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## Effects Of Yogic Eye Exercises On Eye Fatigue In Computer Users Of Madhyapradesh

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#### Abstract:-

The purpose of this study was to investigate how yoga eye exercises can lessen computer users' eye tiredness. Using a pre-post experimental design, convenience sampling was used to choose 30 participants between the ages of 20 – 40 yrs. Of these, 15 were assigned to the exercise group and rest 15 for the control group. For 120 days (4 weeks), the yogic eye workout programme comprised 60-minute sessions twice a day. It covered 10 particular steps, such as palming, blinking, sideways viewing, rotating viewing, and guided relaxation techniques.

A validated questionnaire intended to measure ocular tiredness was used to measure eye fatigue. This study adds to our knowledge of the possible advantages of yoga eye exercises for reducing computer-related eye fatigue. The exercise group's results showed a significant decrease in eye tiredness scores when compared to the control group.

**Conclusion:** Based on these findings, it appears that teaching yogic eye exercises to undergraduate nursing students may help them feel less fatigued.

**Key words:** eye strain, eye yog

#### Introduction:

Our eyes are essential to our everyday lives because they allow us to see a wide range of visual information in both personal and professional contexts. However, a variety of visual discomforts, such as fatigue, dryness, strain, irritation, decreased visual acuity, burning sensations, redness, and double vision, are frequently experienced by users of visual displays.<sup>1-4</sup> Eye tiredness is a common problem, particularly among computer users who are involved in social, recreational, or academic activities<sup>5</sup>. Inadequate lighting, extensive screen time, unhealthy eating habits, ineffective eye muscle function from long office work and academic responsibilities, emotional stress, and the ageing process are some of the causes that cause eye fatigue<sup>6</sup>. Research has shown that functional anomalies in the ocular muscles, which are made worse by the stress and strain of computer work, are frequently the cause of eye disorders<sup>7</sup>. Yoga and other relaxation methods have been suggested as possible treatments for eye fatigue<sup>8</sup>. Yoga has been associated with positive effects on mental and physical health, including the regulation of stress-related pathways such as the sympathetic nervous system and the hypothalamic-pituitary-adrenal

axis<sup>9</sup>. Previous studies have shown that among students who use computers, yoga poses are associated with better levels of self-rated relaxation and lower stress levels<sup>10-12</sup>. Additionally, by raising blink frequency and decreasing the perceived stability of flickers, these activities have been demonstrated to improve visual perceptual sensitivity and the capacity to recognise flickering stimuli.<sup>13</sup> Over the course of a 12-week study involving computer workers, individuals in the yoga exercise group had a significant decrease in stress levels, whereas the control group experienced an increase in stress. On the other hand, there is little data to support the effectiveness of eye yoga in reducing eye tiredness. Thus, the purpose of this study is to look at how yoga eye exercises affect computer workers' eyetiredness.

### **Subjects and Methods:-**

Thirty people in all, eight of them female and seven of them male, participated in this pretest-posttest design study. These people, who were computer users between the ages of 20 – 40 yrs, had never done yoga poses before, nor had they ever used eye medicine. The study recruited participants from a variety of employment backgrounds, such as call centres, banks, reservation counters, ultrasonography centres, and hospital data entry roles. Every participant received comprehensive information about the goal of the study and its possible applications. Before being included in the study, each subject gave their informed consent. The participants were split into two equal groups: 15 people for the yogic eye exercise group and 15 people for the control group. Thirty individuals finished the research with success. The Institutional Review Board at Sarvapalli Radhakrishna University in Bhopal, Madhya Pradesh, approved the study. Pretest and posttest data were gathered on demographics and eye fatigue scores. A questionnaire intended to measure ocular fatigue was used to gauge eye fatigue. This questionnaire consisted of 12 items, each scored on a 7-point Likert scale, where 0 indicated no fatigue, 1 or 2 represented little exhaustion, 3 or 4 marked moderate fatigue, and 5 or 6 signified severe fatigue. A variety of eye fatigue symptoms, such as fatigue, soreness, irritation, watering, dryness, eyestrain, heat/burning sensation, blurred vision, difficulty focusing, double vision, and visual discomfort, were evaluated by the questionnaire. Higher scores corresponded to a sense of perceived weariness. Participants' eye tiredness scale readings were taken both before the study began and after the yogic exercise intervention<sup>2-4</sup>, when the trial was concluded. Over the course of 12 weeks, there were two daily yoga sessions, lasting roughly 30 minutes each. The M.P. Yoga Bharati in India certified the yoga instructor running these programme. The ten yoga poses were as follows: palming, blinking, sideways looking, frontal and lateral looking, rotating looking, upward and downward looking, nose-tip gazing in advance, near and far looking, Trataka, and guided relaxation methods. After completing the eye exercises, participants received guidance on relaxation techniques. The following is an explanation of the scientific basis for yoga eye exercises: Using the palming technique, you may help the aqueous humour, a fluid essential to the health of your cornea and lens, circulate while also relaxing and revitalising your eye muscles. Additionally, it helps to repair visual abnormalities. Exercise for Blinking: Promotes the body's natural blinking reflex, which eases muscle tension and lessens eye strain. Sideways viewing: Reduces tension in the muscles used for close work and extended reading, which helps to avoid and treat squinting. Front and Sideways Viewing: Enhances cooperation between the medial and lateral eye muscles. Rotational Viewing: Restores balance in the muscles around the eyes and facilitates coordinated movement of both eyeballs. Up-and-down viewing: Equalises the muscles of the upper and lower eyes. Initial Nose-Tip Gazing: Enhances the eye muscles' capacity for accommodation and focus. Near and Distant Viewing: Similar to basic nose-tip staring, this exercise widens the range of movement and enhances focusing power<sup>6-14</sup>. For statistical analysis, the SPSS software (version 18.0) for Windows was used. The data were shown as a range (median) or as a number (percentage). A  $\chi^2$  test combined with Fisher's exact test or Z test was used to evaluate the homogeneity of demographic and clinical characteristics between the exercise and control groups. Wilcoxon rank sum tests were used to identify significant differences between groups due to nonhomogeneous ages in the demographic characteristics. Additionally, Wilcoxon signed rank tests were used to evaluate significant differences within groups. A probability value was deemed statistically significant if it was less than 0.05.

### **RESULTS**

Tables 1 and 2 provide a description of the variables. There were no discernible variations in the features of the yoga and control groups, other than age. There was no significant difference in the pre-intervention ocular fatigue scores between the two groups. But after the yoga exercise regimen, there were significant differences in eye tiredness scores across time (pretest vs. posttest,  $p < 0.001$ ) and between the yoga and control groups ( $p < 0.001$ ).

**Table 1 :-Homogeneity test results for general characteristics and eye fatigue between the experimental and control groups**

Variables	Experimental Group	Control Group
Female	8(53.3.0)	10(66.0)
Male	7(47.0)	5(34.0)
Age (Years)	24(22-36)	22(21-25)
Use of visual media per day (hours)	4.0(2.0-12.0)	5.0(2.0-12.0)
Right acuity	1.0D(0.2-1.5)	0.75D(0.0-1.5)
Left acuity	0.9D(0.1-1.5)	0.6D(0.1-1.5)
Sleep duration per day (hours)	7.0(5.0-8.0)	7.0(5.0-8.0)
Eye fatigue	19(3-35)	23(7-47)

P<0.01

**Table 2:- Effects of yogic eye exercise on eye fatigue**

Group	Pre-test	Post-test	Within group	Between Group
SYoga group)	19 (3–35)	8(2-30)	-6(95%CI[-26,3])*	-----
Control group	23 (7–47)	24.5 (5–59)	0 (95% CI [-19, 12])	-14 (95% CI [-52, -3])*

\*p<0.001; CI: confidence interval

**Discussion:-**

As compared to pre-exercise levels, the study's findings show a considerable decrease in eye tiredness scores after 12 weeks of yogic eye exercises. In addition, during the course of the 12-week period, nursing students who were a part of the yoga exercise group reported a significant reduction in their levels of eye fatigue, while the control group showed no discernible change in their levels of eye fatigue. These results are consistent with earlier studies showing that yoga poses significantly lessen participants' visual discomfort among workers in software companies<sup>1-15</sup>. A thorough yoga programme should include yoga postures, breathing exercises, joint exercises, visual cleansing activities, and relaxation techniques, according to previous studies<sup>1</sup>. The control group in this study did not show any discernible variations in their eye tiredness scores compared to the yoga group. In addition to the direct effects of eye yoga, the differences between the two groups might also result from the psychological advantages that the yoga group's members reaped from their frequent encounters with the teacher. This emphasises how important psychological effects may be in the yoga class. As a result, these results highlight the effectiveness of yoga eye exercises as a non-pharmacological treatment for reducing eye fatigue. The paucity of studies on eye-yoga activities, however, indicates that more investigation is necessary to provide strong methodological proof for the effectiveness of eye yoga in reducing eye fatigue. Therefore, more research is necessary to solidify the data supporting the efficacy of eye-yoga programmes.

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