BioScientific Review (BSR)
Volume 7 Issue 3, 2025
ISSN$_{(P)}$: 2663-4198, ISSN$_{(E)}$: 2663-4201
Homepage: https://journals.umt.edu.pk/index.php/bsr

Article QR

Title: **Risk Factors and Prevalence of Contrast Sensitivity Impairment among Commercial Motor Vehicle Drivers in Benin City, Nigeria**

Author (s): John Esimaje Moyegbone[1,2], Eghonghon Ehianata Oronsaye[3], Aghafekokhian Bose Osaiyuwu[2], Patricia Tonbra Osunu[4], Jennifer Aleye Ebeigbe[2] and Ezekiel Uba Nwose[5]

Affiliation (s):
[1]Wellspring University, Benin City, Nigeria
[2]University of Benin, Benin City, Nigeria.
[3]Bingham University, Karu, Nigeria
[4]Bayelsa Medical University, Yenegoa, Nigeria
[5]University of Southern Queensland, Toowoomba, Australia

DOI: https://doi.org/10.32350/bsr.73.07

History: Received: March 30, 2025, Revised: June 25, 2025, Accepted: August 04, 2025, Published: September 20, 2025

Citation: Moyegbone JE, Oronsaye EE, Osaiyuwu AB, et al. Risk factors and prevalence of contrast sensitivity impairment among commercial motor vehicle drivers in Benin City, Nigeria. *BioSci Rev.* 2025;7(3). https://doi.org/10.32350/bsr.73.07

Conflict of Interest: Author(s) declared no conflict of interest.

A publication of

The Department of Life Sciences, School of Science
University of Management and Technology, Lahore, Pakistan

Risk Factors and Prevalence of Contrast Sensitivity Impairment among Commercial Motor Vehicle Drivers in Benin City, Nigeria

Abstract

Background: Contrast sensitivity (CS) is the innate ability of the eyes to discern any variation in luminance or brightness between an object and its background within a given space. CS is important for recognizing lane markers, road signs, and oncoming traffic while driving, especially in low contrast environments, such as at night or during foggy weather. This survey aimed to evaluate the risk factors and prevalence of CS impairment among drivers of commercial motor vehicles in Benin City, Edo State, Nigeria.

Methods: This study employed an observational cross-sectional survey of 341 drivers of commercial motor vehicles aged 20-70 years (with the mean age of 48.09 years ± 11.21 years) in Benin City. The sample comprised 326 (96.6%) male drivers and 15 (4.4%) female drivers. The sample was selected using the purposive random sampling technique. The data was collected through the adjusted National Eye Institute Visual Functioning Questionnaire- 25. Pelli-Robson test was performed to assess contrast sensitivity. Data was analysed using IBM-SPSS (version 29.0). Chi-square test was used to observe significant differences between CS and the associated risk factors.

Results: The prevalence of impaired CS in this study was 21.7%. It increased with the increase in age from 7.9% among the age group 20-30 years to 48.0% among the age group > 60 years. Higher educational level was found to correlate with decreased CS impairment.

Conclusion: The high prevalence of CS in this study could be a threat to safe driving, especially in low contrast environments, if appropriate measures are not put in place to identify drivers with CS impairment. Routine CS assessment of drivers is recommended preceding the issuance of driver's license and relicensing.

Keywords: commercial drivers, contrast sensitivity, low contrast, Pelli-Robson, road accident