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Barriers to Spectacle Use in School Children (Age 6–16 Years) of West District, Tripura: A Cross-Sectional Study

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KEYWORDS:

Refractive error, spectacle compliance, school children, barriers, Tripura

ABSTRACT:

Background

Uncorrected refractive error remains one of the leading causes of avoidable visual impairment among school-aged children. Although school eye screening programs have expanded and free spectacles are frequently provided, actual spectacle usage among children continues to be unsatisfactory.

Objectives

1. To determine the prevalence of refractive error among school children aged 6–16 years in West District, Tripura.
2. To assess spectacle distribution and compliance following school screening.
3. To identify major barriers contributing to non-use of spectacles.

Methods

A cross-sectional, school-based study was conducted among government and private schools of West District, Tripura. A total of 2,400 children aged 6–16 years were screened for refractive error using standard visual acuity testing and refraction protocols. Children diagnosed with refractive error and provided spectacles through school screening services were followed up. Spectacle compliance was assessed through direct observation and structured interviews. Reasons for non-compliance were documented and analyzed descriptively.

Results

Out of 2,400 students screened, 312 (13.0%) were diagnosed with significant refractive error. Spectacles were distributed to 289 children (92.6%). At follow-up, only 142 children (49.1%) were found to be wearing spectacles. Among the 147 non-compliant children, the most common barriers included loss or breakage of spectacles (27.9%), teasing or bullying by peers (19.0%), headache or discomfort (16.3%), misconceptions regarding spectacle use (14.2%), and lack of parental encouragement (12.2%).

Conclusion

Spectacle compliance among school children in West District, Tripura was found to be suboptimal despite high spectacle distribution. Both practical and psychosocial barriers significantly influenced non-use. Strengthening awareness programs, improving spectacle quality, and ensuring regular follow- up are essential to enhance compliance.

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INTRODUCTION

Refractive errors are a major public health concern among school-aged children and constitute a significant proportion of preventable visual impairment worldwide. Visual impairment during childhood adversely affects academic performance, social development, and long-term productivity. The age group of 6–16 years represents a crucial period for learning and visual development, during which uncorrected refractive errors can significantly hinder educational achievement.

School eye screening programs have been implemented across India to detect refractive errors at an early stage and provide spectacles at minimal or no cost. Despite these efforts, several studies have reported low rates of spectacle compliance among children. The reasons for poor compliance are multifactorial and include physical discomfort, social stigma, parental misconceptions, and logistical issues such as loss or breakage of spectacles.

In Tripura, limited data are available regarding spectacle compliance and the specific barriers faced by school children. Understanding these barriers is essential for improving the effectiveness of school eye health programs. Therefore, this study was undertaken to assess spectacle compliance and identify the major barriers to spectacle use among school children of West District, Tripura.

MATERIALS AND METHODS:

Study Design and Setting

A cross-sectional, school-based study was conducted in government and private schools of West District, Tripura.

Study Population

The study included school children aged 6–16 years.

Sample Size

A total of 2,400 students were screened for refractive error.

Inclusion Criteria

- Children aged 6–16 years
- Diagnosed with refractive error
- Received spectacles through school screening services

Exclusion Criteria

- Presence of ocular diseases other than refractive error
- Absence during follow-up visit

Data Collection Procedure

Visual acuity was assessed using standard distance vision charts. Children with reduced visual acuity underwent refraction to confirm refractive error. Spectacles were provided as per the screening program guidelines. Follow-up visits were conducted to assess spectacle usage through direct observation. Children who were not wearing spectacles were interviewed using a structured

questionnaire to identify reasons for non-compliance.

Data Analysis

Data were analyzed using descriptive statistics. Results were expressed in frequencies and percentages.

RESULTS

Prevalence of Refractive Error

Out of 2,400 students screened, 312 children were diagnosed with significant refractive error, yielding a prevalence of **13.0%**.

Spectacle Distribution

Spectacles were distributed to 289 of the 312 diagnosed children, accounting for **92.6%**

coverage.

Spectacle Compliance

During follow-up assessment, only 142 children (**49.1%**) were observed wearing their spectacles, while 147 children (**50.9%**) were non-compliant.

Barriers to Spectacle Use (n = 147)

Barrier	Number	Percentage
Lost or broken spectacles	41	27.9%
Teasing / bullying by peers	28	19.0%
Headache /	24	16.3%

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discomfort		
Misconception that spectacles weaken eyes	21	14.2%
Lack of parental encouragement	18	12.2%
Cosmetic concerns	10	6.8%
Others	5	3.4%

DISCUSSION

The present study highlights that although spectacle distribution was high, actual usage among school children was considerably low. Nearly half of the children who received spectacles were not wearing them during follow-up, indicating a significant gap between provision and compliance.

The most common barrier identified was loss or breakage of spectacles, suggesting the need for more durable frames suitable for active children. Psychosocial factors such as teasing and bullying emerged as major deterrents, emphasizing the role of peer perception in spectacle acceptance. Misconceptions regarding spectacle use and lack of parental encouragement further contributed to non-compliance.

These findings are consistent with national and international studies reporting spectacle compliance rates ranging between 30% and 60% among school-aged children. The multifactorial nature of non-compliance indicates that mere provision of spectacles is insufficient to ensure effective visual correction.

CONCLUSION:

Spectacle compliance among school children aged 6–16 years in West District, Tripura was found to be inadequate despite successful refractive error detection and high spectacle distribution rates. Both practical issues and socio-cultural factors significantly influenced non-use. Addressing these barriers is essential to maximize the benefits of school eye screening programs.

RECOMMENDATIONS

- Provision of sturdy and child-friendly spectacle frames
- Replacement policies for lost or broken spectacles
- Regular parent–teacher–optometrist awareness sessions
- Myth-busting and eye health education campaigns
- Annual follow-up screenings
- Active teacher involvement in monitoring daily spectacle use

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