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Indian Journal of Clinical and Experimental Ophthalmology

Journal homepage: www.ijceo.org

Original Research Article

Assessment of knowledge of vision consequences and vision-related quality of life in head injury patients: A cross-sectional study

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Abstract

Background: Head injuries, including traumatic brain injuries (TBIs) and concussions can significantly impact vision and visual pathways, leading to visual symptoms and ocular motor dysfunction in post-concussion individuals due to neurophysiological changes.
Aim and Objectives: The study assesses knowledge about visual consequences of head traumas, evaluates injury severity's impact on vision health, and compares vision health scores and composite VFQ-25 scores.
Materials and Methods: This is a cross-sectional study on patients with head injury seeking care near Chennai, India, over nine months. 200 participants were chosen using specific criteria, with medical professionals gathering data on their knowledge post-admission. A NEI – VFQ 25 questionnaire was administered one month after hospital discharge.
Results: The mean score of knowledge among the participants regarding the awareness of vision consequences post head injury was found to be of average, 9.49 (max score: 18). The highest mean score was secured by health care professionals (14.74), followed by the participants with postgraduate level education status (14.61). Age significantly influenced VRQoL, with severe head injury severity resulting in a mean score of nearly half that of mild participants in all components. The mean total score of NEI VFQ-25 is as follows, Mild injury – 74.94 ±13.57; Moderate injury – 66.40 ±16.93; Severe injury – 31.69 ±15.79.
Conclusion: The research shows a lack of public awareness about vision-related issues after head injuries, with age significantly affecting quality of life. The severity of the injury significantly impacts VRQoL, necessitating regular ophthalmic assessments in post-injury care plans and patient follow-up consultations.

Keywords: NEI VFQ-25, Vision problems post TBI, Head injury, VRQOL, Vision knowledge.

Received: 27-11-2024; **Accepted:** 05-05-2025; **Available Online**: 13-09-2025

1. Introduction

Head injuries frequently occur as a result of a wide range of accidents, including but not limited to falls and incidents during sports activities. These injuries can give rise to a diverse set of psychological, motor, or developmental symptoms, complicating diagnosis and treatment.[1] Vision problems after a traumatic brain injury often involve issues with binocular vision due to impaired visual processing. Common symptoms include double vision, blurred sight, dizziness, difficulty judging movement, and hallucination-like effects.[2] And those with eye movement problems, such as trouble with vergence, saccades, or smooth pursuits, may indicate early TBI.[3] Recent studies have shown that the worldwide prevalence of traumatic brain injury (TBI) stands at a staggering 69 million cases annually (Confidence Interval, 64 -74 million).[4] In this study we have included individuals with a health care background as well to compare them against the rest to evaluate the knowledge differences.

Head injuries, including traumatic brain injuries (TBIs) and concussions, can have significant impacts on vision and visual pathways. Research has shown the effects of head injuries on various aspects of vision and ocular function. Visual symptoms and ocular motor dysfunction frequently manifest in individuals post-concussion owing to

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https://doi.org/10.18231/j.ijceo.v.11.i.3.22

neurophysiological alterations in the extensively interconnected visual networks of the brain.[5] The optic nerve often gets damaged after a traumatic brain injury, which can cause vision problems. Damage can also affect the eye muscles that control how your pupils react to light, leading to trouble with normal eye function.[6] The optic nerve trauma shows signs of optic nerve degeneration, resultant functional visual impairment, and a gradual loss of retinal ganglion cells that accrue over time. These post-concussive visual impairments can significantly impact an individual's quality of life.[7]

Even the modest traumatic brain injury (TBI) can result in visual dysfunctions and symptoms, even if visual acuity remains intact and hence all people who have suffered a TBI or concussion should be screened for eye problems and visual impairment.[8] As, TBI have shown to cause visual field defects which did not relate to the severity of their injury and also affecting visuospatial skills and visuomotor speed over a period of months.[9] Non-invasive treatments like vision therapy helps with focus, alignment, eye movement, and light sensitivity. It can be used alone or with prism glasses or tinted lenses. Other treatments like physical or occupational therapy often need vision to be steady first. Many people with brain injuries see real progress with these eye therapies.[10] Hence, establishing a comprehensive vision rehabilitation plan that incorporates tailored vision therapy can achieve significant improvements in resolving visual dysfunction associated with TBI, thereby enhancing overall quality of life and functional abilities for individuals affected by this condition.[8]

Head injuries can cause vision problems, so people who've had one need the right care and support. This study checks how much people with head injuries know about possible eye symptoms. It uses a set questionnaire and the NEI-VFQ 25 to see how these symptoms affect their lives. The goal is to spot gaps in knowledge and help improve care for those dealing with vision issues after a head injury.

2. Study Objectives

1. Evaluate the level of knowledge among people who have had head traumas regarding the possibility of visual consequences.
2. Assess the impact of severity of head injury on their vision health status.
3. Compare the various components of Vision health score and composite VFQ-25 score among the participants following a head injury.

3. Materials and Methods

This is a cross-sectional study with its target population as patients with head injury seeking medical care at a tertiary care hospital and its associated urban / rural health centres in the outskirts of Chennai, India for a period of nine months. The sample size was calculated and rounded off at 200. By Purposive sampling method a total of 200 participants with head injury and are seeking treatment at our emergency centre or OPDs will be selected based on these criteria.

3.1. Inclusion criteria

1. Individuals aged 18 years and above, who have experienced a head injury and are seeking medical care and consent to participate in the study.

3.2. Exclusion criteria

1. Individuals with pre-existing vision impairments that are unrelated to the head injury, as these impairments could confound the assessment of head injury-related visual symptoms.
2. Individuals with substance abuse and psychiatric conditions that could affect their ability to comprehend and respond to the questionnaire in a consistent manner.
3. Individuals who have sustained direct orbital injury / eye injury along with TBI

3.3. Study procedure

The study began after obtaining the necessary approvals from the Institution and its Ethical committee. The first part of data collection consisted of their basic sociodemographic profiles, and questions to assess their knowledge regarding the possibilities of visual consequences after a head injury. The knowledge score was evaluated with a questionnaire consisting of 18 yes or no questions pre-tested with a pilot study and was collected directly by medical professionals from the patients after their initial first aid was completed in the emergency centre. Patients with severe head injury or unconscious patients were approached later. The scoring was one point for every correct question making the possible score of least – 0 and highest – 18.

The second part of the questionnaire consisted of the NEI – VFQ 25 (National Eye Institute – Visual Functioning Questionnaire) which were collected one month from their date of discharge from hospital to negate the obvious differences in score and give one month time for all participants to be in their home environment before measuring their vision related quality of life. The NEI-VFQ is a valuable tool for assessing vision-related quality of life in ophthalmic research and clinical practice. Its widespread use and validation across various eye conditions make it a reliable choice for healthcare providers as it has shown to be responsive to clinically significant changes in vision and comparison between research is feasible as well, as the score is generalisable.[11] This one month period was selected to focus on early recovery phase and to minimize loss to follow-up, while we wanted to give the participants enough time to transition back into their daily life activities to measure VRQOL. The severity of the head injury was determined by the study physician based on the guidelines of The American Congress of Rehabilitation Medicine.[12]

3.4. Statistical analysis

The data collected was arranged in Microsoft Excel (Office 16) and then coded and analyzed using SPSS v.26. The descriptives were tabulated and the mean score comparison between the subgroups were done using the tests, Independent T test and ANOVA, as the data distribution of the various component scores were found to be normal. Friedman test was used to compare and assess significant differences between domain scores of patients.

4. Results

The sociodemographic details of the participants are tabulated in the above **Table 1**. We find a majority of the participants in the age group of 45 and below, Males were slightly higher in number than the female participants (by 10%). About 80% of the participants had a minimum educational qualification of at least completing higher secondary school. Around 15% were employed within the healthcare sector. Majority hailed from the urban areas (57%). Nearly half (48%) of the participants experienced moderate to severe head injuries.

The knowledge score comparison revealed statistically significant differences between the 45 & below and Above 45 age groups, with younger groups scoring better. Similar differences were found with their education level, the higher the education the higher their average score. Students and participants in the professional fields scored better. Participants who were associated with the health care field scored much higher than those who didn't. Participants from urban areas also seemed to have a better understanding of visual consequences following head injury. Gender and the severity of the head injury didn't show any significant differences between the scores (**Table 2**).

Significant differences were seen between the scores in all the components of the VFQ-25 among the participants based on their head injury severity (**Table 3**). The mean differences indicate a more significant difference then what age has played in affecting the vision. The scores of those with severe head injury were found to be consistently at an average of 30s.

Table 3 shows how the components of the VRQOL to assess vision functioning differs between the severity of head injury. The distance between the mild, moderate and severe head injury lines tells us that there is an association between severity of head injury and VRQOL. However, the fall of VRQOL score of those who suffered a severe head injury is exponentially greater than that those who suffered mild and moderate injury.

Retrospectively we collected the data relating to their visual symptoms and clinical findings following examination for further analysis with the VRQoL domain scores. It was noted that blurred vision, photophobia, glare and vision loss were the most common symptoms, and accommodative insufficiency was the commonest clinical finding.

Table 1: The sociodemographics of the participants (n=200)

Groups	Sub-groups	Frequency	Percentage
Age	45 & Below	131	65.5
	Above 45	69	34.5
Gender	Male	110	55.0
	Female	90	45.0
Education (Highest Level)	Not completed school	41	20.5
	Completed school	24	12.0
	Diploma / Similar courses	33	16.5
	Undergraduate level	69	34.5
	Postgraduate level	33	16.5
Occupation	Unemployed	23	11.5
	Student	21	10.5
	Home maker / Retired	39	19.5
	Skilled Workers	40	20.0
	Professionals	77	38.5
Health Care Field	No	169	84.5
	Yes	31	15.5
Locality	Urban	114	57.0
	Rural	86	43.0
Severity of Head Injury	Mild	104	52.0
	Moderate	62	31.0
	Severe	34	17.0

Table 2: Comparison of Knowledge scores within the subgroups of socio-demographics among the participants

	Knowledge Mean Score = 9.49 ±4.22			
Group	**Sub-groups**	**Mean**	**SD**	**p-value**
Age	45 & Below	10.38	±3.9	< **0.001**
	Above 45	7.80	±4.3	
Gender	Male	9.44	±4.3	0.843
	Female	9.56	±4.1	
Education	Not completed school	5.93	±2.9	< **0.001**
	Completed school	7.17	±3.7	
	Diploma / Similar courses	8.09	±2.9	
	Undergraduate level	10.64	±2.9	
	Postgraduate level	14.61	±3.2	
Occupation	Unemployed	6.52	±3.7	< **0.001**
	Student	11.43	±2.9	
	Home maker / Retired	8.62	±3.3	
	Skilled Workers	6.35	±3.2	
	Professionals	11.92	±3.8	
Health Care Field	No	8.53	±3.6	< **0.001**
	Yes	14.74	±3.2	
Locality	Urban	11.18	±4.0	< **0.001**
	Rural	7.26	±3.4	
Severity of Head Injury	Mild	9.09	±4.5	0.196
	Moderate	9.56	±3.7	
	Severe	10.59	±4.1	

ANOVA and Independent t-test; significant p-value < 0.05
[Minimum possible score – 0, Maximum possible score – 18]

Table 3: Comparison of the mean scores of VFQ–25 components among participants based on their severity of head injury

Score	**Head Injury**	**Mean**	**Std. Deviation**	p-value
General Health	Mild	60.58	±21.95	< 0.001
	Moderate	43.55	±22.60	
	Severe	25.74	±20.86	
General Vision	Mild	71.35	±16.43	< 0.001
	Moderate	61.61	±16.32	
	Severe	48.24	±12.18	
Ocular Pain	Mild	68.75	±18.27	< 0.001
	Moderate	59.27	±17.67	
	Severe	33.46	±16.78	
Near Activities	Mild	80.37	±19.60	< 0.001
	Moderate	68.41	±25.07	
	Severe	31.13	±23.51	
Distance Activities	Mild	79.81	±21.59	< 0.001
	Moderate	71.24	±22.06	
	Severe	29.66	±17.55	
Colour Vision	Mild	87.74	±20.01	< 0.001
	Moderate	83.47	±25.58	
	Severe	47.73	±31.48	
Peripheral Vision	Mild	88.46	±17.39	< 0.001
	Moderate	78.23	±24.58	
	Severe	41.18	±26.03	

Table 3 Continued…				
Driving	Mild	73.22	±23.66	< 0.001
	Moderate	62.49	±28.95	
	Severe	20.58	±25.53	
Vision Related - Social Functioning	Mild	83.77	±22.02	< 0.001
	Moderate	77.82	±24.32	
	Severe	34.19	±26.70	
Vision Related - Mental Health	Mild	70.31	±19.91	< 0.001
	Moderate	62.10	±22.97	
	Severe	31.43	±19.79	
Vision Related - Role Difficulties	Mild	65.87	±27.28	< 0.001
	Moderate	57.26	±22.47	
	Severe	27.21	±14.59	
Vision Related - Dependency	Mild	76.04	±18.39	< 0.001
	Moderate	67.07	±22.40	
	Severe	30.88	±21.47	
Total Score	Mild	74.94	±13.57	< 0.001
	Moderate	66.40	±16.93	
	Severe	31.69	±15.79	

ANOVA test, significant p-value < 0.05

Table 4: The symptoms and clinical findings of the participants

Groups	Sub-groups	Frequency	Percentage
Symptoms (N = 133)#	Blurred Vision	29	11.3
	Double Vision	19	7.4
	Photophobia	30	11.7
	Colour Vision Defects	10	3.9
	Glare	37	14.4
	Diminished Central Vision/ Vison Loss	27	10.5
	Night Vision Defects	4	1.6
	Flashes & Floaters	13	5.1
	Peripheral Vision Defects	32	12.5
	Eye Pain	22	8.6
	Dry Eyes	34	13.2
	Total	257*	100.0
Clinical Findings (N = 53)#	Accommodative Insufficiency +/ - Convergence deficit	21	25.6
	Visual Field Defects	13	15.9
	Retinal Pathologies	9	11.0
	Optic Nerve Defects	13	15.9
	Optic Nerve Abnormalities	10	12.2
	Pupillary Abnormalities	7	8.5
	Visual Field Defects	9	11.0
	Total	82	100.0

* - The frequency is more than then the actual subgroup sample size as there were multiple symptoms reported by some of the patients / multiple clinical findings.

- The others did not report any symptoms / had any findings / missing data

Table 5: Distribution of signs & symptoms of patients between severity of head injury

Item Name	Severity of Head Injury		
	Mild	Moderate	Severe
Visual Sensory Symptoms			
Blurred Vision	15	9	5
	28.3%	19.1%	15.2%
Double Vision	9	6	4
	17.0%	12.8%	12.1%
Diminished Central Vision/ Vison Loss	1	4	22
	1.9%	8.5%	66.7%
Peripheral Vision Defects	11	7	14
	20.8%	14.9%	42.4%
Night Vision Defects	1	3	0
	1.9%	6.4%	0.0%
Colour Vision Defects	1	3	6
	1.9%	6.4%	18.2%
Flashes & Floaters	1	2	10
	1.9%	4.3%	30.3%
Visual Discomfort Symptoms			
Glare	13	19	5
	24.5%	40.4%	15.2%
Photophobia	17	7	6
	32.1%	14.9%	18.2%
Eye Pain	1	5	16
	1.9%	10.6%	48.5%
Dry Eyes	21	9	4
	39.6%	19.1%	12.1%
Visual Findings			
Accommodative Insufficiency +/ - Convergence deficit	9	9	3
	75.0%	45.0%	14.3%
Retinal Pathologies	0	2	7
	0.0%	10.0%	33.3%
Optic Nerve Abnormalities	1	2	10
	8.3%	10.0%	47.6%
Visual Field Defects	1	7	5
	8.3%	35.0%	23.8%
Cranial Nerve Palsies	2	3	5
	16.7%	15.0%	23.8%
Pupillary Abnormalities	2	2	3
	16.7%	10.0%	14.3%
Gaze & Eye Movements Disorders	2	2	5
	16.7%	10.0%	23.8%

Table 6: Comparison of domain scores between the visual discomfort symptoms

Domain	Glare	Photophobia	Eye Pain	Dry Eyes
General Vision	40.00	60.00	40.00	60.00
Ocular Pain	37.50	62.50	31.25	62.50
Near Activities	41.67	66.67	37.50	75.00
Distance Activities	50.00	75.00	41.67	75.00
Social Functioning	62.50	62.50	62.50	81.25
Mental Health	50.00	68.75	31.25	59.38
Role Difficulties	50.00	50.00	25.00	50.00
Dependency	66.67	75.00	29.17	62.50
Driving	16.67	62.50	12.50	75.00
Colour Vision	100.00	75.00	25.00	87.50

Table 6 Continued…				
Peripheral Vision	75.00	87.50	50.00	75.00
Total Score	51.36	65.46	35.74	67.29
p-value	< .001	< .001	.001	< .001

Friedman's Test; Significant if p-value < 0.05; (Median Scores ≤ 50 are marked bold)

Table 7: Comparison of domain scores between the Visual sensory symptoms

Domain	Blurred Vision	Double Vision	Diminished Central Vision	Peripheral Vision Defects
General Vision	60.00	60.00	40.00	40.00
Ocular Pain	50.00	62.50	25.00	37.50
Near Activities	50.00	75.00	25.00	33.33
Distance Activities	70.84	75.00	33.33	41.67
Social Functioning	75.00	93.75	50.00	50.00
Mental Health	50.00	43.75	25.00	31.25
Role Difficulties	50.00	43.75	25.00	25.00
Dependency	62.50	58.33	25.00	25.00
Driving	54.17	75.00	25.00	25.00
Colour Vision	100.00	100.00	25.00	25.00
Peripheral Vision	75.00	75.00	25.00	25.00
Total Score	56.52	67.29	31.33	33.37
p-value	< .001	< .001	< .001	< .001

Friedman's Test; Significant if p-value < 0.05; (Median Scores ≤ 50 are marked bold)

From the **Table 5**) showing the distribution of signs and symptoms, we find that blurred vision, double vision, photophobia and dry eyes were the most common symptoms associated with mild TBIs. While glare was more commonly seen in moderate TBIs and (Eye pain) ophthalmalgia, diminished central vision and peripheral vision defects were the most prevalent in severe TBIs.

Accommodative Insufficiency, with or without convergence deficit were commonly seen in mild and moderate TBIs which could be the cause of symptoms like blurred vision, photophobia and glare more commonly presenting in these patients. Along with these findings, visual field defects were also commonly noted in moderated TBIs. Retinal pathologies (Traumatic RD, Vitreous haemorrhage, Commotio retinae, macular edema, etc.), Optic nerve abnormalities (TON, Disc pallor, Papilledema, Optic nerve sheath haemorrhage, etc.), and Cranial nerve palsies were noted more in severe TBI patients.

Median domain scores varied by signs and symptoms. Only some domains were affected a lot. Scores at or below 50 (shown in bold) point to those most affected. From table 6, there is evidence of the (visual discomfort) symptoms glare and eye pain affecting VRQoL domains the most. From **Table 7**, the visual sensory symptoms that affected the total VRQoL most were central and peripheral defects. Mental health and role difficulties domain scores was also particularly low in these groups. Colour and Night vision defects along with flashes and floaters were found in only a small number of participants (<15) making the comparison findings less reliable and accurate, hence, not included.

5. Discussion

Through this study we tried to evaluate the knowledge of the public on the possibility of vision consequences after a head injury and how their severity of head injury affects their vision related quality of life. Few studies cover this topic, and this is the first to assess vision-related quality of life in the general population after head injury. Most participants (65.5%) with head injuries were under 45, and a slightly higher number were men. We also grouped people by education and job. About 15% worked or studied in healthcare. We used the American Congress of Rehabilitation Medicine guidelines to classify injury severity.[12] 17% of the participants suffered severe head injury, 31% moderate head injury and 52% mild head injury (**Table 1**).

The average knowledge score was 9.49 out of a possible 18, which is considered average and shows a need for better public awareness. Younger age group scored higher and there wasn't any significant difference between scores of men and women. Education had a strong effect: those with higher education scored 14.61, while those with the lowest education scored 5.93. Students and professionals did better than the rest, with healthcare workers scoring highest at 14.74. Urban residents scored better than those in rural or suburban areas (**Table 2**).

The VRQOL was measured using the NEI VFQ – 25 Questionnaire and though age played a significant role in

affecting the VRQOL we found the difference small compared to the severity of head injury. Besides, Ryan Bulson et al.,[13] and Goodrich G L et al., through their research showed that while many reported vision problems after TBI, not all had measurable vision loss.[14] Issues like eye pain, near activities, driving, and dependency were found in both younger and older groups, but the differences weren't strong. It was evident that Age alone didn't explain lower vision-related quality of life in the group.

People with severe head injuries have much lower VRQOL scores than those with mild or moderate injuries. This lines up with research by Merezhinskaya N et al.,[15] who found more visual field problems after head injuries, though they didn't measure how these issues impact daily life. The biggest gaps between mild and severe injuries showed up in driving, near and distance activities, social functioning, and dependency. On average, scores for the severe group were much lower, especially for driving, even after removing those who'd already stopped driving before their injury. This signifies that driving is the most affected in all the participants combined (43.12 ± 38.7), followed by role difficulties (56.63 ±27.7) and ocular pain (59.81 ±21.8). The least affected component among all the participants together was colour vision (79.77 ±27.9) and peripheral vision (77.25 ±27.2). The total mean score difference between mild and moderate head injury patients was 8.54, whereas the difference between moderate and severe head injury was much higher at 34.71 (**Table 3**).

The decrease in the VRQOL score shows that head injuries often harm vision, even if the eyes aren't hurt directly. This impact is associated significantly with the severity of the injury. A study done by Lemke S et al.,[16] on blast induced traumatic brain injury subjects scored significantly less in the NEI VFQ–25 questionnaire. Similarly, in another study by Sharma G on those with orbital fractures, the vision quality of life was found to be significantly decreased post trauma.[17] Their scores were even lesser when direct orbital trauma was taken into consideration, over 49% scored less than 25 in the NEI VFQ–25 questionnaire. But their study included war veterans and people with more severe injuries, and they followed participants for six to twelve months, whereas we assessed after one month. Hellerstein LF et al.[18] found that even mild TBI can affect vision. They recommend early visual exams to spot issues and start treatment, which can help quality of life. Fox SM et al.[8] and Mahasweta Das et al.[19] highlight the need for eye exams after head injuries and call for more studies on vision problems in these patients.

Blurred vision, double vision, glare and photophobia were seen more commonly in lower severities while vision defects were much higher in severe head injuries. On examination retinal pathologies and optic nerve abnormalities were more prevalent in severe head injuries being the reason behind significant decrease in VRQOL (**Table 5**). The analysis of median domain scores for each symptom revealed notable differences. However, only a few domains were meaningfully affected. Eye pain and Glare were symptoms that seemed to affect VRQOL the most (**Table 6**). Blurred vision had the strongest effects on ocular pain, near activities, mental health, and role difficulties. Double vision, on the other hand, mostly affected mental health and role difficulties (**Table 7**). Miin R et al.,[20] and Preeti G et al.,[21] are on par with this finding from their research as well and the latter also tell us that these visual symptoms can have an effect on vision related mental health and social functioning like role difficulties. Glare had a broader influence, affecting general vision, ocular pain, near and distant activities, mental health, role difficulties, and driving.

People with vision loss or field defects had median scores under 50 in all areas. Those with eye pain, glare, or field defects scored lowest for general vision. Driving scores were also much lower, showing how these symptoms affect daily life (**Table 7**). Petzold A[22] and Plant G T., and Babizhayev M A,[23] give reasons to how driving can be affected the most by these symptoms as vision is a key part of driving.

People with eye pain and vision loss after a head injury report lower quality of life and more mental health problems than those without these symptoms. They often need more support, which reduces independence and affects mood. Even without clear trauma to the eye, people with head injuries should be monitored for possible eye problems. Early eye exams and treatment can protect both vision and well-being. Education on early symptoms helps patients seek care sooner. A team approach, including clear care plans and early therapies like vision exercises and counselling, can improve daily function and independence.

6. Limitations

1. As these patients were recruited from emergency centres, ICUs and other OPDs a proper visual examination could not be done to assess for the problems affecting the VRQOL.
2. Lack of a comparative group (without head injury) undertaking the same questionnaire to assess how much of the vision problems and vision related quality of life is affected by head injury alone as a factor.
3. The data relating to their vision related symptoms were gathered retrospectively which amounted to some missing data.

7. Conclusion

Our research shows that many patients who come to emergency departments due to head injuries lack awareness about potential vision-related problems that may follow. This gap in knowledge can have serious implications. The severity of a head injury plays a critical role in determining the vision-related quality of Life (VRQOL). People who suffer from

severe head trauma are at a higher risk of experiencing significant declines in their VRQOL.

It was evident that those with severe heads injuries (based on the guidelines of The American Congress of Rehabilitation Medicine) have their VRQOL affected about five times that of those who sustained moderate head injuries when compared with the VRQOL score of those with only a mild head injury. Central and peripheral vision defects both significantly reduce vision-related quality of life (VRQOL).

8. Recommendations

1. Patients must undergo an ophthalmological evaluation post their traumatic brain injury irrespective of its severity as this helps catch and treat vision problems.
2. Posters showing the various vision complications that can arise after a head injury, can be posted at Accident and Emergency centres of hospitals.
3. Giving patients clear information—such as booklets or videos—at the hospital or during follow-up helps them understand possible vision changes and manage recovery.
4. Before discharge, patients should receive simple advice about eye care, and ongoing education for patients and caregivers supports long-term needs.
5. New policies in hospitals can be formed by ophthalmologists to help improve the poor VRQOL which is seen following severe head injuries.

9. Source of Funding

None.

10. Conflicts of Interest

None.

11. Ethical Approval

Ethical No.: IHEC-II/0457/23.

12. Acknowledgement

None.

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Cite this article: Poornamuki S, Gnaneswaran P, Matheen AM, Guttikonda S, Thirunavukkarasu P. Assessment of knowledge of vision consequences and vision-related quality of life in head injury patients; a cross-sectional study. *Indian J Clin Exp Ophthalmol*. 2025;11(3):499–507.