

Prevalence of Non Strabismic Binocular Vision Disorders among Students

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Abstract

Purpose: To assess the prevalence of non strabismic binocular vision disorders (NSBVD) among allied health students.

Methods: The impact of non-strabismic binocular vision disorders (NSBVD) on academic performance and quality of life has been extensively reported within the optometric and ophthalmologic literature. The criteria for selection of NSBVD were the absence of strabismus, amblyopia, nystagmus or any other ocular pathology.

Results: Statistical analysis was performed using the IBM SPSS version 21. Results of this study indicated that the most common non-strabismic anomalies in the studied population are combined convergence insufficiency (CI) and accommodative excess (36%) was most prevalent followed by CI (24%), combined CI and AI (15%), accommodative excess (13%), accommodative insufficiency (5%), accommodative Infacility (2%) and fusional vergence dysfunction (2%).

Conclusion: This is the first epidemiological study to report the prevalence of non strabismic binocular vision disorders among allied health students in Punjab. In this study, the prevalence of combined vergence and accommodative disorders was found to be higher as compared to vergence and accommodative disorders alone.

Keywords: Vergence, Accommodative, Ophthalmologic

Introduction

The impact of non-strabismic binocular vision disorders (NSBVD) on academic performance and quality of life has been extensively reported within the optometric and ophthalmologic literature. Non strabismic binocular vision disorders are visual anomalies that affect the subject's binocularity and visual performance while performing close tasks. If left undiagnosed, it can lead to headache, eye strain and blurred vision. These can be categorized as vergence and accommodative disorders. Prevalence of these disorders. Many studies reported the prevalence of non strabismic binocular vision disorders. These binocular vision disorders have been reported to

be highly prevalent among school-going children and in young adults also with the estimates of 30%. In, hospital-based studies also showed the prevalence ranges from 3.6 to 7.7%. The prevalence of non-strabismic anomalies of binocular vision was found to be higher in the 13 to 17 years age group (36.2 per cent) compared to 7 to 12 years. However, no study has been conducted so far in assessing the status of binocular vision disorders among health care students.

Methodology

A written informed consent was obtained from all subjects. The study began after taking permission from the college authorities & fixing the date for the evaluation of non strabismic binocular vision disorders of the students. Students from different departments: Medical lab Technology, Forensic Sciences, Physiotherapy, Cardiovascular Technology, Optometry and Radio Imaging Technology were enrolled. The criteria for selection were the best corrected visual acuity 6/6, healthy eyes, and no strabismus or amblyopia. At baseline visit, demographic data of all subjects were recorded. A detailed binocular vision and accommodative assessment was conducted.

Data Analysis

After the data collection, the data analysis was done using SPSS version 21 with confidence interval 95% and 80% power. Descriptive statistics were calculated for all binocular vision disorders and differences in proportions were analyzed.

Results

In current study, 250 students of age 18-30 years were screened. There were 160 males and 90 females. Out of 250, 190 students had non strabismic binocular vision disorders. list the results for various binocular vision disorders. Out of 190 students, 26% (n=50) had vergence

disorders, 20% (n=40) had accommodative disorders and 52% (n=100) combined accommodative and vergence disorders. Among non-strabismic binocular vision anomalies, combined convergence insufficiency (CI) and accommodative excess (36%) was most prevalent followed by CI (24%), combined CI and AI (15%), accommodative excess (13%), accommodative insufficiency (5%), accommodative Infacility (2%) and fusional vergence dysfunction (2%). In this descriptive study we did not find any case of divergence insufficiency, convergence excess, basic esophoria and divergence excess. presents the overall prevalence of non strabismic binocular vision disorders.

Discussion

Numerous study results reported that accommodative dysfunctions were more prevalent than vergence dysfunctions. In our study, the prevalence of combined vergence and accommodative disorders was found to be higher.

Conclusion

These findings suggest that it is important to conduct binocular vision examination to diagnose non strabismic binocular vision anomalies. Therefore, screening of university students can help in timely diagnosis and management of non strabismic binocular vision disorders.

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