

## Coping strategy in persons with low vision or blindness – an exploratory study

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**Purpose:** Coping strategies employed by people with visual disability can influence their quality of life (QoL). We aimed to assess coping in patients with low vision or blindness. **Methods:** In this descriptive cross sectional study, 60 patients (25–65 years) with <6/18 best-corrected vision (BCVA) in the better eye and vision loss since  $\geq 6$  months were recruited after the institutional ethics clearance and written informed consent. Age, gender, presence of other chronic illness, BCVA, coping strategies (Proactive Coping Inventory, Hindi version), and vision-related quality of life (VRQoL; Hindi version of IND-VFQ33) were recorded. Range, mean (standard deviation) for continuous and proportion for categorical variables. Pearson correlation looked at how coping varied with age and with VRQoL. The analysis of variance (ANOVA) and *t*-test compared coping scores across categorical variables. Statistical significance was taken at  $P < 0.05$ . **Results:** Sixty patients fulfilled inclusion criteria. There were 33 (55%) women; 25 (41.7%) had low vision, 5 (8.3%) had economic blindness, and 30 (50.0%) had social blindness; 27 (45.0%) had a co-morbid chronic illness. Total coping score was  $142 \pm 26.43$  (maximum 217). VRQoL score (maximum 100) was  $41.9 \pm 15.98$  for general functioning;  $32.1 \pm 12.15$  for psychosocial impact, and  $41.1 \pm 17.30$  for visual symptoms. Proactive coping, reflective coping, strategic planning, and preventive coping scores correlated positively with VRQoL in general functioning and psychosocial impact. **Conclusion:** Positive coping strategies are associated with a better QoL. Ophthalmologists who evaluate visual disability should consider coping mechanisms that their patients employ and should refer them for counseling and training in more positive ways of coping.

**Key words:** Blindness, coping strategy, IND-VFQ33, proactive coping inventory, quality of life, vision, low, vision-related quality of life

People with visual impairment have a poorer quality of life (QoL) since it affects their ability to perform independent activities of daily living, including mobility, reading, earning, and performing personal care.<sup>[1,2]</sup> Emotional well-being and social relationships are also affected.<sup>[3-5]</sup> Visual disability forces the individual to cope with challenges every day.<sup>[6]</sup> Coping literally means to face difficulties and to deal with problems in an effort to overcome them. It is known that the ability to function and the approach toward perceived problems varies greatly from disabled to disabled;<sup>[7]</sup> however, there are no studies on people with low vision and blindness and the coping strategies that they use to manage their daily challenges. As visual disability is a chronic stressor,<sup>[8]</sup> understanding the coping strategies used by such people may help in the design of interventions targeted to improve their QoL. This study was conducted to assess coping strategies in patients with low vision or blindness and to determine whether particular coping strategies correlated with vision-related QoL.

### Methods

This was a descriptive, cross-sectional study conducted at a tertiary level teaching hospital from November 2016 to January 2018. After the institutional ethics committee clearance and written informed consent, adult patients (25–65 years) with

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a best-corrected visual acuity (BCVA) of <6/18 with current refraction in the better eye and vision loss duration of 6 months or more, who self-presented to the ophthalmology outpatient department were recruited in the study. The cause of visual loss had to be an irreversible one; here, irreversible low vision was defined as current BCVA between <6/18–6/60 in the better eye that could not be treated by any means, irreversible blindness was defined as current BCVA <6/60–3/60 in the better eye (economic blindness), or BCVA <3/60 in the better eye (social blindness) that could not be treated by any means. We excluded patients who were not willing to participate; had cognitive impairment; had congenital onset of visual impairment or onset in the first 5 years of life; had a history of any co-morbid condition (except those related to vision loss); or had a history of psychosocial disorders; or of taking long-term psychiatric medications such that it would impact their ability to respond to the questionnaire.

Proactive coping is a new focus in positive psychology research.<sup>[9,10]</sup> During a review of the literature we found

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that there was no study on the use of the Proactive Coping Inventory (PCI) in patients with irreversible visual loss. In the absence of objective data with respect to the Hindi version of the PCI, we planned an exploratory study that would include consecutive patients who fulfilled the inclusion criteria and who presented to the outpatient department over the period of data collection.

Age, gender, binocular visual function (distant visual acuity using the Snellen's chart and near visual acuity), and presence of chronic systemic disease or other disability were recorded. Coping strategies were assessed using the Hindi version of the PCI. The PCI was chosen as it has shown good construct validity, homogeneity and acceptable reliability, and shows good item correlations.<sup>[9]</sup> The Hindi adaptation makes it a potentially reliable tool for measuring coping strategies among native Hindi speakers.<sup>[10]</sup> Vision-related QoL was assessed with the Hindi version of the IND-VFQ33, which is a psychometrically sound measure of the impact of vision impairment on daily activity and emotional well-being.<sup>[6,11]</sup> It is designed specifically for the Indian population and has been used in our department before.<sup>[12]</sup> It is suitable for use in populations of mixed literacy and is short enough to keep respondent burden to a minimum.<sup>[6]</sup>

#### Rating of scales

The 55-item PCI has seven scales – proactive coping (14 items), reflective coping (11 items), strategic planning (4 items), preventive coping (10 items), instrumental support seeking (8 items), emotional support seeking (5 items), and avoidance coping (3 items). Each item is rated on a 4-point scale – not at all true (1), barely true (2), somewhat true (3), and completely true (4). Total score for each subscale is calculated by adding the individual scores of the items in that subscale. Three items in the proactive coping subscale (item 2, item 9, and item 14) are rated in reverse since they are negative items. In addition to individual subscale scores, we also calculated the total coping strategy score by adding the seven subscale scores. The higher the score, the better is the coping.

The 33-item IND-VFQ33 has three subscales – general functioning (21 items), psychosocial impact (5 items), and visual symptoms (7 items). General functioning is rated on a 5-point scale (not at all, a little, quite a bit, a lot, and cannot do this because of my sight), while psychosocial impact and visual symptoms are rated on a 4-point scale (not at all, a little, quite a bit, and a lot). The items in each subscale are negative items, so they were rated by scoring in reverse – thus, a higher score meant better functioning in that domain. For each of the three subscales, total score was calculated by adding the individual scores of the items in that subscale. To make them comparable across subscales, the scores were converted into percentage and the converted scores were used in data analysis. Higher scores meant better vision-related QoL.

Data handling were as per the Declaration of Helsinki (1964; revised 2008). Participants were referred to by serial number and data kept confidential. Descriptive statistics were used to calculate range, mean, and standard deviation for all the continuous variables (age and questionnaire scores). For coping scores, the proportion of participants who scored above the mid-point of each subscale was calculated. Proportion percentage was also calculated for gender, presence or absence

of chronic disease, and category of BCVA for distance and near. Pearson correlation was used to look for correlation of coping scores with age and vision-related QoL scores. Analysis of variance (ANOVA) and *t*-test were used to compare coping scores based on gender, on presence or absence of chronic disease, and on category of BCVA distance and near vision. Significance was taken at  $P < 0.05$ .

## Results

Sixty patients fulfilled the inclusion criteria and consented to participate; of them, 33 were women (55%); age ranged between 25 to 65 years (average  $46.1 \pm 14.31$ ); and 27 (45.0%) had a co-morbid chronic illness (either diabetes,  $n = 8$ ; hypertension,  $n = 6$ ; both conditions,  $n = 4$ ; treated tuberculosis,  $n = 6$ ; or others,  $n = 3$ ) but no other disability other than visual. Posterior segment pathology was common (72 eyes; 60.0%) with degenerative myopia being the leading cause of low vision or blindness (18 eyes; 15%). Twenty-five (41.7%) of all participants had low vision; 5 (8.3%) had economic blindness; and 30 (50.0%) had social blindness – out of the latter, 8 (13.3% of all participants) had no perception of light. When near vision was assessed, 35 (58.3%) participants had  $\geq N/36$  vision; 11 (18.3%) had  $< N/60$ ; and 14 (23.3%) were not able to see the letters on the near chart.

Table 1 details the coping strategies reported by the participants. When all participants were taken together, the highest scores were seen for reflective coping and avoidance coping, while the lowest score was seen in strategic planning.

Vision-related QoL scores were generally low with the poorest QoL being associated with the psychosocial impact of visual loss [Table 2]. Coping did not correlate with the age of participants [Table 3]. Most strategies of coping did not vary with the gender of participants, either, as shown in Table 4; however, emotional support seeking was significantly more likely in women.

Coping scores did not correlate with the BCVA for distance vision [Table 5] except in the case of proactive coping where it was seen that persons with low vision had higher scores than those with no perception of light ( $P = 0.042$ ). To further examine this association, the data of participants with no perception of light were merged with that of participants with social and economic blindness. Even then, the score for proactive strategy of participants with low vision ( $n = 25$ ; mean =  $38.7 \pm 7.09$ ) was better than that of all other participants ( $n = 35$ ; mean =  $34.1 \pm 6.65$ ;  $P = 0.014$ ). Total coping scores as well as proactive and reflective coping strategy scores were also higher when near vision was better [Table 6]. There was no association of chronic illnesses with coping strategies.

Total coping scores correlated positively with visual function scores pertaining to general functioning and psychosocial impact, but negatively with visual symptoms score [Table 7]. The table also shows how the seven individual coping strategies correlated with the three visual function scores.

## Discussion

### Coping strategies in general

From a disability standpoint, coping is the way in which people deal with their particular limitations. Coping can

**Table 1: Proactive Coping Inventory scores in 60 participants with low vision or blindness**

Proactive Coping Inventory subscales (minimum-maximum score)	Range Average score ± standard deviation	Number of participants who scored above the halfway score (%)
Proactive coping (14-56)	22-54 36.0±7.15	29 (48.3)
Reflective coping (11-44)	10-43 26.5±7.72	45 (75.0)
Strategic planning (4-16)	4-16 9.7±2.97	20 (33.3)
Preventive coping (10-40)	15-39 27.1±5.99	34 (56.7)
Instrumental support seeking (8-32)	12-32 21.9±5.36	32 (53.3)
Emotional support seeking (5-20)	8-20 13.9±2.93	38 (63.3)
Avoidance coping (3-9)	3-9 7.8±1.86	45 (75.0)
Total coping (55-217)	89-200 142.9±26.43	34 (56.7)

**Table 2: Vision-related quality of life scores (IND-VFQ33) in 60 participants with low vision or blindness**

Domain of vision-related quality of life	Score (can range from 20-100) Range Average±standard deviation
General functioning	20.0-84.8 41.9±15.98
Psychosocial impact	25-65 32.1±12.15
Visual symptoms	25-71.4 41.1±17.30

**Table 3: Correlation between age of participants and coping strategy scores**

Proactive Coping Inventory subscales	Correlation with age	
	Pearson's correlation coefficient (r)	P
Proactive coping	0.025	0.847
Reflective coping	0.031	0.812
Strategic coping	-0.134	0.307
Preventive coping	-0.134	0.308
Instrument support seeking	-0.096	0.464
Emotional support seeking	0.077	0.556
Avoidance coping	-0.027	0.836
Total coping	-0.042	0.748

broadly be classified as reactive or proactive.<sup>[5,7,9,13]</sup> In reactive coping, the individual reacts to a stressor that he has already encountered (disability, in this case) and works to reduce the ensuing stress. Traditional coping models have emphasized the reactive nature of coping while proactive coping is a newer concept. It is a positive coping strategy where the individual anticipates potential stressors that can arise as a result of his disability and seeks proactively to strengthen his ability, develop strategies, and gather resources so that he can manage his life better.<sup>[13]</sup>

Not all strategies used for coping result in positive outcomes. Thus, a patient may react by avoiding thinking about his disability (avoidance coping) so as to reduce the emotional distress and the negative feelings associated with the disability; however, while this may appear to be a beneficial strategy in the short term, it can delay rehabilitation in the long term.<sup>[9]</sup>

Coping is thought to be a multidimensional process and the PCI captures this aspect by measuring seven strategies used by individuals when faced with stress.<sup>[13]</sup> The proactive coping scale, with reference to the PCI, measures a person's ability to set goals autonomously and to self-regulate the attainment of those goals. The reflective coping scale measures the ability to analyze behavioral alternatives and brainstorm about effective plans of action. The strategic planning scale measures the extent to which the individual can break down extensive tasks into manageable components so as to complete an action plan. The preventive coping scale measures how ready the individual is to anticipate potential stressors and prepare himself for them before they develop (threat appraisal). The instrumental support-seeking scale measures how ready the person is to seek advice and help from people in his social network. The emotional support-seeking scale assesses the degree to which the individual regulates emotional distress through disclosing his feelings to significant others and evoking empathy. The avoidance coping scale measures the extent to which the individual uses delaying tactics to avoid taking action in a demanding situation.

Studies show that people may move from one coping strategy to another during the course of the stressful event; many natural factors, individual factors, and situational factors may dictate what coping strategy will be employed.<sup>[14]</sup>

**Proactive coping strategies employed by study participants**

In our study, more participants opted for reflective coping and avoidance coping than other strategies. It is encouraging to find that they were using reflective coping strategy since this strategy is known to keep people occupied and optimistic.<sup>[9]</sup> Avoidance coping, on the other hand, is a passive and distanced approach to stress. While it is considered a

**Table 4: Comparison of coping strategy scores between men and women participants**

Proactive Coping Inventory subscales (minimum-maximum score)	Comparative scores	
	Mean±SD	P t-test
Proactive coping (14-56)	Men: 36.7±7.04 Women: 35.5±7.29	0.516
Reflective coping (11-44)	Men: 27.7±7.60 Women: 25.5±7.78	0.272
Strategic planning (4-16)	Men: 9.6±3.03 Women: 9.8±2.96	0.766
Preventive coping (10-40)	Men: 26.9±5.74 Women: 27.2±6.28	0.859
Instrumental support seeking (8-32)	Men: 21.6±5.39 Women: 22.2±5.42	0.711
Emotional support seeking (5-20)	Men: 13.1±3.05 Women: 14.7±2.67	0.035
Avoidance coping (3-9)	Men: 7.9±1.91 Women: 7.7±1.85	0.800
Total coping (55-217)	Men: 143.5±24.99 Women: 142.5±27.93	0.893

negative strategy, it is not always a bad thing. If the problem is too difficult to deal with, as in the case of visual disability, people may put it aside and deal with it whenever they feel they are ready.<sup>[9]</sup> This allows them a breather during which time they may be able to build up other networks and means of coping. A coping behavior such as avoidance may be positive and helpful in the short run but harmful in the long run if it results in social isolation.<sup>[15]</sup> Thus, avoidance coping for a short time may be acceptable, provided that it gives way to other, more proactive ways of coping. This was not a longitudinal study so we do not know if avoidance coping in our participants was replaced by other forms of coping over time. Also, we did not measure the time of onset of visual disability. It would have been interesting to see if there was any relationship between type of coping strategy and duration of visual disability. This aspect can be taken up in a future study.

A very few participants employed strategic planning as a coping strategy suggesting that they do not break up their problems into small manageable components. Strategic planning has been shown to improve the ability of people with chronic diseases to function effectively and it can be learned through training.<sup>[16]</sup> Since their visual disability was irreversible and no recovery was possible, we expected that our participants would demonstrate greater emotion-focused coping; however, this was not the case. Emotion-focused coping results when stressful situations cannot be easily resolved by a person's action and all the person can do is to reduce the resultant emotional distress.<sup>[17]</sup>

On the surface it may appear that one strategy is better than the other; however, at different times different strategies may work for the same individual.<sup>[9,16]</sup> For example, a person with recent visual disability may employ avoidance coping initially if he fears rejection by peers and family, but later may use emotional support-seeking behavior; even if it does not solve the problem, it may provide emotional comfort. Still later, he may seek instrumental support by sharing his difficulties with others and taking advice from them.

#### Influence of socio-demographic factors on coping

When we examined the factors that might influence coping, we found that there was no association with age. The age groups that were included in our study (25–65 years) represent the working age group. In a developing country like India, other members of the family are dependent on the working age group for sustenance. Studies show that the bread winner is prone to stress.<sup>[18]</sup> We expected that the presence of visual disability at this age would impact their ability to cope; however, that was not found to be the case. While some studies support this finding,<sup>[19]</sup> others refute it claiming that age does influence coping and older people are better able to adopt behavioral, cognitive, and emotional strategies to cope with stress.<sup>[20]</sup>

Most strategies of coping did not vary with the gender of participants in our study [Table 4]; however, women were significantly more likely to try and cope by seeking emotional support. Other studies have also reported this gender variation using other coping instruments;<sup>[21]</sup> some reveal that males use avoidance coping strategy to much greater extent than females. Possibly, when the problem is difficult to deal with, men might choose to ignore it for a while, getting back to it when they feel they are ready.<sup>[9]</sup> More research is needed in this area, especially since other studies using different coping instruments have found no association between coping strategy and gender.<sup>[22–24]</sup> Coping strategies are influenced by chronic illnesses like bipolar disorder, type 2 diabetes mellitus, hemophilia, and chronic obstructive pulmonary disease.<sup>[15,16,25,26]</sup> People with chronic illness or disability may build up fears of death or permanent disability, they may worry about the medications and possible side effects, and have concerns about disruptions in lifestyle, of being unable to work, and of resultant financial hardship. Thus, chronic illnesses act like a stressor and can make coping difficult.<sup>[16]</sup> In our study, about 45% of the participants had a chronic illness and we expected that it would impact coping; however, that was not the case. It is possible that we had fewer patients with chronic illnesses; perhaps a larger study could help understand the

**Table 5: Comparison of coping strategy scores in different categories of distance BCVA**

Proactive Coping Inventory subscales (minimum-maximum score)	BCVA for distance*	Mean coping score±SD	P* ANOVA
Proactive coping (14-56)	No PL	31.1±9.17	No PL: Soc=0.551
	Social blindness	34.9±4.89	No PL: Eco=0.630
	Economic blindness	35.8±8.89	No PL: Low=0.042
	Low vision	38.7±7.09	Soc: Eco=0.993 Soc: Low=0.236 Eco: Low=0.825
Reflective coping (11-44)	No PL	21.9±9.761	No PL: Soc=0.493
	Social blindness	26.4±6.052	No PL: Eco=0.674
	Economic blindness	26.80±12.194	No PL: Low=0.213
	Low vision	28.00±7.240	Soc: Eco=0.999 Soc: Low=0.884 Eco: Low=0.989
Strategic planning (4-16)	No PL	7.88±2.850	No PL: Soc=0.410
	Social blindness	9.77±3.023	No PL: Eco=0.801
	Economic blindness	9.40±3.715	No PL: Low=0.210
	Low vision	10.24±2.758	Soc: Eco=0.994 Soc: Low=0.948 Eco: Low=0.937
Preventive coping (10-40)	No PL	23.88±5.489	No PL: Soc=0.599
	Social blindness	26.95±5.205	No PL: Eco=0.826
	Economic blindness	26.80±9.935	No PL: Low=0.262
	Low vision	28.36±5.859	Soc: Eco=1.000 Soc: Low=0.852 Eco: Low=0.951
Instrumental support seeking (8-32)	No PL	19.25±5.34	No PL: Soc=0.667
	Social blindness	21.77±4.88	No PL: Eco=0.376
	Economic blindness	24.20±7.76	No PL: Low=0.465
	Low vision	22.44±5.28	Soc: Eco=0.798 Soc: Low=0.974 Eco: Low=0.908
Emotional support seeking (5-20)	No PL	13.25±3.11	No PL: Soc=0.995
	Social blindness	13.55±3.08	No PL: Eco=0.730
	Economic blindness	15.00±3.16	No PL: Low=0.811
	Low vision	14.32±2.78	Soc: Eco=0.756 Soc: Low=0.808 Eco: Low=0.966
Avoidance coping (3-9)	No PL	8.50±1.41	No PL: Soc=0.724
	Social blindness	7.68±2.10	No PL: Eco=0.839
	Economic blindness	7.60±1.34	No PL: Low=0.712
	Low vision	7.68±1.91	Soc: Eco=1.000 Soc: Low=1.000 Eco: Low=1.000
Total coping (55-217)	No PL	125.8±31.39	No PL: Soc=0.492
	Social blindness	140.9±20.14	No PL: Eco=0.539
	Economic blindness	145.6±41.29	No PL: Low=0.116
	Low vision	149.7±25.29	Soc: Eco=0.984 Soc: Low=0.656 Eco: Low=0.988

\*Number of participants: No PL ( $n=8$ ), social blindness ( $n=22$ ), economic blindness ( $n=5$ ), low vision ( $n=25$ ). #Soc=Social blindness, Eco=Economic blindness, Low=Low vision

relationship between chronic illness and coping in persons with visual disability in our set up.

#### Influence of residual vision on coping

When we looked for associations between coping scores and BCVA for distance, we found none [Table 5] except in the case of the proactive coping strategy where it was seen that participants with some degree of vision (low vision) had higher scores than those with blindness ( $P = 0.014$ ). Perhaps if people

are able to recognize the visual cues of potential stressors, they may be better able to use this coping strategy to reduce or modify the impending stressful event. Participants with no perception of light may have lesser ability to visually detect potential stressors; they may also have less ambitious goals and therefore appear to be less proactive in coping. For the same reason, probably, proactive coping scores were also higher when BCVA for near vision was better. The participants with better near vision also had better reflective coping strategy

**Table 6: Comparison of coping strategy scores in different categories of BCVA for near vision**

Proactive Coping Inventory subscales (minimum-maximum score)	BCVA for near*	Mean score±SD	P <sup>a</sup> ANOVA
Proactive coping (14-56)	Unable to see any letter	31.7±6.97	Unable: N60=0.399
	N60	35.3±5.98	Unable: ≥N36=0.013
	≥N36	38.0±6.90	N60: ≥N36=0.479
Reflective coping (11-44)	Unable to see any letter	21.7±7.98	Unable: N60=0.240
	N60	26.6±4.29	Unable: ≥N36=0.016
	≥N36	28.4±7.78	N60: ≥N36=0.753
Strategic planning (4-16)	Unable to see any letter	8.5±2.82	Unable: N60=0.558
	N60	9.7±3.23	Unable: ≥N36=0.191
	≥N36	10.1±2.90	N60: ≥N36=0.912
Preventive coping (10-40)	Unable to see any letter	24.6±5.53	Unable: N60=0.906
	N60	25.6±5.07	Unable: ≥N36=0.093
	≥N36	28.6±6.15	N60: ≥N36=0.320
Instrumental support seeking (8-32)	Unable to see any letter	20.6±5.53	Unable: N60=0.996
	N60	20.8±5.04	Unable: ≥N36=0.426
	≥N36	22.8±5.39	N60: ≥N36=0.546
Emotional support seeking (5-20)	Unable to see any letter	14.1±3.44	Unable: N60=0.458
	N60	12.7±2.79	Unable: ≥N36=0.992
	≥N36	14.3±2.75	N60: ≥N36=0.293
Avoidance coping (3-9)	Unable to see any letter	8.6±1.16	Unable: N60=0.121
	N60	7.1±2.59	Unable: ≥N36=0.286
	≥N36	7.7±1.78	N60: ≥N36=0.619
Total coping (55-217)	Unable to see any letter	129.9±27.48	Unable: N60=0.723
	N60	137.8±20.12	Unable: ≥N36=0.043
	≥N36	149.8±26.04	N60: ≥N36=0.368

\*Number of participants: Unable to see any letter (n=14), N60 (n=11), ≥N36 (n=35). <sup>a</sup>Unable=Unable to see any letter

**Table 7: Correlation of coping strategy scores (Proactive Coping Inventory) with visual function domain scores (IND-VFQ33)**

Proactive Coping Inventory subscales	Domain of vision-related quality of life					
	General functioning		Psychosocial impact		Visual symptoms	
	Pearson's correlation coefficient (r)	P	Pearson's correlation coefficient (r)	P	Pearson's correlation coefficient (r)	P
Proactive coping	0.429	0.001	0.355	0.005	-0.239	0.095
Reflective coping	0.363	0.004	0.340	0.008	-0.237	0.097
Strategic planning	0.510	<0.001	0.490	<0.001	-0.038	0.796
Preventive coping	0.365	0.004	0.309	0.016	-0.312	0.027
Instrumental support seeking	0.216	0.097	0.159	0.226	-0.345	0.014
Emotional support seeking	0.233	0.073	0.202	0.121	-0.100	0.489
Avoidance coping	-0.213	0.102	-0.155	0.237	0.153	0.289
Total coping	0.417	0.001	0.365	0.004	-0.286	0.044

scores [Table 6]. We can speculate that near visual function, known to be related to the participant's QoL, may enhance self-confidence and, thus, allow reflective coping.<sup>[27]</sup>

#### Coping and vision-related QoL

In our study, visual loss seemed to affect QoL adversely in all three domains of IND-VFQ33. The greatest impact of visual disability was seen on psychosocial functioning suggesting that our participants had poor personal, social, or familial well-being. Several studies have proved that people who use strategies that are more proactive have a better QoL.<sup>[26]</sup> This was

seen in our study where we found that participants who were better able to cope with their visual disability also had a better QoL in the general functioning and in the psychosocial domains as assessed by a vision-specific QoL instrument [Table 7]. When individual coping strategies were considered, the positive ways of coping (proactive coping, reflective coping, strategic planning, and preventive coping) were associated with good QoL in these two domains. Good QoL is not just determined by how a person copes with adversity but many other isolated or inter-related factors may contribute;<sup>[16,25,28]</sup> nevertheless, this association encourages one to consider recommending the use

of these particular strategies when there is visual disability so as to improve the general and psychosocial health.

When QoL related to visual symptoms was considered, however, QoL was poor even when overall coping was good, and also when preventive strategy and instrumental support-seeking strategy was employed for coping. It is likely that irreversible visual disability and visual symptoms that are associated with it are sufficient to impact QoL and that coping strategies, no matter which is employed, may not be able to compensate for the symptoms of an irreversible visual disability.

### Limitations of the study

Our study included a hospital-based sample and the findings may not be representative of the general population. Since many of our patients self-reported to the hospital for visual handicap certificate, the study is likely to have selection bias. These were patients who presented on their own; this suggests that they may already have the propensity to seek support and thus cope proactively unlike what we may find in the general population. We collected data through interviewer administered questionnaires; it is possible that participants became conscious and misinterpreted the questions.<sup>[29]</sup> Had the questionnaires been self-administered, the responses might have been more accurate, although there is a risk that participants take self-administered questionnaires casually.<sup>[30]</sup> Being cross-sectional in design, the study is unable to confirm the nature of the association between coping and QoL.

### Clinical implications

Despite these limitations, our study shows that determining an individual's coping behavior may be important from the point of view of training them toward positive coping so as to improve QoL. Ophthalmologists have an important role when dealing with patients with visual disability. Where necessary, the treating ophthalmologist or the one certifying the disability can refer to a social worker or a psychologist for help. By modifying maladaptive coping strategies and replacing them with more effective ways of coping, patients may be benefited.

### Conclusion

In conclusion, people with low vision and blindness use multiple strategies to cope with their disability. The commonly used strategies in our study were both positive (reflective coping) and negative (avoidance coping); strategic planning was used least often. Positive coping strategies were associated with a better general functioning and better psychosocial QoL. Ophthalmologists who evaluate visual disability should be trained to become aware of the coping mechanisms that their patients employ and should consider directing them for counseling and for training in more positive ways of coping. Longitudinal studies exploring the evolution of coping strategies over time in people with visual disability may be helpful in improving our understanding of the relationship between coping and QoL. Future studies could also be directed to assessing how modification in coping strategies impacts QoL in people with visual disability.

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### References

1. Siqueira RC, Messias A, Messias K, Arcieri RS, Ruiz MA, Souza NF, *et al.* Quality of life in patients with retinitis pigmentosa submitted to intravitreal use of bone marrow-derived stem cells (Reticell-clinical trial). *Stem Cell Res Ther* 2015;6:29.
2. Ke KM, Montgomery A-M, Stevenson M, O'Neill C, Chakravarthy U. Formal and informal care utilisation amongst elderly persons with visual impairment. *Br J Ophthalmol* 2007;91:1279-81.
3. Mohanraj B, Immanuel Selvaraj C, Selvaraj B, Srinivasan T. Assessment of psychological and psycho-physiological problems among visually impaired adolescents. *Iran J psychiatry Behav Sci* 2016;10:e3895.
4. Wang C-W, Chan CL, Chi I. Overview of quality of life research in older people with visual impairment. *Adv Aging Res* 2014;3:79-94.
5. Stevelink SAM, Malcolm EM, Fear NT. Visual impairment, coping strategies and impact on daily life: A qualitative study among working-age UK ex-service personnel. *BMC Public Health* 2015;15:1118.
6. Finger RP, Kupitz DG, Holz FG, Balasubramaniam B, Ramani RV, Lamoureux EL, *et al.* The impact of the severity of vision loss on Vision-Related Quality of Life in India: An evaluation of the IND-VFQ-33. *Investig Ophthalmology Vis Sci* 2011;52:6081-8.
7. Glen FC, Crabb DP. Living with glaucoma: A qualitative study of functional implications and patients' coping behaviours. *BMC Ophthalmol* 2015;15:128.
8. Wahl HW. The psychological challenge of late-life vision impairment: Concepts, findings, and practical implications. *J Ophthalmol* 2013;2013:11.
9. Vaculíková J. Proactive coping behavior in sample of university students in helping professions. *Soc Educ* 2016;4:38-55.
10. Bhushan B, Gautam R, Greenglass ER. The Hindi adaptation and standardization of the proactive coping inventory (PCI). *Int J Psychol Psychol Ther* 2010;10:331-43.
11. Gupta SK, Viswanath K, Thulasiraj RD, Murthy GVS, Lamping DL, Smith SC, *et al.* The development of the Indian vision function questionnaire: Field testing and psychometric evaluation. *Br J Ophthalmol* 2005;89:621-7.
12. Dhaliwal U, Kajla G, Rohatgi J. Use of subjective and objective criteria to categorise visual disability. *Indian J Ophthalmol* 2014;62:400-6.
13. Greenglass E, Schwarzer R, Taubert S. The Proactive Coping Inventory (PCI): A Multidimensional Research Instrument The 7 Subscales of the Proactive Coping Inventory : In: 20<sup>th</sup> International Conference of the Stress and Anxiety Research Society (STAR). Cracow, Poland; 1999. p. 7-9.
14. Hambrick EP, McCord DM. Proactive coping and its relation to the five-factor model of personality. *Individ Differ Res* 2010;8:67-77.
15. Blixen C, Levin J, Cassidy K, Perzynski A, Sajatovic M. Coping strategies used by poorly adherent patients for self-managing bipolar disorder. *Patient Prefer Adherence* 2016;10:1327-35.
16. Kalka D. Quality of life and proactive coping with stress in a group of middle adulthood women with type 2 diabetes. *Polish Psychol Bull* 2016;47:327-37.
17. Solomon LJ, Rothblum ED. Stress, coping, and social support in women. *Behav Ther* 1986;9:199-204.
18. Crowley MS. Men's self-perceived adequacy as the family breadwinner: Implications for their psychological, marital, and work-family well-being. *J Fam Econ Issues* 1998;19:7-23.
19. Yampolsky AM, Wittich W, Webb G, Overbury O. The role of

- spirituality in coping with Visual Impairment-JVIB Abstract-American Foundation for the Blind. *J Vis Impair Blind* 2008;102:28-39.
20. Monteiro NM, Balogun SK, Oratile KN. Managing stress: The influence of gender, age and emotion regulation on coping among university students in Botswana. *Int J Adolesc Youth* 2014;19:153-73.
  21. Sunnqvist C, Träskman-bendz L, Westrin Å. Coping strategies used by suicide attempters and comparison groups. *Open J Psychiatry* 2013;3:256-63.
  22. Sturrock BA, Xie J, Holloway EE, Lamoureux EL, Keeffe JE, Fenwick EK, *et al*. The influence of coping on vision-related quality of life in patients with low vision: A prospective longitudinal study. *Investig Ophthalmology Vis Sci* 2015;56:2416-22.
  23. Jaser SS, Faulkner MS, Whittemore R, Jeon S, Murphy K, Delamater A, *et al*. Coping, self-management, and adaptation in adolescents with type 1 diabetes. *Ann Behav Med* 2012;43:311-9.
  24. Frota PMP, Zanini DS. Coping, personality traits and social support in severe burn survivors. *Psychology* 2013;4:1059-63.
  25. Santavirta N, Bjorvell H, Solovieva S, Alaranta H, Hurskainen K, Konttinen YT. Coping strategies, pain, and disability in patients with hemophilia and related disorders. *Arthritis Rheum* 2001;45:48-55.
  26. Tiemensma J, Gaab E, Voorhaar M, Asijee G, Kaptein A. Illness perceptions and coping determine quality of life in COPD patients. *Int J Chron Obstruct Pulmon Dis* 2016;11:2001-7.
  27. Patel I, Munoz B, Burke AG, Kayongoya A, Mchiwa W, Schwarzwaldner AW, *et al*. Impact of presbyopia on quality of life in a rural African setting. *Ophthalmology* 2006;113:728-34.
  28. Sutan R, Al-Saidi NA, Latiff ZA, Ibrahim HM. Coping strategies among parents of children with acute lymphoblastic leukemia. *Health* 2017;09:987-99.
  29. Skalicky SE, Martin KR, Fenwick E, Crowston JG, Goldberg I, McCluskey P. Cataract and quality of life in patients with glaucoma. *Clin Experiment Ophthalmol* 2015;43:335-41.
  30. Lang FR, John D, Lüdtke O, Schupp J, Wagner GG. Short assessment of the Big Five: robust across survey methods except telephone interviewing. *Behav Res Methods* 2011;43:548-67.