

## Low vision quality of life assessment: Psychometric validation of Portuguese version of NEI-VFQ 25

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**Abstract.** The goal was to make the validation, for the Portuguese people of a functional vision measurement instrument, that could be used to help characterise a situation of low vision and to evaluate a visual rehabilitation process results. An American visual functioning questionnaire was applied to a 100 individuals group, after being made its cultural and linguistic adaptation to Portuguese. Simultaneously, a general health condition related quality of life questionnaire was applied, to obtain the health condition's perception and to establish the NEI-VFQ 25's specific scales' validity, intended to evaluate the loss of vision's influence in the health's physical and mental aspects. Two visual functions were assessed to the same individuals: visual acuity and visual fields. The relation between the actual evaluated values of the visual functions and the questionnaires responses was studied. It was observed that there is a relation between the best scores of visual functions values and the high scores in responses obtained in the different scales of the visual functioning questionnaire. It was concluded that the NEI-VFQ-25 could be considered a valid measurement instrument for the goals described. © 2005 Published by Elsevier B.V.

*Keywords:* Quality of life; Low vision; Visual function; Functional vision

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## **1. Introduction**

Vision is a fundamental sense in the relation of man with the outside world. Vision loss has a profound impact in the quality of life and independence of people. In the planning of visual rehabilitation and its evaluation we need objective measures of visual capacities and measure not only the loss of vision but the effect it has in adaptative behaviour.

## **2. Objective**

To achieve a measure instrument, in Portuguese, that could be used to evaluate the loss of vision's influence in quality of life and a visual rehabilitation process result.

To validate criteria and an evaluation model used internationally allowing gathering information with interest for the planning and evaluation of the given cases.

## **3. Methodology**

The original 25-Item National Eye Institute Visual Function Questionnaire was applied to a sample of 100 individuals, after the cultural and linguistic adaptation to Portuguese had been made. This process includes two translations in Portuguese by two independent translators, a consensual version and back translation into English by a bilingual English translator. Then a comprehension test to evaluate conceptual equivalence was done. All the patients were at least 21 years old and had one of the following eye conditions: cataract (24 patients), glaucoma (23), diabetic retinopathy (21) and low vision (13) from any cause. There was a reference group of 19 individuals without pathology. The average age of the patients was 66.1 and 60% were female.

Two visual functions: visual acuity (ETDRS chart), and visual fields (Goldman perimeter-isopter III-4), were assessed to the same individuals. The patients were grouped in three groups for visual acuity and visual fields.

The study was carried out at The University's Ophthalmology Service of Egas Moniz Hospital.

The relation between the actual evaluated values of the visual functions and the questionnaire responses was studied.

## **4. Results**

A relation between the best scores of the visual functions values and the high scores obtained in the different scales of the visual functioning questionnaire had been observed. For this study the patients were grouped in three groups concerning scores of visual acuity (normal vision, near normal and low vision) and visual fields (normal fields, near normal and mobility difficulties) (Table 1).

Data showed the existence of a significant difference between the three groups of visual acuity and visual fields.

Table 1  
Kruskal–Wallis test,  $p < 0.05$ , significance established at 0.05

	Visual acuity			Significance
	Normal	Near normal	Low vision	
General health	58.58	43.17	46.56	0.069
General vision	73.98	46.22	28.2	0
Ocular pain	51.09	49.22	51.13	0.952
Near activities	71.38	52.66	28.84	0
Distance activities	71.47	54.22	27.33	0
Social functioning	69	57.72	26.46	0
Mental health	67.7	57.97	27.46	0
Role difficulties	70.27	56.64	26.24	0
Dependency	70.73	56.38	26.06	0
Color vision	54.55	55.47	42.14	0.01
Peripheral vision	68.32	55.42	29.2	0

  

	Visual fields			Significance
	Normal	Near normal	Mobility difficulties	
General health	52.13	38.17	42.5	0.184
General vision	55.14	32.83	11.5	0
Ocular pain	53.18	39.4	43	0
Near activities	57.12	28.13	19.25	0.181
Distance activities	57.31	29.43	13.5	0
Social functioning	57.64	25.1	20	0
Mental health	56.87	29.53	19.08	0
Role difficulties	57.29	28.7	15.58	0
Dependency	56.57	30.13	21.5	0
Color vision	54.19	37.23	35.08	0.002
Peripheral vision	57.08	30.77	13.17	0

The reliability study showed a coefficient  $\alpha$  Cronbach ranging from 0.72 to 0.94, with Test/Retest values above 85%.

## 5. Conclusions

The Portuguese version of NEI-VFQ 25 shows comparable results to those obtained with the original version of the questionnaire.

It was the first vision related quality of life questionnaire that has been translated in Portuguese.

It has the advantage of having been translated in several languages.

It has been considered important to have models of evaluation and criteria that can be used internationally.