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INTRODUCTION

Eye and sight problems are the most common long-term health conditions reported by Aboriginal and Torres Strait Islander peoples,¹ but little is known about the impact of vision impairment on functioning or quality of life (QoL) in Australian Indigenous populations. Concepts of health in Indigenous cultures are also not always equivalent with the tenets of Western medicine, and cultural and language differences can impact quality of life measures.²

The WHO's International Classification of Functioning (ICF)^{3,4} provides a unifying framework for classifying the health components of functioning and disability and can be used as a model to examine the impact of vision impairment on the restriction of participation.

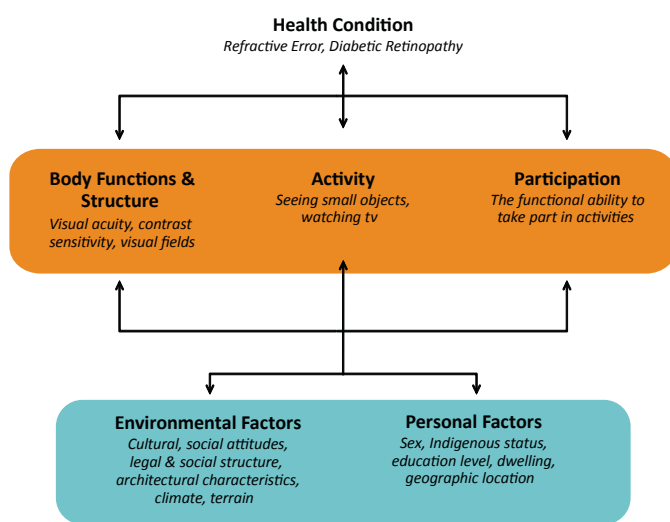


Figure 1: International Classification of Functioning

The ICF model guided the development of the Impact of Vision Impairment (IVI) questionnaire, a tool that examines how vision impairment restricts participating in daily living and affects QoL. It measures the impact of vision impairment on a person's ability to participate in their society.⁵

The purpose of this study was to adapt the IVI questionnaire for use in Aboriginal and Torres Strait Islander communities, as a valid and reliable instrument could assist in assessing disease impact, interventions and program planning.

METHODS

- One hundred and seventy two Indigenous participants completed the IVI questionnaire,
- Participants were recruited via the Rapid Assessment of Avoidable Blindness and Vision Impairment in Indigenous Communities (RABVIIC) study in Northern NSW and the National Indigenous Eye Health Survey conducted by the Centre for Eye Research Australia. Participants presenting with vision impairment or blindness to regular ICEE clinics around NSW were also invited to participate,
- Visual acuity was assessed by qualified personnel,
- Floor and ceiling effects were assessed by calculating the fraction of patients scoring the lowest or highest rating,
- Reliability of the IVI_I was measured by internal consistency (Cronbach's alpha),
- Validity was evaluated by correlation between the different IVI_I subscales and clinical measures,
- Confirmatory factor analysis (CFA) was used to assess a three-factor model of the IVI in this sample.

Demographics

- The majority of participants (63%) had completed at least year 9 or higher
- Apart from a large group of participants with normal vision the largest vision category was those with mild vision impairment (26%, n=45)
- In the participants with vision impairment or blindness, the primary cause was refractive error (16%, n=28), followed by cataract (13%, n=23)

Table 1: Demographic characteristics of study participants

	N (%)
Age [mean (SD)] in years	51.8 (15.8)
Gender (% female)	61%
Language spoken at home (% English)	142 (82.6%)
Better Eye Presenting Distance Visual Acuity	
Normal vision (<6/12)	96 (56.1%)
Mild Impairment (<6/12 to 6/18)	45 (26.3%)
Moderate impairment (<6/18 to 6/60)	17 (9.9%)
Severe impairment (<6/60)	13 (7.6%)
Presenting Near Visual Acuity	
N8 or better	71 (41.3%)
<N8-N20	72 (41.9%)
<N20-N40	12 (7%)
<N48	6 (3.5%)

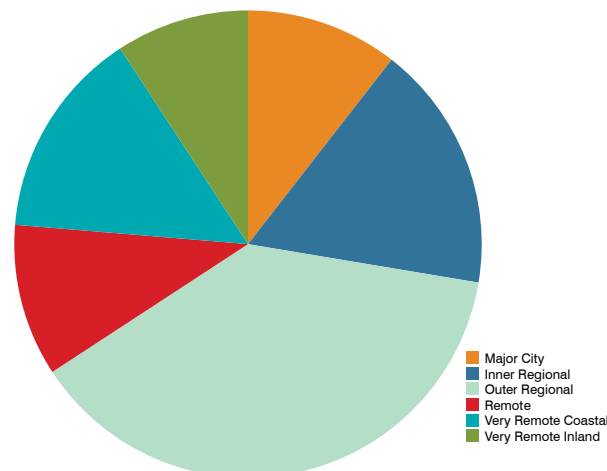


Figure 2: Remoteness of vision impaired participants

Factor Analysis

Principal-components analysis (PCA) revealed three strong domains, explaining 65% of the overall variance.

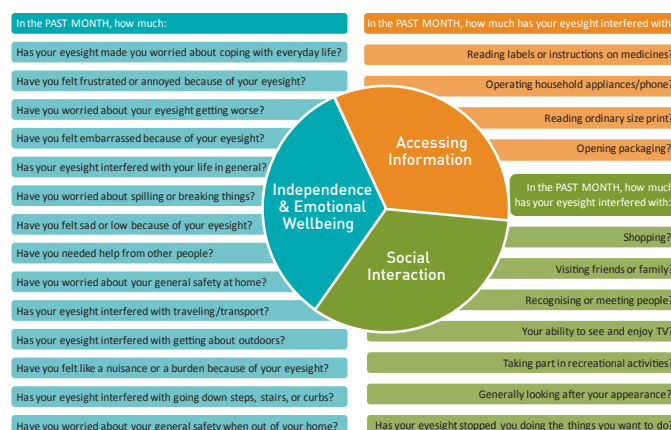


Figure 3: IVI_I Domains

Reliability

Internal consistency was adequate for the total scale (Cronbach's $\alpha = 0.98$), with individual factors yielding alphas between 0.86 and 0.94.

RESULTS

Validity

Poorer distance and near visual acuities, but not age or gender, were significantly associated with worse quality-of-life instrument and domain scores ($P < 0.001$). Comparisons between groups of patients with vision impairment showed significantly lower (worse) scores for concern, physical/social functioning, and the overall score. There was a significant association between vision impairment and the Independence and Emotional Wellbeing. This confirms that the scores for each domain seem to be dependent on visual acuity outcomes.

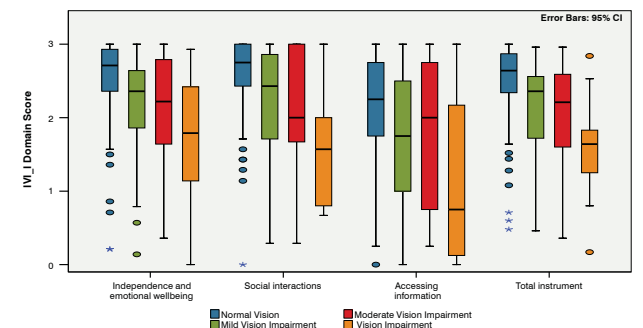


Figure 4: Relationship between IVI-I score and distance visual acuity

The association between domain scores and worsening visual acuity was also observed for near visual acuity and each of the three proposed domains (Figure 5). Participants with reduced near visual acuity had lower scores and experienced more difficulty with items in the reading and accessing information domain. Differences were also observed between near vision impairment and the independence and emotional wellbeing domains and the total instrument.

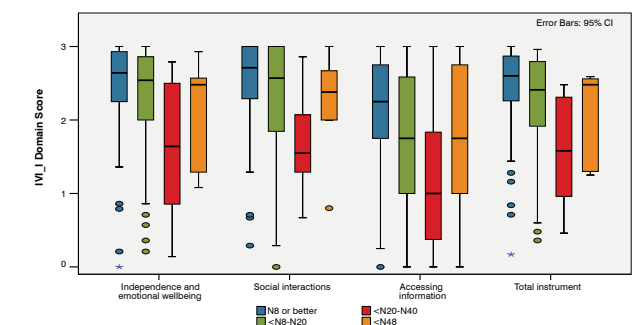


Figure 5: Relationship between IVI-I score and near visual acuity

OUTCOMES

The IVI is the first vision-related quality of life questionnaire adapted for use with Aboriginal and Torres Strait Islander peoples in Australia that has undergone psychometric validation. Construct validity, which relates to the extent to which the instrument is consistent with its theoretical foundation, supports the notion that the IVI_I is able to demonstrate the restriction in participation in daily life by Aboriginal and Torres Strait Islander participants with vision impairment, even when it is mild.

ACKNOWLEDGEMENTS

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