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Use of Spectacles in Refractive Error of Children

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Abstract **Original Research Article**

Purpose: To study the use of spectacles and problems faced by these children while using spectacles. ***Methods:*** This was a hospital-based observational study conducted over a period of 6 months in children between 2 to 14 years of age using spectacles. A standard questionnaire was asked and answers were evaluated. Data thus obtained was subjected to standard statistical analysis. ***Results:*** Among 110 children in the study, 58 (52.7%) were male and 52 (47.3%). Were female, with a male-female ratio of 1.1:1. Their average age was 10± 2.8 years. 31.8% children felt that wearing spectacles is a sign of intelligence. 75.5% were of the opinion that if they do not use spectacles, their refractive power will increase. 20.9% children said that the continuous use of spectacles will lead to an increase in their power. 42.7% considered nutritional deficiency as a common cause of refractive error while 47.3% children thought that yoga or diet or traditional medicines or a combination of these can reduce the refractive error. 55.5% felt that they faced problems due to the use of spectacles. 77.3% were teased for using spectacles and 33.6% children considered spectacles as a cosmetic blemish. 56.4% children accepted that they feel ashamed or embarrassed in using spectacles. ***Conclusion*:** Knowledge in children regarding use of spectacles and refractive errors is not very encouraging. Children do face problems in using spectacles. There is potential for incorporation of correct information in the curriculum and teachers' training program.

Keywords: spectacles, refractive errors, children.

INTRODUCTION

Refractive errors are one of the most important causes of avoidable visual impairment [1]. If not treated in time uncorrected refracted error can lead to amblyopia. Use of contact lens and refractive surgery is becoming more popular nowadays, still, spectacles remain the most popular method of correction and the only method for correction in children age group. However, it is seen that many times, children do not like to wear spectacles [2, 3]. Wearing spectacles is not only a social stigma but also has tremendous impact on the psychological development of a child [4, 5]. Now, it is worth a thought why don't children like spectacles. This study was conducted to understand the common perceptions in children about the use of spectacles as well as refractive errors and problems faced by these children while using spectacles. In future, these factors can be incorporated in the school teachers' training curriculum and student health education, which will, in turn, lead to better acceptance or a good compliance with the use of spectacles.

MATERIAL AND METHODS

This was a hospital-based observational study conducted over a period of 6 months at Drishti the Vision Eye Hospital Vijaynagar Indore. All the children between 2 to 14 years of age, attending the eye OPD, using spectacles for more than one month and whose parents/ guardians consented to participate in the study were included. A standard questionnaire was asked to all children in Hindi and English language (Table1).

Table-1

Questionnaire About Spectacle Use And Refractive Error	
1	Spectacles does not suit my face
2	I feel embarrassed in using spectacles
3	Wearing spectacles is a sign of intelligence
4	I am teased for using spectacles
5	I do not face any problem due to spectacles
6	By not wearing spectacles, the power of spectacles will increase
7	If I use spectacles, power of spectacles will remain the same
8	Continuous use of spectacles will increase the power of spectacles
9	Common cause of need of spectacles is nutritional deficiency
10	Yoga or diet or traditional medicines or combination of these can reduce the power of eye

Table 1

Children and parents/guardians were provided with the correct information for filling the questionnaire. Data thus obtained was subjected to standard statistical analysis. Interpretations and analysis of data obtained were done by Microsoft Excel software. Descriptive statistics were calculated. For continuous variables, mean and standard deviation were calculated and proportions were calculated for categorical variables. The results were expressed in the form of ratios, rates, and percentages.

RESULTS

110 children participated in study. Their average age was 11± 2.8 years. 58 (52.7%) were male and 52 (47.3%) were female, with the male-female ratio of 1.1:1 (Table2).

Table-2

Children Participated		
Male	**Female**	**Total**
58	52	110
52.7%	47.3%	100%

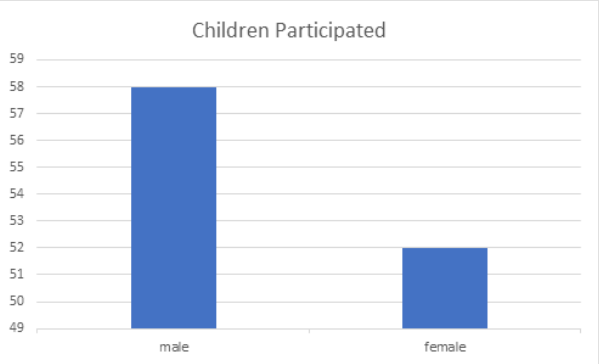

Table 2

Among various beliefs about spectacles and refractive errors, 31.8% children felt that wearing spectacles is a sign of intelligence. Most of the children (75.5%) were of the opinion that if they do not use spectacles, their refractive power will increase. Strangely, 20.9% children said that continuous use of spectacles will lead to an increase in their power. Almost half of the children (42.7%) considered nutritional deficiency as a common cause of refractive error while 47.3% children thought that yoga or diet or traditional medicines or a combination of these can reduce the refractive error. A number of children (77.3%) were teased for using spectacles and 33.6% children considered spectacles as a cosmetic blemish. 56.4% children accepted that they feel ashamed or embarrassed in using spectacles.

DISCUSSION

Refractive errors are a common cause of visual impairment in children [6]. An estimated population of around 2.3 billion people has refractive error worldwide [7, 8] and an estimated population of 153 million people is living with uncorrected refractive error excluding presbyopia [9]. If untreated, they can lead to an irreversible decrease in vision in the form of amblyopia. Spectacles are the commonest method to correct these refractive errors. Once the misconceptions in children about the use of spectacles and refractive errors, as well as problems faced while using spectacles are known, the same can be rectified and good compliance of spectacle use can be achieved. This will help not only in achieving better academic goals but also reducing amblyopia. This will ultimately lead to a better quality of life and less financial burden on the society. In the current study, 52.7% of the children were males and 47.3% were females. Males were slightly more in number than females but the difference was not significant.

In the current study, wearing spectacles was considered as a sign of intelligence by many children (31.8%). In another study from South India, 26.8% children believed the same [10]. Dhoble *et al*. in their study from central India, also found 22% children who felt that wearing spectacles makes a person look intellectual[11].

In the current study from North India, more children considered spectacle wearing as a sign of intelligence than studies from Central and South India.

This difference might be due to the difference in the study setting as the children coming to our setup were more from an urban area. Use of spectacles does

not affect the progression of refractive error but most of the children (75.5%) thought that by not wearing spectacles, the power of their spectacles will increase.

Few (20.9%) children also said that continuous use of spectacles will lead to an increase in their power. This number was lesser in this study, in comparison to previous studies. In another study from Central India, malnutrition was considered a cause for refractive error by the highest percentage (68%) of children; followed by bad eye care (56%), heredity (47%), excessive reading (22%), witchcraft (16%) and trauma to eyes (18%)[11]. In the current study, 47.3% children thought that yoga, diet, traditional medicines or a combination of these can reduce the refractive error.

In the present study, approximately half of the children (55.5%) felt that they faced problems due to the use of spectacles. 77.3% children in the present study gave a response that they were teased for using spectacles and 33.6% children considered spectacles as a cosmetic blemish. This finding is in accordance with a previous study in which 51% respondents felt the same about spectacles being a cosmetic blemish [10]. 56.4% children in the current study accepted that. They feel ashamed or embarrassed in using spectacles. This number was lower in another study in which 10.6% felt ashamed or embarrassed in using spectacles [11].

In conclusion, the majority of children in this study had the wrong notion that use of spectacles is related to the progression of refractive error. Almost half of the children had the misconception that refractive errors are related to nutrition and can be managed by yoga, diet, traditional medicines or a combination of these and almost half of the children had social problems related to spectacle use. These wrong notions and the social problem need to be explained during teacher training and school health screening. Informing the youth towards problems of refractive errors **r**is a major step in preventing avoidable visual impairment.

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