Visual Impairment and Risk of Road Traffic Crashes Among Commercial Bus Drivers in Bangladesh

Lutful Husain
Director, Program Technology, Clinical Services and Research

Mohammad Awlad Hossain
Director, MEL and Program Development

Md. Iqbal Hossain
Associate Director, Program Implementation and Partnership Management

Md. Parvez Hossain
Program Manager

Munir Ahmed
Country Director

Abstract:

Introduction: Road traffic injuries remain a major public health concern in low- and middle-income countries, where professional drivers are frequently exposed to high-risk road conditions. Visual impairment is a critical but often neglected contributor to unsafe driving practices and traffic crashes. This study examined the prevalence and causes of visual impairment among bus drivers in Bangladesh and evaluated its association with self-reported road traffic crashes.

Methodology: A cross-sectional study was conducted between June and August 2019 at 10 bus terminals across seven districts of Bangladesh. A total of 700 professional bus drivers were enrolled. Comprehensive ophthalmic assessments, including distance and near visual acuity testing and refraction, were performed by trained clinical teams using standardized national protocols. Data on socio-demographic characteristics, licensing status, and road traffic crash history were collected through structured interviews.

Results: The mean age of the participants was 42.3 years, and all participants were male. Overall, 18.0% of drivers did not meet the national visual acuity standard required for driving eligibility. The prevalence of visual impairment increased with age, affecting 25.7% of drivers aged over 40 years and 29.5% of those aged over 50 years. Overall, 70.3% drivers had near or distance refractive error. Cataract was identified in 6.0% of participants, with a considerable proportion presenting bilateral involvement. Notably, 67.3% of participants had never undergone a vision examination before obtaining a driving license. Most visual impairment cases (88.1%) were potentially correctable through spectacles or cataract surgery. Self-reported road traffic crashes were documented in 9.0% of drivers, and visual impairment was significantly associated with crash involvement ($p = 0.030$).

Conclusion: Visual impairment is highly prevalent among bus drivers in Bangladesh and is significantly associated with increased crash risk. Strengthening mandatory vision screening during licensing and ensuring timely access to affordable eye care interventions could substantially enhance road safety and reduce traffic-related injuries.