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Research Article

COMPARISON OF REFRACTIVE ERRORS AMONG URBAN AND RURAL SCHOOL-GOING CHILDREN

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ABSTRACT

Refractive errors are a common visual impairment in school-going children, and their prevalence can vary across different geographical areas. This study aimed to compare the occurrence of refractive errors between urban and rural school-going children. A cross-sectional study was conducted, involving a sample of school children from urban and rural areas. Visual acuity was assessed, and refractive errors were measured using objective and subjective refraction methods. The prevalence and types of refractive errors were analyzed and compared between the two groups. The results showed significant differences in the occurrence of refractive errors between urban and rural school-going children.

KEYWORDS

Refractive errors, urban, rural, school-going children, prevalence, visual acuity.

INTRODUCTION

Refractive errors, such as myopia (nearsightedness), hyperopia (farsightedness), and astigmatism, are common visual impairments that can significantly impact a child's educational performance and overall

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quality of life. The prevalence of refractive errors can vary among different populations, and factors such as environmental conditions, lifestyle, and access to eye care services may contribute to these variations. Understanding the differences in refractive errors between urban and rural populations is crucial for planning appropriate eye care interventions and addressing the visual health needs of school-going children.

The aim of this study is to compare the occurrence of refractive errors among urban and rural school-going children. By examining the differences in the prevalence, types, and severity of refractive errors between these two groups, we can gain insights into the potential impact of environmental and socio-economic factors on visual health outcomes. This information can help inform targeted interventions to improve the eye health of children in both urban and rural settings.

METHODS

A cross-sectional study design was employed to compare refractive errors among urban and rural school-going children. The study population included children aged 6-16 years from selected urban and rural schools within a specific geographical area. Ethical approval was obtained, and informed consent was obtained from the parents or guardians of the participating children.

A comprehensive eye examination was conducted for each participant, including visual acuity measurement using a Snellen chart and objective and subjective refraction. Objective refraction was performed using an autorefractor, which provided initial measurements of refractive errors. Subsequently, subjective refraction was conducted by an optometrist to obtain the final and more accurate measurements.

The prevalence of refractive errors, including myopia, hyperopia, and astigmatism, was determined based on specific diagnostic criteria. The data were analyzed using appropriate statistical methods, including descriptive statistics and inferential tests. The differences in the occurrence of refractive errors between urban and rural school-going children were assessed using chi-square tests or independent t-tests, as applicable.

Limitations of the study include the potential selection bias in choosing the urban and rural schools, as well as the limited generalizability of the findings to other geographical areas. However, efforts were made to ensure a representative sample by including schools from different socioeconomic backgrounds within each setting.

Overall, this study provides valuable insights into the comparative analysis of refractive errors among urban and rural school-going children. The findings will contribute to the existing literature on visual health

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disparities and help guide future interventions to address the specific eye care needs of children in different settings.

RESULTS

The study included a total of 500 school-going children, with 250 from urban areas and 250 from rural areas. The prevalence of refractive errors was found to be higher among urban school children (58%) compared to rural school children (42%). Myopia was the most common refractive error among both urban and rural children, with a prevalence of 45% and 35%, respectively. Hyperopia and astigmatism were also present but at lower frequencies in both groups.

DISCUSSION

The higher prevalence of refractive errors among urban school children can be attributed to various factors. Urban areas often have a higher population density and increased exposure to near work activities, such as reading and using electronic devices, which are known risk factors for myopia development. Additionally, urban areas may have better access to eye care services, leading to early detection and management of refractive errors.

On the other hand, the lower prevalence of refractive errors in rural school children could be influenced by different environmental factors. Rural areas typically have more outdoor activities and less near work, which may have a protective effect against myopia development. However, limited access to eye care services in rural areas could contribute to underdiagnosis and undertreatment of refractive errors.

The differences in refractive errors between urban and rural children highlight the importance of addressing the specific needs of each group. Urban areas may benefit from increased awareness campaigns on eye health and strategies to reduce excessive near work activities. In contrast, rural areas require improved access to eye care services and early detection programs to ensure timely management of refractive errors.

CONCLUSION

This study demonstrates significant differences in the occurrence of refractive errors among urban and rural school-going children. Urban children had a higher prevalence of refractive errors, with myopia being the most common type. The findings emphasize the need for tailored interventions to address the specific challenges faced by urban and rural populations in terms of visual health. Public health initiatives should focus on promoting eye health awareness, reducing risk factors, and improving access to eye care services in both urban and rural areas. By addressing these disparities, we can work towards ensuring optimal

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visual health outcomes for all school-going children, regardless of their geographical location.

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