

# Status of Myopia in Adolescents

V. Deepika\*, R. Gayatri Devi\*\*

\*3<sup>rd</sup> year BDS, Saveetha Dental College and Hospitals, Chennai-77, India

\*\* Assistant Professor, Saveetha Dental College and Hospitals, Chennai-77, India

**Abstract:** *Aim: Aim of this study is to analyse the status of myopia in adolescents. Objective: The main objective of this study is to assess the status of myopia in adolescents. Background: Myopia also known as nearsightedness is the most common refractive error of the eye. It is a condition where light is focussed in front of the retina rather than being focused on the retina. This result in blurring of distant objects and nearby objects appears clearly (1). The underlying cause for this type of refractive error is genetic and environmental factors. It also associates with high socioeconomic status. It is diagnosed by eye examination conducted by optometrist or ophthalmologist. It is usually managed by using glasses or contact lenses. Surgeries are also preferred at times to correct the refractive error.(2) Reason: The reason for this study is to create awareness among the adolescents about myopia as it is the most alarming refractive errors which most commonly affect the adolescent population. This study is also done to assess the myopic status, treatment modalities and prognosis.(3)*

**Keywords:** Myopia, adolscents

## 1. Introduction

Myopia also known as nearsightedness occurs as a result of elongation of eyeball or increased curvature of the cornea. It results in blurring of distant objects along with headache. It causes eye strain and fatigue over a period of time. (4)This increases the risk of eye retinal detachment, sub retinal neovascularisation glaucoma and cataract. The risk of myopia increases with time spent indoors such as on gadgets, television, reading, etc... It usually occurs in school-age children. It also occurs in adults due to visual stress and conditions such as diabetes. (5)Initial objective assessment of the refractory status of each eye is done by using auto-refractor or retinoscope. It is measured in diopters. Depending upon the severity of the defect it is classified as low myopia ( less than -3.00 diopter), moderate myopia ( -3.00 to - 6.00 diopter) and high myopia (more than -6.00 diopter). (6)

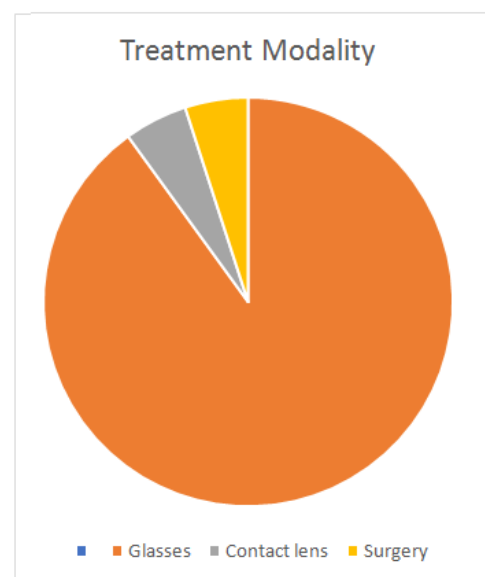
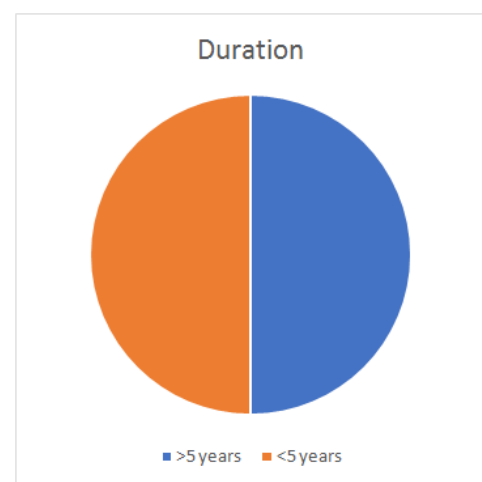
There is no effective preventive measure for myopia. However, prolonged usage of glasses and contact lenses reduces its rate of progression. Myopia can be prevented to some extent by increasing the time spent on outdoor activities.(7)

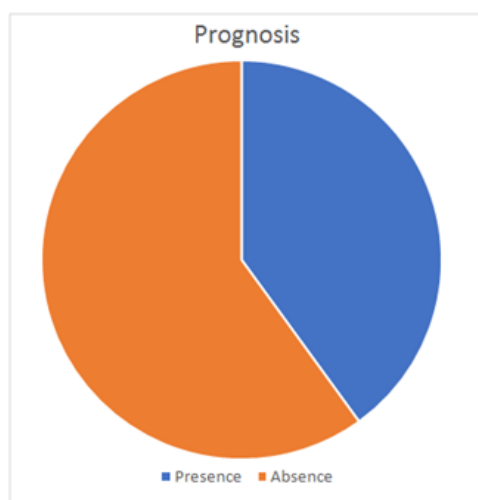
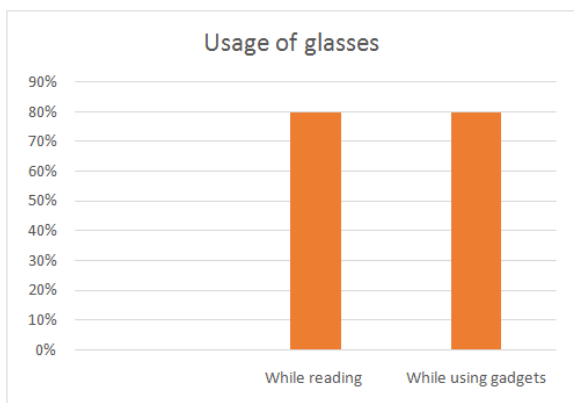
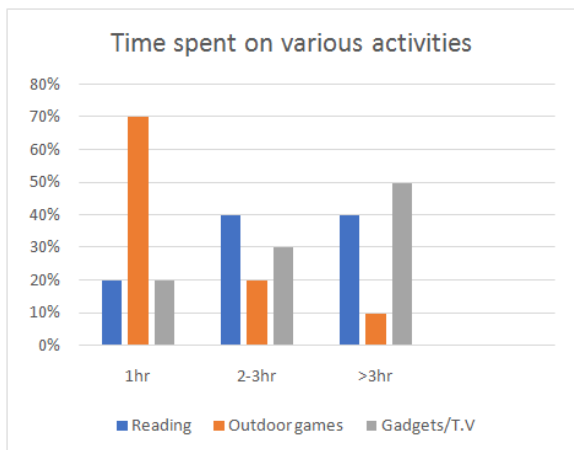
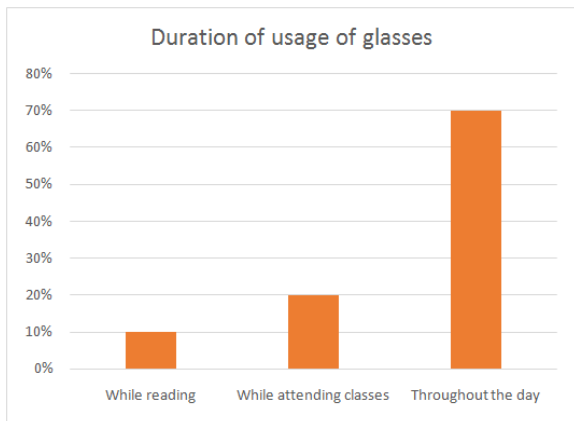
It is usually corrected by usage of glasses and contact lenses. Concave lenses are used. The other treatment options are anti-muscarinic topical medications like pirenzepine gel, cyclopentolate eye drops and atropine eye drops, vision therapy, orthokeratology, refractory surgery.

## 2. Materials and Methods

This is a questionnaire based study of 50 individuals of age ranging between 13-19. Each questionnaire comprises of 10 questions which helped in the evaluation of myopic status in individuals. It questioned about the duration of myopia, optical power of the individual, treatment modality, duration of usage of glasses, time spent on various activities such as reading, outdoor games, gadgets/TV, presence of associated illness such as headache, nausea vomiting, irritation, etc. and prognosis.(8)

## 3. Results





#### 4. Discussion

In this study, 50% of the study population were found to be myopic for more than five years. A study was conducted by Mavracanas and colleagues in Greek students aged 15-18 in the year 2000 and a prevalence rate of about 29% was discovered which is somewhat higher than the prevalence found in the study conducted in Germany in the same age group. It was found that the majority of the individuals of about 90% preferred using glasses to contact lenses and surgeries as their treatment modalities in order to correct their refractory error. This was because unlike glasses, both contact lenses and surgeries have their own potential problems.(9) Most important disadvantage of using contact lens is that it is expensive, requires proper maintenance, causes eye irritation and redness, produces dry eye syndrome and computer vision syndrome. In case of surgery, it results in dry eyes and may not rectify the refractory error completely. Hence, glasses are more preferred. 70% of them used the glasses throughout the day whereas the remaining 10% and 20% of the subjects used glasses only while reading and attending classes respectively. This shows the severity of the error and reveals the fact that usage of glasses throughout the day is highly essential for the subjects to have clear and an unobstructed vision. Majority of the subjects were found to spend more time on gadgets and less time on outdoor games. Lifestyle modifications are found to be the reason for this transformation. Only 40% of them were found to have a good prognosis.(10)

#### 5. Conclusion

This study mainly aimed at assessing the status of myopia in adolescent as it is the potential refractory error faced by the population. However, this refractory error can be prevented by some lifestyles modifications and can be corrected by following a proper treatment modality.

#### Reference

- [1] Brody BL, Roch-Levecq AC, Klonoff-Cohen HS, et al. 2007. Refractive errors in low-income preschoolers. *Ophthalmic Epidemiol*, 14:223–9.
- [2] Chung K M, Mohidin N, Yeow PT, et al. 1996. Prevalence of visual disorders in Chinese school children. 1996. *Optom Vis Sci*, 73:695–700.
- [3] Cummings GE. 1996. Vision screening in junior schools. *Public Health*, 110:369–72.
- [4] Fan DSP, Lam DSC, Lam RF, et al. 2004. Prevalence, incidence, and progression of myopia of school children in Hong Kong. *IOVS*, 45:1071–5.
- [5] Fledelius HC. 1983. Is myopia getting more frequent? A cross-sectional study of 1416 Danes aged 16 years. *Acta Ophthalmol Scan*, 61:545–59. Fledelius HC. 2000. Myopia profile in Copenhagen medical students 1996–1998. Refractive stability over a century is suggested. *Acta*
- [6] Lin LLK, Shih YF, Lee YC, et al. 1996. Changes in ocular refraction and its components among medical students. A 5-year-longitudinal study.

- [7] Loman J, Quinn GE, Kamoun L, et al. 2002. Darkness and near work. Myopia and its progression in third-year law students. 2002. *Ophthalmol*, 109:1032–8.
- [8] Mantyjarvi M. 1983. Incidence of myopia in a population of Finnish school children. 1983. *ActaOphthalmol (Copenh)*, 61:417–23.
- [9] Mavracanas TA, Mandalos A, Peios D, et al. 2000. Prevalence of myopia in a sample of Greek students. 2000. *ActaOphthalmolScand*, 78:656–9.
- [10] Midelfart A, Aamo B, Sjøhaug KA, et al. 1992. Myopia among medical students in Norway. *ActaOphthalmolScand*, 70:317–22