

Study on Prevention and Control Measures of Adolescent Myopia based on Myopia Health Education

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Abstract. Juvenile myopia will not only have a serious impact on themselves, but also related to the future of the country and nation. Therefore, under the background of healthy China strategy, it is of great significance to prevent and control juvenile myopia and promote the healthy development of physique. The education department attaches great importance to the near prevention of children and adolescents, and earnestly implements the spirit of the important instructions of the CPC Central Committee and the State Council on Strengthening Students' physique and adolescents' visual health. Individual health belief and its influencing and restricting factors, promote teenagers to adopt healthy behaviors through health education, and promote participation in outdoor sports activities, thus opening up a new perspective for preventing and controlling myopia among teenagers. Through health education, it can effectively delay the development of juvenile myopia, reduce the occurrence of myopia and improve the level of juvenile physical fitness. This paper analyzes and summarizes the influencing factors of adolescent myopia in recent years, and analyzes, sums up and discusses the main points of the countermeasures.

Keywords: Myopia Health Education; Teenagers; Prevention and Control.

1. Introduction

In recent years, the prevalence of myopia in China is increasing, especially for teenagers. Personal injury incidents of teenagers and children are common, safety accidents emerge one after another, and mental health is widely concerned by the public [1]. Juvenile myopia will not only have a serious impact on themselves, but also related to the future of the country and nation. Therefore, in the context of healthy China strategy, it is of great significance to prevent and control juvenile myopia and promote the healthy development of physique [2]. Therefore, the prevention and treatment of juvenile myopia is extremely urgent, so we should strengthen publicity and education, give priority to prevention, and pay attention to early childhood. Myopia refers to a clinical disease in which parallel light enters the eye in the unregulated state of the eye, and the visual image focuses on the retina through refractive action [3]. The social transformation and transformation require that the physical development of young children can respond flexibly with ability, endurance and physical strength. On the other hand, the changing political, economic, cultural and social environment constantly impacts the spiritual world of teenagers. Using the method of health belief model theory, we can systematically analyze the inducement and intervention mechanism of adolescent myopia from the perspective of myopia occurrence and health education.

The physiological development stage of teenagers determines the development limitations of their cognitive ability and thinking ability, and their morality and values are not yet mature [4]. The education department attaches great importance to the near prevention of children and adolescents, and earnestly implements the spirit of the important instructions of the CPC Central Committee and the State Council on Strengthening Students' physique and adolescents' visual health. The physical health of teenagers and children is facing new problems, such as unhealthy work and rest and eating habits such as not eating breakfast, not loving exercise and poor health awareness [5]. Research shows that increasing outdoor sports activities for children and adolescents can protect eyesight and delay the deepening of myopia to a certain extent. We should put the vision health management of children and adolescents on the important agenda, and reduce the academic burden, strengthen outdoor sports, popularize and adhere to eye exercises, publicize health knowledge, and control electronic products [6]. Individual health belief and its influencing and restricting factors, promote teenagers to adopt

healthy behaviors through health education, and promote participation in outdoor sports activities, thus opening up a new perspective for preventing and controlling myopia among teenagers. To explore and master the influencing factors of adolescents' vision, and to provide important decision-making basis for actively, effectively and timely carrying out relevant intervention work.

2. Main Causes of Juvenile Myopia

2.1 Learning and Lifestyle

Incorrect learning posture, too early and too small, close and high-intensity eye use are bad eye environment and habits that induce myopia. Healthy lifestyle should be cultivated from teenagers. China's physical activity guidelines for teenagers suggest that children and teenagers should carry out medium-intensity physical activities of no less than 60min every day, and the video screen time should be less than 2H. Although various countries are taking various measures to promote teenagers to participate in outdoor sports activities, the actual effect is not good [7]. Adolescents' bad living habits are significant factors in the formation and development of myopia, such as incorrect writing posture, reading while lying down, reading while the sun is strong, lack of physical exercise, frequent contact with electronic products, etc.

Select the adolescent patients who visited the ophthalmology clinic of a hospital from January 2019 to January 2020. The number of patients with equivalent spherical lens power of -2.00d after 3 and 6 months, the change of equivalent spherical lens power and the change of true myopia after 6 months of treatment were compared between the two groups. Comparison of the number of patients with equivalent spherical degree reaching -2.00D after 3 months and 6 months of treatment between the two groups There was no significant difference between the number of patients with equivalent spherical degree reaching -2.00D before and after 3 months of treatment ($P > 0.05$), but after 6 months of treatment, the number of patients with equivalent spherical degree reaching -2.00D in the study group was less than that in the control group, with a statistically significant difference ($P < 0.05$). See table 1.

Table 1. Comparison of the number of patients in the two groups with equivalent spherical lens power of -2.00d before treatment, 3 months and 6 months after treatment.

Group	Number of people	Before treatment.	3 months	6 months
Control group	100	22	28	47
Research group	100	20	23	31

See Table 2 for the comparison of the increase of equivalent spherical lens power between the two groups after 6 months of treatment.

Table 2. Comparison of the number of eyes with increased equivalent spherical degree (D) after 6 months of treatment between the two groups.

Group	Number of people	Increase by (0 ~ 0.25) d.	Increase (0.25 ~ 0.5) d	Increase by (0.75 ~ 1.00) d.	Increase \geq 1.25d
Control group	100	11	15	60	27
Research Group	100	28	31	43	11

Seeing things freely for a short time can avoid myopia caused by restrictive visual activities such as reading for a long time. Teenagers have double vision, inattention, burnout and so on when they first develop myopia. If these symptoms are found, they should be prevented in time, and good results can be achieved. The awareness of society and parents to prevent myopia is not strong. There is a serious lack of awareness of the dangers of myopia in the whole society, especially the parents' lack of knowledge, awareness and late work in preventing myopia among children and adolescents.

Promote youth sunshine sports by ensuring the class hours of physical education and health classes and carrying out rich and colorful inter class sports activities. Children who spend more time outdoors have more hyperopia spherical equivalent refraction and lower prevalence of myopia. Bad living habits accelerate the formation of myopia. Correcting bad habits is of great significance to the prevention and treatment of myopia.

2.2 Bad Habit of Using Eyes

Due to academic pressure and the development of scientific and technological products, teenagers have developed many bad eye behavior habits. The eye is a window for individuals to observe the outside world. Myopia is caused by long-term bad eye use behavior, which will lead to too long eye axis or relatively strong refractive power. In the state of adjustment relaxation, the image of parallel light entering the eye will focus in front of the retina, resulting in blur. Health education for primary school students in eye hygiene is very necessary. For example, the posture of reading and writing should be: keep a foot distance between the eyes and the book, a fist distance between the chest and the writing desk, an inch between the nib and the index finger, maintain certain outdoor sports every day, look into the distance, use the eyes for 45 minutes, rest or look into the distance for 10 minutes. Due to the academic pressure of teenagers and the development of scientific and technological products, many bad habits of using eyes have been formed. The choice of light source and different light intensity in the environment will lead to eye fatigue, which will lead to myopia [8]. Some children and adolescents do eye exercises irregularly. Poor environment for eyes for lighting. Some children and adolescents have poor eye environment and poor visual light when studying and living at school and at home. Incorrect eye hygiene and poor eye habits are the important reasons leading to myopia among teenagers. Effective health education is the key work to prevent and control myopia.

3. Potential Mechanisms and Approaches of Prevention and Control of Juvenile Myopia

3.1 Improve the Joint Prevention and Control System and Mechanism

We will improve the joint prevention and control mechanism for myopia among children and adolescents, and give full play to the professional advantages of health departments and the organizational advantages of education departments. Strengthen supervision and inspection, carry out special supervision on the implementation of relevant systems and measures for the prevention and control of myopia among children and adolescents, and urge all localities to implement the implementation plan for the comprehensive prevention and control of myopia among children and adolescents, the guidance on strengthening the prevention and control of myopia among children and adolescents, and the work plan for the prevention and control of myopia among primary and secondary school students. The health belief model theory is based on the individual's susceptibility to disease, threat, severity and the construction of self-efficacy to prevent bad behavior.

Table 3. Analysis of access to adolescent health knowledge and skills

Access	N	Percentage%
School health Education curriculum	18	18%
Internet	11	11%
Books and periodicals	19	19%
Through friends, family, etc.	13	13%
Telecasting	20	20%
Go to the hospital to consult a doctor	19	19%

By investigating the access to health knowledge and skills of adolescents, it can be found that the access to health knowledge and skills of adolescents is mainly attributed to the influence of classmates and family members (accounting for 13%) and the spread of the Internet (accounting for 11%). The

impact of school health education cannot be ignored (accounting for 18%), and the influence of traditional media is inferior. See Table 3 for the analysis of access to adolescent health knowledge and skills.

Aiming at the influencing factors of juvenile myopia, this paper puts forward the corresponding preventive countermeasures: reasonable diet, sufficient sleep, forming good living and learning habits, strengthening health education and so on. Outdoor activities are an effective means to prevent and control children and adolescents' myopia. Therefore, it is necessary to improve students' cognition and cultivate their health belief of actively participating in outdoor sports activities. Jointly set up a national expert guidance team for the prevention and control of myopia among children and adolescents, and formulate scientific and standardized guidelines for the prevention and control of myopia and guidelines for the use of electronic products such as mobile phones for children and adolescents. The school improves the lighting of the classroom, takes measures to enhance the lighting performance of the classroom, and adopts lamps that can effectively protect students' eyesight. Try to provide suitable desks and chairs. While paying attention to improving soft power, hardware facilities should be improved to improve students' eye environment and ensure their eyesight health. The analysis of health belief model of parents' behavior of preventing myopia by path analysis shows that parents' perceived benefits, parents' prompting factors and parents' self-efficacy are positively correlated with myopia prevention, while parents' perceived obstacles are negatively correlated with myopia prevention. At this stage, teenagers' self-control ability is poor and they are faced with learning pressure. Therefore, parents and schools adopt the theory of health belief model, which is an effective way to improve teenagers' health belief. How to implement specific prevention and control measures is undoubtedly the basis for ensuring the myopia rate to decrease continuously.

3.2 Develop Good Living Habits

The preventive effect of eye exercises on myopia has been widely recognized at home and abroad. It can effectively enhance eye blood circulation, relieve eye muscle fatigue and protect eyesight. Correct reading and writing posture. When reading and writing, the eyes are about 30 cm away from the book, and the distance between the chest and the edge of the desk is a horizontal punch. Avoid strabismus or reading while lying or walking. It is also urgent for parents and schools to work together to strengthen the education and control of minors. We should expand the resources of education and teaching, strengthen the construction of Moore lessons by means of modern information technology, and expand the teaching resources of "Internet plus vision health management". Strengthen the publicity and education of children and adolescents on the threat, severity and self-efficacy related to myopia. Regularly publicize health knowledge. The most important reason for teenagers' myopia is their poor eye habits. Therefore, this study puts forward several requirements for teenagers' eye hygiene. Teaching health knowledge regularly is the beginning of helping teenagers form good habits as soon as possible.

4. Conclusion

Myopia can't be cured from its root, and prevention is the key to prevent and control myopia. Actively implement early vision screening, early detection and early correction. The school level should raise the awareness of myopia prevention and control to a certain height and earnestly shoulder its own responsibilities; Parents should also assume the obligation of guardian and play the role of supervision and supervision by parents. Through health education, it can effectively delay the development of juvenile myopia, reduce the occurrence of myopia and improve the level of juvenile physical fitness. According to the requirements of the guiding outline of health education in primary and secondary schools and colleges, and in combination with the health needs of students in different sections of the new era, an online open course on adolescent vision health management and health education is developed. Strengthen health education, improve the cognition of myopia, establish relevant health beliefs, and deepen the benefits of outdoor sports activities for vision protection, so

as to promote the healthy growth of teenagers. The occurrence of myopia not only affects daily life, learning status and mental health, but also the complications of high myopia can eventually lead to eye injury and even blindness. Therefore, "protecting vision and preventing myopia" has become the primary task of health care in China.

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