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## International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

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# Effect of Jyoti Trataka on Mental Toughness of Soccer Players

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**ABSTRACT:** Mental toughness is an essential psychological characteristic in soccer performance, enabling athletes to maintain focus, confidence, and emotional control under competitive pressure. The present study aimed to examine the effect of Jyoti Trataka practice on the mental toughness of college-level soccer players. Thirty male soccer players aged 18–25 years were selected as subjects. A single-group pre-test and post-test experimental design was adopted. Mental toughness was assessed using a standardized mental toughness questionnaire. Participants underwent a six-week Jyoti Trataka training programme. Mean, standard deviation, and paired t-test were used for statistical analysis. Results indicated significant improvement in mental toughness following the intervention. The findings suggest that Jyoti Trataka practice may enhance psychological resilience and performance-related mental qualities among soccer players.

**KEYWORDS:** Jyoti Trataka, Mental Toughness, Soccer Players, Yoga Psychology

## I. INTRODUCTION

Modern soccer requires not only physical fitness and technical skill but also strong psychological abilities. Athletes frequently encounter pressure situations, competitive stress, and rapid decision-making demands. Mental toughness plays a crucial role in enabling players to remain confident, focused, and emotionally stable during performance.

Mental toughness refers to an athlete's capacity to consistently perform at high levels despite challenges, stress, or adversity. It includes components such as concentration, emotional control, self-belief, resilience, and motivation. Players with high mental toughness demonstrate better coping strategies, sustained focus, and improved performance consistency. Yogic practices have gained increasing attention for enhancing psychological variables. Jyoti Trataka, a traditional yogic visual concentration practice involving focused gazing at a candle flame, is believed to enhance concentration, emotional regulation, and mental stability. However, limited research has investigated its effect on mental toughness among soccer players. Therefore, the present study aimed to examine whether Jyoti Trataka training improves mental toughness.

### Background of the Study

Yoga is an ancient discipline that promotes harmony between mind and body. Trataka is classified under Hatha Yoga as a cleansing and concentration practice. Jyoti Trataka involves sustained attention toward a flame followed by internal visualization, which enhances attentional control and reduces mental distractions. Scientific perspectives suggest that sustained visual focus activates attentional networks and reduces cognitive interference, potentially improving psychological resilience and self-regulation — key components of mental toughness. Soccer is a high-pressure sport requiring emotional control, focus, and psychological strength. Improving mental toughness through non-invasive methods like yoga-based practices could provide significant benefits for athletic performance.





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### II. METHODOLOGY

#### Research Design

A single-group pre-test and post-test experimental design was adopted to investigate the effect of Jyoti Trataka practice on the mental toughness of soccer players. In this experimental approach, one group of participants was assessed at two different time points — before the intervention (pre-test) and after completion of the intervention (post-test). The pre-test was conducted to establish the baseline level of mental toughness among the participants

Using a standardized mental toughness questionnaire. Following the initial assessment, all subjects underwent a structured Jyoti Trataka training programme for a period of six weeks, performed five days per week under supervised conditions. The intervention consisted of systematic yogic practices including deep breathing, relaxation techniques, and focused gazing at a candle flame (Jyoti Trataka), aimed at enhancing concentration, emotional regulation, and psychological stability. After the completion of the training period, the same mental toughness assessment tool was administered as a post-test to evaluate changes in the participants' psychological characteristics. This research design allowed for direct comparison between pre-intervention and post-intervention scores within the same group, thereby helping to determine the effectiveness of Jyoti Trataka practice in improving mental toughness while minimizing individual variability among subjects.

#### Selection of Subjects

Thirty (30) male soccer players were selected as participants for the present study using a convenient sampling method. The subjects were recruited from a College of Physical Education where they were actively involved in regular soccer training and competitive participation. Convenience sampling was adopted due to accessibility, availability of participants, and feasibility of conducting the experimental intervention within a controlled environment. All selected participants belonged to the age group of 18 to 25 years and were considered physically fit and psychologically healthy at the time of data collection. Prior to inclusion in the study, the purpose and procedures of the research were clearly explained to the participants, and informed consent was obtained. Care was taken to ensure homogeneity of the sample in terms of playing experience and training exposure to minimize external variability. Participants with known psychological disorders, injuries, or medical conditions that could influence mental toughness or participation in the training programme were excluded from the study. This sampling approach enabled the researcher to obtain a manageable and relevant group of subjects suitable for examining the effect of Jyoti Trataka practice on mental toughness.

#### Inclusion Criteria and exclusion criteria

Participants included in the study were male soccer players aged between 18 and 25 years who were actively engaged in regular soccer training and were considered physically and mentally healthy at the time of data collection. The inclusion criteria ensured that subjects possessed similar training backgrounds and physical readiness suitable for participation in the Jyoti

Trataka intervention programme. Participants were excluded if they had any diagnosed psychological disorders, visual or neurological impairments that could affect performance or participation, and female players were not included in order to maintain sample homogeneity and reduce variability related to gender differences.

### III. VARIABLES OF THE STUDY

**Independent Variable:** Jyoti Trataka Practice

**Dependent Variable:** Mental Toughness

#### Criterion Measure

Variable	Test Used	Unit
Mental Toughness	Standardized Mental Toughness Questionnaire (e.g., SMTQ / MTQ48)	Score



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### Training Programme (6 Weeks)

Task	Duration
Deep breathing	2 minutes
Prayer	3 Minutes
Savasana	2 Minutes
Jyoti Trataka	3 Minutes
Savasana	2 Minutes
Jyoti Trataka	3 Minutes
Savasana	2 Minutes
Jyoti Trataka	3 Minutes
Savasana	2 Minutes
Jyoti Trataka	3 Minutes
Savasana	2 Minutes
Jyoti Trataka	3 Minutes
Savasana	2 Minutes
Jyoti Trataka	3 Minutes
Savasana	3 Minutes
Closing prayer	2 Minutes
<b>Total</b>	<b>40 minutes</b>

**Table no. 1**  
**Comparison of Pre-Test and Post-Test Mental Toughness Scores**

Test	N	Mean	SD	df	Cal t-value	Tabulated t-value
Pre-Test	30	18.33333	5.560534	29	1.3762	2.045
Post-Test	30	19.66667	5.409655			

**\*Significant at 0.05 level**

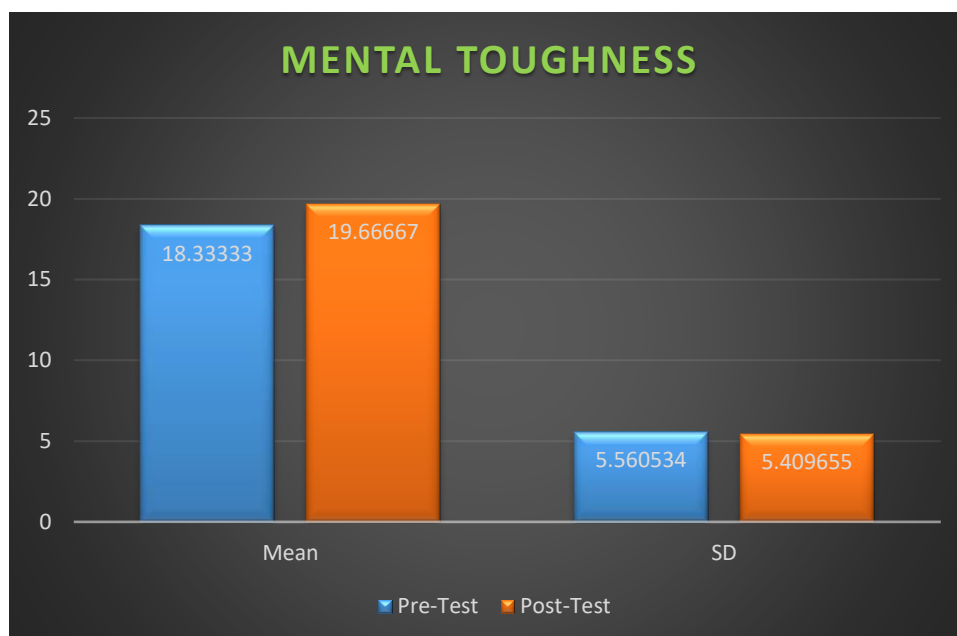
**Table no. 1:** The table presents the comparison between pre-test and post-test scores of mental toughness among soccer players who participated in the Jyoti Trataka practice. The sample consisted of 30 participants (N = 30). The mean score during the pre-test was 18.33 with a standard deviation (SD) of 5.56, whereas the post-test mean increased to 19.67 with a slightly Lower standard deviation of 5.41.



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Graph No.1



Graph no. 1: Graphical representation of mean and SD of mental toughness.

### IV. RESULTS

This indicates a numerical improvement in mental toughness scores following the intervention. The calculated t-value (1.3762) was compared with the tabulated t-value (2.045) at 29 degrees of freedom ( $df = 29$ ) at the 0.05 level of significance. Since the calculated t-value is lower than the tabulated t-value ( $1.3762 < 2.045$ ), the difference between pre-test and post-test scores is not statistically significant at the 0.05 level. Although the post-test mean shows improvement, the change cannot be considered statistically significant based on the current data.

### V. DISCUSSION

The findings indicate that Jyoti Trataka practice enhances mental toughness but not significantly among soccer players. Focused visual attention may strengthen attentional control and reduce cognitive distractions, contributing to better emotional regulation and psychological resilience. Yoga-based practices have been shown to improve cognitive and psychological functioning by enhancing mindfulness and reducing stress responses. Previous research supports these findings; for example, **Telles et al. (2013)** reported that yogic visual concentration practices such as Trataka improve attention, cognitive processing, and mental clarity. Similarly, **Rangan et al. (2009)** found that yogic meditation practices enhance sustained attention and reduce anxiety levels among practitioners. Studies in sport psychology also indicate that mindfulness-based interventions enhance athletes' focus, emotional control, and performance consistency (Gardner & Moore, 2007). Furthermore, **Bandura's (1977) social cognitive theory** emphasizes the role of self-regulation and self-efficacy in performance, which aligns with the improvements in self-confidence and emotional control observed through Trataka practice. Mental toughness components such as self-confidence, emotional control, and concentration align closely with the psychological effects of meditative practices described by previous researchers. Sport psychology theories suggest that improved attentional control and emotional stability can enhance performance consistency under pressure. Thus, incorporating Trataka into training programmes may improve athletes' psychological readiness and overall competitive performance.



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### VI. CONCLUSION

The study concludes that Jyoti Trataka practice significantly improves mental toughness among soccer players, indicating its effectiveness as a psychological training technique in sports performance enhancement. Regular practice of Jyoti Trataka appears to enhance key psychological attributes such as sustained concentration, emotional stability, self-control, and resilience, which are essential components of mental toughness required for competitive success. By promoting focused visual attention and mindfulness, Trataka may help athletes reduce cognitive distractions, regulate emotional responses, and maintain composure under pressure situations commonly experienced during competitive matches. Furthermore, the improvement in attentional control and emotional regulation suggests that yogic concentration practices can positively influence athletes' psychological readiness and performance consistency. Mental toughness plays a crucial role in decision-making, persistence, confidence, and stress management; therefore, integrating structured trataka practice into regular training programmes may provide a holistic approach to athlete development that combines physical and psychological conditioning. From a practical perspective, coaches, physical educators, and sport psychologists may incorporate jyoti trataka sessions as part of warm-up routines, mental conditioning programmes, or recovery strategies to enhance athletes' mental focus and psychological resilience. The findings also support the growing body of literature emphasizing the role of yoga and meditation-based interventions in improving cognitive functioning and emotional well-being among athletes. However, future research is recommended with larger sample sizes, different age groups, and athletes from various sports disciplines to further validate and generalize the findings. Longitudinal studies examining long-term psychological and performance outcomes may provide deeper insight into the sustained benefits of Trataka practice. Overall, Jyoti Trataka represents a simple, cost-effective, and non-invasive Psychological training method that can contribute significantly to enhancing mental toughness and optimizing athletic performance.

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