

Research Article

Impact of Traumatic Visual Loss: A Pilot Study on the Quality of Life of Evisceral Patients

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Abstract

The aim of this study was to assess the health-related quality of life (QOL) of patients with traumatic vision loss, with a view making recommendations for comprehensive patient management. It was a retrospective and prospective study with descriptive and analytical aims carried out in the ophthalmology department of the Cocody University Hospital Center (CHU) in Abidjan, Côte d'Ivoire, over a period of 13 months, from September 1, 2024, to September 30, 2025. The study included nine patient records of individuals followed for traumatic vision loss. Data were collected using a semi-structured questionnaire and the abbreviated version of the World Health Organization's Quality of Life Assessment Scale (WHO-QOL-BREF). The mean age of the patients was 32 ± 13.7 years, with a range of 19 to 50 years. The majority of patients were between 19 and 39 years old (66.7%). Males predominated (7/9 eyes), representing 77.8% of the population, with a sex ratio of 3.5. Patients' mean overall quality of life score was 51.78 ± 10.73 . Patients had significantly lower QoL scores than the general population, especially for the psychological, social, and environmental health domains. The interest lies in the need to systematically include a psychological assessment to ensure comprehensive management.

Keywords

Impact, Quality of Life, Traumatic Vision Loss, Ivory Coast, Sub-Saharan Africa

1. Introduction

Quality of life (QoL) is defined as an individual's physical, emotional, and social well-being [1]. Ocular trauma, particularly eviscerations and wounds of the eyeball, is one of the main causes of partial or total visual loss [2]. Half a million people are blind as a result in developed countries, with 30 to 40% experiencing monocular blindness [3]. Visual impair-

ment and facial deformities resulting from mechanical eye injuries can reduce a patient's quality of life, affecting their social skills, daily life, and professional abilities [4]. Several African studies have focused on post-traumatic blindness, notably that Koffi in Côte d'Ivoire, who reported a prevalence of post-traumatic blindness of 39.5% [5], and 16.92% according

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to Kokki in Cameroon [3]. This loss of vision therefore constitutes a real public health problem. However, few studies in Africa have focused on the quality of life of these patients.

The aim of our work was to evaluate the quality of life of patients with traumatic visual loss in a hospital environment.

2. Methods

2.1. Study Setting, Type, Period of Study and Sampling

This retrospective and prospective descriptive and analytical study was conducted in the ophthalmology department of the Cocody University Hospital Center (CHU) in Abidjan, Côte d'Ivoire, over a period of 13 months, from September 1, 2024, to September 30, 2025. It included nine patient records of individuals followed for traumatic visual loss. Inclusion criteria were: being over 18 years of age. Patients with other facial differences, physical disabilities, or neurological or psychiatric disorders were excluded from the study.

2.2. Patient Selection Method

Patients were interviewed using a questionnaire covering:

General demographic data including sex, marital status, employment status, age, place of residence, education level and economic situation.

The cause of the trauma, the circumstances of its occurrence, the time elapsed since the loss of the eye, the fitting of an ocular prosthesis and the completion of visual rehabilitation.

The questionnaire used to assess quality of life was the World Health Organization Quality of Life Questionnaire (WHOQOLBREF). Quality of life was analyzed by measuring the score for each item on a Likert scale. This questionnaire comprised 26 items across four domains: physical (items 3, 4, 10, 15, 16, 17, and 18), psychological (items 5, 6, 7, 11, 19, and 26), social (items 20, 21, and 22), and environmental (items 8, 9, 12, 13, 14, 23, 24, and 25). For each respondent, the raw score for each dimension was calculated. The score obtained for each dimension was converted to a scale of 0 to 100 according to the standard formula defined by the WHO,

as shown below. TRANSFORMED SCORE = (SKOR4) * (100/16). Based on previous studies using WHOQOL-BREF, the following scores were extracted and applied: score ≤ 45 : Low quality of life; scores between 46 and 65: Moderate quality of life; scores >65 : High quality of life. The scores for these four domains were combined to produce a total quality of life score.

2.3. Data Analysis

Data entry and analysis were performed using SPSS® version 23. Quantitative variables were expressed as mean and standard deviation. Qualitative variables were presented as proportions. The relationships between two variables were assessed using Fisher's exact test, the Mann-Whitney U test, and Spearman's rank correlation coefficient with $p < 0.05$ as the significance level.

2.4. Ethical Considerations

This study based on medical records was approved by the ophthalmology department team at Cocody University Hospital. Data confidentiality was respected. The study protocol was explained in detail to patients. We obtained written informed consent from patients.

2.5. Limitations of the Study

The main limitation is the small sample size, which significantly limits statistical power; this is, in fact, an exploratory study.

3. Results

The internal consistency of the WHOQOL-BREF instrument items was measured using Cronbach's alpha coefficient, which was 0.772 for the questionnaire as a whole. Since a Cronbach's alpha coefficient greater than 0.7 is considered a desirable estimate of reliability, these results indicate good internal consistency for the tested domains.

3.1. Analytical Aspect

Table 1. Socio-demographic and clinical characteristics of patients.

Variables	Number (n)	Percentage (%)
Age range		
[19 and 30 years old]	5	55.6
[31 and 50 years old]	4	44.4
sex		

Variables	Number (n)	Percentage (%)
male	8	88.9
female	1	11.1
Marital status		
Single	6	66.7
Bride	2	22.2
divorcee	1	11.1
Place of residence		
Abidjan	5	55.6
out Abidjan	4	44.4
Level of education		
illiterate	1	11.1
primary	2	22.2
secondary	4	44.4
superior	2	22.2
Patient activities	Staff	Percentage
student	1	11.1
Merchants	2	22.2
craftsmen	4	44.4
carrier	1	11.1
entrepreneur	1	11.1
Unemployment after blindness	Staff	Percentage
Yes	2	22.2
No	7	77.8
laterality		
right eye	2	22.2
left eye	7	77.8
Circumstances of occurrence		
domestic accident	3	33.3
workplace accident	2	22.2
assault	2	22.2
eye infection	2	22.2
Type of trauma		
evisceration	4	44.4
wound of the globe	5	55.6
Visual acuity		
pl -	4	44.4
pl +	5	55.6
Diagnosis at presentation		
endophthalmitis	2	22.2

Variables	Number (n)	Percentage (%)
wound to the eyeball	5	55.6
corneal staphyloma	2	22.2
Time since vision loss		
<6 months	1	11.1
> 6 months	8	88.9
prosthetic fitting		
Yes	2	22.2
No	7	77.8

The quality of life of the men surveyed was, on average, higher than that of the women surveyed. It was lower in cases of divorce and improved with higher levels of education. The higher the subject's level of education, the better their quality of life. Patients under 40 years of age, as well as those wearing ocular prostheses, had a better quality of life. Regarding the type of trauma, eviscerated patients had a higher quality of life

than subjects with blinding eye injuries. Quality of life was more or less similar depending on whether the assessment was performed before or after 6 months (Table 3). None of the patients' baseline characteristics, including age, sex, education level, type of trauma, or time elapsed since eye loss, were significantly associated with baseline quality of life domains.

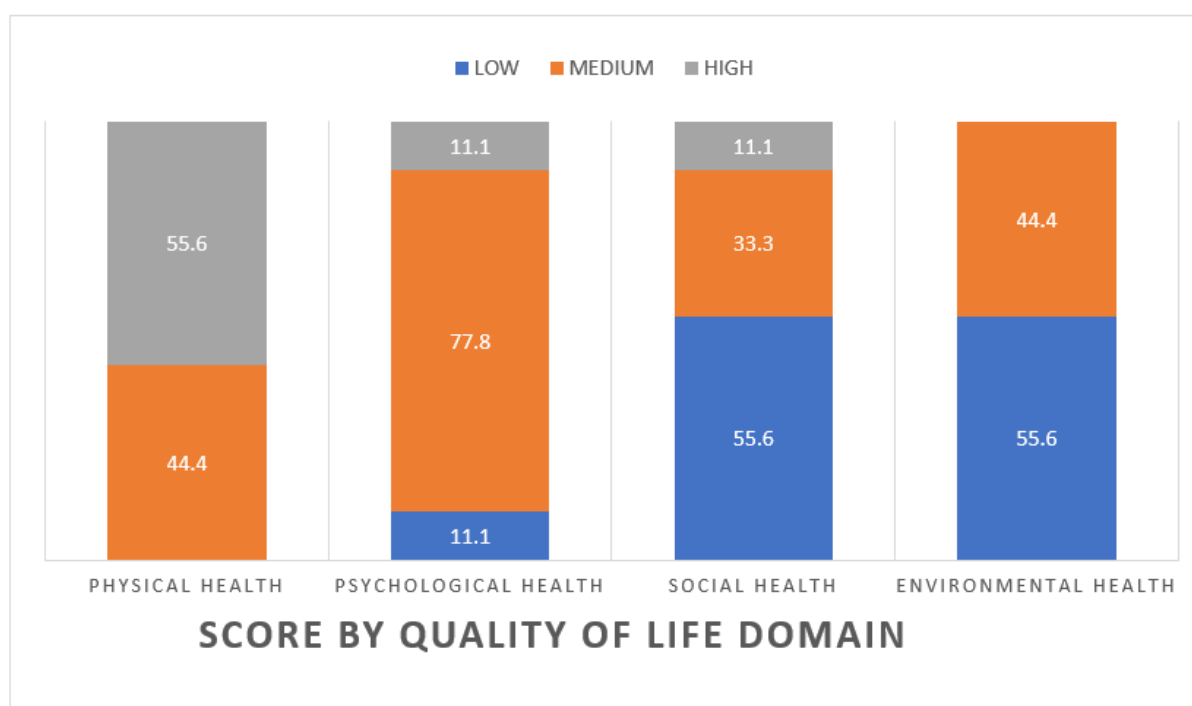


Figure 1. Distribution of patients according to quality of life dimensions.

Table 2. Comparison of average patient quality of life vs. WHO standards.

Domain	Average score	WHO standards	p -value
Physical health	67.4556 ($\pm$ 8.26)	72 ($\pm$ 10)	0.173
Psychological health	52.3122 ($\pm$ 15.8)	65 ($\pm$ 12)	0.014

Domain	Average score	WHO standards	p-value
Health of social relationships	42.5789 (± 15.8)	70 (± 18)	0.003
Environmental health	44.7889 (± 14.3)	75 (± 15)	0.004

Table 3. Correlations between quality of life score and explanatory variables.

		Physical health	Psychological health	Health and Social Services	Environmental health	QOL SCORE	Test value	p-Value
Sex	Male	69.38	57.74	47.61	44.64	54.84	4	0.5
	Female	60.71	33.33	24.98	45.31	41.08		
Marital status	Bachelor	71.42	56.25	49.99	42.71	55.09		
	Bride	64.28	58.33	37.50	59.37	54.87	2.48	0.28
	Divorcee	50.00	16.66	8.30	28.12	25.77		
Level of education	Illiterate	67.85	45.83	66.60	31.25	52.88		
	Primary	71.43	58.33	45.83	35.94	52.88	3.36	0.33
	Secondary	64.28	45.83	33.32	46.09	47.38		
Age range	Superior	69.64	62.50	45.83	57.81	58.94		
	Between 18 and 39 years old	71.42	56.25	49.99	42.71	55.09	5	0.38
	Between 40 and 50 years old	59.52	44.44	27.76	48.95	45.17		
Type of trauma	Evisceration	68.576 68.57	57.50	48.32	48.12	55.62	7	0.55
	Blinding wound of the globe	66.0 66.07	45.83	35.41	40.62	46.98		
Wearing an ocular prosthesis	Yes	69.64	58.33	41.67	57.81	56.86	5	0.66
	No	66.83	50.59	42.84	41.07	50.33		
Time since vision loss	<6 months	64.28	54.16	33.33	59.37	52.78	6	0.66
	> 6 months	67.85	52.08	43.74	42.97	51.66		
Unemployment after blindness	Yes	57.14	35.41	20.82	43.75	39.28	13	0.11
	No	70.40	57.14	48.80	45.09	55.35		

3.2. Socio-demographic and Clinical Aspects

During the study period, nine patients were interviewed at the outpatient ophthalmology department of the Cocody University Hospital for ocular trauma, including eviscerations and

blinding wounds of the globe. The patients' mean age was 32 ± 13.7 years, with a range of 19 to 50 years. The largest age group was 19 to 39 years (66.7%). Males predominated (7/9 eyes), representing 77.8% of the patients, with a male-to-female ratio of 3.5. The majority of patients resided outside Abidjan (55%). Two-thirds of the patients were single, and

44.4% had a secondary education. Craftsmen and traders were the most numerous. Among these patients, two had lost their jobs, and one woman was in the process of divorcing. One-third of our patients had suffered traumatic vision loss during domestic accidents. Left-sided unilateral blindness predominated, accounting for 7 cases (77.8%) (Table 1), and the most common cause was penetrating eye injuries (55.6%). The mean time since eye loss was 7.44 ± 2.18 , and 22.2% of patients were fitted with ocular prostheses. No patients received visual rehabilitation or psychological support. Regarding quality of life, the patients' overall mean quality of life score was 51.78 ± 10.73 . More than half of the patients (55.6%) had low quality of life in terms of social and environmental health. Psychological health was average in 77.8% of cases, and physical health was high (55.6%) (Figure 1). Our patients had significantly lower QoL scores than the general population, especially in the psychological, social and environmental domains (Table 2).

4. Discussion

Severe mechanical eye injuries can cause considerable damage ocular structures, resulting in visual impairment and sometimes removal of the eye [4]. Ocular trauma remains a major cause of low vision and blindness, resulting in disability, impairment, and a reduced quality of life [6]. In our study, traumatic visual loss was found more frequently in young men, which is similar to findings in many other studies [7, 8]. This could be partly explained by the fact that boys engage in more dangerous games, have a more aggressive lifestyle, or fight more frequently than girls. The mean age of the participants was 32 years, indicating that the younger population is more susceptible to ocular trauma. Our results are similar to those reported in Yüksel's study. [8] Patients with vision loss due to ocular trauma suffer not only from visual impairments but also from a deterioration in their social functioning, which can reduce their ability to work. Many of them can no longer work and must change professions or obtain disability status. In our study, two patients lost their jobs, and the only married woman in the cohort was in the process of divorcing. [6] These results show that the quality of life of these individuals is therefore significantly impacted. However, neither sex nor age had a statistically significant correlation with quality of life. The overall mean quality of life score was 51.78 ± 10.73 . Our result was lower than that of Ifeoma in Nigeria (61.10 ± 19.75). In his study, the most frequent causes of visual impairment and blindness were uncorrected refractive errors (73%), followed by cataracts (53%) and glaucoma (37%). Glaucoma was the most frequent cause of blindness, followed by cataracts, while cataracts were the most frequent cause of severe visual impairment [9]. Upon analysis, these were conditions that developed gradually, unlike the sudden visual loss experienced by our patients. In our series, no statistically significant difference was observed between overall quality of life and the type of trauma, whether evisceration or a blinding

wound of the globe. This result can be explained primarily by the limited sample size, which reduces statistical power and prevents the detection of small differences between groups. Furthermore, the psychosocial impact of these two situations is highly likely to be similar: in both cases, the patient experiences significant visual loss associated with impaired body image and a risk of social stigmatization, factors already widely described in the literature as major determinants of quality of life [7]. Several studies have indeed shown that it is not so much the type of ocular lesion that influences quality of life, but rather the severity of the visual loss, the ability to adapt, and the availability of social support [13]. In this instance, our patients were all monocularly blind. They had significantly lower quality of life scores than the general population in all four domains, especially those related to social relationships and the environment. This is consistent with a study conducted in Ghana that showed that visual impairment was associated with a significant decrease in quality of life, with significant reductions in the physical, psychological, social, and environmental domains [10]. The highest average score was in the physical health domain, followed by psychological health, then the environmental domain, and finally social relationships. Although all these patients had monocular blindness, monocular vision led to physical impairments. Our results differ from those of Chotprasert, who observed negative repercussions on the patients' physical and psychological well-being. Indeed, their motor functions were likely to decrease with monocular vision, leading to restrictions in performing daily activities [11]. Furthermore, ocular prostheses have been shown to have a positive impact on psychosocial health [12]. However, we did not find a statistically significant link between wearing a prosthesis and the quality of life domains. When evaluating the different quality of life domains, the environmental domain (44.78 ± 14.3) and the social relationships domain (42.57 ± 15.8) were the most affected. Our results are comparable to those of IFEOMA in Nigeria [9]. This trend can be explained by the fact that most of our patients worked in the informal sector and therefore had limited financial resources. Furthermore, the predominance of young, male subjects, as well as the unaesthetic appearance of their eyes, led to isolation, exclusion, and rejection by women, resulting in dissatisfaction with their sex lives and thus affecting the quality of their social relationships. The eyes are the most visible structure of the face, and their loss leads to psychological vulnerability in patients [13].

From the above, we recommend systematic psychiatric evaluation for all these patients and improved multidisciplinary care, an element sorely lacking in our current practice. Appropriate intervention should be implemented for those with low scores. It is important to note that this study has certain limitations. First, the small sample size may lead to problems such as underrepresentation of patients. The cross-sectional design also prevents us from assessing changes in quality of life over time, particularly after adaptation to an ocular

prosthesis. Furthermore, the use of a self-administered questionnaire may introduce subjectivity bias. These results pave the way for multicenter studies with larger sample sizes, incorporating a longitudinal approach. They also highlight the importance of systematically including quality-of-life assessments and psychological support in the follow-up of patients after traumatic vision loss. Rehabilitation should not be limited to the surgical component (evisceration, ocular prosthesis) but should include psychological support, functional rehabilitation, and structured social support. Multicenter studies, with a larger sample and longitudinal follow-up, are needed to confirm these results and better guide management strategies.

5. Conclusion

This pilot study, although limited by sample size, highlights the significant impact of traumatic vision loss on quality of life, with a predominant impact on social and environmental dimensions. It underscores the urgent need to develop multidisciplinary care strategies that integrate psychological, social, and environmental support. These preliminary results justify the implementation of larger, longitudinal studies to better understand the evolution of quality of life and to identify modifiable factors that can improve the experience of these patients.

Abbreviations

QOL	Quality of Life
CHU	University Hospital Center
WHO-QOL-BREF	World Health Organization's Quality of Life Assessment Scale

Author Contributions

Kouadio Kouao Cedric Romarie: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Validation, Writing – review & editing

Kra Alla N'goran Simeon: Methodology, Validation, Writing – review & editing

Agbohoun Reine Prisca: Methodology, Validation, Writing – review & editing

Konan Manmi Sienou Marguerite Pascaline: Writing – review & editing

Soumahoro Massese: Supervision, Writing – review & editing

Koman Chiatse Ellalie: Supervision, Writing – review & editing

Kouassi-Rebours Aya Colette: Writing – review & editing

N'da Hermine Cynthia: Visualization

Gougou Matthekei Roxane: Data curation

Kouassi Francois Xavier: Supervision, Writing – review & editing

Conflicts of Interest

The authors declare no conflicts of interest.

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