



Original Study

Validation of the Binocular Vision Dysfunction Questionnaire (BVDQ)

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Objective: Among patients presenting with dizziness, visual dysfunction must be considered, including vertical heterophoria (VH), a frequently under-identified form of binocular vision dysfunction where there is vertical discrepancy between the lines of sight of the eyes when at physiologic rest. Current self-rated screening measures do not account for complex VH symptomatology including dizziness/ambulation difficulties, nausea, headache, anxiety, neck pain, and reading impairment. VH must be differentiated from vestibular/otolith etiologies, as their treatment frequently provides inadequate relief, yet treatment of the VH can reduce/eliminate symptoms. The objective of this study is to create a valid measurement tool (binocular vision dysfunction questionnaire) to assist in identifying VH among dizzy patients to aid in appropriate referral.

Study Design: Retrospective case series.

Setting: Tertiary referral center.

Patients: One hundred twenty-six patients presenting to an optometric binocular vision subspecialist diagnosed with VH.

Intervention: Psychometric study. The measurement tool's internal consistency and test-retest reliability was assessed. Confirmatory and exploratory factor analyses were performed. Validity was estimated through correlations with a visual analog scale and validated instruments for headaches, dizziness, and anxiety.

Main Outcome Measures/Results: Excellent reliability demonstrated including Cronbach's alpha of 0.91 and high test-retest reliability. Statistical correlations with established measurements established sound convergent/content validity. Analysis of participants who underwent treatment indicated change in BVDQ score correlates with perception of change in symptom burden.

Conclusions: Results suggest the BVDQ is a valid, reliable screening tool to assist otologists in identifying VH among their dizzy patients. The BVDQ may also be useful for measuring changes with various treatments, and in identifying diverse symptoms associated with BVD/VH.

Key Words: Binocular vision dysfunction, Dizziness, Psychometrics, Vertical heterophoria, Vestibular dysfunction, Vestibulopathy.

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