

Perceptions and attitudes of teachers on visual impairment among elementary school students in Yogyakarta: A phenomenological study

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Abstract

Purpose: This study explored teachers' perceptions and attitudes toward visual impairments among elementary school students. **Methods:** A phenomenological approach was used in four elementary schools in Ngemplak, Yogyakarta. Twelve teachers were selected through purposive sampling. Data were collected using semi-structured interviews and analyzed manually using the Clarke and Braun thematic analysis method. **Results:** Teachers' perceptions of visual impairment were primarily shaped by personal experiences and access to information, especially from the internet. Informants demonstrated knowledge about the causes, risk factors, and impacts of visual impairments, emphasizing gadget use and nutritional factors. Teachers commonly recognized signs of visual difficulty among students and implemented informal strategies such as seating adjustments and parent engagement. Most informants exhibited a positive attitude, expressing a willingness to collaborate with health services and emphasizing the need for regular vision screening and educational programs in schools. **Conclusion:** Elementary school teachers understand visual impairments well and approach students with visual difficulties positively. Enhancing teachers' role in early detection and collaboration with healthcare services may improve school-based eye health programs.

Keywords: attitude; perception; school; teacher; visual impairment

INTRODUCTION

Vision plays a vital role in human interaction with the environment, as approximately 80% of the information the brain receives is derived from visual stimuli, with the remainder coming from the senses of hearing, touch, taste, and smell [1]. Visual impairments can significantly reduce an individual's productivity and even affect long-term quality of life [2]. In children, such impairments may hinder cognitive development and academic performance. Globally, it is estimated that 19 million children suffer from visual impairment or blindness [3]. In Indonesia, 59.9% of childhood

blindness and visual impairment cases are considered avoidable, and 33.3% are preventable [4].

Refractive errors are the most common cause of visual impairment in children [5], with myopia (nearsightedness) being the most prevalent type. Myopia is a complex condition influenced by genetic and environmental factors, such as prolonged indoor activity, near work, and reduced exposure to natural light [3]. Increased screen time, poor posture during near work, and limited outdoor play have all been associated with the development and progression of myopia in school-aged children [6]. The COVID-19 pandemic exacerbated these risk factors, particularly through school closures, social distancing measures,

and the shift to online learning, which dramatically increased screen time among children [7]. The World Health Organization predicts that by 2050, approximately 50% of the global population will be affected by myopia [8], with some researchers already referring to it as an epidemic [9].

Elementary school children, aged 6 to 12 years, spend up to eight hours daily in school, making teachers key figures in observing and addressing children's eye health [10]. Teachers' knowledge, perceptions, and attitudes can significantly influence early detection, management, and referral of vision problems. Creating an eye-health-friendly learning environment—including proper classroom lighting and encouraging outdoor play—can help reduce the incidence and severity of myopia [11]. The importance of school instructors in recognising vision difficulties in elementary school students was previously investigated in India, with the study evaluating teachers' capacity to recognise visual impairments [12]. A recent study in New Delhi and Ghana assessed school teachers' perceptions regarding eye health using a questionnaire [13,14].

Despite the importance of this issue, research in Indonesia focusing on teachers' roles in the early identification and management of visual impairments is still limited. While school-based health programs exist, such as UKS (Usaha Kesehatan Sekolah), the effectiveness of these programs heavily depends on teachers' awareness and involvement. Most existing studies on visual health in school-aged children are quantitative, focusing on prevalence and screening outcomes. At the same time, teachers' perspectives, who interact closely with students—are often overlooked. This qualitative study is better adapted to capturing the reality of a phenomenon. In Indonesia, research exploring how teachers perceive and respond to visual impairments remains limited, particularly after the shift in learning patterns during the pandemic. This study explores elementary school teachers' perceptions and attitudes toward visual impairments, especially myopia, and to understand how they detect, respond to, and support students with visual challenges in the school setting.

METHODS

This study employed a qualitative approach with a phenomenological design to explore elementary school teachers' perceptions and attitudes regarding visual impairments in children [15]. The research was conducted in four elementary schools (two public and two private) located in Ngemplak Subdistrict, Sleman

Regency, Yogyakarta, between December 2023 and January 2024.

Informants were selected using purposive sampling based on specific inclusion criteria: teachers (male or female) aged 20–60 years, actively teaching first to second grade, able to communicate effectively, and willing to participate voluntarily by signing an informed consent form. A total of 12 teachers participated in the study. Teachers with communication barriers, cognitive impairments, or who refused consent were excluded from participation.

Data were collected through semi-structured, in-depth interviews conducted face-to-face by the research team. Each informant was interviewed twice to ensure data saturation and explore emerging themes more deeply. The interview guide was developed based on relevant literature and aligned with the study's objectives (Table 1). All interviews were audio recorded with the informant's consent.

Table 1. Interview guide

Topics	Guided Question
Knowledge	1. Tell us your opinion on visual impairments in children, especially elementary school-aged children. 2. Where did you learn about vision disorders? 3. Do you know the causes of visual impairment in children/elementary school students? 4. Do you think the vision impairment can be cured? (Do you know what will happen if the visual impairment is not addressed?) 5. Do you know what factors can worsen/improve the distance vision problems experienced by school children?
Perception	6. According to you, what factors can influence a child's vision? 7. Tell us about your opinion on visual impairment. 8. Do you think avoiding visual problems in children is possible? 9. Do you think visual impairment in children is a harmful condition?
Attitude	10. What would you do if you found children with visual impairment at school? 11. What would you do to decrease factors that could worsen the vision problems in school children? 12. What will you do to prevent vision problems in school children? 13. What do you think is the best action related to reading activities at school? 14. What do you think about visual screening conducted on school children?

The audio recordings were transcribed verbatim and analyzed thematically using the six-step approach by Braun and Clarke: (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report [16].

The analysis was conducted manually by the research team. Ethical approval for this study was obtained from the Ethical Protocol Review Board of the Faculty of Medicine, Universitas Islam Indonesia No. 6/Ka.Kom.Et/70/KE/XII/2023. All informants were informed about the purpose of the research and their rights, and written consent was obtained before data collection.

RESULTS

Table 2 provides an overview of the demographic and professional characteristics of informants. Most of the informants were over 40 years old, mostly female. In terms of educational attainment, most held undergraduate degrees, while a smaller proportion had completed a master’s degree. All informants identified as Muslim, reflecting the religious homogeneity of the sample. Professionally, the informants represented three roles equally: school principals, homeroom teachers, and sports teachers, with each group accounting for one-third of the total sample. This distribution offers a diverse perspective on how different teaching positions understand and respond to visual impairments among students.

Table 2. Characteristics of informants (n=12)

Variables	n	%
Age (years)		
< 30	1	8.33
30-40	3	25.00
> 40	8	66.67
Sex		
Male	2	16.67
Female	10	83.33
Education level		
Undergraduate	9	75.00
Master	3	25.00
Religion		
Muslim	12	100
Other	0	0
Position		
Principal	4	33.33
Homeroom teacher	4	33.33
Sports teacher	4	33.33

Teachers' perceptions of visual impairments in children

According to the results, informants recognized several causes and risk factors for visual impairment, such as genetic predisposition, excessive screen time, poor posture, and insufficient vitamin A intake.

“...So, it could be because of the frequent use of mobile phones. It could also be due to nutritional intake, especially vitamin A, which is not good.” There is also genetics, as indeed the parents have also worn glasses since childhood...” 45 years old, Female, School principal.

"Maybe the duration of using gadgets and laptops. The frequent use of laptops. Sometimes there are bumps around the eyes like that which certainly can't be comfortable..." 34 years old, Female, Homeroom teacher.

Informants also demonstrated awareness of early signs of vision problems, such as students squinting, moving closer to the board, or reporting blurred vision. In response, teachers adjusted the classroom seating arrangements or advised students to limit gadget use and maintain healthy habits.

"Just in general." If a child usually complains, "I can't see, Ma'am," like that. Later I would say, 'let's see if the others can see it?' If the others can see it but he can't see it himself, then usually I move his seat to the front like that..." 30 years old, Female, Homeroom Teacher

"In my opinion, it can be prevented. Increase the intake of vitamin-rich foods like carrots, like juice, or... well, carrot juice or vegetable juice like that. Then the use of mobile phones, nowadays children sometimes have their gaming time limited. We give advice, for example, not to play for too long... And not to be too close to the phone. Then the position when watching TV should be sitting, not lying down..." 34 years old, Female, Homeroom Teacher.

Teachers across schools, both public and private, reported using informal but practical strategies to address suspected visual problems. This typically included informing the child’s homeroom teacher or contacting parents to encourage medical follow-up. While schools did not have formal referral mechanisms, they supported students by adjusting learning conditions and ensuring peer inclusion.

"...when writing on the blackboard, the child often squints his eyes, you know." Squinting, looking, then blinking a bit, that. Well, sometimes after that I communicate with the parents. Alhamdulillah, the parents responded quickly and have also informed us if they haven't had the check-up yet, explaining why, and when they plan to have the next check-up, like that..." 34 years old, Female, Homeroom Teacher.

Informants also recognized the broader impact of visual impairment, including its effects on academic performance, concentration, motivation, and self-esteem. One informant reflected that students with undetected vision issues often fell behind academically and socially.

"His motivation to study is lacking. Then his abilities are increasingly falling behind his classmates." And it's pitiful if he doesn't get help." 41 years old, Female, Homeroom Teacher.

The attitude of teachers regarding visual impairments in children

Most participants demonstrated a positive and proactive attitude toward students with visual impairments. They expressed openness to collaborating with health professionals and emphasized the importance of regular vision screening in schools. Teachers supported initiatives such as socialization and awareness campaigns targeted at both teachers and students.

Furthermore, participants highlighted the need for structured training for educators to better understand and detect visual impairments. They believed that increasing teacher capacity in this area could enhance the quality of classroom interaction and reduce the risk of learning delays due to undetected vision problems.

"I completely agree if there is training or socialization for teachers regarding this matter, because later if the child has any issues (with their eyesight), it can be detected early on, for example, if there is special handling or maybe it can be treated, that would be better..." 34 years old, Female, Homeroom Teacher.

DISCUSSION

This study highlights that teachers' perceptions of visual impairment are primarily shaped by their knowledge and previous experiences. Knowledge shapes how individuals perceive and interpret health-related issues [14]. As indicated in prior research, perception is influenced by various factors, including personal experience, access to information, and contextual factors such as environment and profession [17].

Teachers in both public and private schools demonstrated an awareness of visual impairments, particularly myopia, and were able to identify its potential causes, including genetic predisposition, nutritional intake, and prolonged use of electronic devices [10,17-19]. Teachers with personal or familial experiences with visual impairment appeared to have a

deeper understanding of the issue, supporting the notion that lived experience enhances health awareness [10].

Informants were also able to recognize symptoms such as students' complaints of blurred vision, squinting, or difficulty reading from the board. They commonly responded by adjusting the student's position in class and engaging with parents to encourage further medical examination. This aligns with previous findings, where teachers were identified as key figures in the early detection of eye problems in school-aged children [20,21].

Teachers' supportive attitudes were evident in their willingness to assist students with visual impairments and collaborate with parents. These findings are in line with studies from other countries, where teachers have shown inclusive attitudes toward children with vision-related difficulties [22,23]. Teaching experience, empathy, and prior exposure to inclusive practices may influence such attitudes [24, 26].

Moreover, informants emphasized the importance of regular eye examinations and proposed that teachers should receive training in basic vision screening. Such initiatives have been proven effective in early detection and referral for further care, especially in low-resource settings [25,27]. However, the implementation of school-based vision programs in Indonesia is often inconsistent and dependent on the priorities of local health centers [31,32].

Almost all informants agreed that socializing for teachers and students, as well as regular vision examinations for children, are essential for detecting any abnormalities early on. Teachers should be trained in simple eye examinations for school children, even when local community health centers already provide eye health screening [27]. However, this program is part of the development of Public Health Efforts (UKM), which is conducted in accordance with the needs of each community health center [28]. This is because over half of a child's time is spent at school, and teachers spend the most time with the students [21]. Simple eye examination training for teachers can improve early detection, allowing any identified concerns to be handled swiftly. According to Paudel et al. (2016), unaided visual acuity-based testing by school instructors effectively diagnose visual impairments in youngsters. Eye screening training for school teachers in detecting visual abnormalities was found to be more efficient and was associated with greater hospital referrals [29].

Based on the research results above, it is known that there are variations in teachers' perceptions regarding the causes, types, symptoms, and attention towards students with visual impairments. This will

impact further preventive efforts. From the teachers' attitude, there is a need for cooperation with healthcare facilities for regular eye health examinations and monitoring. This has implications for public health, highlighting the need for further training for elementary school teachers to cover the types, symptoms, causes, and preventive measures of vision disorders. Material on eye health can also be included in the school curriculum, optimizing the UKS (Unit Kesehatan Sekolah) program, which emphasizes preventive measures such as adjusting lighting, maintaining a healthy diet, and collaborating with nearby healthcare facilities for regular check-ups. Advocacy and eye health campaigns must be promoted to raise public and professional awareness of visual impairment and provide education and information for families, teachers, and other professionals [30].

In Indonesia, eye health screening serves as a minimum service standard in the health sector, specifically for primary school-aged children [31]. Unfortunately, the latest government policy regarding the free health check-up program (CKG-Cek Kesehatan Gratis) for all citizens celebrating their birthday has not yet prioritized eye health screening for children [32]. Nevertheless, the Indonesian Ophthalmologists Association (PERDAMI) has issued the School-Based Refractive Error Screening Model Recommendations for children, which can serve as a reference for conducting health screenings [33]. This finding aligns with the results of this study, which support the existence of a school-based screening program. Collaboration with various related parties is necessary to implement this program and ensure better eye health for Indonesian children.

This research has the advantage of being the first qualitative study in Yogyakarta, Indonesia, that deeply explores the perceptions and attitudes of elementary school teachers regarding visual impairments. To enhance trustworthiness, the researcher conducted triangulation of primary school teacher informants, using a maximum variation approach that included both public and private schools, as well as schools with varying levels of expense. This study was conducted in only four schools within a single subdistrict, which may limit the generalizability of the findings to other regions or educational contexts. Additionally, social desirability bias may have influenced how informants presented their attitudes during interviews. Future research should include a larger and more diverse sample and consider quantitative teacher knowledge and screening effectiveness assessments.

CONCLUSION

This study found that elementary school teachers possess a relatively good understanding of visual impairments in children, particularly regarding risk factors, symptoms, and preventive behaviors. Their perceptions are shaped by prior knowledge and personal experiences, and they generally demonstrate positive attitudes toward students with visual impairments. Teachers were also strongly willing to collaborate with parents and health institutions to support early detection and intervention.

The findings highlight the critical role of teachers in identifying and managing visual health problems in school settings, particularly given the extended time children spend in the classroom. Integrating teacher-based observation with school-based vision screening programs could enhance the early detection of visual impairment and contribute to better educational outcomes.

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