

ABSTRACT

Colour Vision Deficiency among Failed Candidates for Driving License in Sabah

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Introduction: Good visual acuity (VA) coupled with the ability to discriminate colours and having a sufficiently wide field of view are factors needed for safe driving. This study aimed to determine the types of colour vision deficiency (CVD) among failed candidates for driving license and to identify the accuracy of the Road Transport Department (RTD) screening tests in detecting those who have poor VA and CVD in Sabah. **Methods:** A cross-sectional study on the patient's records of all failed candidates for the driving license that were referred for further assessment by an optometrist. This study was conducted at eight hospitals in Sabah from March to June 2019. Basic demographic data, distance VA, Ishihara test and Farnsworth-Munsell D15 test were collected. Descriptive statistics were used to summarise the results. All subjects referred with best-corrected visual acuity (BCVA) 0.3 LogMAR were included. **Results:** A total of 73 subjects (79% males and 21% females), age range from 16 to 61 years (mean 29 ± 13 years) were recruited. Bajau, Dusun, Bugis and Kadazan were the major ethnic among the subjects. Mean VA on attendance was 0.1 ± 0.19 LogMAR, while BCVA was 0.0 ± 0.07 LogMAR. Thirty-six subjects (49%) were found to have CVD. The prevalence of CVD was more in males than females (45% vs 4%). Most of the CVD were deutans (25%) followed by protans (22%), no findings of tritan CVD. In this study, 37 subjects (51%) passed the Ishihara test. These were the false-positive error of the RTD screening tests. **Conclusions:**

Hereditary red-green perceptive disorder was the commonest CVD in Sabah. The severity of CVD was not been evaluated in this study because it is best evaluated using Hardy Rand and Rittler (HRR) test. The false-positive

results might be because of technical error or unfamiliar of using computerized colour vision test, especially among elderly candidates. Visual field screening might be considered in the future to ensure safe driving.