



Journal of Optometry

www.journalofoptometry.org



ORIGINAL ARTICLE

Vergence findings and horizontal vergence dysfunction among first year university students in Benin City, Nigeria

Godwin O. Ovenseri-Ogbomo*, Peter E. Ovigwe

Department of Optometry, Faculty of Life Sciences, University of Benin, Benin City, Nigeria

Received 4 November 2015; accepted 18 January 2016

KEYWORDS

Vergence dysfunctions;
Convergence insufficiency;
Phoria;
Fusional vergence;
University students

Abstract

Purpose: The study was designed to determine the prevalence of vergence dysfunctions among first year university students in Nigeria and to document the measures that define the vergence system of the visual system.

Methods: A cross-sectional study of first year students of the University of Benin, Benin City, Nigeria, who presented for the mandatory eye examination as part of their medical examinations required for clearance was conducted. A battery of tests that defines the vergence system including near and far phoria, positive and negative fusional vergence amplitudes at far and near, near point of convergence (NPC) and AC/A ratio were measured using conventional clinical protocols.

Results: The prevalence of vergence dysfunction among 212 first year university students who satisfied the inclusion criteria and gave consent to participate was 12.7%, with convergence insufficiency being the most common vergence dysfunction. Blurred vision, headache and diplopia were the most frequently reported visual symptoms.

Conclusion: There is a considerable prevalence of previously undiagnosed vergence dysfunctions in this population of students. The study underscored the need to carry out a thorough binocular vision assessment as part of the battery of tests administered to newly admitted students in this community to forestall any adverse effect the presence of vergence dysfunctions might have on the academic activity of university students.

© 2016 Spanish General Council of Optometry. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

* Corresponding author. Tel.: +234 8060962506.

E-mail addresses: godwin.ovenseri-ogbomo@uniben.edu (G.O. Ovenseri-Ogbomo), ovigwe.oe@gmail.com (P.E. Ovigwe).

<http://dx.doi.org/10.1016/j.optom.2016.01.004>

1888-4296/© 2016 Spanish General Council of Optometry. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Please cite this article in press as: Ovenseri-Ogbomo GO, Ovigwe PE. Vergence findings and horizontal vergence dysfunction among first year university students in Benin City, Nigeria. *J Optom.* (2016), <http://dx.doi.org/10.1016/j.optom.2016.01.004>

PALABRAS CLAVE

Disfunción de las vergencias;
Insuficiencia de convergencia;
Foria;
Vergencias fusionales;
Estudiantes universitarios

Resultados vergenciales y disfunciones de las vergencias horizontales entre los estudiantes universitarios de primer año de Benin City, Nigeria

Resumen

Objetivo: El estudio fue diseñado para determinar la prevalencia de las disfunciones de las vergencias entre los estudiantes universitarios de primer año en Nigeria, y documentar las mediciones que definen el sistema de las vergencias en el sistema visual.

Métodos: Se realizó un estudio transversal de los estudiantes de primer año de la Universidad de Benin, Benin City, Nigeria, que se presentaron a un examen ocular obligatorio como parte de las pruebas médicas requeridas a efectos de certificación. Se realizaron las mediciones necesarias para caracterizar el sistema de vergencias, incluyendo foria cercana y lejana, amplitudes de las vergencias fusionales positiva y negativa cercanas y lejanas, punto próximo de convergencia (NPC) y ratio AC/A, utilizando protocolos clínicos convencionales.

Resultados: La prevalencia de las disfunciones de la vergencia entre los 212 estudiantes universitarios de primer año que satisficieron los criterios de inclusión, y prestaron su consentimiento a participar, fue del 12.7%, siendo la insuficiencia de la convergencia la disfunción de las vergencias más común. Los síntomas visuales más frecuentemente reportados fueron visión borrosa, cefalea y diplopía.

Conclusión: Existe una prevalencia considerable de disfunciones de vergencias no diagnosticadas previamente en esta población de estudiantes. El estudio subrayó la necesidad de realizar una valoración profunda de la visión binocular como parte de la serie de pruebas realizadas a los nuevos estudiantes de esta comunidad, de cara a prevenir cualquier efecto adverso que pudiera producirse sobre la actividad académica de los estudiantes universitarios como consecuencia de la presencia de disfunciones de las vergencias.

© 2016 Spanish General Council of Optometry. Publicado por Elsevier España, S.L.U. Este es un artículo Open Access bajo la licencia CC BY-NC-ND (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Vergence dysfunctions describe a wide range of motor disorders of the visual system and includes convergence insufficiency, convergence excess, divergence insufficiency, divergence excess, decompensated heterophoria as well as inefficient and inaccurate pursuits and saccadic eye movements.¹ These binocular vision disorders are of particular significance during prolonged visual tasks such as reading. Whereas there is considerable evidence that individuals with binocular vision dysfunction experience significantly more visual symptoms associated with prolonged use of the eyes compared to those without binocular vision dysfunctions,²⁻⁴ there is however debate whether this association is important for reading performance^{5,6} and by extension for academic performance. Grisham et al.,⁴ demonstrated that there was an increase in the number of asthenopic complaints during reading compared to when not reading. They suggested that visual symptoms are a factor in reducing reading performance in symptomatic individuals.

During transition from high school to the university, there is a tendency for increased reading for considerably longer periods. This increased prolonged reading might have implications for individuals who have binocular vision dysfunctions. Porcar and Martinez-Palomera⁷ have reported that accommodative and non-strabismic binocular vision problems are prevalent in this population with a prevalence reported to be as much as 32.3% among university students.

Several studies⁸⁻¹³ have reported the prevalence of these dysfunctions in the general population and specific populations. These studies reported varying prevalence of both accommodative and vergence dysfunctions. The wide range of prevalence reported could be attributed to the different criteria used in the diagnosis of the various dysfunctions by the different authors as well as the differences in the study populations.

Whereas the prevalence of these dysfunctions is widely reported for Caucasian populations,^{7,9-11,13} we did not find any report for Nigerian populations. The paucity of data on the prevalence of binocular vision dysfunction in this part of the world may be related to the fact that the practice of optometry and the development of subspecialty in pediatric optometry is relatively new. It could also be due to the fact that primary eye care professionals rarely examine patients with a view to diagnosing vergence dysfunctions. As noted by Maino,⁸ "as primary eye care professionals we do not ask the right case history questions; we do not evaluate patients using the right tests; we do not make the diagnosis; and we do not treat or refer out for treatment these frequently encountered but often ignored disorders".

The present study was therefore designed to provide a preliminary data on the prevalence of vergence dysfunctions as well as document vergence findings among first year university students at the University of Benin, Benin City, Nigeria. A comparison between symptomatic and asymptomatic subjects is also reported.

Download English Version:

<https://daneshyari.com/en/article/8591088>

Download Persian Version:

<https://daneshyari.com/article/8591088>

[Daneshyari.com](https://daneshyari.com)