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AWARENESS ON EYE CARE AMONG INDIAN KIDS BELOW THE AGE GROUP OF TWELVE YEARS - A SURVEY

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ABSTRACT

Childhood blindness refers to a group of diseases and conditions occurring in childhood or early adolescence which if left untreated results in severe blindness or some visual impairment that are likely to be untreatable later in life. A cross sectional survey was conducted on 100 patients on awareness on eye care among Indian kids below the age group of twelve years. Data collection was done using a self structured questionnaire consisting of 11 questions. Google forms were used to collect the data and circulate among the patients.Data analysis done using SPSS by IBM. After tabulation using MS Excel, the data was exported to IBM SPSS software for statistical analysis. It was observed that majority of the kids in 6-12 years of age group wore spectacles (n=32;62.7%) when compared to the other age group, 1-5 years (n=16;33.3%).Pearson's Chi square value=1.246; df=1; p-value: 0.264 (p>0.05); hence statistically not significant. It was observed that majority of the Indian kids parents at about 6-12 years of age were aware about the fact that improper intake of nutritious food could lead to eye problems (n=43;67.2%) when compared to 1-5 years of age group(n=21;32.8%).Pearson's Chi square value=2.861; df=1; p-value: 0.091 (p>0.05); hence

statistically not significant.It was observed that majority of the kids at about 6-12 years of age spent less than 5 hours on gadgets(n=27;54%) when compared to 1-5 years of age group(n=23;46%). It was also observed that a few kids spent less than 12 hours on gadgets,6-12 years of age group(n=18;72%) and 1-5 years of age group(n=7;28%). It was also observed that a few kids spent less than 10 hours on gadgets, 6-12 years of age group (n=16;64%) and 1-5 years of age group (n=9;36%).Pearson's Chi square value=2.396; df=2; p-value: 0.302 (p>0.05); hence statistically not significant.The study concluded that although most parents are aware of common eye diseases in children, they have the wrong perception of the causes of these diseases.One of the prerequisites of health-seeking behavior is knowledge of disease and their symptoms, which seems to be lacking in parents of children.The findings of this study suggest that programs to increase awareness of the causative factors and spectacle wearing to be done.

INTRODUCTION

Childhood blindness refers to a group of diseases and conditions occurring in childhood or early adolescence which if left untreated results in severe blindness or some visual impairment that are likely to be untreatable later in life.(Ntim-Amponsah and Amoaku, 2008; Ntim-Amponsah *et al.*, 2012)Paediatric ophthalmology is not yet well established as a separate subspecialty in India in most eye care programs although there are an estimated 200,000 blind children in India. (Rahi *et al.*, 1995)Lack of parental awareness of these eye conditions might result in visual impairment and ocular morbidity.This may in turn cause emotional, social, and economic hardship to them, their family, and to the society.(Senthilkumar *et al.*, 2013).

Previous studies reported on parents' perception and awareness of children's eye diseases in Chennai, India and concluded that one of the prerequisites of health-seeking behavior is knowledge of disease and their symptoms, which seemed to be lacking in the parents of children studied (Senthilkumar *et al.*, 2013). Three main reasons have been attributed to various eye diseases, firstly diseases that can lead to blindness such as measles, vitamin A deficiency and ophthalmia neonatorum are still prevalent in poor regions of the world. Second, there are fewer well equipped facilities and personnel trained in the management of treatable causes of blindness in poorer countries. Third, in rural areas, ignorance, poverty and superstitions contribute to disease causation and propagation and these work against treatment and prevention.(Foster and Gilbert, 2000)A major factor in childhood blindness is a lack of knowledge about preventive and promotive eye care measures among parents.About 500,000 children become blind, yearly, with 1.5 million already blind, the rate is five times higher in the poor regions compared to wealthy areas. Also, it is estimated that every minute a child goes blind with 60% dying within a year after becoming blind (Cahill, 1993; Cramer, 2010)These studies highlight the importance of creating awareness about eye care and the need/importance of getting it treated at the earliest.Numerous high quality articles have been published in this domain over the past 3 years With this inspiration we planned to pursue research on awareness on eye care among indian kids below the age of 12.(Menon, V and Gayathri, 2016; Ke *et al.*, 2019; Ma *et al.*, 2019; Ponnulakshmi *et al.*, 2019; Wu *et al.*, 2019). The aim of this study is to create awareness on eye care among Indian kids below the age group of 12 years.

MATERIALS AND METHODS

Study design and setting

The study setting was a university setup , held at Saveetha dental College and Hospital. A cross sectional study was conducted on 100 patients on awareness on eye care among Indian kids below the age of 12 , who visited Saveetha Dental College and Hospital. Thus the population includes kids below the age group of 12 years. The advantage of this study was that the study population belonged to the same ethenic group and was conducted to create awareness regarding the field of study. However, the drawback of this study was patient participation, only patients who were ready to cooperate were included in the study. This study was approved by Institutional Review Board, Saveetha Dental College.

Data collection

Data collection was done using a self structured questionnaire consisting of 11 questions. Google forms were used to collect the data and circulate among the patients. Variables such as age were also collected. Data was assessed based on these variables. File charts were used to represent each variable. Questions were based on awareness on eye care among Indian kids below the age group of 12 years. Data analysis done using SPSS by IBM.

Statistical Analysis

After tabulation using MS Excel, the data was exported to IBM SPSS software [Version 19: IBM Corporation NY USA] for statistical analysis. Descriptive statistics was done to assess the responses given by the patients .

RESULTS AND DISCUSSION

Hundred participants responded to the online questionnaire in this study. Only parents who completed all the questions in the survey were included. Sociodemographics of participants and analysis of the questionnaire are shown below.

Out of the 100 patients involved in the study,it was observed that majority of the kids at about 6-12 years of age wore spectacles (n=32;62.7%) when compared to the other age group, 1-5 years (n=16;33.3%).Pearson's Chi square value=1.246; df=1; p-value: 0.264 (p>0.05); hence statistically not significant [Figure 1]. It was observed that majority of the kids at about 6-12 years of age had Myopia (n=38;66.7%) when compared to blurred vision(n=19;33.3%).Pearson's Chi square value=1.789; df=1; p-value: 0.181 (p>0.05); hence statistically not significant.[Figure 2]It was observed that majority of the Indian kids parents at about 6-12 years of age were aware about the fact that improper intake of nutritious food could lead to eye problems (n=43;67.2%) when compared to 1-5 years of age

group(n=21;32.8%). Pearson's Chi square value=2.861; df=1; p-value: 0.091 (p>0.05); hence statistically not significant.[Figure 3].

It was observed that the majority of the kids at about 6-12 years of age spent less than 5 hours on gadgets(n=27;54%) when compared to 1-5 years of age group (n=23;46%). It was also observed that a few kids spent less than 12 hours on gadgets,6-12 years of age group(n=18;72%) and 1-5 years of age group(n=7;28%). It was also observed that a few kids spent less than 10 hours on gadgets, 6-12 years of age group (n=16;64%) and 1-5 years of age group (n=9;36%).Pearson's Chi square value=2.396; df=2; p-value: 0.302 (p>0.05); hence statistically not significant.[Figure 4]. It was observed that the majority of the kids at about 6-12 years of age spent less than 5 hours on gadgets.(n=35;58.3%). It was also observed that a few kids spent less than 12 hours on gadgets,6-12 years of age group(n=13;72.7%) and 1-5 years of age group(n=5;27.8%). It was also observed that a few kids spent less than 10 hours on gadgets, 6-12 years of age group (n=13;59.1%) and 1-5 years of age group (n=9;40.9%).Pearson's Chi square value=1.166; df=2; p-value: 0.558 (p>0.05); hence statistically not significant.[Figure 5]. It was observed that majority of the kids parents at about 6-12 years of age were aware about the various eye exercises that could treat the eye problems (n=32;66.7%) when compared to 1-5 years of age group (n=16;33.3%).Pearson's Chi square value=1.246; df=1; p-value: 0.264 (p>0.05); hence statistically not significant [Figure 6]. It was observed that majority of the kids parents at about 6-12 years of age were willing to try the eye exercises on their children (n=31;68.9%) worn compared to 1-5 years of age group (n=14;31.1%) Pearson's Chi square value=2.140; df=1; p-value: 0.143 (p>0.05); hence statistically not significant [Figure 7].

It was observed that majority of the kids parents at about 6-12 years of age were not aware about the various eye asanas (n=34;56.7%) when compared to 1-5 years of age group(n=26;43.3%).Pearson's Chi square value=1.184; df=1; p-value: 0.277 (p>0.05); hence statistically not significant.[Figure 8]. It was observed that majority of the parent's kids at about 6-12 years of age were not aware about the benefits of vitamin A rich foods(n=45;64.3%) when compared to 1-5 years of age group (n=25;35.7%).Pearson's Chi square value=1.059; df=1; p-value: 0.303 (p>0.05); hence statistically not significant.[Figure 9]. It was observed that majority of the kids parents at about 6-12 years of age were aware about the potent increase in eye power if not properly monitored(n=35;58.3%) when compared to 1-5 years of age group (n=25;41.7%)Pearson's Chi square value=0.448; df=1; p-value: 0.503 (p>0.05); hence statistically not significant.[Figure 10]It was observed that majority of the kids at about 6-12 years of age did not have a proper diet (n=32;66.7%) when compared to 1-5 years of age group (n=16;33.3%).Pearson's Chi square value=1.246; df=1; p-value: 0.264 (p>0.05); hence statistically not significant.[Figure 10].

The WHO reported that about 50% of the total blindness worldwide was due to avoidable causes.3 The expected number of blind years is more for children than adults, therefore childhood blindness is given a higher priority in eye care

policy making in various parts of the world, especially in the developing regions.(Steinkuller *et al.*, 1999)

Parents were hesitant to provide spectacle correction for their children with vision problems because they perceived wearing spectacles as a stigma.Their study reported that 49% of parents do not want their child to wear glasses despite the awareness of the child's vision problem .(He *et al.*, 2005)Parents were also asked about their children and if they wear glasses. Among the participants, 55.7% of parents denied that their children wear glasses, while 42.3% of parents mentioned that they would not have any problem if their children needed to wear glasses.(Bashar*et al.*, 2020)

Most of the teachers were aware about the micronutrients which are good for healthy vision and the importance of adequate light while reading/studying (52% and 76% respectively). However, knowledge about the direction of light, the minimum distance between the phone screen and eyes and the rule of 20-20-20 was negligible .(Rewri, Nagar and Gupta, 2016)

Despite the presence of awareness in eye problems in their children, the causes for those problems were not well understood by the parents. Parents considered that unhealthy eating habits and lack of proper nutrition caused ocular disorders, especially refractive error. In addition, watching television, playing video games, and not taking oil bath were perceived by parents as causes of refractive error. (Nirmalan *et al.*, 2004)A few parents (34.3%) thought too much TV and computer games could result in refractive errors. They complained that children watch too much television these days and hardly go outside to play anymore.(Ebeigbe and Emedike, 2017)

The discussions raise several issues of relevance that eye care programs need to address for better community involvement with programs. More focused educational programs on early detection and proper management of eye problems are recommended. Eye care practitioners advocated enlightenment campaigns to educate parents on causes of eye diseases and identifying the signs and symptoms of these diseases. The need for parents to visit eye clinics for early interventions and treatment needs to be stressed.

CONCLUSION

The study concluded that although most parents were aware of common eye diseases in children, they have the wrong perception of the causes of these diseases. One of the prerequisites of health-seeking behaviour is knowledge of disease and their symptoms, which seems to be lacking in parents of children.The findings of this study suggest that programs to increase awareness of the causative factors and spectacle wearing to be done. Public enlightenment and health education programs are advocated to keep parents aware of the implications of these conditions, their causes and the effects they might have if left untreated.

ACKNOWLEDGEMENT

The authors thank Saveetha Dental College and Hospitals for all the support to complete this study successfully..

CONFLICT OF INTEREST : Nil

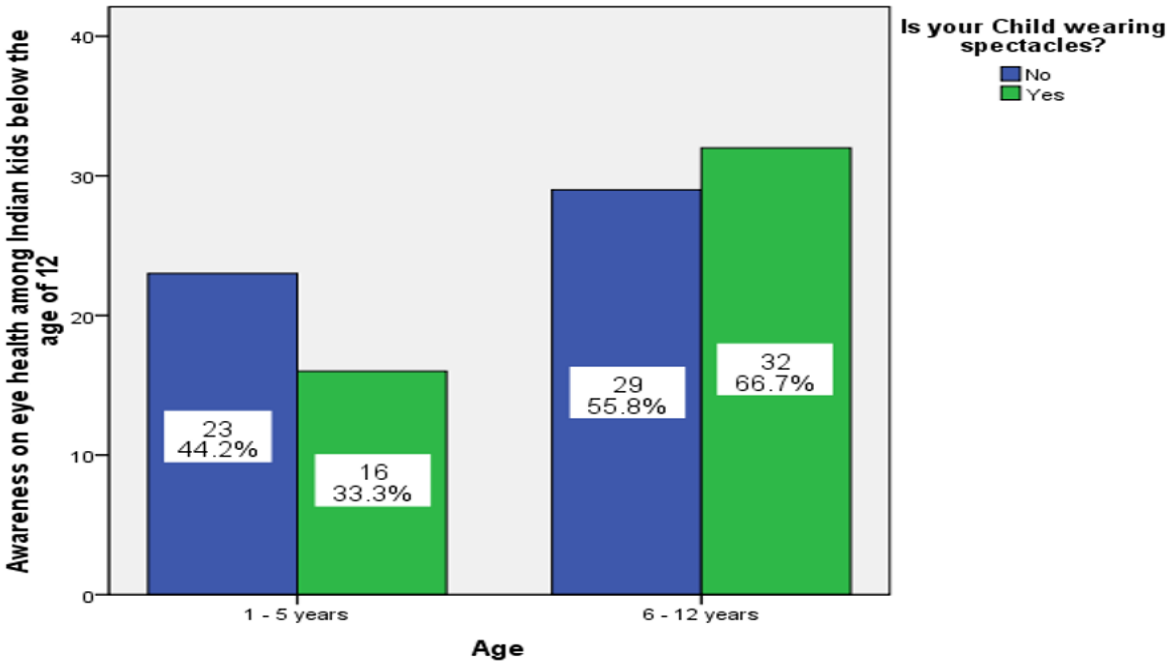

Figure 1:Bar graph depicts the association between age and number of Indian kids wearing spectacles. X axis represents age and Y axis represents number of responses.Green colour represents yes and blue colour represents no.It was observed that majority of the kids at about 6-12 years of age wore spectacles (Green)Pearson's Chi square value=1.246; df=1; p-value: 0.264 (p>0.05); hence statistically not significant.

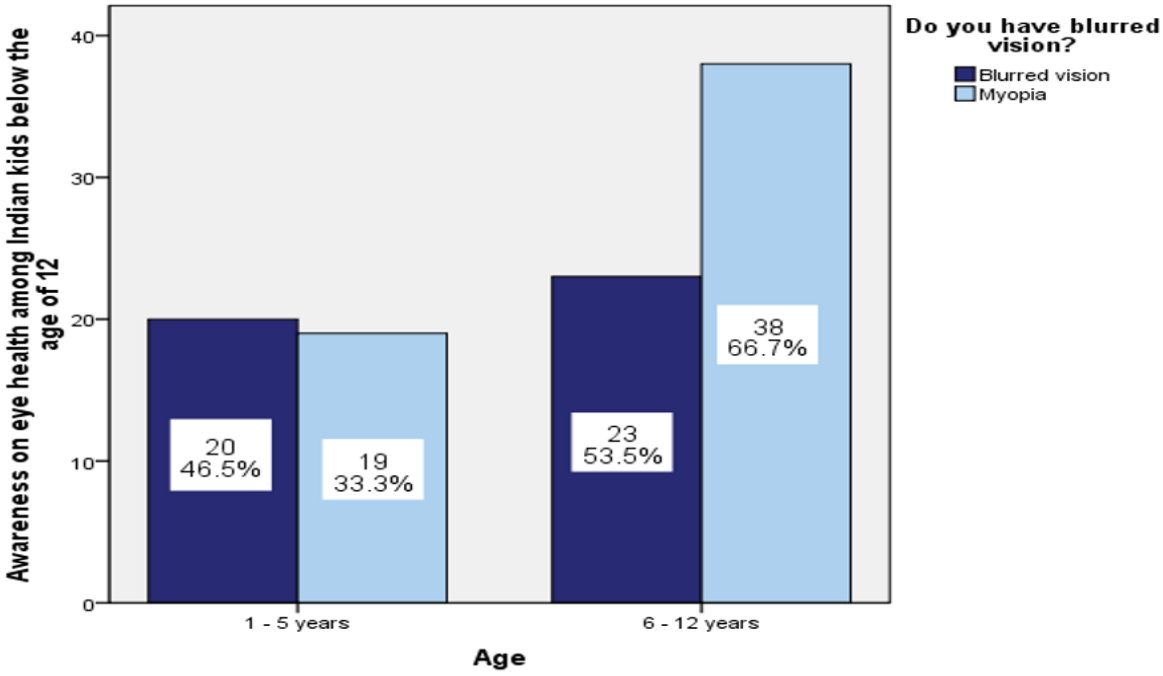

Figure 2:Bar graph depicts the association between age and number of Indian kids having blurred vision. X axis represents age and Y axis represents number of responses.Blue colour represents Myopia and Dark blue colour

represents blurred vision .It was observed that majority of the kids at about 6-12 years of age had Myopia (Blue).Pearson's Chi square value=1.789; df=1; p-value: 0.181 (p>0.05); hence statistically not significant.

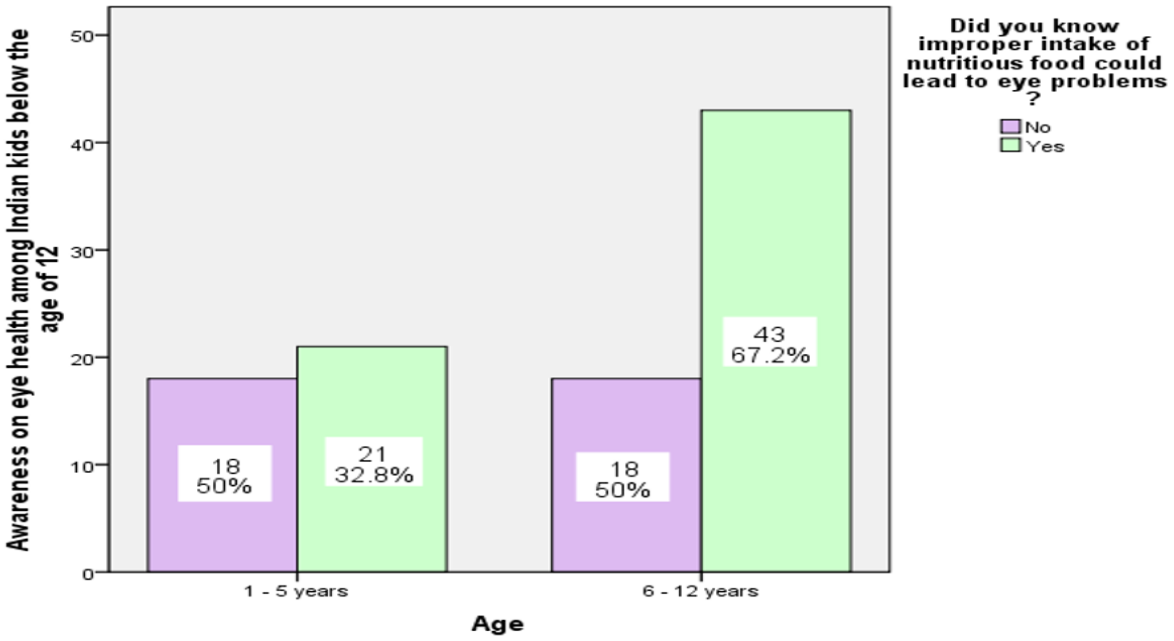

Figure 3:Bar graph depicts the association between age and number of Indian kids parents aware about the fact that improper intake of nutritious food could lead to eye problems.X axis represents age and Y axis represents number of responses.Green colour represents yes and purple colour represents no.It was observed that majority of the Indian kids parents at about 6-12 years of age were aware about the fact that improper intake of nutritious food could lead to eye problems.(Green)Pearson's Chi square value=2.861; df=1; p-value: 0.091 (p>0.05); hence statistically not significant.

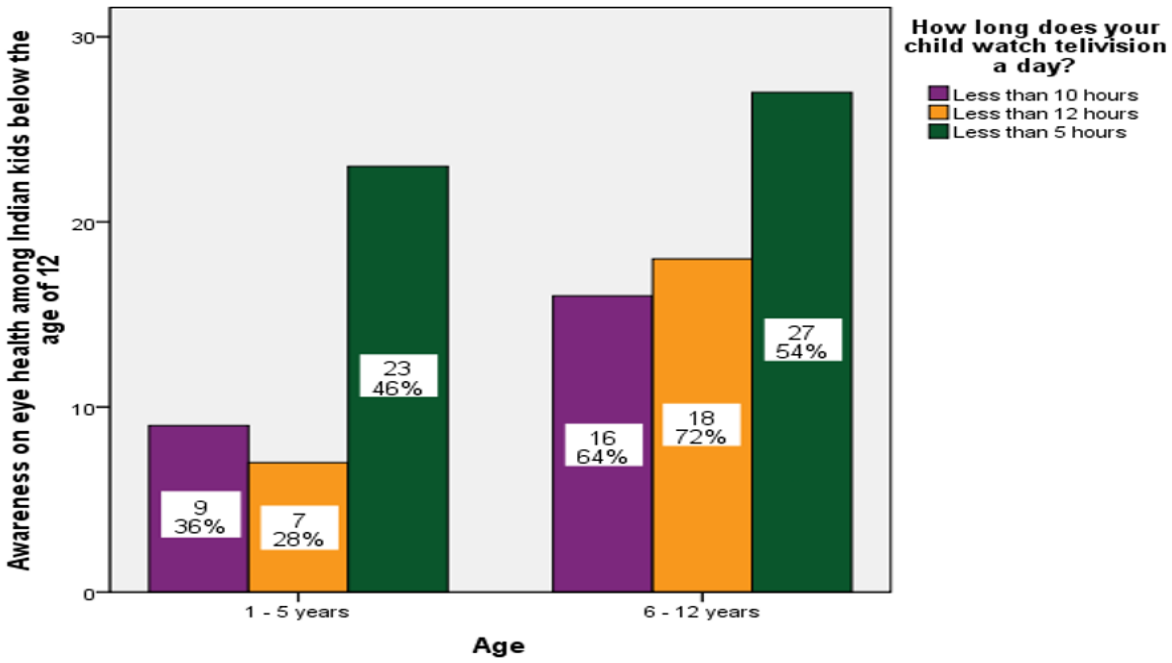

Figure 4:Bar graph depicts the association between age and amount of time kids spend watching television. X axis represents age and Y axis represents number of responses.Purple colour represents less that 10 hours,Orange colour represents less than 12 hours and green colour represents less than 5 hours.It was observed that majority of the kids at about 6-12 years of age spent less than 5 hours on gadgets.(Green).Pearson's Chi square value=2.396; df=2; p-value: 0.302 (p>0.05); hence statistically not significant.

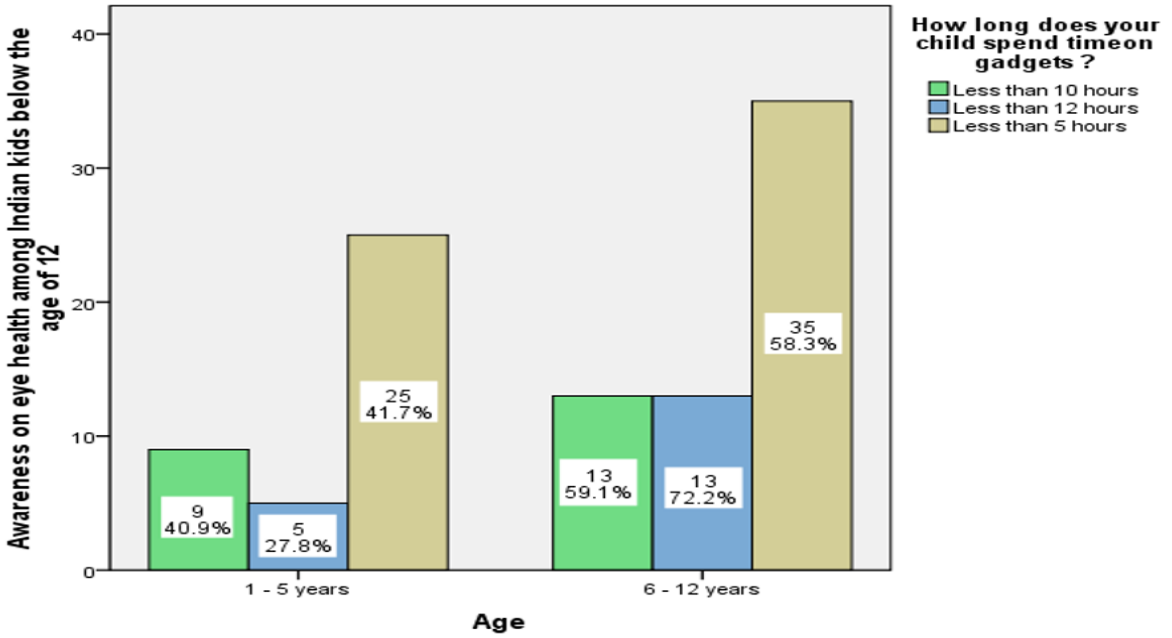

Figure 5:Bar graph depicts the association between age and amount of time kids spend on gadgets. X axis represents age and Y axis represents number of responses.Green colour represents less that 10 hours,Blue colour represents

less than 12 hours and beige colour represents less than 5 hours.It was observed that majority of the kids at about 6-12 years of age spent less than 5 hours on gadgets.(Beige)Pearson's Chi square value=1.166; df=2; p-value: 0.558 (p>0.05); hence statistically not significant.

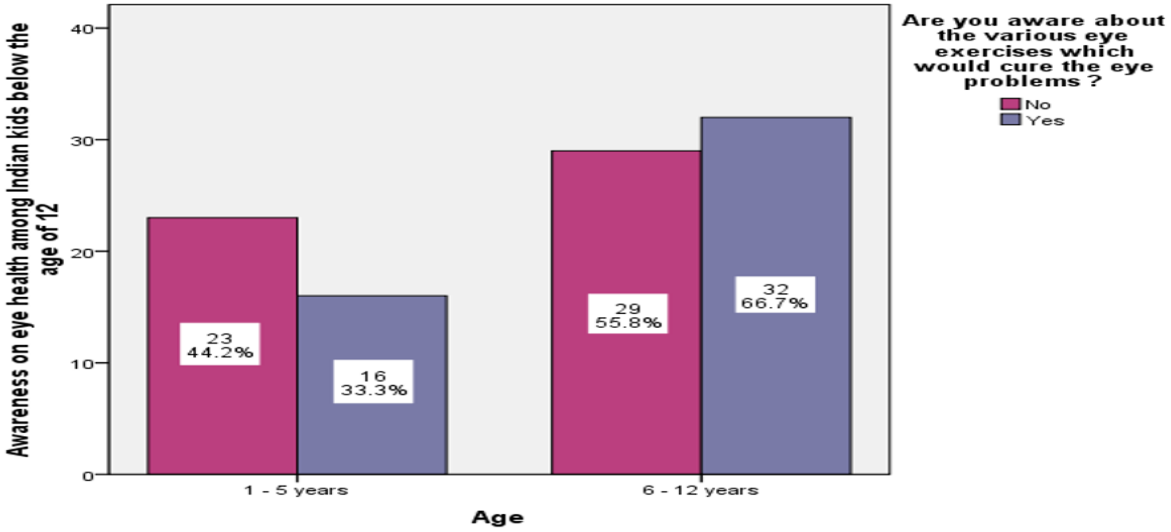

Figure 6:Bar graph depicts the association between age and number of Indian kids parents aware about the various eye exercises that could treat eye problems. X axis represents age and Y axis represents number of responses.Purple colour represents yes and pink colour represents no.It was observed that majority of the kids parents at about 6-12 years of age were aware about the various eye exercises that could treat the eye problems. (Purple)Pearson's Chi square value=1.246; df=1; p-value: 0.264 (p>0.05); hence statistically not significant.

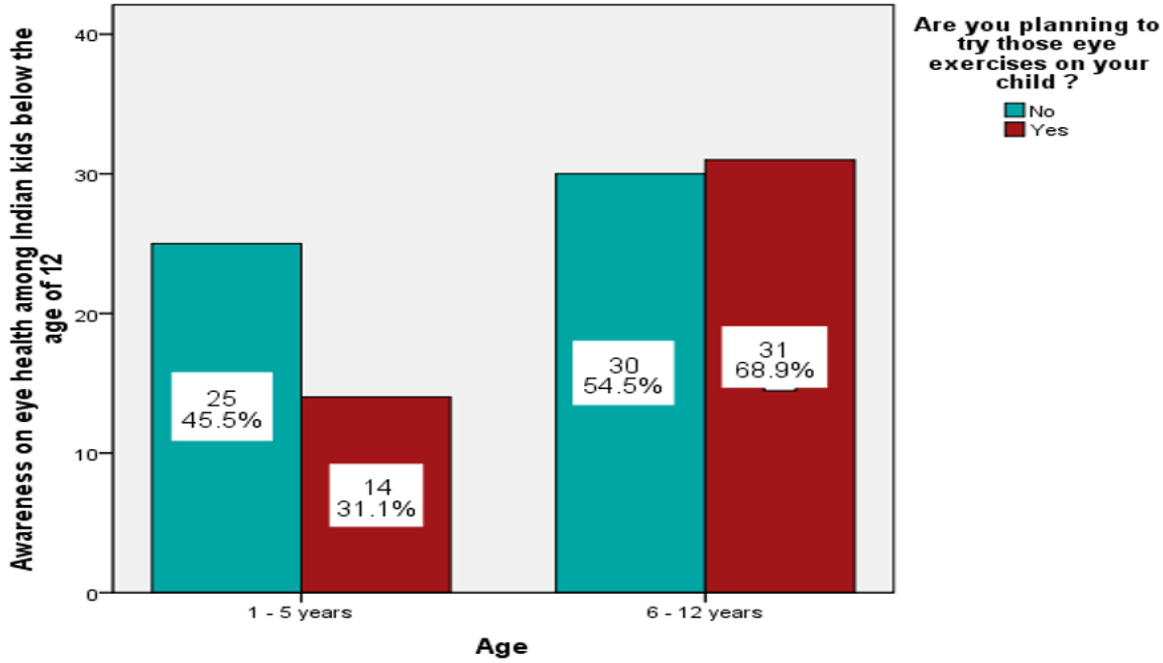

Figure 7:Bar graph depicts the association between age and number of Indian kids parents willing to try eye exercises on their children.X axis represents age and Y axis represents number of responses.Red colour represents yes and blue

colour represents no.It was observed that majority of the kids parents at about 6-12 years of age were willing to try the eye exercises on their children.(Red)Pearson's Chi square value=2.140; df=1; p-value: 0.143 (p>0.05); hence statistically not significant.

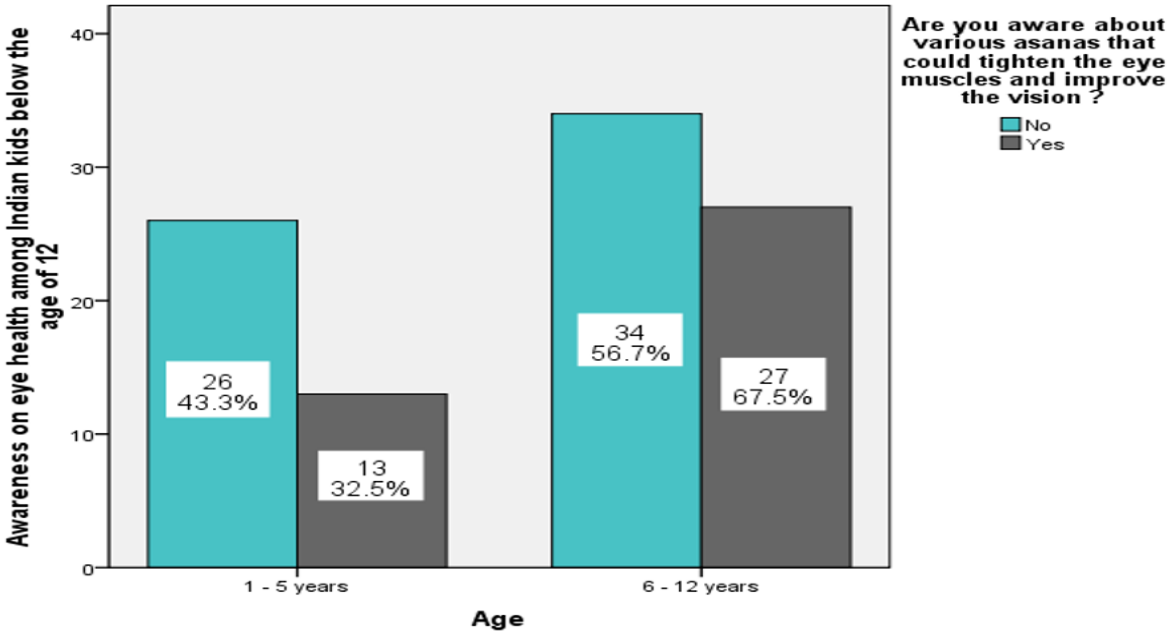

Figure 8:Bar graph depicts the association between age and number of Indian kids parents aware about the asanas that could tighten the eye muscles and improve the vision. X axis represents age and Y axis represents number of responses.Grey colour represents yes and blue colour represents no.It was observed that majority of the kids parents at about 6-12 years of age were not aware about the various asanas.(Blue)

Pearson's Chi square value=1.184; df=1; p-value: 0.277 (p>0.05); hence statistically not significant.

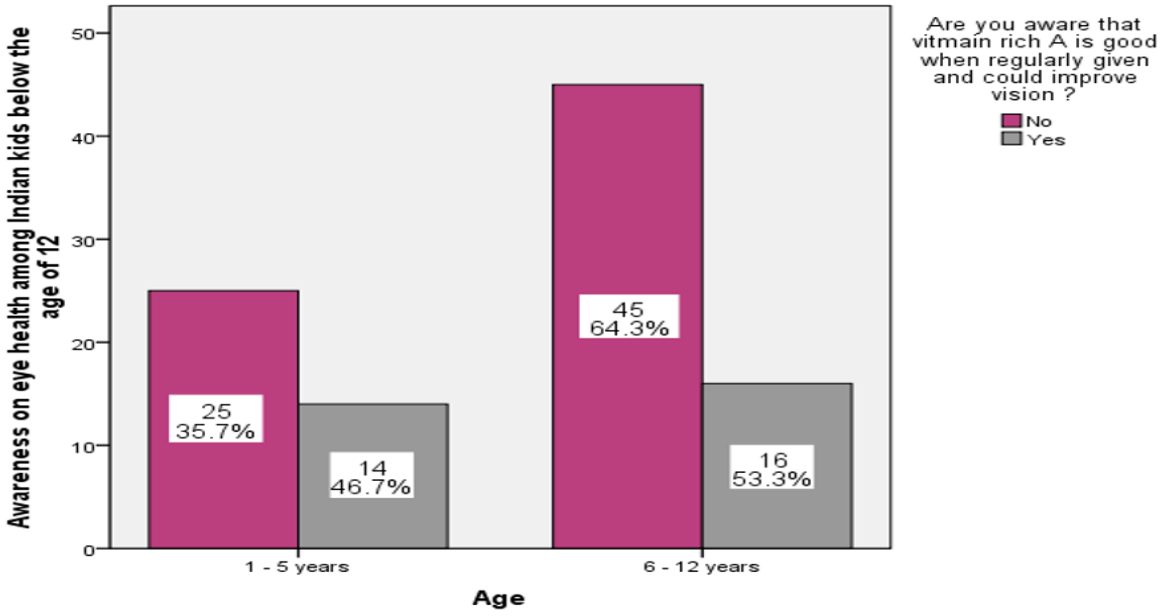

Figure 9:Bar graph depicts the association between age and number of Indian kids whose parents are aware about the benefits of Vitamin A rich food and that it could improve the vision. X axis represents age and Y axis represents number of responses.Pink colour represents no and grey colour represents yes.It was observed that majority of the parent's kids at about 6-12 years of age were not aware about the benefits of vitamin A rich foods(Pink).Pearson's Chi square value=1.059; df=1; p-value: 0.303 (p>0.05); hence statistically not significant.

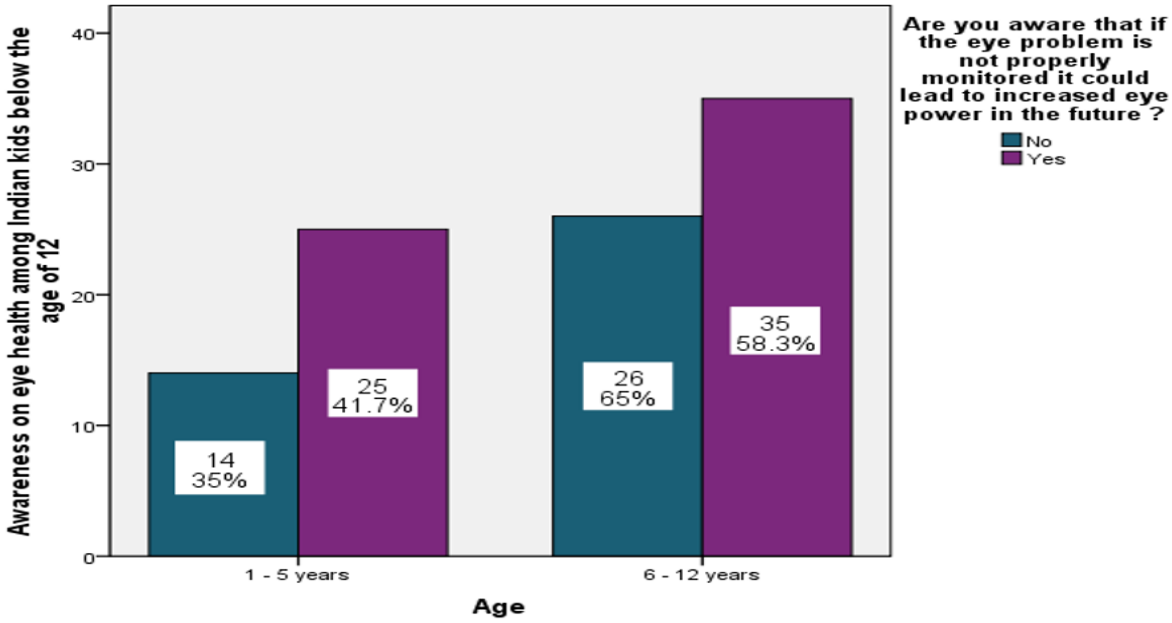

Figure 10:Bar graph depicts the association between age and number of Indian parents aware that the eye power could increase if not properly monitored. X axis represents age and Y axis represents number of responses.Green colour represents no and purple colour represents yes.It was observed that majority of

the kids parents at about 6-12 years of age were aware about the potent increase in eye power if not properly monitored.(Purple)Pearson's Chi square value=0.448; df=1; p-value: 0.503 (p>0.05); hence statistically not significant.

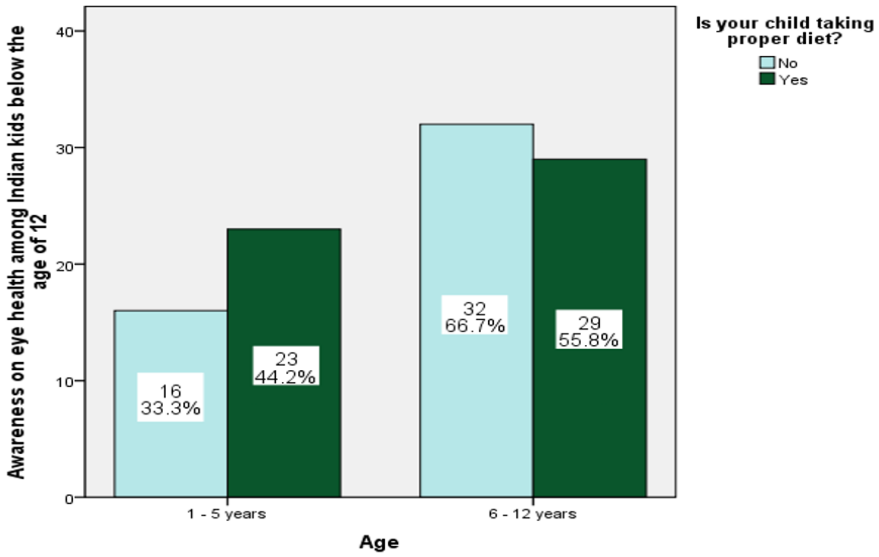

Figure 11:Bar graph depicts the association between age and number of Indian kids consuming proper diet. X axis represents age and Y axis represents number of responses.Green colour represents yes and blue colour represents no.It was observed that majority of the kids at about 6-12 years of age did not have a proper diet.(Blue)Pearson's Chi square value=1.246; df=1; p-value: 0.264 (p>0.05); hence statistically not significant.

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