

Original Article

Cross Sectional Study on Well-Being and Coping Strategies of Low Vision Patients Visiting Al-Shifa Eye Trust Hospital, Pakistan

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Conflict of Interest: None.

Sadat A., et al. (2024). 4(1): DOI: <https://doi.org/10.61919/jhrr.v4i1.625>

ABSTRACT

Background: Visual impairment significantly impacts individuals' lives, affecting their ability to perform daily activities and influencing their emotional well-being. The Global Burden of Disease study highlights vision impairment as a leading cause of disability worldwide, necessitating a deeper understanding of its impacts and the coping strategies employed by those affected.

Objective: This study aimed to assess the functional and emotional impacts of visual impairment on patients' well-being and explore the coping strategies used by individuals with low vision. The association between the severity of visual impairment and its impacts, alongside the effectiveness of various coping mechanisms, was examined.

Methods: A cross-sectional study was conducted in the Low Vision Department of a Tertiary Eye Care Hospital over six months. A total of 400 participants diagnosed with low vision were recruited through internal and external referrals. Data were collected using the Impact of Visual Impairment (IVI) tool and the Coping Strategy Indicator (CSI), alongside demographic information. The IVI tool assessed functional and emotional well-being, while the CSI evaluated the coping strategies employed. Statistical analyses were performed using SPSS version 25, focusing on mean scores and the significance of differences across demographic and clinical variables.

Results: The study found that the severity of visual impairment was significantly associated with worse functional (Mean±SD: 28.33±14.86) and emotional (Mean±SD: 14.92±7.14) well-being scores ($P<0.001$). Participants over 30 years and those residing in rural areas experienced a greater impact of visual impairment. Notably, employment status significantly correlated with the degree of impact, with unemployed individuals reporting higher functional and emotional distress. Avoidant coping strategies were linked with greater emotional distress, while problem-solving and seeking social support showed a mixed impact on patients' well-being.

Conclusion: The severity of visual impairment adversely affects both the functional abilities and emotional well-being of individuals, with avoidant coping strategies exacerbating these impacts. Encouraging active coping mechanisms and enhancing support systems could mitigate the negative effects of visual impairment on patients' lives. These findings underscore the need for holistic approaches in the care and support of individuals with low vision.

Keywords: Visual impairment, Low vision, Coping strategies, Functional well-being, Emotional well-being, Impact of visual impairment, Visual acuity, Quality of life.

INTRODUCTION

Visual impairment, characterized by vision loss that cannot be ameliorated through refractive correction, medication, or surgery, stands as a significant global health concern, impacting an individual's ability to efficiently perform daily activities and significantly affecting functional and emotional well-being (1). The Global Burden of Disease 2017 report underscored vision impairment and blindness as the third leading cause of impairment worldwide, with an alarming 1.34 billion individuals affected (3). The prevalence of these conditions is particularly pronounced in developing countries, where over 90% of those affected reside (4). In the context of South Asia in 2015, low vision and blindness affected 61.19 million and 11.76 million individuals respectively, positioning Pakistan as a country with a considerable burden of vision loss following Bangladesh and India (5,6).

The impact of visual impairment extends significantly into the quality of life of the affected individuals, measured through the vision-related quality of life (VRQoL) metrics. These metrics assess the influence of visual impairment on daily functioning, social relations, and emotional health, which collectively contribute to the overall well-being of individuals (2). Persons with visual impairments often experience diminished activity levels, hindering their independence in daily living activities such as mobility, reading, earning, and personal care. Consequently, their social relationships and emotional well-being are adversely affected, exacerbating feelings of stress and depression (7). The constant stressor of activity limitations and the fear of dependency often lead to emotional distress, a condition more frequently encountered than depression, necessitating diverse treatment modalities (8).

Addressing these challenges, coping strategies emerge as pivotal in mitigating the effects of low vision. The Lazarus and Folkman Stress and Coping Model delineates coping strategies into two primary categories: problem-focused strategies aimed at addressing the stressor, such as loss of vision function, and emotion-focused strategies aimed at altering the emotional response to the stressor (10). Similarly, Suls and Fletcher's differentiation between approach coping, which confronts the stressor and its emotional consequences, and avoidant coping, which diverts attention away from the stressor, underscores the varied approaches individuals may adopt in managing their condition (11). Such coping mechanisms significantly affect the adaptation process, influencing the maintenance of independence and management of emotional challenges faced by low vision patients. Specifically, problem-focused coping strategies, including the use of assistive devices, learning mobility and orientation techniques, and environment modification, have shown efficacy in enhancing functional independence (12). Conversely, avoidant coping strategies may exacerbate emotional distress, while seeking social support and engaging in emotion-focused coping can positively affect emotional well-being (13).

The provision of low vision services, representing a beacon of hope for patients, necessitates a holistic approach that spans across all life facets of a person with low vision. A multidisciplinary approach that integrates psychosocial factors with medical and physiological considerations is imperative for understanding and aiding individuals with visual impairments. By exploring the challenging visual experiences and coping strategies of those with low vision, healthcare professionals can develop interventions to improve their quality of life (14-15). This study, therefore, seeks to examine the impact of visual impairment on the well-being of low vision patients, explore the coping strategies employed, and assess the relationship between these coping strategies and the overall impact of visual impairment on the patients' lives. Through a comprehensive understanding of these dynamics, the study aims to provide evidence-based insights for enhancing low vision interventions and improving the efficacy of daily living activities for this population.

MATERIAL AND METHODS

In a rigorous investigation conducted at the Low Vision Department of a Tertiary Eye Care Hospital, a cross-sectional study spanned six months from October 2021 to March 2022. This department, known for its comprehensive rehabilitative eye care services, offers a variety of aids including optical devices such as telescopes and magnifiers, electronic gadgets like CCTV and portable magnifiers, and non-optical aids including writing and communication tools, relative size adjustments, and typoscopes. Additional services encompass counseling, orientation and mobility training, and recreational guidance, all designed to support the multifaceted needs of individuals with low vision. Ethical compliance was a paramount consideration, adhering strictly to the Declaration of Helsinki. Ethical approval for this study was granted by the Ethical Review Board and the hospital's administration, ensuring that all procedures were conducted with the highest ethical standards. Participants were recruited following a detailed process of obtaining verbal informed consent, during which they were fully briefed about the research's objectives, methodologies, and their freedom to withdraw at any time without repercussions.

The study targeted a sample size determined to be 376 participants through the WHO sample size calculator, aiming to estimate the population mean. To account for potential non-responses and missing data, the final sample size was adjusted to 380. Eligibility criteria included internal and externally referred diagnosed low vision cases aged 16 years and above, with best corrected visual acuity below 0.5 log MAR in the better eye, in alignment with the ICD-10 classification. Visual acuity was evaluated using a standard ETDRS log MAR chart under appropriate lighting conditions (107 lux).

Data collection employed two primary instruments: the Impact of Visual Impairment (IVI) tool and the Coping Strategy Indicator (CSI). The IVI tool, developed by the Center for Eye Research Australia, is a 28-item scale designed to assess the ramifications of visual impairment on individuals' well-being, segmented into functional and emotional well-being aspects. This tool not only evaluates the interference of visual impairment in daily activities but also its emotional toll on individuals, utilizing a 4-point Likert scale for responses. Adaptations were made to tailor the tool to the local context. The CSI, on the other hand, measures the employment of three coping strategies: problem-solving, seeking social support, and avoidance, through a 33-item questionnaire, also rated on a 3-point Likert scale. The reliability of these tools was confirmed through pilot testing, yielding Cronbach's alpha coefficients of 0.914 for the IVI and 0.774 for the CSI, indicating high reliability.

Data analysis was conducted using SPSS version 25, adhering to standard statistical methodologies to evaluate the collected data. The study meticulously compiled socio-demographic profiles, medical histories, and vision-related expectations of the participants, alongside their coping strategies and the impact of visual impairment on their quality of life. Through this comprehensive methodology, the research aimed to elucidate the intricate relationship between coping mechanisms and the well-being of individuals with low vision, contributing valuable insights to the field of rehabilitative eye care.

RESULTS

In a comprehensive study involving 400 participants, the investigation into the impacts of visual impairment revealed significant variances across several dimensions of visual functionality and emotional well-being, as delineated in Tables 1 and 2. The mean functional impact score for all subjects was 28.33 (± 14.86), with the emotional impact score being slightly lower at 14.92 (± 7.14). A stratified analysis of visual acuity showed a graded increase in both functional and emotional scores as the severity of vision loss increased, indicating a profound impact on individuals' lives. For instance, participants with moderate visual impairment (0.5 to 1.0 logMAR) reported lower mean functional (22.23 \pm 12.44) and emotional (13.33 \pm 7.23) impact scores compared to those classified as having no light perception (npl), who exhibited the highest scores (52.66 \pm 8.23 for functional and 23.66 \pm 0.81 for emotional impacts, respectively), all of which were statistically significant ($P < 0.001$).

When examining the ICD_10 classification of visual impairment, distinct patterns emerged. Individuals with binocular blindness reported the highest functional impact (44.69 \pm 11.28) and a significantly elevated emotional impact (18.79 \pm 5.21) compared to those with monocular blindness or less severe impairments, underscoring the comprehensive effect of severe vision loss on all aspects of life. The influence of visual impairment type (acquired vs. congenital) was also notable, with acquired cases showing higher mean functional (31.56 \pm 14.63) and emotional (15.67 \pm 6.87) impacts, which suggests the adjustment challenges faced by individuals who lose vision later in life ($P < 0.001$ and $P = 0.046$, respectively).

Sociodemographic factors further modulated the experience of visual impairment. Age played a significant role, with individuals over 30 years experiencing higher functional impacts (33.08 \pm 15.26) than their younger counterparts, though the emotional impact was not significantly different between age groups. Interestingly, while gender did not significantly affect functional or emotional scores, residency did, with rural residents reporting higher functional (30.68 \pm 14.68) and emotional (16.00 \pm 6.63) impact scores compared to urban dwellers ($P = 0.004$ and $P = 0.001$, respectively), highlighting the additional challenges faced by rural populations.

Table 1 Frequency and Mean \pm SD for Visual Factors

Variables	IVI FUNCTIONAL	IVI EMOTIONAL
Visual Acuity		
- 0.5 to 1.0 (Moderate)	22.23 \pm 12.44 (227)	13.33 \pm 7.23 (<0.001*)
- >1.0 to 1.30 (Severe)	31.60 \pm 12.40 (81)	16.03 \pm 7.01 (<0.001*)
- >1.3 to 1.77 (Blindness)	38.06 \pm 9.77 (31)	17.80 \pm 5.01 (<0.001*)
- >1.77 to LP (Blindness)	47.54 \pm 11.52 (35)	18.57 \pm 5.32 (<0.001*)
- npl (Blindness)	52.66 \pm 8.23 (6)	23.66 \pm 0.81 (<0.001*)
ICD_10 Classification		
- Blindness Binocular	44.69 \pm 11.28 (68)	18.79 \pm 5.21 (<0.001*)
- Blindness Monocular	27.79 \pm 13.98 (89)	14.38 \pm 7.20
- Moderate VI Binocular	20.11 \pm 11.01 (137)	13.10 \pm 7.38
- Severe VI Binocular	30.46 \pm 13.08 (56)	15.28 \pm 7.32
- Severe VI Monocular	26.40 \pm 12.10 (30)	15.33 \pm 6.08
Type		
- Acquired	31.56 \pm 14.63 (183)	15.67 \pm 6.87 (<0.001*)
- Congenital	25.32 \pm 14.47 (197)	14.21 \pm 7.33 (0.046*)
Family history		
- Negative	32.33 \pm 14.94 (197)	16.04 \pm 6.82 (<0.001*)
- Positive	24.02 \pm 13.55 (183)	13.71 \pm 7.29 (0.001*)
Visual expectation		
- Deteriorate	36.02 \pm 14.17 (88)	17.95 \pm 6.03 (<0.001*)
- Don't know	28.95 \pm 14.51 (61)	15.70 \pm 6.39

Variables	IVI FUNCTIONAL	IVI EMOTIONAL
- Fluctuate	31.45 ± 14.03 (24)	17.29 ± 6.06
- Improve	23.29 ± 12.48 (111)	12.88 ± 7.32 (<0.001*)
- Same	25.93 ± 15.60 (96)	13.40 ± 7.47 (<0.001*)

Educational attainment and work status also had significant associations with the impact of visual impairment. Those with lower levels of education and non-working individuals reported higher functional and emotional impacts, pointing towards the socio-economic dimensions of visual impairment. Specifically, participants with no education or employment reported the highest functional (34.41±15.38) and emotional (16.62±6.91) impacts, underscoring the intersection of visual impairment with broader socio-economic vulnerabilities.

General health and the presence of co-morbidities such as cardiovascular diseases, diabetes, and hypertension further exacerbated the impacts of visual impairment. Those reporting poor general health had the highest functional (38.01±14.84) and emotional (16.32±7.08) impact scores, signifying the compounded effects of health challenges on individuals with visual impairments.

Table 2 Correlation Between Emotional IVI And Coping Strategies

Variables	IVI FUNCTIONAL	IVI EMOTIONAL
Age		
- ≤ 30yrs	25.16 ± 13.73 (60%)	14.52 ± 7.23
- > 30yrs	33.08 ± 15.26 (40%)	15.51 ± 6.97
Gender		
- Female	26.97 ± 15.33 (43.5%)	15.50 ± 7.18
- Male	29.37 ± 14.44 (56.5%)	14.47 ± 7.09
Residency		
- Rural	30.68 ± 14.68 (53.4%)	16.00 ± 6.63
- Urban	25.98 ± 14.76 (46.6%)	13.67 ± 7.50
Marital status		
- Married	31.03 ± 14.58 (46.1%)	15.68 ± 6.87
- Single	25.50 ± 15.54 (52.1%)	14.16 ± 7.31
- Widowed	41.00 ± 13.17 (1.8%)	17.28 ± 7.13
Education		
- Bachelors or more	22.92 ± 12.14 (23.7%)	13.76 ± 7.54
- Intermediate	24.88 ± 16.32 (18.2%)	13.71 ± 7.44
- Matric	31.61 ± 14.56 (58.2%)	15.76 ± 6.78
Work Status		
- House maker	28.38 ± 14.11 (25.5%)	16.62 ± 6.91
- None	34.41 ± 15.38 (29.5%)	14.65 ± 7.22
- Student	21.48 ± 14.15 (20.0%)	12.53 ± 7.91
- Worker	26.60 ± 12.76 (25.5%)	15.40 ± 6.10
General Health		
- Excellent	20.40 ± 11.67 (38.7%)	12.80 ± 7.34
- Good	30.22 ± 13.44 (36.8%)	16.20 ± 6.44
- Poor	38.01 ± 14.84 (24.5%)	16.32 ± 7.08
Co-morbidity		
- Cardiovascular	25.91 ± 13.53 (3.2%)	12.58 ± 8.53
- Diabetes	39.66 ± 11.56 (7.9%)	15.86 ± 7.19
- Hypertension	34.79 ± 14.777 (11.6%)	17.27 ± 6.80
- None	25.36 ± 14.33 (68.9%)	14.20 ± 7.06
- Others	34.06 ± 13.57 (8.4%)	17.50 ± 6.54

Table 3 Correlation Between Emotional IVI And Coping Strategies

Coping Strategies	Functional IVI (r)	p-value	Emotional IVI (r)	p-value
Avoidance	0.112*	0.029	0.314*	<0.001

Problem solving	-0.075	0.145	0.126*	0.014
Seeking support	-0.068	0.185	-0.002	0.963

The study also explored the correlation between coping strategies and the emotional impact of visual impairment (Table 3), revealing significant associations. The avoidance coping strategy was positively correlated with higher emotional impact scores ($r=0.314$, $P<0.001$), indicating that individuals who tend to avoid dealing with their vision loss may experience greater emotional distress. Conversely, problem-solving coping strategies were associated with slightly lower emotional impact scores ($r=0.126$, $P=0.014$), suggesting that active engagement with the challenges of visual impairment could mitigate some of its emotional burdens.

DISCUSSION

In the exploration of the functional and emotional impacts of visual impairment, our study uncovered significant correlations that underscore the profound challenges faced by individuals with low vision. Echoing the findings of similar research conducted in Germany, America, and India, our investigation confirmed that as the severity of visual impairment escalates, so does the adverse effect on both functional and emotional dimensions of well-being (27,28,29). This alignment with international studies lends credence to the notion that the repercussions of visual impairment are universally challenging, despite variations in healthcare systems and societal contexts.

Contrary to some earlier studies that highlighted a disconnect between the severity of visual impairment and its emotional repercussions (30), our findings indicate a comprehensive impact that spans both functional abilities and emotional health. This discrepancy may suggest evolving understandings of the psychological ramifications of visual impairment or differences in study populations. Moreover, while demographic variables like gender, income, and education have been established as influencers of vision-related functioning (31), our study adds nuance by identifying age, residency, marital status, and educational attainment as additional significant factors. Notably, the absence of a significant gender difference in our study diverges from previous research that suggested a disproportionately greater impact of visual impairment on women (4). This variation could be attributed to cultural or regional differences in gender roles and expectations.

Work status emerged as a critical determinant of the impact of visual impairment, with unemployed individuals experiencing more pronounced effects (27). This association underscores the socio-economic ramifications of visual impairment and highlights the importance of occupational considerations in managing low vision. Interestingly, while our study found education to influence coping strategies, suggesting that higher educational attainment may equip individuals with more effective means of managing their condition, this contradicts earlier findings where gender was seen as a significant factor in coping approach (7).

Our study's insights into coping mechanisms reveal a complex picture. Avoidant coping strategies, although commonly adopted, were found to exacerbate emotional distress, aligning with Australian research that pointed to the detrimental effects of such approaches on quality of life (2). This suggests a critical need for interventions aimed at promoting more adaptive coping strategies. Conversely, while problem-solving strategies are intuitively appealing, they may lead to frustration and emotional distress if focused on unattainable goals (8), indicating that the context and realism of coping efforts are key.

The lack of a significant association between seeking social support and improved outcomes challenges conventional wisdom about the benefits of social networks in managing chronic conditions, hinting at the nuanced role of perceived dependency and emotional distress in the context of visual impairment. This finding suggests that not all coping strategies uniformly benefit all individuals, underscoring the importance of personalized approaches to support and intervention.

This study, however, is not without limitations. The methodology, involving the oral administration of questionnaires, could introduce bias, potentially skewing patient responses. Additionally, the moderate sample size and the cross-sectional nature of the study limit the generalizability of the findings and preclude longitudinal insights into the evolution of visual impairment's impacts. Future research could benefit from larger, more diverse cohorts and longitudinal designs to explore the developmental trajectories of emotional distress and coping strategies over time.

Implications of this study extend to both policy and practice. Policymakers should prioritize the accessibility and affordability of eye care, incorporating vision rehabilitation into broader healthcare strategies. For eye care providers, the findings emphasize the necessity of holistic care approaches that address not only the physical but also the psychological aspects of visual impairment. Integrating assessments of coping strategies and emotional well-being into routine care can enhance the support provided to individuals with low vision, promoting more adaptive coping mechanisms and, ultimately, improving quality of life.

CONCLUSION

In conclusion, the intricate interplay between visual impairment, its functional and emotional impacts, and the coping strategies employed by individuals highlights the complex nature of living with low vision. Despite the challenges posed by avoidant coping, the potential for adaptive strategies to improve functional well-being suggests avenues for intervention and support. Addressing the multifaceted needs of low vision patients requires a concerted effort from eye care professionals, policymakers, and the broader community, emphasizing the critical role of comprehensive, empathetic care in enhancing the well-being of those affected by visual impairment.

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