

Prevalence and Effect of Eye Exercises on Dry Eye Symptoms among People in the Age Group of 35-75 Years

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Abstract

The present study aimed to assess the prevalence of dry eye symptoms among the age group of 35 – 75 years, and the effect of eye exercises on dry eye symptoms between experimental and control group. Quantitative approach with quasi experimental pre-test post-test control group design was used. Structured questionnaire was used for collecting base line data and structured interview schedule to assess the prevalence of dry eye symptoms. Two hundred people were selected for assessing its prevalence; from among them 40 samples with dry eye symptoms were taken and assigned equally to experimental and control group by non-probability purposive sampling technique. Post-test was done after two weeks. Data analysis was done by frequency, percentage, paired and unpaired 't' test. Analysis shows that 49.5 percent had mild, 47.5 percent samples had moderate and 3% had severe dry eye symptoms. Mean post-test score (8.85) is less than mean pre-test score (16) in the experimental group which indicates eye exercises are effective ($p < 0.05$). Mean post-test score in experimental (8.85) and control group (19.65) shows that eye exercises reduce dry eye symptoms ($p < 0.05$). There is a significant association between the selected baseline variables such as age, education, occupation, consumption of drugs, use of computer, use of eye wear and dry eye symptoms.

Vision is our most precious sense. Our eyes are in constant use during every waking minute of every day. The way we use our eyes can determine how well we work throughout our lifetime. Dry eye symptom is a group of ocular symptoms characterised by foreign body sensation, light sensitivity, blurred vision and itching. The prevalence of dry eye varies with the criteria used to diagnose the disorder. Eye exercises help to increase the tear secretion and help to prevent clogging of tear glands. It can be performed throughout a day in regular intervals.

Need and significance: Our eyes are body's most highly developed sensory organs. In a fraction of a second, our eyes work with our brain to tell us the size, shape, colour and texture of an object. Dry eye is a common complaint among middle aged and older adults. Eye exercise have been proposed to improve a wide range of conditions including convergence problems, ocular motility disorders, visual field defects, visual acuity and general wellbeing. The vision problem can be reduced significantly by

performing simple eye exercises.

A study was conducted to assess the prevalence of dry eye disease in hospital-based population in West Bengal; 444 samples were selected using random sampling method. The study revealed that 45.39 percent of the patients had dry eye. Dry eye prevalence was higher in above 70 years of age (74%).

Eye exercises are effective, inexpensive, low risk and easy measure to reduce the dry eye symptoms. Hence health care personnel need to take initiative to resolve the problems associated with dry eye symptoms through different approaches based on sound research findings.

Objectives

1. Assess the prevalence of dry eye symptoms among people in the age group of 35-75 years in selected wards of Rayamangalam Panchayath.
2. Determine the effect of eye exercise on dry eye

symptoms in experimental group.

3. Find out the difference between the post-test score of dry eye symptoms between experimental and control group.
4. Find out the association between dry eye symptoms and selected demographic variables.

Hypotheses

H₁: There is a significant difference between the pre-test and post-test score of dry eye symptom in experimental group.

H₂: There is a significant difference between the post-test score of dry eye symptom between experimental and control group.

H₃: There is an association between dry eye symptom and selected demographic variables.

Conceptual Framework

Conceptual framework acts as a building block for the research study. The present study was aimed at assessing the prevalence and the effect of eye exercises on dry eye symptoms among the age group of 35-75 years. It was developed based on Theory of Goal Attainment by Imogene King.

Review of literature

A cross sectional study conducted to assess the prevalence and associated factors of dry eye among patients above 40 years of age. Sample size was 400 patients who visited the ophthalmology outpatient department of a 600-bedded tertiary care centre with various complaints with may or may not involve dry eye symptoms. The study samples include mixed population of both rural and urban areas. The study showed that the prevalence of dry eye was 55.93 percent in this study population.

A randomised control study was conducted in

Vadodhara, India on the effect of eye exercises on myopia among 30 subjects aged between 18- 25 of both sexes having myopia. Snellens chart and near point convergence were taken as outcome measures. Eye focusing exercises provided for experimental group thrice daily for four weeks. In experimental group the mean $\pm$ SD was 35.20 ± 1.698 and after intervention was 34.00 ± 1.8851 for near point of convergence. The p value was <0.001 , indicating significant improvement whereas control group with no changes 19. The study revealed that eye focusing exercises are effective on myopia in experimental group compared to control group.

Methodology

A quantitative approach with quasi experimental pre-test post-test control group research design was used. The study was conducted in selected wards of Rayamangalam Panchayath during the month of May 2017. Target population for the present study was people in the age group of 35-75 years. A purposive sampling technique was used.

The tool consisted of structured questionnaire for collecting baseline data and structured interview schedule to assess the prevalence of dry eye symptom. Reliability was checked through inter-rater method (Kronbach's alpha) and r value was 0.95.

The data was collected after getting informed consent from the participants and concerned authorities. The researcher has selected 200 people in the age group of 35-75 years for assessing the prevalence of dry eye symptom and from among that 40 samples with dry eye symptoms were taken to assess the effect of eye exercise on dry eye symptoms, 20 as experimental group and 20 as control group. The post-test was done after two weeks. Data analysis was done with descriptive and inferential statistics.

Data analysis and interpretation

Findings (Tables 1 and 2) shows that majority of sample about 32 percent were in the age group 45-54 years, 41 percent samples have primary education, 78 percent samples used computer $<$ less than 2 hours, 11 percent samples are alcoholic. Most of samples (98%) are home makers, 100 percent samples are in rural area and about 55 percent samples uses spectacles.

Assessment of prevalence of dry eye symptoms among age group of 35-75 years shows that 49.5 percent have mild, 47.5 percent have moderate and 3 percent have severe dry eye symptoms.

Table 1: Effect of eye exercise on dry eye symptoms in the experimental group (n=40)

Experimental group	Mean	SD	t-value
Pre-test	16	6.15	4.99*
Post-test	8.85	1.76	

Table 2: Comparison of post interventional score of dry eye symptom between experimental and control group (n=40)

	Mean	SD	t-value
Experimental group	8.85	1.76	9.78
Control group	19.65	4.61	

Paired t test was used to determine the effect of eye exercises on dry eye symptoms among age group of 35-75 years. In experimental group the mean score in pre-test and post-test were 16 and 8.85 respectively. The calculated 't' value is 4.99. The table value is significant at 0.05 level which indicates that the eye exercises were effective in experimental group.

Table 2 depicts that in experimental group and control group the mean score in posttest were 8.85 and 19.65 respectively. The calculated 't' value was 9.78. The table value is 2.04 which is significant at 0.05 levels. It indicates that the eye exercises were effective in reducing dry eye symptoms in experimental group compared to control group.

This study also depicts that there is a significant association between the selected baseline variables such as age, education, occupation, consumption of drugs, use of computer, use of eye wear and dry eye symptoms.

Discussion

The findings of the present study indicate 49.5 percent have mild dry eye, 47.5 percent have moderate dry eye and 3 percent have severe dry eye symptoms among the age group of 35-75 years. These findings were supported by a study conducted in Ahmadabad revealed that 6 types of eye symptoms were prevailed among the computer users which were dry/ irritated eye (74%), the prevalence of visual problem was 152 (76%).

In the present study, in experimental group the mean score in pre-test and post-test is 16 and 8.85 respectively and in control group the mean score in pre-test and post-test was 14.4 and 19.65 respectively. It indicates that the eye exercises are effective in the reduction of dry eye symptoms in experimental group.

The findings of the study were consistent with an experimental study done on clinical test responses to different orthoptic exercise regimes in young adults. A total of 156 asymptomatic young adults were directed to carry out eye exercises three times daily for 2 weeks. Exercises were directed at improving blur responses (accommodation), disparity responses (convergence), both in a naturalistic relationship, convergence in excess of accommodation, accommodation in excess of convergence, and a placebo regime. They were compared with control group. Convergence exercises independent of accommodation were the most effective treatment, followed by accommodation ex-

ercises, and both regimes resulted in changes in both convergence and accommodation test responses.

Nursing Implications

- Develop and implement creative health education among people to spread the effectiveness of eye exercise among the public
- Programmed instruction of eye exercise may be prepared by educators to make awareness among the people regarding dry eyes and effectiveness of eye exercise.
- Nurse administrators can organise and conduct awareness programmes on eye exercises.

Limitations: Sample size was limited to 40; purposive sampling was used in the study which makes generalisation difficult. The study was limited only to selected dry eye symptoms.

Recommendations

- The study can be replicated in large number of samples in different settings.
- A comparative study can be done between different types of eye exercises in reducing ocular problems
- A similar study can be done in computer users to evaluate the findings of the present study.

Conclusion

Eye exercises are effective in improving eye health. The present study concluded that eye exercises were effective in reducing dry eye symptoms among age group 35-75 years. The nurse plays an important role in providing eye exercises, by giving pamphlets, demonstration and it will be helpful for increasing awareness in community as well as in clinical setting.

References

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