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Original Article

Awareness of Pediatric Eye Diseases Among Parents and Teachers in Kerala: A Cross-Sectional Survey

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ABSTRACT

Background: Early detection and timely management of pediatric eye diseases are essential for preventing avoidable visual impairment and blindness. Parents and teachers play a crucial role in recognizing visual problems and facilitating appropriate eye care; however, awareness regarding common childhood eye diseases remains inadequately explored in Kerala.

Objective: To assess and compare the knowledge and attitudes of parents and teachers regarding common pediatric eye diseases in Kerala.

Methods: A cross-sectional questionnaire-based survey was conducted among 400 participants, comprising 200 parents and 200 teachers. A structured online questionnaire was used to assess knowledge of amblyopia, congenital cataract, congenital glaucoma, and attitudes toward pediatric eye care practices. Data were analyzed using descriptive statistics and comparative analysis.

Results: Knowledge regarding pediatric eye diseases was generally inadequate among both groups. Among parents, 87% demonstrated poor knowledge, while only 3% exhibited excellent knowledge. Teachers showed relatively better awareness, with 15% demonstrating excellent knowledge; however, 60% still had poor knowledge. Awareness of amblyopia was low among parents (37%) and teachers (36.5%). Knowledge regarding congenital glaucoma was particularly poor, with only 9.5% of parents and 18.5% of teachers correctly identifying the condition. Most participants recognized the importance of vision for academic performance, but routine eye examination practices and awareness of pediatric eye care remained limited.

Conclusion: Significant knowledge gaps regarding pediatric eye diseases exist among both parents and teachers in Kerala. Targeted awareness programs, teacher training initiatives, and school-based vision screening programs are needed to promote early detection and timely referral of children with visual disorders.

Keywords: Pediatric eye diseases, amblyopia, congenital cataract, congenital glaucoma, parents, teachers, awareness, childhood visual impairment.

Introduction:

Childhood visual impairment remains a major global public health concern and continues to affect the educational, social, and psychological development of millions of children worldwide. Visual disorders occurring during childhood can have lifelong consequences if not identified and managed during the critical period of visual development. According to the World Health Organization (WHO), a substantial proportion of childhood visual impairment is preventable or treatable when diagnosed at an early stage [1]. Delayed recognition of ocular disorders may result in irreversible vision loss, poor academic performance, reduced quality of life, and increased socioeconomic burden on families and healthcare systems [2]. Among the common causes of childhood visual impairment are refractive errors, amblyopia, congenital cataract, congenital glaucoma, strabismus, and retinal abnormalities [3]. Amblyopia is one of the leading causes of monocular visual impairment in children and affects approximately 1–5% of the pediatric population worldwide [4]. The condition results from abnormal visual development during early childhood and is often associated with uncorrected refractive errors, strabismus, or visual deprivation. Successful treatment depends heavily on early detection, making awareness among caregivers and educators critically important [5].

Congenital cataract is another important cause of childhood blindness and visual disability. It is characterized by lens opacity present at birth or developing during infancy and can significantly interfere with normal visual development [6]. Early surgical intervention and visual rehabilitation are essential for achieving favorable visual outcomes. Similarly, congenital glaucoma, although relatively uncommon, is a potentially blinding condition caused by developmental abnormalities of the aqueous outflow pathways. Delayed diagnosis can result in irreversible optic nerve damage and permanent visual impairment [7]. Parents play a crucial role in recognizing abnormal visual behavior, developmental delays, and ocular symptoms in children. They are often the first individuals to notice signs such as squinting, abnormal head posture, poor eye contact, excessive tearing, photophobia, or difficulty in performing visual tasks [8]. Timely consultation with eye care professionals largely depends on parental awareness and health-seeking behavior. Inadequate knowledge may delay diagnosis and treatment, reducing the effectiveness of therapeutic interventions.

Teachers also represent an important component of the pediatric eye health care system. School-aged children spend a substantial portion of their day in educational settings where teachers are uniquely positioned to observe behavioral and academic changes associated with visual impairment [9]. Difficulties in reading, copying from the board, maintaining concentration, and classroom participation may be early indicators of underlying visual problems. Teachers with adequate knowledge regarding childhood eye diseases can facilitate prompt referral and encourage parents to seek professional eye care services. Despite improvements in eye care services and educational outreach programs, awareness regarding pediatric eye diseases remains suboptimal in many developing countries [10]. Previous studies have reported inadequate knowledge among parents and school teachers regarding amblyopia, congenital cataract, congenital glaucoma, and the importance of routine eye examinations [11,12]. Such deficiencies may contribute to delayed diagnosis and increased prevalence of preventable visual impairment.

Kerala has one of the highest literacy rates in India and comparatively better access to healthcare facilities. However, limited evidence is available regarding awareness of pediatric eye diseases among parents and teachers within the state. Understanding existing knowledge gaps is essential for designing effective educational interventions and strengthening school eye health programs. Therefore, the present study was undertaken to assess and compare the knowledge and attitudes of parents and teachers regarding common pediatric eye diseases in Kerala.

MATERIALS AND METHODS

Study Design and Population : A cross-sectional questionnaire-based survey was conducted among parents and teachers residing in Kerala. The study population consisted of parents and teachers who voluntarily agreed to participate in the survey. Participants were recruited using online platforms and social networking channels.

Sample Size and Sampling : A total of 415 responses were received. After excluding incomplete and invalid responses, 400 questionnaires were included in the final analysis. The final sample comprised 200 parents and 200 teachers.

Study Instrument

A structured questionnaire was developed following an extensive review of pediatric ophthalmology and public health literature. The questionnaire consisted of demographic variables and multiple-choice questions assessing: Awareness of amblyopia, Awareness of congenital cataract, Awareness of congenital glaucoma, Eye examination practices, Attitudes toward spectacle use, Referral practices, School eye health awareness. Separate sections were designed for parents and teachers while maintaining comparable domains for analysis.

Data Collection

The questionnaire was administered electronically through Google Forms. Participation was voluntary, and informed consent was obtained before data collection. Responses were collected anonymously to ensure confidentiality.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using SPSS software. Descriptive statistics were expressed as frequencies, percentages, means, and standard deviations. Knowledge levels were categorized as poor, good, or excellent based on overall response scores. Comparative analyses were performed between parent and teacher groups.

RESULTS

Demographic Characteristics

A total of 400 participants were included in the final analysis. Among parents, the mean age was 30.85 ± 6.36 years, whereas teachers had a mean age of 39.50 ± 9.28 years. Female participants constituted the majority of respondents in both groups (Table-1).

Variable	Parents (n=200)	Teachers (n=200)
Mean Age (years)	30.85 ± 6.36	39.50 ± 9.28
Total Participants	200	200

Table 1. Participant Characteristics

Knowledge Levels Among Parents

Knowledge regarding pediatric eye diseases was generally poor among parents. Only 6 (3%) participants demonstrated excellent knowledge and 20 (10%) demonstrated good knowledge. The remaining 174 (87%) were categorized as having poor knowledge. Only 37% of parents correctly identified amblyopia, while 58% selected “don't know.”

Awareness regarding causes of amblyopia was particularly poor, with more than 90% unable to identify the condition correctly. Although 58% recognized that early treatment could improve visual outcomes, overall understanding remained inadequate.

Awareness regarding congenital cataract and congenital glaucoma was also limited. Only 40.5% correctly identified congenital cataract, whereas merely 9.5% correctly identified congenital glaucoma. More than half of the respondents were unaware that these conditions could occur in children and potentially lead to blindness (Table-2).

Knowledge Category	Frequency	Percentage
Excellent	6	3%
Good	20	10%
Poor	174	87%

Table 2. Knowledge Levels Among Parents

Attitudes Among Parents

Although many parents acknowledged the importance of vision for learning and development, routine pediatric eye care practices were inadequate. Only 19.5% believed children should undergo annual eye examinations. Acceptance of spectacle wear was low, and many parents reported that lack of awareness programs was a major barrier to seeking eye care services.

Knowledge Levels Among Teachers

Teachers demonstrated better awareness than parents; however, substantial deficiencies remained. Excellent knowledge was observed in 15% of teachers, while 25% demonstrated good knowledge. Nevertheless, 60% of teachers still fell into the poor knowledge category. Approximately 36.5% correctly identified amblyopia, while 73% correctly identified cataract. Awareness regarding congenital glaucoma remained inadequate, with only 18.5% correctly identifying the condition (Table-3).

Knowledge Category	Frequency	Percentage
Excellent	30	15%
Good	50	25%
Poor	120	60%

Table 3. Knowledge Levels Among Teachers

Attitudes Among Teachers

Most teachers acknowledged the importance of good vision for academic performance. Nearly all participants recognized that healthy vision contributes significantly to learning outcomes. However, a large proportion reported that they had never received formal training in identifying visual problems among schoolchildren. Many teachers also reported the absence of structured vision-screening programs within schools.

Comparison Between Parents and Teachers

Teachers demonstrated higher awareness than parents across most domains assessed. Excellent knowledge was observed five times more frequently among teachers (15%) than among parents (3%). Despite this difference, both groups demonstrated inadequate awareness regarding amblyopia and congenital glaucoma, highlighting a significant need for targeted educational interventions (Table-4).

Knowledge Level	Parents (%)	Teachers (%)
Excellent	3	15
Good	10	25
Poor	87	60

Table 4. Comparison of Overall Knowledge

DISCUSSION

The present study assessed the knowledge and attitudes of parents and teachers regarding pediatric eye diseases in Kerala and revealed considerable deficiencies in awareness among both groups. Although teachers demonstrated relatively higher knowledge levels than parents, important gaps persisted regarding amblyopia, congenital cataract, and congenital glaucoma. The finding that 87% of parents exhibited poor knowledge is concerning because parents are generally the first individuals to observe abnormalities in a child's visual behavior. Inadequate awareness may delay diagnosis and treatment, thereby increasing the risk of permanent visual impairment. Similar findings have been reported in previous studies where parental awareness regarding childhood eye diseases was found to be insufficient despite increasing access to healthcare services [11,13]. Awareness regarding amblyopia was particularly poor among both parents and teachers. This finding is significant because amblyopia remains one of the leading causes of preventable visual impairment in children. Successful treatment outcomes depend on intervention during the critical period of visual development. Failure to recognize early signs may result in irreversible reduction in visual acuity despite later treatment [4,5].

Knowledge regarding congenital glaucoma was even lower than awareness of amblyopia. Only a small proportion of respondents correctly identified glaucoma, and many were unaware that glaucoma can affect children. Similar observations have been reported in studies from developing countries where childhood glaucoma remains poorly understood among the general population [14]. Considering the potentially blinding nature of congenital glaucoma, strengthening public awareness should be a priority.

Teachers demonstrated comparatively better knowledge than parents, possibly due to higher educational exposure and frequent interaction with schoolchildren. Nevertheless, 60% of teachers still demonstrated poor knowledge. This finding suggests that teacher-training curricula may not adequately address childhood eye health and vision-related learning difficulties. School teachers represent an important resource for identifying children with visual problems, and enhancing their knowledge could significantly improve early referral rates. The study also identified several attitudinal barriers. Routine eye examination practices were limited, and many participants reported lack of awareness programs as a major obstacle. These findings emphasize the importance of community-based education, school screening initiatives, and collaboration between healthcare providers and educational institutions.

The findings have important public health implications. Increasing awareness among parents and teachers may facilitate earlier diagnosis, improve treatment compliance, reduce preventable childhood blindness, and enhance educational outcomes. School-based vision screening programs, awareness campaigns, teacher training workshops, and digital educational interventions may represent effective strategies for improving pediatric eye health awareness in Kerala. Overall, the results demonstrate that although teachers possess relatively better knowledge than parents, both groups require substantial educational support. Strengthening awareness regarding amblyopia, congenital cataract, congenital glaucoma, and routine pediatric eye examinations may contribute significantly to reducing avoidable childhood visual impairment.

Limitations: This study was limited by its cross-sectional design and reliance on self-reported online questionnaire responses, which may introduce response bias. The survey was conducted among participants with internet access, potentially affecting representativeness. Additionally, factors such as educational level, socioeconomic status, and geographic location were not analyzed.

Recommendations: Awareness programs on pediatric eye diseases should be conducted for both parents and teachers. School-based vision screening initiatives and teacher training programs should be strengthened to promote early detection and referral of children with visual disorders. Future studies involving larger and more diverse populations are recommended.

Conclusion: The study revealed inadequate knowledge regarding pediatric eye diseases among both parents and teachers in Kerala. Although teachers demonstrated relatively better awareness than parents, significant gaps persisted, particularly concerning amblyopia, congenital cataract, and congenital glaucoma. Strengthening eye health education and school vision programs may improve early detection and reduce preventable childhood visual impairment

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