



ASSOCIATION OF INTRAOCULAR PRESSURE CHANGES IN DIFFERENT DEGREES OF MYOPIA

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ABSTRACT

Background- To estimate the prevalence and specific diagnoses of vision problems in children in a homeless shelter. **Methods-** A prospective series of 100 homeless children and teenagers who underwent screening with a vision questionnaire, eye chart screening (if mature enough) and if vision problem suspected, evaluation by a ophthalmologist. Glasses and other therapeutic interventions were provided if necessary. **Results-** The prevalence of vision problems in this population was 23.00% and 20.00% children required glasses. **Conclusions-** Vision problems in homeless children are common and frequently correctable with ophthalmic intervention. Evaluation by ophthalmologist is crucial for accurate diagnoses and treatment. Our system of screening and evaluation is feasible, efficacious, and reproducible in other homeless care situations.

KEYWORDS : Homeless, vision, myopia, ophthalmology

INTRODUCTION

Children without homes are a major issue in India more so in urban cities and towns. Many such children can be found in railway stations, near temples and dargahs, in markets, under bridges, near bus depots and stops among other places. These children lack a stable home or a shelter and some of them have no family ties. They are easy victims of abuse and inhuman treatment, and are often engaged in petty theft or prostitution for economic survival.¹

There are a number of factors that lead children to living on the street. One root cause that has been identified is poverty. Often, there are those kids who are runaways - having escaped abusive or dangerous environments or those who runaway from homes for better jobs in cities. Almost 50% of street children are self-employed as rag-pickers, hawkers and shoeshine boys, while others work in shops and establishments. Their work hours range between 10-13 hours a day. These children are exposed to high health hazards due to unhygienic living conditions and having no shelter they are also constantly exposed to environmental conditions of heat, cold and rain. Many homeless children living in public spaces also face harassment by municipal authorities and police.²⁻⁴

The current study focused first on determining the prevalence and types of vision problems in homeless children who live in a homeless shelter in Jaipur, India. This was accomplished prospectively using a questionnaire, with visual acuity screening using an eye chart, and for children who failed the questionnaire or screen, by means of a referral to an ophthalmologist. The work continued with the institution of a program to diagnose and correct these vision problems, and an evaluation of the efficacy of this program.

METHODS

Type of study- Prospective study

Study population- Children and teenagers, age birth to 19 years, who lived at Homeless Shelter in the 12-month time period. The parents of all children and teenagers, age birth to 19 years, who lived at Homeless Shelter, were offered the opportunity to participate in this study. The vision questionnaire and screening protocol was developed. A background survey to obtain demographic data along with a brief vision health questionnaire was reviewed and completed by all parents (and the children by themselves if old enough).

A staff member reviewed the questionnaire answers, answered questions and provided clarification if necessary. A well- child (well-adolescent) history and exam was completed by our volunteer caregiver staff (nurses, advanced practice providers, and pediatricians), with pediatrician supervision. Part of this well- child examination consisted of a visual exam with external examination of the eyelids, orbit, cornea and iris, ocular motility and red reflex testing, pupillary examination and, when possible, ophthalmoscopy. The vision questionnaire was reviewed and if necessary clarified by our health caregivers. Immunizations, dental screening and eye chart

screening were included in this examination. Screeners were given special training in reviewing the vision questionnaire, appropriate testing of visual acuity with the Snellen eye chart and criteria used to institute a pediatric ophthalmic referral (see below). All children mature and cooperative enough (usually over the age of four) were administered Snellen Eye Chart Screening by our health caregivers. The study patient was positioned 10 feet from the chart and both eyes tested individually and then together. If the patient wore glasses, testing was conducted both with and without corrective lenses. The following criteria were used for "failure," which resulted in referral to our ophthalmology clinic for a complete eye examination.

RESULTS

Table 1. General characteristic

Mean age in yrs	6.91±1.12 yrs
Male : Female	53:47
Length of time homeless	6.02±1.12 month
Vision problem	23.00%
Required glasses	20

The prevalence of significant vision problems in our study population was 23.00%. Diagnoses included amblyopia, anisometropia, astigmatism, esotropia, hyperopia, myopia, nystagmus, and ocular albinism. Of the 23 patients with significant vision problems, 20 required glasses.

DISCUSSION

Our results show that 23% (23/ 100) of our homeless children had a significant vision problem. This prevalence is similar to the Philadelphia experience⁶ (26%), but higher than that described in the other prior studies.⁵⁻⁷ This higher prevalence probably indicates the importance of including eye chart screening by trained testers as opposed to questionnaires alone. The prospective nature of our study probably resulted in a more accurate prevalence rate than retrospective analyses. Historical control data on the prevalence of vision problems in non-homeless children is surprisingly hard to find.

Kleinstei et al.⁸ studied 2,523 children ages 5– 17 years and found myopia in 9.2% and hyperopia in 12.8% (similar to our values of 11% and 5%, respectively). Since our pediatric ophthalmologists did not evaluate all 100 children, only the ones thought to have vision problems, it is not accurate to say the pediatric ophthalmic exam increased the overall detection of prevalence of vision problems. But in many ways the pediatric ophthalmic exam provided significant new information. It allowed us to clarify the diagnoses, more accurately determine the prevalence of significant vision problems, reassure some families that there were no vision problems when questionnaires and/or screening suggested that there were, and most importantly provided the next step in evaluation and treatment.

CONCLUSION

Vision problems in homeless children are common and frequently correctable with ophthalmic intervention. Evaluation by ophthalmologist is crucial for accurate diagnoses and treatment. Our system of screening and evaluation is feasible, efficacious, and reproducible in other homeless care situations.

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