The Influence of Sociodemographic Characteristics on Vision-Related Quality of Life in Visually Impaired Patients

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Introduction: Vision-related quality of life (VRQOL) describes an individual's overall sense of well-being that is related to the individual's level of visual functioning. [1] Visual functioning is defined by two terms: Functional Vision and Visual Function. [1]**Functional Vision** describes how a person functions in vision-related activities; as opposed to **Visual Function** which describes how the eyes and the visual system function. Functional vision is a broader measure than visual acuity, because it evaluates patients' ability to conduct activities of daily living (e.g., reading, driving, writing, orientation and mobility, and face recognition) for which peripheral vision, contrast sensitivity, color vision and visual acuity are important.[1] Visual function is defined by visual acuity, visual field, contrast sensitivity, color vision, dark adaptation, and stereopsis.[1] Currently, the assessments of these parameters are the most-accepted clinical evaluation of visual function.[2] However they have been shown to be inadequate in explaining poor performance in vision-related activities of daily living among visually impaired patients.

The interactions of several factors such as environmental factors, personal factors, socio-cultural norms, social structure, age, gender, etc,[3] interplay to influence the visually impaired patient's perception of his/her quality of life. Thus, the impact of the degree of visual impairment and associated factors defines the concept of vision-related quality of life. The aim of this study was to determine the influence of sociodemographic factors on the vision-related quality of life among adults who are visually impaired.

Materials and Methods: This was a 6-month prospective cross-sectional study between August 2015 and March 2016 on consecutive adult patients with visual impairment attending the University of Calabar Teaching Hospital (UCTH) Eye Clinic. Ethical approval UCTH/HREC/33/239 for the study was obtained from the UCTH Health Research Ethics Committee. All patients had presenting visual acuity worse than 6/18 in the better eye. VRQOL was assessed by the validated English version 25-item National Eye Institute Visual Functioning Questionnaire (NEI VFQ-25). Original numeric values obtained from the respondent's response are re-coded following the scoring rules in the NEI VFQ-25 manual. All items were scored so that a high score represents better functioning on a 0 to 100 scale. Items within each sub-scale were averaged together to create the 12 sub-scale scores. Hence, scores represent the average for all items in the sub-scale that the respondent answered. The average score of the following subscales: General vision, Near activities, Distance activities, Color vision and Peripheral vision, constituted the visual function (VF) scores. The average score of the following subscales: Social functioning, Mental health, Role difficulties and Dependency, constituted the quality of life (QOL) scores. Sociodemographic characteristics and ocular parameters were also obtained. Sociodemographic characteristics were evaluated based on age, sex, area of residence, marital status, religion, educational attainment, and monthly income. Each characteristic was stratified into groups or levels. Analysis of variance (ANOVA), including Post-hoc analysis was used to evaluate the association between sociodemographic characteristics and VRQOL parameters.

Results: A total of 270 patients were enrolled. After adjustments for category and causes of visual impairment, older age (p< 0.001), rural dwellers (p<0.001), widowhood (p=0.006), and No formal education (p<0.001) were significantly associated with low mean vision function (VF) scores (Table 1). Similarly, older age (p<0.001), rural dwellers (p<0.001), widowhood (p=0.003), and No formal education (p<0.001), were significantly associated with low mean quality of

life (QOL) scores (Table 1). The differences in mean scores of VF and QOL due to religion, sex and monthly income were not statistically significant. **Conclusion:** Besides the degree of visual impairment,the interplay of certain social and demographic factors play a remarkable role in determining the quality of life in visually impaired patients. Therefore, an individualized management plan, including psychosocial therapy is imperative in the care of visually impaired patients. Particular attention should be considered in the

Table 1: Association of visual function and quality of life with socio-demographic characteristics of study participants

Characteristics	Total VF Mean(95% CI)	Test statistics (p-value)	Total QOL Mean(95% CI)	Test statistics (p-value)
Age group(years)				
<20	74.2(59.7-88.7)	ANOVA(0.560)	70.9(53.3-88.4)	ANOVA(0.215)
20-39	80.2(75.5-84.9)	ANOVA(<0.001*)	80.2(75.0-85.4)	ANOVA(<0.001*)
40-59	76.4(72.8-80.0)	ANOVA(0.003*)	79.7(75.6-83.7)	ANOVA(<0.001*)
60-79	71.3(67.2-75.5)	ANOVA(0.062)	72.8(68.1-77.6)	ANOVA(<0.001*)
≥80	54.2(38.3-70.2)	Reference category	44.0(27.4-60.7)	Reference category
Sex				
Male	73.8(70.6-77.0)	Reference category	75.9(72.3-79.4)	Reference category
Female	76.1(72.6-79.6)	T-test(0.337)	76.5(72.5-80.6)	T-test(0.798)
Residence				
Rural	66.8(70.6-77.0)	Reference category	64.9(58.7-71.1)	Reference category
Urban	77.5(75.0-80.1)	T-test(<0.001*)	79.7(76.9-82.5)	T-test(<0.001*)
Marital status				
Single	74.7(69.1-80.3)	Reference category	73.0(67.0-79.1)	Reference category
Married	75.2(72.6-77.7)	ANOVA(1.000)	77.3(74.4-80.2)	ANOVA(0.609)
Widow/widower	13.5(13.5-13.5)	ANOVA(0.006*)	0(0.0-0.0)	ANOVA(0.003*)
Religion				
Christianity	74.7(72.3-77.0)	ANOVA(0.222)	76.0(73.3-78.7)	ANOVA(0.276)
Islam	87.6(75.1-100.0)	Reference category	89.0(69.7-108.2)	Reference category
Education				
None	51.2(37.6-64.9)	Reference category	48.5(33.5-63.5)	Reference category
Primary	62.7(55.5-70.0)	ANOVA(0.385)	64.6(56.8-72.5)	ANOVA(0.101)
Secondary	77.7(74.2-81.3)	ANOVA(<0.001*)	78.2(73.9-82.5)	ANOVA(<0.001*)
Vocational	57.8(37.1-78.9)	ANOVA(1.000)	55.9(31.8-9.9)	ANOVA(1.000)
Tertiary	81.1(78.3-83.9)	ANOVA(<0.001*)	83.3(80.2-86.5)	ANOVA(<0.001*)
Socioeconomic status				
High	80.4(59.7-101.1)	Reference category	85.0(64.0-106.0)	Reference category
Middle	77.1(74.5-79.7)	ANOVA(1.000)	79.0(76.1-82.0)	ANOVA(1.000)
Low	67.3(62.0-72.5)	ANOVA(0.501)	66.5(60.5-72.5)	ANOVA(0.248)

=Statistically significant

management of the following groups: advanced age groups, those of low socioeconomic status, and those with low educational attainment, widows/widowers and rural dwellers, with visual impairment.

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