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Prevention, Control and Management of Myopia– An Easy Approach

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Essay

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Introduction

Myopia became a huge public health issue in recent years and approximately, 2 billion population is affected globally which is expected to increase about 5 billion in 2050. The rapid increase in myopia is cause of vision impairment among population due to pathological changes in the eye [1].

The high prevalence of myopia affects the individual's quality of life, so affecting economic burden for individual, country as well as globally. Due to pathological changes like cataract, glaucoma, fundus lesions such as staphyloma, neuropathy and maculopathy affect directly on quality of life of the population with myopia [2]. These diseases also have the clinical significance to resolve the visual problems as an increase of expenditures on the financial status of individual and on health care system [2].

To control and manage the burden of disease may be a great need of the time as establishing a standard protocol management strategy in clinical settings as ophthalmological and optometric practice [3].

Lifestyle modification is a part of the management of myopia as to adopt the strategy of outdoor activities recommended 2 hours daily spending time in outdoor activities [4].

Why Control of Myopia is Necessary?

Myopia is a visual disorder in which individual cannot see well distant objects but nearby objects remains clear. As an epidemic scenario of myopia, this must be addressed as a public health issue of recent years and not to be ignored. Data showed that the myopia prevalence was about 30% 2010 worldwide, and the alarming threat is that this will be expected to increase 50% by 2050. The worse situation of myopia existence is more prevalent in East Asia, where the condition might be as high by 90%. Myopia is the most common visual disorder globally causing visual impairment especially in children. Myopia is increasing day by day so rapidly and estimated data identified that high myopia is evident in almost 70 million people worldwide [5]. This assumed that the factors of the ailment may be genetic or environmental or combination of both. In adolescent age the condition is recorded by the use of tiny screen for a long time [6].

Myopia also known as nearsightedness, may be detected with presence of many symptoms including blurred vision for distance, headache, eye strain, reflux blinking, discomfort of eyes, and rubbing the eyes especially in children [7]. Pathologically myopia is caused, in conditions including increased axial length and increase corneal curve hindering the sharp focus of image at the fovea point [8]. Myopia is manageable, preventable and may be treated if timely detected by screening or during routine eye examination in clinics. Curable Myopia may be managed by many ways and prevented to rapid progression of the disease markably in children who are more prone to be the victim of the condition. More time spent in outdoor or extra ocular activities confirmed to reduce the risk of progression, recommended to spend minimum 2 hours a day for outdoor activity. Advice to minimize the use of tiny screen and take frequently breaks during study or near work and maintaining the convenient working distance. Studying in good light and avoiding near work in dim light to reduce eye strain [9].

In clinical settings, nearsightedness may be managed by several ways depending upon the condition of the diseases, progression, compliance, and available resources for the patient. The eye examination starts from taking visual acuity and corrective prescription for refractive errors, detailed retinal examination for pathological changes as well. Refractive may be verified following retinoscopy under cyclopedia under the age of 12 years. The main purpose of the intervention will be to correct the vision optically and to find out the best corrected vision of the patient. The prescription may be exercised by the following techniques [10,11]. This is important to control and manage the myopia as a strategy due to rapid progression, poor visual performance affecting quality of life. We have some options to manage this epidemic issue. Children are at high risk of this ailment and early detection may save the vision and improving the best educational performance. At the early stage, provision of a pair of glasses, spending more time for outdoor activities, regular screening for the detection and control the progression of the diseases, pharmacological implications, and surgical interventions are the available options for management of myopia [12]. Atropinization is a way to reduce the progression of myopia and low dose atropine may be prescribed to dilate the pupil so relaxing the muscles and this is an effective technique in children in treatment of myopia [13]. Change of life style or behavioral changes, especially in children must be considered and outdoor activities may contribute a great to break the process in progressive myopia [14,15].

Managing Myopia in Clinical Settings

Optical Correction

Glasses: This is a start of the management strategy of myopia, prescribing a simple pair of glasses may be helpful step to control the further progression and to perform the visual tasks easily in myopic population. The individual presenting with poor vision should be examined thoroughly including visual acuity along with detailed fundus examination [16]. A simple pair of glasses should be prescribed for correcting the vision and the individual must be evaluated regularly once a year and not to be discontinuing the use of glasses especially in adolescent age. The worse condition is when the individual discontinue the use of glasses. This is evident that the myopia progression is speedier in patient having no optical treatment or under correction of prescription and surly not a suitable way to treat the myopia. In full correction myopia progression is recorded but this is only effective, when the myopic individual is evaluated on regular basis and proper counseling about this effective way of treatment. The myopic patients suffer to execute the near visual tasks due to accommodation, so bifocal glasses may be helpful in this condition [17,18].

Contact Lenses: Use of soft contact lenses may be a better technique in myopia for the treatment of myopia due to better results cosmetically acceptable and to reduce the social interaction barrier due to small size eye shown being the high power concave lenses in the spectacle [19].

Orthokeratology: Orthokeratology is also the treatment technique in myopia as a non-surgical technique wearing special types of contact lenses for longer time to corneal shape alteration and regular use regularly for good results. Multifocal lenses may be a good technique also by which the lens has different power in different parts of the lens and best vision experienced for distant vision as well as near visual performance [20,21].

Atropinisation: It is a way to reduce the progression of myopia and low dose atropine may be prescribed to dilate the pupil so relaxing the muscles and this is an effective technique in children in treatment of myopia [13].

Change of Life Style or Behavioral Changes: Especially in children must be considered and outdoor activities must be as a strategic plan incorporated in schools by the education department directing 2 hours minimum out door time for physical activities4.

Reduce the Risk of Myopia Development in Children

Encouragement of Outdoor Activities

Advice the parents to encourage children to take part actively in outdoor activities in natural light, at least average 90 minutes in a day, this may reduce the rapid progression of myopia. Playing with friends, talking walks, swimming and other all games in play grounds certainly help to develop myopia [14,15].

Follow 20–20–20 Rule

In case of more indoor works or working on computers for a longer time, the 20 – 20 – rule may be helpful. This rule applies by seeing gazing at a distance 20 feet for 20 seconds after every 20 minutes [21].

Limit the Screen Time

Digital screens of computers, tablets, smart phones have direct effects on vision. Especially tiny screen can harm more than large screen [4].

Sufficient Use of Light

Ask the children to work or study in good light, as this may help to avoid eye strain [22].

Regular Routine Eye Examination

This is important to check visual equity at the time of admission in school. If any refractive error found than should be examined once a year by eye health care personal [9].

Protective Glasses

While spending time in sun light or during outdoor activities, use of protective glasses may provide extra protective benefits from harmful ultra violet rays. In case of myopia or low vision, the protective shields as a special need may be very helpful prescribed by optometrist or low vision expert [23].

Vision Therapy

Visual therapy improves the visual skills including muscles balance exercises to target the focusing abilities, coordination of both eyes and visual comfort [24].

Conclusion

As myopia has public health concerns, so need is to prevent and control this issue in both adults and children. The children are more prone to victim of myopia, so important to rapid progression and development to enhance the visual performance, able to make them efficient in educational needs and tasks in schools. Screening in schools may be helpful to detect this visual ailment in urban slums areas and marginal communities. Regular clinical examination following visual acuity and retinal examination is necessary. Use of corrective glasses, contact lenses and visual aids prescribed by eye health professional may also limit the progression. In children some time spent in outdoor activities and limit the screen use especially tiny screen must be advised. Awareness regarding progression and importance of treatment to control the issue is significance, so advocacy is counter part of the strategy in myopia [25,26].

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