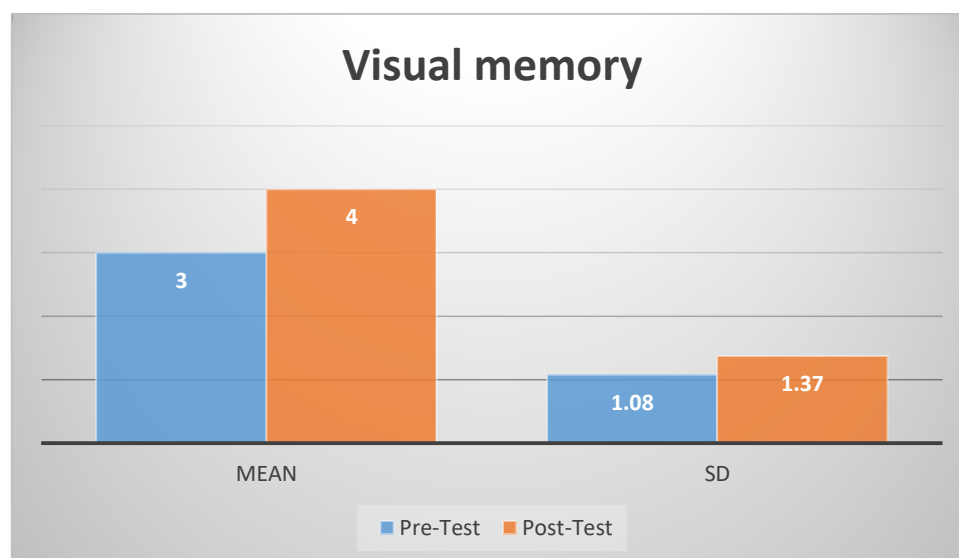
The level of significance was set at 0.05.

Table 1 Mean and Standard Deviation of Pre-test and Post-test Scores of Visual Memory

Test	N	Mean	SD	SEM	Df	Cal T	Tab T
Pre-Test	30	3.00	1.08	0.20	29	11.7829	2.045
Post-Test	30	5.90	1.37	0.25	29		

Table no.2: The table presents the comparison between pre-test and post-test scores of 30 subjects using a paired sample t-test. The mean score increased from 3.00 in the pre-test to 5.90 in the post-test, indicating a substantial improvement following the intervention. The standard deviation values (1.08 and 1.37) suggest a slight increase in variability in post-test scores, while the SEM values (0.20 and 0.25) indicate that the sample means are reasonably reliable. With 29 degrees of freedom, the calculated t-value (11.7829) is much higher than the tabulated t-value (2.045) at the 0.05 level of significance, showing that the difference between pre-test and post-test scores is statistically significant. Therefore, it can be concluded that the intervention had a highly significant positive effect on the performance of the subjects.

Graph No.2



Graph No. 1: Showing the mean of visual memory score during Pre-Test and Post-Test

IV. DISCUSSION ON FINDINGS

The present study was conducted to examine the effect of selected yogic practices on flexibility and visual memory of softball players. The findings of the study revealed a statistically significant improvement in both flexibility and visual memory following the yogic training programme. The calculated 't' values for visual memory (Alternate Hand Wall Test = 11.7252) and flexibility (Sit and Reach Test = 9.5345) were found to be much higher than the tabulated value (2.045) at the 0.05 level of significance, indicating that the improvements were significant and not due to chance.



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The significant enhancement in flexibility can be attributed to the regular practice of yogic asanas, which involve controlled stretching and sustained postures. These practices help in improving muscle elasticity, increasing joint range of motion, and reducing stiffness, thereby contributing to better performance in flexibility-related measures. Continuous engagement in such movements leads to physiological adaptations that enhance overall flexibility. Similarly, the improvement in visual memory may be due to the concentration and mindfulness components inherent in yogic practices. Techniques such as pranayama and focused attention during asanas enhance mental clarity, attention span, and memory retention. These practices facilitate better coordination between the mind and body, which is essential for tasks involving visual processing and recall. In conclusion, the results of the study demonstrate that selected yogic practices have a significant positive effect on both flexibility and visual memory of softball players. The findings emphasize the importance of incorporating yoga into training programmes to achieve improvements not only in physical attributes but also in cognitive functions.

V. CONCLUSION

Based on the findings of the study, it was concluded that the selected yogic practices had a significant positive effect on the visual memory of softball players. The participants who underwent the yogic training programme showed noticeable improvement in their ability to observe, retain, and recall visual information. These improvements may help players better recognize game situations, remember tactical patterns, and respond more effectively during competition. Therefore, the study suggests that incorporating selected yogic practices into the regular training programme of softball players can be an effective method for enhancing visual memory and overall sports performance.

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