ONLINE ISSN :3007-309X
PRINT ISSN :3007-3081

Journal of Medical & Health Sciences Review

# IMPACT OF DIFFERENT YOGA OCULAR EXERCISES ON EYE HEALTH AMONG INDOOR WORKERS

**Tahir Shaukat[1], Muhammad Assad Nasir[2], Muhammad Shayyan[3], Noor Fatima[4], Muhammad Saleem[5], Khalid Mehmood[6]**

[1]Investigative Oculist at The University of Lahore Teaching Hospital, Lahore
The University of Lahore, Email: Tahir.shaukat@hospital.uol.edu.pk
[2]Optometrist at The University of Lahore Teaching Hospital, Lahore
The University of Lahore, Email: Assadnasir22@gmail.com
[3]Optometrist at The University of Lahore Teaching Hospital, Lahore
The University of Lahore, Email: Dr.muhammadshayyanlatif@gmail.com
[4]Optometrist at Abdul Majeed Poly Clinic, Lahore
The University of Lahore, Email: Noorfatima52426@gmail.com
[5]Optometrist at National Eye Center, The University of Lahore,
Email: muhammadsaleemoptom@gmail.com
[6]Optometrist at Life Care Hospital, Lahore, The University of Lahore,
Email: mk695524@gmail.com

**ARTICLE INFO:**

**Key words:**
Yoga, Exercises, Eye Fatigue, ocular exercise

**Corresponding Author:**
**Tahir Shaukat ,**
Investigative Oculist at The University of Lahore Teaching Hospital, Lahore
The University of Lahore,
Email:
Tahir.shaukat@hospital.uol.edu.pk

**Article History:**
Published on 10 July 2025

**ABSTRACT**

**OBJECTIVE:** To assess impact of different yoga ocular exercises on eye health among indoor workers

**METHODOLOGY:** This study was conducted online. The study comprised forty adults who were symptomatic according to a validated questionnaire. They were divided into two groups based on the eye fatigue symptoms score, with twenty participants in each. The exercise group did yoga ocular exercises on alternate days for up to two months, afterwards the eye fatigue symptoms were assessed again in both groups.

**RESULTS:** Out of 20 subjects in control group, 13(65.0%) had headache sometimes, followed by 5(25.0%) had headache normally, 1(5.0%) more often, and 1(5.0%) had no headache and the time for the headache in study subjects 11(55%) was anytime in the day. About 9(45%) students had headache sometimes while doing near work followed by 4(20%) normally had headache, 4(20%) had more often and 3(15%) had no headache while doing near work. Out of 20 subjects, 6(30.0%) students had eye fatigue normally and mostly 8(40%) had

moderate level of eye fatigue followed by 2(10%) had mild level of eye fatigue, and 4(20%) with severe level of fatigue. Most of the study subjects 8(40%) had complain of eye burn sometimes, followed by 5(25.0%) choose yes, 5(25.0%) more often and 2(10%) had no burning sensation in eyes. The study revealed a notable disparity in headache occurrence during near work was observed, indicating a significant variation between the two groups ($p < 0.05$). Furthermore, the analysis indicated a significant relationship between eye fatigue severity among both groups ($p < 0.05$). Overall, the research findings indicated a significant association between the variables under investigation.

**CONCLUSION:** This study concluded that engaging in yoga ocular exercises, appears to have a positive impact on ocular health. The exercise group demonstrated lower frequencies of headaches, reduced eye fatigue, and improved overall eye-related practices compared to the control group.

## INTRODUCTION

The eyes are the most crucial and well-developed sensory organs in the body for the sense of vision. We depend upon our sight more than any other sense in our body.[1] As, the eyes are one of the most essential organs thus, sight is one of the most wonderful gifts from nature.[2] Eyes are windows to the soul because they connect us to the surroundings and maintain the sharpness of our minds. These are the eyes that keep us safe by providing awareness of any danger, allowing us to understand and locate any happening in the surroundings.[3],[4] We visualize most of our surroundings by making eye movements. Our eyes move continuously even while we fixate on an object. Eye movements also assure that visual input is available to the cognitive system as it is required for the processing of information. These eye movements are carried out by two sets of six external eye muscles also named as extra ocular muscles.[5],[6] Extra ocular muscles are classically categorized as four rectus and two oblique muscles. These muscles are intrinsically different from other skeletal muscles and can also get fatigued. Eye fatigue is a physiologic reaction of the eye to stressful conditions. It's a common complaint while using applications in which eyes follow the screen scrolling. Visual fatigue is fundamentally different from normal muscle fatigue and is related either to activities of the central nervous system.[7],[8] Eye fatigue and various symptoms associated with computer vision are common complaints when using a computer for academic, recreational, or social media purposes. Viewing computer screen for longer time places large amount of burden on our eyes and thus leads to fatigue and other symptoms of eyestrain. Because of the growing popularity of mobile gaming among adults, there is growing concern about the alarming health impacts of localized muscle and eye fatigue.[9],[10] Inappropriate body postures when using mobile phones have been linked to musculoskeletal issues, digital eye strain, and loss of focus and attention. The reported prevalence range of symptoms due to digital eye strain is from 25 to 93% in different studies. These symptoms may be aggravated

by insufficient lighting conditions. Many of us today have jobs that require us to spend long hours staring at a computer screen. This can put a lot of strain on our eyes.[11]

Yoga practitioners prescribe ocular exercises for maintaining your eyes, which include a short relaxation method, ocular exercise, and 'palming' or warming one's eyes by previously rubbing the hands without providing any pressure on the eyeball. Slow and continuous motions and stretching of the bulbomotor muscles in maximum horizontal, vertical, right-side, and left-side circular movements of the eyeballs are included in the ocular exercise.[12] Yoga ocular exercises assist to maintain the eyes healthy and reduce the strain produced by staring at computer displays or printed pages for long periods of time.36 It is also essential to remember that just breathing can relax the eye muscles and boost the availability of oxygen in the blood.[13]

Here is the scientific explanation of yoga exercises for the eyes. The palm relaxes and activates the eye muscles and helps correct refractive errors by stimulating the circulation of aqueous humor (the fluid that flows between the cornea and the lens of the eye). Blinking exercises relax the eye muscles, stimulating the blink reflex. Peripheral vision prevents and corrects strabismus by relieving muscle tension that occurs with constant reading and working at close range. Front and side views improve the coordination of the medial and lateral muscles. Rotational vision restores the balance of the muscles around the eyes and promotes the coordinated activity of the two eyes. Looking up and down balances the upper and lower eye muscles. Gazing first with the tip of the nose increases eye muscle control and focusing power. You can see near and far, but similarly to the preliminary exercise, look at the tip of the nose.[14]

**METHODOLOGY**

Data was collected through a self-designed questionnaire. First, a self-designed questionnaire was filled by people then we picked 40 participants who have a complaint of eye fatigue and divided them in 2 groups (20 participants each). All communication was done online. One group was asked to do eye exercise for 30 minutes thrice a week on alternative days and the other was asked to not to do any eye exercise (but if any of them need any glasses, etc. for protection or relief then they can use them) for 2 months. There was a follow-up with the same questionnaire filled by both groups after completion of duration. Then we compared and observed the status of the complaint of eye fatigue (whether there is some improvement in eye fatigue or not) between the control group and the case group. And if there is improvement then how much is it?

**RESULTS**

This case-control study was conducted during the period of 4 months at Superior University, Lahore. A total of 40 adults (20 in each group) were recruited in this study. The mean age of exercise groups and control group were 21.7±1.38 years and 21.6±1.429 years respectively. Gender distribution of both groups is described in Table IV-1.

**Table IV-1: Frequency Distribution of Gender**

| | Gender | | Total |
|---|---|---|---|
| | **Female** | **Male** | |
| **Control group** | 13 | 7 | 20 |
| **Exercise group** | 15 | 5 | 20 |
| **Total** | 28 | 12 | 40 |

Out of 20 subjects in control group, 13(65.0%) had headache sometimes, followed by 5(25.0%) had headache normally, 1(5.0%) more often, and 1(5.0%) had no headache and the time for the headache in study subjects 11(55%) was anytime in the day. About 9(45%) students had headache sometimes while doing near work followed by 4(20%) normally had

headache, 4(20%) had more often and 3(15%) had no headache while doing near work. Majority of the students 9(45%) slept less than 4 hours in a day, followed by 6(30%) for 6-7 hours, 4(20.0%) for 4-5 hours and only 1(5.0%) for more than 7 hours.

Out of 20 subjects, 6(30.0%) students had eye fatigue normally and mostly 8(40%) had moderate level of eye fatigue followed by 2(10%) had mild level of eye fatigue, and 4(20%) with severe level of fatigue. Most of the study subjects 8(40%) had complain of eye burn sometimes, followed by 5(25.0%) choose yes, 5(25.0%) more often and 2(10%) had no burning sensation in eyes. Frequency distribution of study individuals having pain in neck, back and shoulder and those who used medicines to overcome eye fatigue was showed in table IV-2. According to this almost 50.0% subjects had no pain and 80% didn't use any medicine, also 50% subjects didn't get eye examination done while other 50% did.

Out of 20 participants, 4(20%) wore glasses, followed by 13(65%) didn't wore glasses and 3(15%) wore sometimes. Out of 20 participants, 11(55%) had difficulty in concentration or focusing sometimes while 5(25%) normally, 2(10%) had no difficulty and 2(10%) more often. Majority of the study subjects 13(65%) are those who didn't skip lines while reading and 7(35%) sometimes did. Table IV-2 showed that 3(15%) subjects read same line by mistake 11(55.0%) didn't read same line by mistake while other 6(30%) sometimes. Out of 20 participants, 2(10%) experienced sensitivity to light 8(40%) sometimes, followed by 7(35%) choose no, and 3(15%) more often. In our study population of 20 participants, less than half of patients 7(35%) knew about exercise and did exercise too while other 13(65.0%) not.

**TABLE: Control group parameters**

| Questions | Frequency (Percentage) | | | |
|---|---|---|---|---|
| **Statement** | **Yes** | **No** | **Sometimes** | **More often** |
| Do you have headache? | 0 (0.0) | 11 (55.0) | 9 (45.0) | 0 (0.0) |
| Do you get headache while doing near work? | 0 (0.0) | 13 (65.0) | 7 (35.0) | 0 (0.0) |
| Do you have eye fatigue? | 0 (0.0) | 17(42.5) | 3 (15.0) | 0 (0.0) |
| Do you feel your eyes burning? | 0 (0.0) | 12 (60.0) | 8 (40.0) | 0 (0.0) |
| Do you have pain in your neck, back and shoulders? | 0 (0.0) | 15 (75.0) | 5 (25.0) | 0 (0.0) |
| Do you have difficulty in concentration / focusing? | 1 (5.0) | 11 (55.0) | 8 (40.0) | 0 (0.0) |
| Do you feel tired while reading? | 0 (0.0) | 12 (60.0) | 8 (40.0) | 0 (0.0) |
| Do you experience any sensitivity to light? | 1 (5.0) | 9 (45.0) | 8 (40.0) | 2 (10.0) |
| **Statement** | **Yes** | **No** | **Sometimes** | |
| Do you wear glasses? | 3 (15.0) | 13 (65.0) | 4 (20.0) | |
| Do you use any medicine when you feel eye fatigue? | 0 (0.0) | 19 (95.0) | 1 (5.0) | |

| | | | | |
|---|---|---|---|---|
| While reading, do you skip a line or lose your place on the page? | 0 (0.0) | 16 (80.0) | 4 (20.0) | |
| While reading, do you read the same line by mistake? | 0 (0.0) | 17 (85.0) | 3 (15.0) | |
| Do the letters look blurry or double? | 0 (0.0) | 17 (85.0) | 3 (15.0) | |
| **Statement** | **Morning** | **After-Noon** | **Evening** | **Any time** |
| What time do you have a headache? | 0 (0.0) | 9 (45.0) | 8 (40.0) | 3 (15.0) |
| **Statement** | **< 4 hours** | **4 to 5 hours** | **6 to 7 hours** | **More than 7 hours** |
| For how much time do you get sleep? | 4 (20.0) | 6 (30.0) | 6 (30.0) | 4 (20.0) |
| **Statement** | **Normal** | **Mild** | **Moderate** | **Severe** |
| How much eye fatigue do you have? | 15 (75.0) | 5 (25.0) | 0 (0.0) | 0 (0.0) |
| **Statement** | **Yes** | | **No** | |
| Have you ever visited any eye doctor? | 15 (75.0) | | 5 (25.0) | |
| Have you ever got your eye examination done? | 15 (75.0) | | 5 (25.0) | |
| Do you know about eye exercises? | 20 (100.0) | | 0 (0.0) | |
| Have you ever done any eye exercise? | 20 (100.0) | | 0 (0.0) | |

**TABLE: Exercise group parameters**

| Questions | Frequency (Percentage) | | | |
|---|---|---|---|---|
| **Statement** | **Yes** | **No** | **Sometimes** | **More often** |
| Do you have headache? | 0 (0.0) | 11 (55.0) | 9 (45.0) | 0 (0.0) |
| Do you get headache while doing near work? | 0 (0.0) | 13 (65.0) | 7 (35.0) | 0 (0.0) |
| Do you have eye fatigue? | 0 (0.0) | 17(42.5) | 3 (15.0) | 0 (0.0) |
| Do you feel your eyes burning? | 0 (0.0) | 12 (60.0) | 8 (40.0) | 0 (0.0) |
| Do you have pain in your neck, back and shoulders? | 0 (0.0) | 15 (75.0) | 5 (25.0) | 0 (0.0) |
| Do you have difficulty in concentration / focusing? | 1 (5.0) | 11 (55.0) | 8 (40.0) | 0 (0.0) |
| Do you feel tired while reading? | 0 (0.0) | 12 (60.0) | 8 (40.0) | 0 (0.0) |

| | | | | |
|---|---|---|---|---|
| Do you experience any sensitivity to light? | 1 (5.0) | 9 (45.0) | 8 (40.0) | 2 (10.0) |
| **Statement** | **Yes** | **No** | **Sometimes** | |
| Do you wear glasses? | 3 (15.0) | 13 (65.0) | 4 (20.0) | |
| Do you use any medicine when you feel eye fatigue? | 0 (0.0) | 19 (95.0) | 1 (5.0) | |
| While reading, do you skip a line or lose your place on the page? | 0 (0.0) | 16 (80.0) | 4 (20.0) | |
| While reading, do you read the same line by mistake? | 0 (0.0) | 17 (85.0) | 3 (15.0) | |
| Do the letters look blurry or double? | 0 (0.0) | 17 (85.0) | 3 (15.0) | |
| **Statement** | **Morning** | **After-noon** | **Evening** | **Any time** |
| What time do you have a headache? | 0 (0.0) | 9 (45.0) | 8 (40.0) | 3 (15.0) |
| **Statement** | **< 4 hours** | **4 to 5 hours** | **6 to 7 hours** | **More than 7 hours** |
| For how much time do you get sleep? | 4 (20.0) | 6 (30.0) | 6 (30.0) | 4 (20.0) |
| **Statement** | **Normal** | **Mild** | **Moderate** | **Severe** |
| How much eye fatigue do you have? | 15 (75.0) | 5 (25.0) | 0 (0.0) | 0 (0.0) |
| **Statement** | **Yes** | | **No** | |
| Have you ever visited any eye doctor? | 15 (75.0) | | 5 (25.0) | |
| Have you ever got your eye examination done? | 15 (75.0) | | 5 (25.0) | |
| Do you know about eye exercises? | 20 (100.0) | | 0 (0.0) | |
| Have you ever done any eye exercise? | 20 (100.0) | | 0 (0.0) | |

## DISCUSSION

This case-control study on the impact of yoga ocular exercise was conducted during the period of 4 months at Superior University, Lahore. A total of 40 students (20 in each group) were recruited in this study. The mean age of exercise groups and control group were 21.7±1.38 years and 21.6±1.429 years respectively. Out of the total subjects, 12(30%) were males and 28(70%) were females.

Out of 20 subjects in control group, 13(65.0%) had headache sometimes, followed by 5(25.0%) had headache normally, 1(5.0%) more often, and 1(5.0%) had no headache and the time for the headache in study subjects 11(55%) was anytime in the day.[15] About 9(45%) students

had headache sometimes while doing near work followed by 4(20%) normally had headache, 4(20%) had more often and 3(15%) had no headache while doing near work. Majority of the students 9(45%) slept less than 4 hours in a day, followed by 6(30%) for 6-7 hours, 4(20.0%) for 4-5 hours and only 1(5.0%) for more than 7 hours. A similar study was conducted on the impact of yoga exercise for headache relief which lead to the results that yoga exercise may be beneficial for headache relief.[16],[17]

Out of 20 subjects, 6(30.0%) students had eye fatigue normally and mostly 8(40%) had moderate level of eye fatigue followed by 2(10%) had mild level of eye fatigue, and 4(20%) with severe level of fatigue. Most of the study subjects 8(40%) had complain of eye burn sometimes, followed by 5(25.0%) choose yes, 5(25.0%) more often and 2(10%) had no burning sensation in eyes. Almost 50.0% subjects had no pain and 80% didn't use any medicine, also 50% subjects didn't get eye examination done while other 50% did. Yoga eye exercises boost the effectiveness of extra ocular muscles, which lowers the eye tiredness symptom score. Therefore, it could be viewed as a therapeutic and non-pharmacologic intervention for easing asthenopic symptoms such as eye tiredness.[18],[19],[20]

After being asked for exercise, there is statistically significant difference in categorization of eye fatigue and routine of yoga ocular exercises before and after exercise responses. However, there is statistically significant difference in other characteristics of study subjects before and after exercise.

According to a review of 8 articles chosen at random, yoga practice for the eyes has been shown to have advantages such as lowering intraocular pressure in glaucoma patients, reducing eye fatigue, calming the mind, preventing the symptoms of asthenopia, and improving binocular vision function. It is clear from the review that yoga eye exercises can help people avoid vision issues and keep their eyes healthy in the new normal era.[21]

## CONCLUSION

This study led to the conclusion that yoga ocular exercise proved to be very effective in relieving headache, eye fatigue, sensitivity to light and difficulty in focusing while reading. This yoga ocular exercise can be very beneficial in improving eye health. In this study there was a statistically significant difference in categorization of eye fatigue and routine of ocular yoga before and after exercise responses. Overall, the research findings indicated a significant association between the variables under investigation.

## RECOMMENDATIONS

Yoga ocular exercises are recommended to patients having eye fatigue as these exercises help in reducing eye fatigue by strengthening extra ocular muscles.

## REFERENCES


1. Allsop VL, Schmid AA, Miller KK, Slaven JE, Daggy JK, Froman A, et al. The Pain Outcomes Comparing Yoga vs. Structured Exercise (POYSE) Trial in Veterans With Fibromyalgia: Study Design and Methods. Front Pain Res (Lausanne). 2022;3:934689.10.3389/fpain.2022.934689
2. Azward H, Ramadhany S, Pelupessy N, Usman AN, Bara FT. Prenatal yoga exercise improves sleep quality in the third trimester of pregnant women. Gac Sanit. 2021;35 Suppl 2:S258-S62.10.1016/j.gaceta.2021.10.030
3. Cagas JY, Biddle SJH, Vergeer I. For Exercise, Relaxation, or Spirituality: Exploring Participation Motives and Conformity to Masculine Norms among Male and Female Yoga Participants. Int J Environ Res Public Health. 2022;19(2).10.3390/ijerph19020770
4. Chapman-Lopez TJ, Moris JM, Petty G, Timon C, Koh Y. Effects of Static Contemporary Western Yoga vs. a Dynamic Stretching Exercise Program on Body Composition, Balance, and Flexibility. J Strength Cond Res. 2023;37(5):1064-9.10.1519/JSC.0000000000004362
5. Ding X, Xu C, Yin M. Letter to the Editor Regarding: "The Effect of a Stretch and Strength-Based Yoga Exercise Program

on Patients With Neuropathic Pain due to Lumbar Disc Herniation" by Yildirim and Gultekin. Spine (Phila Pa 1976). 2023;48(16):E286.10.1097/BRS.0000000000004556
6. Halappa NG. Integration of yoga within exercise and sports science as a preventive and management strategy for musculoskeletal injuries/disorders and mental disorders - A review of the literature. J Bodyw Mov Ther. 2023;34:34-40.10.1016/j.jbmt.2023.04.055
7. Han S, Zhang L, Li Q, Wang X, Lian S. The Effects of Laughter Yoga on Perceived Stress, Positive Psychological Capital, and Exercise Capacity in Lung Cancer Chemotherapy Patients: A Pilot Randomized Trial. Integr Cancer Ther. 2023;22:15347354231218271.10.1177/15347354231218271
8. Herbert C. Can Yoga Boost Access to the Bodily and Emotional Self? Changes in Heart Rate Variability and in Affective Evaluation Before, During and After a Single Session of Yoga Exercise With and Without Instructions of Controlled Breathing and Mindful Body Awareness in Young Healthy Women. Front Psychol. 2021;12:731645.10.3389/fpsyg.2021.731645
9. Jarbou NS, Newell KA. Exercise and yoga during pregnancy and their impact on depression: a systematic literature review. Arch Womens Ment Health. 2022;25(3):539-59.10.1007/s00737-021-01189-2
10. Kasture S, Khadilkar A, Padidela R, Gondhalekar K, Patil R, Khadilkar V. Effect of Yoga or Physical Exercise on Muscle Function in Rural Indian Children: A Randomized Controlled Trial. J Phys Act Health. 2023:1-9.10.1123/jpah.2023-0182
11. Ismail AMA, El-Azeim ASA. Short-Term Intraocular Pressure Response to the Combined Effect of Transcutaneous Electrical Nerve Stimulation over Acupoint (Acu-TENS) and Yoga Ocular Exercise in Type 2 Diabetic Patients with Primary Open-Angle Glaucoma: A Randomized Controlled trial. J Acupunct Meridian Stud. 2021;14(5):193-9.10.51507/j.jams.2021.14.5.193
12. Kocyigit BF, Sagtaganov Z, Yessirkepov M. The effectiveness of yoga as a form of exercise in the management of rheumatic diseases. Rheumatol Int. 2023;43(5):795-801.10.1007/s00296-023-05291-9
13. Khan S, Agrawal R, Memon S. Comparison of Effect of Yoga versus Aerobic Exercise on Waist Circumference, Waist-Hip Ratio and Body Mass Index in Overweight and Obese Adult Individuals. Kathmandu Univ Med J (KUMJ). 2022;20(77):38-42. https://www.ncbi.nlm.nih.gov/pubmed/36273288
14. Kothari R, Mittal G, A P, Bokariya P. Exploring the Effect of Yoga on Exercise Endurance As Assessed by Cardiorespiratory Efficiency Tests in Exercise Physiology Laboratory: A Pilot Study. Cureus. 2023;15(4):e38283.10.7759/cureus.38283
15. Stec K, Pilis K, Pilis W, Miodek P, Pilis A, Letkiewicz S. Body Loading during an Intensive Yoga Exercise Routine and a Cycle Ergometer Test. Int J Environ Res Public Health. 2023;20(5).10.3390/ijerph20054157
16. Krejci M, Hill M, Kajzar J, Tichy M, Hosek V. Yoga Exercise Intervention Improves Balance Control and Prevents Falls in Seniors Aged 65. Zdr Varst. 2022;61(2):85-92.10.2478/sjph-2022-0012
17. Leach HJ, Hidde MC, Portz JD, Van Puymbroeck M, Sharp JL, Fox AL, et al. Matching Exercise Volume in Active Control Groups for Yoga Interventions. Altern Ther Health Med. 2023;29(6):237-41. https://www.ncbi.nlm.nih.gov/pubmed/35687710
18. Kuptniratsaikul V, Muaksorn C, Koedwan C, Suesuwan O, Srisomnuek A. Pain reduction, physical performance, and psychological status compared between Hatha yoga and stretching exercise to treat sedentary office workers with mild/moderate neck/shoulder pain: A randomized controlled non-inferiority trial.

Complement Ther Med. 2023;79:102996.10.1016/j.ctim.2023.102996
19. Li Q. The Effects of Yoga Exercise on Pelvic Floor Rehabilitation of Postpartum Women. J Healthc Eng. 2022;2022:1924232.10.1155/2022/1924232
20. Pandey A, Pandey A, Pandey AS, Bonsignore A, Auclair A, Poirier P. Impact of Yoga on Global Cardiovascular Risk as an Add-On to a Regular Exercise Regimen in Patients With Hypertension. Can J Cardiol. 2023;39(1):57-62.10.1016/j.cjca.2022.09.019
21. Lai YT, Huang HL, Hsieh CC, Lin CH, Yang JC, Tsou HH, et al. The Effects of Yoga Exercise on Blood Pressure and Hand Grip Strength in Chronic Stroke Patients: A Pilot Controlled Study. Int J Environ Res Public Health. 2023;20(2).10.3390/ijerph20021108