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ADJUSTMENT TO DISABILITY IN PERSONS WITH ACQUIRED VISUAL IMPAIRMENT

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ABSTRACT

PURPOSE: *The main purpose of this study was to assess the level of adjustment (attitude, self-efficacy and self-esteem) in persons with acquired visual impairment.*

MATERIALS AND METHODS: *A descriptive cross-sectional study was conducted among people having acquired visual impairment. A total of 35 patients having acquired visual impairment presenting to Mayo Hospital, Lahore were examined. Data was collected by clinical examination and using the self-designed Proforma. After taking consent of the patient, complete history and visual functions including visual acuity, color vision, contrast sensitivity and visual fields by using appropriate charts or instruments were recorded. Adjustment was measured by Acceptance and Self-Worth Adjustment Scale (AS-WAS). Depression was measured by Center for Epidemiologic Studies Depression Scale (CES-D). Ethical approval was sought from ethical review board College of Ophthalmology and Allied Vision Sciences.*

RESULTS: *Thirty five persons were enlisted; 20 were male (57.1%) and 15 (42.9%) were female; age ranged from 20 to 60 (average 36.2 ± 13.3) years. Most clients resided in rural areas (n = 21; 60%); 24 were unemployed (69 %); 21 (60 %) had studied to less than Class 5. Adjustment was not very good (mean 55.74 ± 6.69). The degree of depression (average 30.1 ± 4.59) seems to have worth in terms of adjustment. The factors (age, gender, education, residence and occupation) studied did not affect adjustment.*

CONCLUSION: *This cross-sectional study found that some degree of adjustment had taken place in all our patients to their acquired vision loss. We found that all our patients had symptoms of depression or they felt distressed. Training patients that how to handle their emotions and teaching family members to react to the expressive and unexpressive needs of individuals with visual impairment might contribute to decreasing stress and depression.*

KEYWORDS: *Depression, Adjustment, Visual Impairment.*

INTRODUCTION

Low vision is a condition in which subject who has impairment of visual functioning after the standard management or refractive correction has a visual acuity of less than 6/18 to the light perception in the better seeing eye and visual field of less than 10 degrees from the point of fixation and who is potentially capable to use the vision for the planning and accomplishment of task. It is classified as moderate visual impairment, severe visual impairment, blind and total blind or clinical blind. In moderate visual impairment, an individual has a visual acuity of less than 6/18 and visual field of less than 20 to 10 degrees from point of fixation. In the category of severe visual impairment, an individual has a visual acuity of less than 6/60 to 3/60 and visual field of less than 10 to 5 degrees from point of fixation. In blind, an individual has a visual acuity of less than 3/60 to light perception and visual field of less than 5 degrees from point of fixation. In total blind, an individual has no light perception, no light projection and no usable vision.[1]

Functional low vision is referred to as impaired vision for which no therapy and refractive correction can better the visual acuity up to greater than 6/18 in good/better eye.[2] Blindness is defined as visual acuity which is < 3/60 in the improved eye and visual field of less than 10˚ from point of fixation. Blindness and impaired vision that occur in childhood are a main hindrance to the normal development of children.[2]

Low vision is a bilateral impairment to vision that

considerably weakens the working of the patient and cannot be effectively improved with medical, surgical therapy, conventional eyewear or contact lenses.[1]

Visual disability influences activities of daily living and encumbers guardians who deliver emotional, financial, and physical support. Corresponding to other prolonged disorders, it can bring psychosocial affliction leading to poor adjustment. Maladjustment, a destructive outcome, can further demote the quality of life. Adaptation is reported by means of the procedure of reacting to life's needs and tensions.[3] Individuals vary prominently in their capability towards many extrinsic factors, such as age, gender, official as well as casual support systems, and intrinsic elements like person's traits are considered to affect adjustment. Throughout adaptation to vision loss, one adapts toward the damage by altering one's aims as well as anticipations in response to the recent limitations enforced by the visual loss.[4]

The adjustment may not start instantaneously after vision loss. Before accepting the vision loss, commonly the patients undergo a series of sensations that might comprise rejection, anger and stress, mourn over it, and then begin adjusting. There is neither certain period of time nor sequence for these emotions to grow regardless of the severity vision loss and different people will behave in different manners.[5]

While coping with vision loss, that persons suffer marked psychosocial load and resulting in increased rate of mortality.[6] After getting low vision rehabilitation services, these psychosocial loads related with visual disability may not eliminate totally and can exist.[7] Though, people differ significantly in their responses to vision damage, probably being affected to the certain impactful limits of individual features and communal conditions, the problems have ascended in describing, quantifying, and shaping the important elements involved in the procedure of adaptation to visual impairment.[8]

Personality may perform a part in conditions like adapting to vision loss because of the concept that it disturbs the capability of a person to handle a problem in an elastic and formative manner, comprising the magnitude towards the optimistic reassessment and planful way of problem resolving is used. Personality is also considered to decide the magnitude of any destructive impact, and hence, one may suffer throughout his/her life from such conditions as visual damage.[9] Communal assistance is commonly considered to have significance when a person is coped through a cause of depression and duration of conversion such as vision damage and behave as a defensive barrier to the agony of that happenings.[10] Communal assistance has a constructive impact on adaptation to loss but may also be an obstruction if destructive assistance or overprotection happens. Other planned impacts on adjustment consist of a person's age, overall fitness, living style, and mentoring.[11-12]

Low vision therapy develops subjects' capability on the way to move through prolonged restricting visual damage.[13] Low vision therapy contains establishing the individual's practical aims, executing an aim-concerned with management platforms to improve the individual's vision with help of adaptive devices and techniques, trained the subject to use compromised vision further efficiently as well as training non-visual approaches which enhance whole practical capability in regardless of limited vision.[14]

METHODOLOGY

Ethical clearance to conduct the study was obtained from College of Ophthalmology and Allied Vision Sciences, King Edward Medical University, Lahore. A descriptive cross-sectional study design was utilized. A total of 35 patients who had been diagnosed of low vision by the Low Vision Clinic, Mayo Hospital, Lahore were examined.The participants who were not willing; had VA>6/18 ;had a cognitive impairment such that they could not respond to the items in the scales; had a history of any co-morbid condition (except that which related to vision loss); had a history of psychological disorders or of taking long-term psychiatric medications were excluded. A consent form containing information related with purpose, significance and intended procedures of the research study was completed and signed by each participant. Data was collected by clinical examination and using the self-designed proforma. After taking consent of the patient, complete history and visual functions including visual acuity, color vision, contrast sensitivity and visual fields by using appropriate charts or instruments were recorded. Adjustment was measured by Acceptance and Self-

Worth Adjustment Scale (AS-WAS), which is derived by Daryl Tabrett and Keziah Latham from 55-items Nottingham Adjustment Scale. It estimates the level of adjustment concerned with acceptance (4 items), attitude (4 items), self−efficacy (3 items), self−esteem (8 items), and locus of control (2 items). Depression was measured by Center for Epidemiologic Studies Depression Scale (CES-D), which is published by Lenore Sawyer Radloff. The CES−D has 20 items which assess the level of depression during the past week.

Data was entered and analyzed using SPSS Version 20. A descriptive cross-sectional study was done using non-parametric tests with a probability of $p < 0.05$ to evaluate the adjustment to disability in persons with acquired visual impairment. To maintain confidentiality the use of a code rather than the participant's name was employed.

RESULTS

Table 1: Factors affecting adjustment (Acceptance and Self-Worth Adjustment Scale) in thirty five persons with visual disability

	N	Mean	Std. Deviation	P-Value
Occupation	35	1.69	.471	.650
Residence	35	1.60	.497	.974
Education	35	1.40	.497	.585
Gender	35	1.57	.502	.015

Table 2: Descriptive Statistics of Ocular Pathology

	Frequency	Percent
Bilateral pupillary membranes	1	2.9
Corneal involvement	15	42.9
Glaucomatous optic atrophy	5	14.3
Macular Dystrophy	2	5.7
Maculopathy	1	2.9
Myopic degeneration	5	14.3
Optic atrophy	6	17.1
Toat	35	100

Table 3: AS-WAS and CES-D Scale Statistics

	Mean	Variance	Std. Deviation	N of Items
AS-WAS Scale	55.74	44.844	6.697	19
CES-D Scale	30.14	21.126	4.596	20

Table 1 shows the factors that could affect adjustment. None of them were found to significantly enhance or prevent adjustment to visual disability in our patients.

Table 2 shows that the most common involvement resulting in blindness related to the cornea i.e. corneal dystrophy, corneal degeneration and corneal ectasias (n = 15; 42.9%). Optic atrophy (n = 6; 17.1 %); Glaucomatous optic atrophy (n = 5; 14.3%); Myopic degeneration (n = 5; 14.3%); Macular Dystrophy (n = 2; 5.7%); Maculopathy (n = 1; 2.9%); and Bilateral pupillary membranes (n = 1; 2.9%).

Table 3 shows that Results were considered as statistically significant at $P < 0.05$.

The degree of adjustment to visual disability was not very good (mean 55.74 ± 6.69). The degree of depression (average 30.1 ± 4.59); depression appears to hold significance in terms of adjustment, with lower adjustment expected in the presence of higher levels of depression.

DISCUSSION

This cross-sectional study was carried out in an outpatient department and involved persons with acquired vision loss. Our patients had adjusted to vision loss to varying degrees; however, adjustment was low and ranged from 33% to 60%. Age, gender, educational status, family income, official as well as casual support systems, and intrinsic elements like person's traits may play a role in adjustment to blindness.

The AS-WAS is indicated for use in patients with recognized visual impairment. It estimates the range of adjustment related with acceptance (4 items), attitude (4 items), self efficacy (3 items), self esteem (8 items), and locus of control (2 items). Every part of the scale is rated on a four option scale as “strongly agree, agree, disagree, and strongly disagree”. Higher scores mean better adjustment. We chose this scale as it assesses the unidirectional dormant concept of adaptation to visual impairment; it was an improvement over the original Nottingham adjustment scale, which had 55 items that were reduced on the basis of Rasch analysis to remove misfitting items; and it is a second generation patient reported outcome measure that demonstrates better accuracy of evaluation for many patients. In persons with acquired visual impairment it is a dependable and authentic instrument. The developers of the AS-WAS

scale recommend the use of a separate measure of depression to evaluate adaptation in a wider area, which is the reason that we used the CES-D to assess depression in our patients.[15-16]

The Center for epidemiologic studies and depression scale has 20 items which evaluate the range of depression during the past week. Each item is scored in four different rates of incidences of signs of depression i.e. rarely (<1 day in the preceding week and a score of 0), sometimes (1–2 days and a score of 1), occasionally (3–4 days and a score of 2) and most of the time (5–7 days and a score of 3). Marks may sort from 0 to 60, with greater scores indicating the presence of higher level of depression. Total grades of less than 15 indicates no depression; grades of 15 to 21 indicates mild to moderate depression; as well as grades of greater than 21 indicates major depression.[17]

The effect of age on adjustment was calculated using Spearman's correlation. Correlation between total adjustment score and depression score was calculated using Spearman's correlation. Results were considered as statistically significant at $P < 0.05$.

The literature suggests that a person with disability who receives support from family or others may still feel stressed. For example, the person with disability may be stressed from the knowledge that the person, providing support to him/her is spending time and money on him and perhaps losing time at work because of the care he has to provide. We found that our patients did not report much stress related to any family or nonfamily member. Alternatively, their need to be accepted by peers and family may have prompted them to try harder to get along with others. Studies have shown a positive relationship between stress and adjustment. We believe this may be because of the adjustment we assessed was the amount that they had adjusted up to that point; since the adjustment is an ongoing process, for some patients, it may have been just starting, while for others, the adjustment may have ended.[15]

It was suggested in a study that adjustment to visual damage is considerably related to stress as well as person's traits, liberated of the harshness of visual damage, vision related activity limitation, and period of visual damage. The consequences of the study reported that some people might be susceptible to showing poor adaptation to visual damage because of his/her traits, as well as show worse adjustment due to or as a result of stress, somewhat because of additional aspects; for example the onset and rigorousness of vision loss.[15]

It was reported in a study that, the consequences of the current work suggests that stress and personality are prominently related to adjustment to visual impairment liberated of the period of vision loss or the rigorousness of vision damage as evaluated through self-stated vision related activity limitation and a series of medically proven vision evaluation procedures.[18]

Our patients reported many symptoms of depression. Depression and disability are co-related; i.e. depression causes disability and disability leads to depression. The CES-D has been reported to over diagnose depression and it may not able to differentiate stress from depression.[17] Nevertheless, whether distressed or depressed, such people may not seek eye care when they need it and may not adhere to treatment for diagnosed eye conditions, thus resulting in blindness. In any case, vision-specific distress is a strong predictor of depressive symptoms, and its effect may be separate from that related to the severity and duration of the visual impairment.[19] In this cross-sectional study, it is not possible to say whether disability came first or depression; however, the fact that our patients were depressed to varying degrees deserves attention. The present study has limitations. This is a clinic based study and its outcomes may not be demonstrative about the general population. Since all of our patients self-reported to the hospital for visual disability certificate, we had many more men than women. Hence the findings of this study are likely to have a gender bias. We collected data through self-designed proforma and scales; it is possible that participants became conscious and misinterpreted the questions. We did not record precise duration of visual impairment except to make sure that patients fulfilled the inclusion criteria and had been visually disabled for more than 6 months. Thus, we cannot comment on how adjustment would have varied with the duration of vision loss. Statistical analysis adjusted by duration of vision loss might have elicited the influence of time over adjustment, even though adjustment is known to be a continuous process and there may be no definite sequence or timeline.[18]

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REFERENCES

1. WHO. Guidelines for programmes for the prevention of blindness. 1979.
2. Khandekar R, Kishore H, Mansu RM, Awan H. The status of childhood blindness and functional low vision in the Eastern Mediterranean region in 2012. Middle East Afr J Ophthalmol. 2014;21(4):336.
3. Bambara JK, Owsley C, Wadley V, Martin R, Porter C, Dreer LE. Family caregiver social problem-solving abilities and adjustment to caring for a relative with vision loss. Invest Ophthalmol Vis Sci. 2009;50(4):1585-92.
4. Köberlein J, Beifus K, Schaffert C, Finger RP. The economic burden of visual impairment and blindness: A systematic review. BMJ Open. 2013;3(11):e003471.
5. Telford K, Kralik D, Koch T. Acceptance and denial: implications for people adapting to chronic illness: Literature review. J Adv Nurs. 2006;55(4):457-64.
6. Zheng DD, Christ SL, Lam BL, Arheart KL, Galor A, Lee DJ. Increased mortality risk among the visually impaired: The roles of mental well-being and preventive care practices. Invest Ophthalmol Vis Sci. 2012;53(6):2685-92.
7. Stanford P, Waterman H, Russell WB, Harper RA. Psychosocial adjustment in age related macular degeneration. Br J Vis Impair. 2009;27(2):129-46.
8. Waern M, Rubenowitz E, Runeson B, Skoog I, Wilhelmson K, Allebeck P. Burden of illness and suicide in elderly people: Case-control study. BMJ. 2002;324(7350):1355.
9. Rovner BW, Casten RJ. Neuroticism predicts depression and disability in age-related macular degeneration. J Am Geriatr Soc. 2001;49(80):1097-100.
10. Kef S. Psychosocial adjustment and the meaning of social support for visually impaired adolescents. JVIB. 2002;96(1):22-37.
11. Cimarolli VR, Boerner K. Social support and well-being in adults who are visually impaired. JVIB. 2005;99(9):521-34.
12. Jadoon MZ, Dineen B, Bourne RR, Shah SP, Khan MA, Johnson GJ, et al. Prevalence of blindness and visual impairment in Pakistan: The Pakistan national blindness and visual impairment survey. Invest Ophthalmol Vis Sci. 2006;47(11):4749-55.
13. Markowitz SN. Principles of modern low vision rehabilitation. Can J Ophthalmol. 2006;41(3):289-312.
14. Mogk LG, Crane Jr WG, Jackson ML, Lawrence MG, Markowitz SN, Morgan RK, et al. Prepared by the American Academy of Ophthalmology Vision Rehabilitation Committee. 2007.
15. Nakade A, Rohatgi J, Bhatia MS, Dhaliwal U. Adjustment to acquired vision loss in adults presenting for visual disability certification. Indian J Ophthalmol. 2017;65(3):228.
16. Tabrett DR, Latham K. Derivation of the acceptance and self-worth adjustment scale. Optom Vis Sci. 2010;87(11):899-907.
17. Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. Appl Psychol Meas. 1977;1(3):385-401.
18. Tabrett DR, Latham K. Adjustment to vision loss in a mixed sample of adults with established visual impairment. Invest Ophthalmol Vis Sci. 2012;53(11):7227-34.
19. Zhang X, Bullard KM, Cotch MF, Wilson MR, Rovner BW, McGwin G, et al. Association between depression and functional vision loss in persons 20 years of age or older in the United States, NHANES 2005-2008. JAMA Ophthalmol. 2013;131(5):573-81.