Original Article

Depression, anxiety, and stress indicators for patients who are blind or visually impaired

Rokiah Omar [1] , Putera Mohd Farhan Najwan Mohd Rizal [1] , Mahadir Ahmad [2] , Chiranjib Majumder [1] and Victor Feizal Knight [3]

[1] *Optometry and Vision Science Program, Faculty of Health Sciences, Universiti Kebangsaan Malaysia*
[2] *Program Psychology Clinical, Faculty of Health Sciences, Universiti Kebangsaan Malaysia*
[3] *Faculty of Medicine and Defence Health, National Defence University of Malaysia*

ABSTRACT

Background: Severe visual impairment is reportedly detrimental to mental health. Blind individuals are expected to have poorer mental health status compared to those with low vision. However, most mental health studies have focused on people with low vision, leaving a substantial gap in our understanding of the mental health status of the blind. Therefore, this study compared the mental health status of individuals with low vision to that of blind individuals.

Methods: This cross-sectional, questionnaire-based investigation involved individuals with low vision or blindness who were registered with the Social Welfare Department, Federal Territory of Kuala Lumpur, Malaysia. Participants were recruited using a simple random sampling method. The medical records of each participant were screened. Participants were individually interviewed, and their socio-demographic details, education level, working status, marital status, type and duration of impairment, and rehabilitation status were collected. Additionally, the Depression, Anxiety, and Stress Scale (DASS-21) was administered to each individual.

Results: Of the 30 participants, 20 (66.7%) had low vision and 10 (33.3%) had blindness, 16 (53.3%) were men, and most participants were single (n = 20, 66.7%). Congenital and acquired causes of visual impairment each accounted for 50% of cases. Most participants (n = 26, 86.7%) had not received psychosocial rehabilitation. The mean DASS-21 scores for the depression, anxiety, and stress subscales were significantly higher in patients with low vision than in those with blindness (all $P < 0.05$). Considering the clinical cut-off increments to determine emotional states for the DASS-21 subscales, individuals with low vision were in the mild, moderate, and mild categories for the depression, anxiety, and stress subscales, respectively. Individuals with blindness were categorized as normal in all subscales. The mean DASS-21 scores for the depression, anxiety, and stress subscales among individuals with congenital and acquired causes of visual impairment were comparable (all $P > 0.05$). Individuals with congenital visual impairment were in the normal, moderate, and normal categories for the depression, anxiety, and stress subscales, respectively. Those with acquired visual impairment were categorized as mild, moderate, and normal for the depression, anxiety, and stress subscales, respectively.

Conclusions: Individuals with low vision experienced mild to moderate levels of mental health issues, which may consist of depression, anxiety, stress, or a combination of these. The blind individuals in this study demonstrated no similar mental health issues. The small number of participants in certain racial and age groups prevents us from concluding how these factors might influence mental health. Further research with a larger sample size should consider the severity of visual impairment, age groups, and ethnicity, as these factors may impact the outcomes.

KEYWORDS

mental hygiene, low vision, blind person, legal blindness, habilitation, emotional depression, social anxiety, psychological stress

Correspondences: Rokiah Omar, Optometry and Vision Science Program, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abdul Aziz, Kuala Lumpur, Malaysia. Email: r_omar@ukm.edu.my. ORCID iD: https://orcid.org/0000-0001-9485-1620

How to cite this article: Omar R, Mohd Rizal PMFN, Ahmad M, Majumder C, Knight VF. Depression, anxiety, and stress indicators for patients who are blind or visually impaired. Med Hypothesis Discov Innov Optom. 2024 Winter; 5(4): 152-159. DOI: https://doi.org/10.51329/mehdioptometry210

Received: 14 December 2024; Accepted: 28 February 2025

INTRODUCTION

Low vision is a condition in which the vision or visual field is reduced and cannot be corrected with treatment. In 2010, the World Health Organization (WHO) estimated that there were 39 million people with blindness and 246 million with low vision globally [1, 2]. In Malaysia, rates of blindness and visual impairment are similar to those in other Southeast Asian countries. According to a national eye survey conducted in 1996, the age-adjusted prevalence of bilateral blindness was 0.29%, whereas the prevalence of low vision was 2.44% [3]. However, the prevalences of blindness and low vision increased to 1.2% and 6.9% in the year 2014, respectively [4]. This increase in less than a decade is a matter of concern.

The major causes of low vision are macular degeneration (50.0%), the posterior pole pathology (52.5%), and glaucoma (7.6%) [5]. Age-related macular degeneration is a common cause of blindness in developed countries [6], whereas in developing countries, cataracts are the major cause [7]. In Malaysia, the leading causes of bilateral blindness and low vision are untreated cataracts (39.1%) and uncorrected refractive error (48.3%) [3].

The WHO defines mental health as a state of well-being whereby individuals recognize their abilities, cope with the normal stresses of life, work productively, and contribute to their communities [8]. Mental health can also be regarded as an emotional expression and symbolizes the capability to adapt to a variety of stresses and life circumstances [9]. Certain screening tools, such as the Depression, Anxiety, and Stress Scale (DASS-21), can objectively assess mental health status. The DASS-21 measures distress along three axes: depression, anxiety, and stress. Each subscale includes seven items [10] and is suitable for screening purposes [11].

A person with vision loss will experience a substantial loss of independence and increased difficulty undertaking activities of daily living and engaging in hobbies, which include walking, climbing steps, shopping, socializing [12], and other daily activities [13]. Low vision and blindness not only affect an individual's daily activities but can also cause emotional stress [14, 15]. Previous studies reported that patients with visual impairment have a lower quality of life (QoL), which may lead to mental problems such as depression [16, 17]. Older individuals with visual impairment have a high prevalence of depression, ranging from 7% to 39% for clinical depression and from 29% to 43% for significant depressive symptoms [18]. Most previous studies have revealed depression as the most common mental health challenge among those with low vision and blindness [12, 19]. Moreover, a study by Omar et al. [16] in Malaysia found that patients with low vision could experience more than one mental health issue. This finding is supported by research that demonstrated a higher rate of mental health issues in visually impaired individuals than in normally sighted peers [20, 21].

Recently, the prevalence of low vision and blindness in Malaysia has an increasing trend [4]. Hence, the mental health challenges among individuals with low vision and blindness are also expected to increase. One would assume that mental health status may be poorer in the blind than in low-vision individuals. However, most mental health studies have involved patients with low vision [12, 16, 19, 21], and little information is available on the mental health status of the blind [22, 23].

Hence, this study compared the mental health statuses of low-vision and blind individuals registered with and receiving assistance from the Social Welfare Department.

METHODS

This cross-sectional, questionnaire-based survey used a simple random sampling technique together with a random number table to select 30 patients from 90 individuals who were registered as low-vision or blind people with the Social Welfare Department, Federal Territory of Kuala Lumpur, Malaysia, in July 2021. The study received ethical approval from the Research Ethical Committee of Universiti Kebangsaan Malaysia (UKM, PP/111/8/JEP-2021-352) and followed the tenets of the Declaration of Helsinki. Eligible individuals were recruited and informed about the study using a Patient Information Sheet specific to this study. All participants provided informed consent, participation was voluntary, and all identities were kept confidential.

The medical records of each participant were screened. The inclusion criteria consisted of low vision or blindness and registration with the Social Welfare Department (JKM) in Malaysia. Eligible participants were aged between 18 and 75 years and understood both Malay and English languages. We excluded individuals with low vision or blindness who had known physical, neurological, or psychiatric disorders that could impact their QoL.

Demographic data including age, sex, ethnicity, education level, working status, marital status, type and duration of impairment, and rehabilitation status were collected via a one-to-one telephone interview, and the validated Bahasa Malaysia version of DASS-21 [24] was completed for each individual. The DASS-21 is a self-reported questionnaire for screening the mental health status of individuals [10]. The participant answers each question by selecting a score ranging from zero (0) to three (3). This score is based on the frequency of emotional problems experienced, scoring zero (0) for "never", one (1) for "rarely", two (2) for "often", and three (3) for "very often". The summarized score value is multiplied by 2 to derive the actual score [24]. The total score ranges from 0 to 63 points [25]. From these values, the nature and severity of mental health problems can be objectively identified. The severity of mental health issues is divided into five categories. Cut-off increments used in clinical practice to determine emotional states for the DASS-Depression subscale are 0–9, 10–13, 14–20, 21–27, and ≥ 28 for normal, mild, moderate, severe, and extremely severe categories, respectively; for the DASS-Anxiety subscale, increments are 0–7, 8–9, 10–14, 15–19, and ≥ 20 for normal, mild, moderate, severe, and extremely severe categories, respectively; and for the

DASS-Stress subscale, increments are 0–14, 15–18, 19–25, 26–33, and ≥ 34 for normal, mild, moderate, severe, and extremely severe categories, respectively [25].

During the interview, participant responses were recorded and then transcribed. Statistical analysis was performed using the Statistical Package for the Social Sciences (version 26, SPSS Inc., IBM Corp., Armonk, NY, USA). Descriptive statistics are used to present the demographic data and the DASS-21 mental health scores. The Shapiro–Wilk test was used to assess the normality of data distribution. The independent Student's *t*-test was used to compare DASS-21 scores between low-vision and blind individuals and between individuals with congenital and acquired low-vision or blindness. A *P*-value less than 0.05 was considered significant.

RESULTS

Thirty individuals were recruited, comprising 20 participants (66.7%) with low vision and 10 (33.3%) with blindness. Most were of Malay ethnicity (n = 22, 73.3%), 16 (53.3%) were men, and most participants were single (n = 20, 66.7%). Most participants were in the 18–30-year age group (n = 21, 70.0%), whereas the least represented were in the 61–75-year age group (n = 1, 3.3%). The causes of visual impairment were evenly split, with 50% attributed to congenital factors and 50% to acquired factors. Only four participants (13.3%) had received psychosocial rehabilitation. In terms of educational attainment, 12 participants (40.0%) completed their education at the secondary school level, 10 participants (33.3%) obtained a university degree, and eight participants (26.7%) were enrolled in college, foundation, or preparatory programs. Regarding working status, 14 participants (46.7%) were employed, 11 participants (36.7%) were unemployed, and five participants (16.7%) were students. Table 1 summarizes the socio-demographic characteristics of participants with low vision and blindness.

Table 1. Socio-demographic distribution of participants with low vision and blindness who had registered with and received assistance from the Social Welfare Department

Parameters	n (%)
Age groups (years)	
18–30	21 (70.0)
31–45	5 (16.7)
46–60	3 (10.0)
61–75	1 (3.3)
Sex	
Men	16 (53.3)
Women	14 (46.7)
Ethnicity	
Malay	22 (73.3)
Chinese	4 (13.3)
Indian	2 (6.7)
Others	2 (6.7)
Marital Status	
Married	9 (30.0)
Single	20 (66.7)
Divorced	1 (3.3)
Education level	
Secondary school	12 (40.0)
College / Foundation / Preparatory programs	8 (26.7)
University	10 (33.3)
Working status	
Employed	14 (46.7)
Unemployed	5 (16.7)
Student	11 (36.7)
Type of impairment	
Low vision	20 (66.7)
Blindness	10 (33.3)
Duration of impairment	
Congenital	15 (50.0)
Acquired	15 (50.0)
Participation in psychosocial rehabilitation	
Yes	4 (13.3)
No	26 (86.7)

Table 2. Comparison of the DASS-21 stress, anxiety, and depression scores between participants with low vision and blindness, and with congenital and acquired causes, who had registered with and received assistance from the Social Welfare Department

Subscales	DASS-21 Score, Mean ± SD		*P*-value	DASS-21 Score, Mean ± SD		*P*-value
	Low-vision (n = 20)	Blind (n = 10)		Congenital (n = 15)	Acquired (n = 15)	
Depression	12.9 ± 5.6	5.8 ± 7.8	**0.008**	9.3 ± 5.6	11.7 ± 8.4	0.365
Anxiety	12.7 ± 4.7	4.6 ± 3.9	**< 0.001**	9.6 ± 5.3	10.4 ± 6.5	0.715
Stress	15.0 ± 2.9	7.6 ± 4.7	**< 0.001**	12.4 ± 4.7	12.7 ± 5.4	0.886

Abbreviations: DASS-21, Depression, Anxiety, and Stress Scale; SD, standard deviation; n, number of participants. Note: *P*-values < 0.05 are shown in bold.

DASS-21 scores for the depression, anxiety, and stress subscales among individuals with low vision and blindness, and those with congenital and acquired causes of visual impairment, are summarized in Table 2. The mean scores for the depression, anxiety, and stress subscales were significantly higher in patients with low vision than in those with blindness (all $P < 0.05$) (Table 2). This indicates higher depression, anxiety, and stress levels among individuals with low vision compared to those with blindness. Considering the clinical cut-off increments to determine emotional states for the DASS-21 subscales, individuals with low vision were in the mild, moderate, and mild categories for the depression, anxiety, and stress subscales. Individuals with blindness were categorized as normal in all subscales (Table 2).

The mean DASS-21 scores for the depression, anxiety, and stress subscales among individuals with congenital and acquired causes of visual impairment were comparable (all $P > 0.05$) (Table 2). Considering the clinical cut-off increments to determine emotional states for the DASS-21 subscales, individuals with congenital visual impairment were in the normal, moderate, and normal categories for the depression, anxiety, and stress subscales, respectively. Individuals with acquired visual impairment were categorized as mild, moderate, and normal for the depression, anxiety, and stress subscales, respectively (Table 2)**.**

DISSCUSSION

We recruited 30 patients, 20 (66.7%) with low vision and 10 (33.3%) with blindness. Most did not receive psychosocial rehabilitation. Most participants were of Malay ethnicity, and a higher proportion were men. Additionally, most participants were single and fell within the 18–30-year age group, whereas the least represented group was those aged 61–75 years. The causes of visual impairment were evenly distributed, with congenital and acquired factors each accounting for 50% of cases. Mean scores on the DASS-21 indicated that levels of depression, anxiety, and stress were significantly higher in individuals with low vision compared to those who were blind. However, the scores were comparable between those with congenital and acquired causes of visual impairment. Moreover, individuals with low vision, individuals with congenital causes, and those with acquired causes were in the mild, moderate, and mild categories; the normal, moderate, and normal categories; and the mild, moderate, and normal clinical categories for the depression, anxiety, and stress subscales, respectively. In contrast, blind individuals were classified within the normal clinical categories of all subscales.

Rahman et al. [26] assessed the prevalence and risk factors of visual impairment among 201 adults aged 60 or more years in Selangor, Malaysia, with most participants being of Malay ethnicity (n = 72, 35.8%). The mean (SD) visual acuity for the better eye was 0.23 (0.20) on the logarithm of the minimum angle of resolution scale. The prevalence of visual impairment was 27.3% (n = 55), with 33 individuals (16.4%) having mild visual impairment and 22 (10.9%) having moderate visual impairment; however, no cases of severe visual impairment or blindness were documented [26]. We recruited participants with low vision among those registered with the Social Welfare Department in Malaysia, and their mean DASS-21 scores indicated mild to moderate levels of depression, anxiety, and stress. This suggests that individuals with low vision face multiple mental health issues. Similar results were reported by Omar et al. [16], who found that patients with low vision experienced various mental health challenges [16]. Their participants experienced depression, anxiety, and stress, which negatively affected their overall well-being, even though they were receiving assistance from the Social Welfare Department [16]. However, our study indicated that blind individuals displayed no mental health issues, as evidenced by significantly lower mean DASS-21 scores across all three subscales.

The mean DASS-21 scores for individuals with congenital visual impairment indicated normal levels of depression, moderate anxiety, and normal stress levels. In contrast, the mean DASS-21 scores for those with acquired low vision revealed mild depression, moderate anxiety, and normal stress. This suggests that individuals with acquired visual impairment experience multiple mental health challenges and a poorer mental health status compared to those with congenital low vision. However, the differences in mean scores across all subscales did not reach statistical significance. These findings contradict those of a previous study, which indicated that individuals with acquired low vision had significantly poorer mental health compared to those with congenital low vision. The discrepancy between the two studies [27] may be attributed to variations in sample size, differences in the measurement scales used, or the sex and racial composition of the participants [28, 29]. Our study was restricted to individuals with low vision and blindness who were registered with the Social Welfare Department and received assistance. Consequently, other factors may also influence the mental health symptoms experienced by those with low vision. Further research should consider the severity of impairment, age groups, and ethnicity, as these factors may impact the outcomes [28, 29].

In a cross-sectional study, Li et al. [30] examined the mental health of children with visual impairments and related factors during the coronavirus pandemic. They enrolled 2036 secondary school children, collected sociodemographic and lifestyle information, and administered the Chinese version of the DASS-21 questionnaire. Of these children, 1992 responded, resulting in a response rate of 97.8%. The prevalences of depression, anxiety, and stress symptoms among the participants were 28.9%, 46.4%, and 22.3%, respectively. The distribution of stress levels differed significantly between children with and without visual impairments. Specifically, extremely severe stress symptoms were significantly more prevalent in children with visual impairments (n = 11, 2.72%) compared to those without (n = 14, 0.88%) [30]. Multivariable logistic regression analyses revealed that the likelihood of experiencing depression symptoms decreased with higher parental education, longer sleep duration, and longer study time, whereas it increased with more recreational screen time [30]. Similarly, the likelihood of anxiety symptoms decreased with greater parental education but increased with higher recreational screen time and being a left-behind child [30]. Furthermore, the likelihood of stress symptoms decreased with longer sleep duration but increased with a higher number of siblings, more recreational screen time, and older age. The authors proposed that health policymakers should adopt strategies such as ensuring adequate sleep, decreasing recreational screen time, and quickly identifying mental health symptoms in socioeconomically disadvantaged populations [30]. Our adult participants with low vision experienced mild depression, moderate anxiety, and mild stress; however, we did not investigate contributing factors. Further studies on adults with low vision must explore potential risk factors for the mental health issues observed in this study.

In a cross-sectional, multicenter study, Moreira et al. [31] examined reports of depression, anxiety, and stress symptoms among caregivers of children who were not visually impaired, who had low vision, or who were blind. The study assessed the relationship between these symptoms and the degree of social, emotional, material, and affective support received by the caregivers. The Medical Outcomes Study Social Support Scale (MOS-SSS) and the DASS-21 were administered to 355 caregivers, of whom more than 90% were mothers. Caregivers of children with visual impairments had the highest rates of no schooling, incomplete elementary education, and lower average monthly income [31]. Notably, most caregivers of blind children reported symptoms of depression, anxiety, and stress, with rates of 66.7%, 73.3%, and 80%, respectively. Caregivers of children with low vision reported similar issues [31]. Evaluation of the relationship between MOS-SSS and DASS-21 results indicated that caregivers of children without disabilities or with less severe visual impairments received greater support and reported less depression, anxiety, and stress. In contrast, caregivers of blind children showed the highest prevalence of these symptoms, regardless of the support they received. The authors highlighted the urgent need for care policies that include mechanisms to protect the mental health of caregivers of children with visual impairments [31]. In our study, blind participants fell within the normal ranges for depression, anxiety, and stress, as measured by a similar questionnaire; however, those with low vision experienced some mental health challenges. This suggests that the mental effects of visual impairment may vary between affected individuals and their caregivers [31]. Additional research utilizing the same questionnaire, and incorporating both adults and children with varying levels of visual impairment, along with their caregivers, could yield more substantial and practical results. This could inform effective care policies aimed at mitigating the adverse mental effects of visual impairment on individuals and reducing caregivers' vulnerability.

Magdalene et al. [32] examined the causes of severe visual impairment and blindness along with the mental health and QoL of children in schools for the blind throughout two phases. In the first phase, 515 children from 17 schools for the blind were examined using the WHO/Prevention of Blindness eye examination record to document their findings [32]. In the second phase, mental health and QoL were objectively measured in 442 children using the DASS-21 and low-vision QoL (LVQOL) questionnaires [32]. Approximately 3.1% (n = 16) of the children had severe visual impairment, whereas 71.84% (n = 370) were blind. The underlying cause of visual loss was undetermined for 55% (n = 278) of the children; however, a hereditary pattern was observed in 1.35% (n = 7) of cases. Approximately 74.94% (n = 386) of the children had either blindness or severe visual impairment since birth [32]. According to the DASS-21 scores, 56.56% (n = 250) of the children displayed some level of anxiety and stress, and 85.52% (n = 378) reported a reduction in QoL. A significant number of these children featured potentially preventable and/or treatable causes of severe visual impairment and blindness. The study concluded that low vision significantly impacts an individual's QoL [32]. Additionally, although we detected some mental health issues in adult patients with low vision using the DASS-21, we did not administer the LVQOL questionnaire to evaluate the effects of these mental issues on the participants' QoL [33]. Further studies using both the DASS-21 and LVQOL questionnaires are needed to provide robust evidence concerning the adverse effects of visual impairments on QoL in adults.

Rees et al. [34] evaluated the effectiveness of a low-vision self-management program (LVSMP) involving 153 older adults who were clients of a national low-vision rehabilitation organization. The participants were randomly assigned to either usual services (n = 60) or usual services plus LVSMP (n = 93) [34]. The LVSMP was a bimonthly group program facilitated by low-vision counselors. The effectiveness of the program was assessed using the Impact of Vision Impairment (IVI) questionnaire to measure vision-specific QoL. Additionally, emotional well-being, self-efficacy, and adaptation to vision loss were evaluated using the DASS-21, the General Self-Efficacy Scale (GSES), and the Short-Form Adaptation to Age-Related Vision Loss Scale (AVL12). At the one- and six-month follow-up assessments, there were no significant differences between groups in terms of vision-specific QoL, emotional well-being, adaptation to vision loss, or self-efficacy. Both univariate and multivariate analyses indicated that the intervention had no impact on the outcome measures [34]. The authors noted that contrary to previous studies, they observed limited benefits of the LVSMP on QoL for older adults accessing low-vision services. They recommended that when implementing self-management programs in low-vision rehabilitation settings, addressing client interests, diverse needs, program accessibility, and the fidelity of intervention delivery is essential [34]. Although our participants with low vision received assistance from the Social Welfare Department, they still scored significantly higher on all three subscales of the DASS-21. This suggests that further comprehensive investigations, ideally using a randomized clinical trial design and incorporating additional questionnaires such as the IVI [35], GSES [34, 36], and AVL12 [34, 37], are necessary to assess the effectiveness of Social Welfare Department programs on the well-being of individuals with visual impairments in Malaysia.

In a prospective study, Jackson et al. [38] evaluated the effect of adding a video magnifier (VM) to standard comprehensive vision rehabilitation (VR) for individuals with central field loss. The study recruited 37 participants, who were randomly assigned to receive either standard VR (n = 18) or standard VR plus VM (n = 19) [38]. Participants were assessed at enrollment, one month later, and after occupational therapy to address patient goals. They performed tasks such as reading the International Reading Speed Texts (IReST), a banking check, and a phone number [38]. The IVI questionnaire, a version of the Activity Inventory, and the DASS-21 were administered at various points: at enrollment, one month later, after occupational therapy, one month after therapy, and one year after enrollment [38]. At the one-month mark, individuals in the VR plus VM group showed significant improvement in reading continuous print as measured by the IReST. However, the IVI questionnaire, Activity Inventory, and DASS-21 scores were similar between the two groups. From enrollment to one month, all participants' abilities to spot-read phone numbers and checks improved significantly [38]. Notably, the VR plus VM group was more successful in finding and reading numbers in a phone book compared to the VR group one month after the initial consultation. Moreover, all participants reported significantly improved well-being based on the IVI questionnaire. While the VR plus VM group read faster and excelled in two spot-reading tasks, they did not differ from the VR group in other outcome measures [38]. Given the observed mental health issues among participants with low vision and those with acquired visual impairments, the interventions implemented by Jackson et al. [38] may provide a valuable approach to alleviating the psychological adverse effects of visual impairment in these patient subgroups in Malaysia. However, further studies are required to verify the effectiveness of these rehabilitation modalities within our community.

We observed that low vision had a more significant negative impact on mental health than blindness, which appeared to have no discernible effects. However, the small number of participants in certain racial and age groups prevents us from concluding how these factors might influence mental health. Additionally, the lack of follow-up and the non-inclusion of appropriate rehabilitation methods are limitations of our study, preventing a determination of whether the adverse effects observed are reversible. Further research on adults with low vision should consider the severity of vision impairment, as well as variations in age and ethnicity. It should also explore potential risk factors for the mental health issues identified in this study. Utilizing tools such as the DASS-21, along with additional questionnaires such as the IVI, GSES, and AVL12, while incorporating a diverse group of adults and children with varying levels of visual impairment—along with their caregivers—could lead to more substantial insights into their mental health and QoL. The outcomes of such studies could inform the development of effective care policies aimed at alleviating the negative mental health effects of visual impairment and reducing the vulnerability of caregivers. Furthermore, randomized clinical trials implementing rehabilitation methods are essential to assess the effectiveness of these interventions within our community.

CONCLUSIONS

Individuals with low vision experience mild to moderate mental health issues, which could include depression, anxiety, stress, or a combination of these. However, those with blindness had no discernible mental health issues. Although individuals with acquired visual impairment had more mental health problems compared to those with congenital causes, the difference did not reach significance. The small number of participants in certain racial and age groups prevents us from concluding how these factors might influence mental health. Further research with a larger sample size should consider the severity of visual impairment, age groups, and ethnicity, as these factors may impact the outcomes.

ETHICAL DECLARATIONS

Ethical approval: The study received ethical approval from the Research Ethical Committee of Universiti Kebangsaan Malaysia (UKM, PP/111/8/JEP-2021-352) and followed the tenets of the Declaration of Helsinki. Eligible individuals were recruited and informed about the study using a Patient Information Sheet specific to this study. All participants provided informed consent, participation was voluntary, and all identities were kept confidential.

Conflict of interests: None.

FUNDING

None.

ACKNOWLEDGMENTS

None.

REFERENCES

1. Lee SY, Gurnani B, Mesfin FB. Blindness. 2024 Feb 27. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan–. PMID: 28846303.
2. Pascolini D, Mariotti SP. Global estimates of visual impairment: 2010. Br J Ophthalmol. 2012 May;96(5):614-8. doi: 10.1136/bjophthalmol-2011-300539. Epub 2011 Dec 1. PMID: 22133988.
3. Zainal M, Ismail SM, Ropilah AR, Elias H, Arumugam G, Alias D, Fathilah J, Lim TO, Ding LM, Goh PP. Prevalence of blindness and low vision in Malaysian population: results from the National Eye Survey 1996. Br J Ophthalmol. 2002 Sep;86(9):951-6. doi: 10.1136/bjo.86.9.951. PMID: 12185113; PMCID: PMC1771293.
4. Chew FLM, Salowi MA, Mustari Z, Husni MA, Hussein E, Adnan TH, Ngah NF, Limburg H, Goh PP. Estimates of visual impairment and its causes from the National Eye Survey in Malaysia (NESII). PLoS One. 2018 Jun 26;13(6):e0198799. doi: 10.1371/journal.pone.0198799. PMID: 29944677; PMCID: PMC6019397.
5. Quartilho A, Simkiss P, Zekite A, Xing W, Wormald R, Bunce C. Leading causes of certifiable visual loss in England and Wales during the year ending 31 March 2013. Eye (Lond). 2016 Apr;30(4):602-7. doi: 10.1038/eye.2015.288. Epub 2016 Jan 29. PMID: 26821759; PMCID: PMC5108547.
6. Taylor HR, Keeffe JE. World blindness: a 21st century perspective. Br J Ophthalmol. 2001 Mar;85(3):261-6. doi: 10.1136/bjo.85.3.261. PMID: 11222327; PMCID: PMC1723903.
7. Flaxman SR, Bourne RRA, Resnikoff S, Ackland P, Braithwaite T, Cicinelli MV, Das A, Jonas JB, Keeffe J, Kempen JH, Leasher J, Limburg H, Naidoo K, Pesudovs K, Silvester A, Stevens GA, Tahhan N, Wong TY, Taylor HR; Vision Loss Expert Group of the Global Burden of Disease Study. Global causes of blindness and distance vision impairment 1990-2020: a systematic review and meta-analysis. Lancet Glob Health. 2017 Dec;5(12):e1221-e1234. doi: 10.1016/S2214-109X(17)30393-5. Epub 2017 Oct 11. PMID: 29032195.
8. Michaud PA, Fombonne E. Common mental health problems. BMJ. 2005 Apr 9;330(7495):835-8. doi: 10.1136/bmj.330.7495.835. PMID: 15817553; PMCID: PMC556080.
9. Chisholm D. Investing in mental health. East Mediterr Health J. 2015 Sep 28;21(7):531-4. PMID: 26442896.
10. Oei TP, Sawang S, Goh YW, Mukhtar F. Using the Depression Anxiety Stress Scale 21 (DASS-21) across cultures. Int J Psychol. 2013;48(6):1018-29. doi: 10.1080/00207594.2012.755535. Epub 2013 Feb 21. PMID: 23425257.
11. Kok T, de Haan HA, van der Meer M, Najavits LM, De Jong CA. Screening of current post-traumatic stress disorder in patients with substance use disorder using the Depression, Anxiety and Stress Scale (DASS-21): a reliable and convenient measure. Eur Addict Res. 2015;21(2):71-7. doi: 10.1159/000365283. Epub 2014 Nov 19. PMID: 25413311.
12. Court H, McLean G, Guthrie B, Mercer SW, Smith DJ. Visual impairment is associated with physical and mental comorbidities in older adults: a cross-sectional study. BMC Med. 2014 Oct 17;12:181. doi: 10.1186/s12916-014-0181-7. PMID: 25603915; PMCID: PMC4200167.
13. Bowers A, Peli E, Elgin J, McGwin G Jr, Owsley C. On-road driving with moderate visual field loss. Optom Vis Sci. 2005 Aug;82(8):657-67. doi: 10.1097/01.opx.0000175558.33268.b5. PMID: 16127330.
14. Crews JE, Campbell VA. Vision impairment and hearing loss among community-dwelling older Americans: implications for health and functioning. Am J Public Health. 2004 May;94(5):823-9. doi: 10.2105/ajph.94.5.823. PMID: 15117707; PMCID: PMC1448344.
15. Sabel BA, Wang J, Cárdenas-Morales L, Faiq M, Heim C. Mental stress as consequence and cause of vision loss: the dawn of psychosomatic ophthalmology for preventive and personalized medicine. EPMA J. 2018 May 9;9(2):133-160. doi: 10.1007/s13167-018-0136-8. PMID: 29896314; PMCID: PMC5972137.
16. Omar R, Rahman MH, Knight VF, Mustaphal M, Mohammed Z. Mental health state and quality of life questionnaire in low vision assessment: a case report. BMC Res Notes. 2014 Sep 23;7:667. doi: 10.1186/1756-0500-7-667. PMID: 25245590; PMCID: PMC4190380.
17. Watanabe N, Hunot V, Omori IM, Churchill R, Furukawa TA. Psychotherapy for depression among children and adolescents: a systematic review. Acta Psychiatr Scand. 2007 Aug;116(2):84-95. doi: 10.1111/j.1600-0447.2007.01018.x. PMID: 17650269.
18. Renaud J, Bédard E. Depression in the elderly with visual impairment and its association with quality of life. Clin Interv Aging. 2013;8:931-43. doi: 10.2147/CIA.S27717. Epub 2013 Jul 19. PMID: 23888110; PMCID: PMC3722036.
19. Rees G, Tee HW, Marella M, Fenwick E, Dirani M, Lamoureux EL. Vision-specific distress and depressive symptoms in people with vision impairment. Invest Ophthalmol Vis Sci. 2010 Jun;51(6):2891-6. doi: 10.1167/iovs.09-5080. Epub 2010 Feb 17. PMID: 20164466.
20. van der Aa HP, Margrain TH, van Rens GH, Heymans MW, van Nispen RM. Psychosocial interventions to improve mental health in adults with vision impairment: systematic review and meta-analysis. Ophthalmic Physiol Opt. 2016 Sep;36(5):584-606. doi: 10.1111/opo.12313. PMID: 27580757.
21. van der Aa HP, Comijs HC, Penninx BW, van Rens GH, van Nispen RM. Major depressive and anxiety disorders in visually impaired older adults. Invest Ophthalmol Vis Sci. 2015 Jan 20;56(2):849-54. doi: 10.1167/iovs.14-15848. PMID: 25604690.
22. Stelmack JA, Stelmack TR, Massof RW. Measuring low-vision rehabilitation outcomes with the NEI VFQ-25. Invest Ophthalmol Vis Sci. 2002 Sep;43(9):2859-68. PMID: 12202503.
23. Kuyk T, Liu L, Elliott JL, Grubbs HE, Owsley C, McGwin G Jr, Griffin RL, Fuhr PS. Health-related quality of life following blind rehabilitation. Qual Life Res. 2008 May;17(4):497-507. doi: 10.1007/s11136-008-9336-3. PMID: 18392688; PMCID: PMC2705061.

24. Ramli M, Salmiah MA. Validation and psychometric properties of Bahasa Malaysia version of the Depression Anxiety and Stress Scales (DASS) among diabetic patients. Malaysian Journal of Psychiatry. 2009 Dec 1;18(2):40-5. Link
25. Soria-Reyes LM, Alarcón R, Cerezo MV, Blanca MJ. Psychometric properties of the Depression Anxiety Stress Scales (DASS-21) in women with breast cancer. Sci Rep. 2024 Sep 3;14(1):20473. doi: 10.1038/s41598-024-68814-9. PMID: 39227677; PMCID: PMC11372162.
26. RAHMAN MH, TING KQ, MOHAMMED Z, FADZIL NM, SAHAR S, AHMAD M. Visual Impairment among Older Adults in Selangor State of Malaysia: The Grand Challenge Project. Journal of Clinical & Diagnostic Research. 2020 Jan 1;14(1):NC05 - NC09. doi: 10.7860/JCDR/2020/42998.13441.
27. Choi SU, Chun YS, Lee JK, Kim JT, Jeong JH, Moon NJ. Comparison of vision-related quality of life and mental health between congenital and acquired low-vision patients. Eye (Lond). 2019 Oct;33(10):1540-1546. doi: 10.1038/s41433-019-0439-6. Epub 2019 Apr 24. PMID: 31019263; PMCID: PMC7002576.
28. Jackson JS, Torres M, Caldwell CH, Neighbors HW, Nesse RM, Taylor RJ, Trierweiler SJ, Williams DR. The National Survey of American Life: a study of racial, ethnic and cultural influences on mental disorders and mental health. Int J Methods Psychiatr Res. 2004;13(4):196-207. doi: 10.1002/mpr.177. PMID: 15719528; PMCID: PMC6878295.
29. Huang FY, Chung H, Kroenke K, Delucchi KL, Spitzer RL. Using the Patient Health Questionnaire-9 to measure depression among racially and ethnically diverse primary care patients. J Gen Intern Med. 2006 Jun;21(6):547-52. doi: 10.1111/j.1525-1497.2006.00409.x. PMID: 16808734; PMCID: PMC1924626.
30. Li D, Chan VF, Wang H, Zhang H, Virgili G, Whitestone N, Xiao B, Singh MK, She X, Mackenzie G, Boswell M, Mavi S, Rozelle S, Congdon N. Depression, anxiety, stress symptoms and their determinants among secondary students with vision impairment in rural Northwestern China during the COVID-19 pandemic. Front Public Health. 2024 Jan 24;11:1282826. doi: 10.3389/fpubh.2023.1282826. PMID: 38328549; PMCID: PMC10847594.
31. Moreira MCN, Steffen RE, Zin AA, Santos MDS, Costa ACCD, Campos DS, Barros LBP, Moreira MEL, Mendes CHF, Kuper H, Pinto M. Depressão, ansiedade, estresse e apoio social: estudo transversal com cuidadores de crianças com deficiência visual no Rio de Janeiro, Brasil - Views-QoL Study [Depression, anxiety, stress, and social support: a cross-sectional study with caregivers of visually impaired children in Rio de Janeiro, Brazil - Views-QoL Study]. Cad Saude Publica. 2023 Dec 15;39(11):e00247622. Portuguese. doi: 10.1590/0102-311XPT247622. PMID: 38126419; PMCID: PMC10727032.
32. Magdalene D, Bhattacharjee H, Deshmukh S, Mohapatra SD, Ali A, Paidi RR, Multani PK. Assessment of quality of life, mental health and ocular morbidity in children from schools for the blind in North-East India. Indian J Ophthalmol. 2021 Aug;69(8):2040-2044. doi: 10.4103/ijo.IJO_3071_20. PMID: 34304174; PMCID: PMC8482933.
33. Wolffsohn JS, Cochrane AL. Design of the low vision quality-of-life questionnaire (LVQOL) and measuring the outcome of low-vision rehabilitation. Am J Ophthalmol. 2000 Dec;130(6):793-802. doi: 10.1016/s0002-9394(00)00610-3. PMID: 11124300.
34. Rees G, Xie J, Chiang PP, Larizza MF, Marella M, Hassell JB, Keeffe JE, Lamoureux EL. A randomised controlled trial of a self-management programme for low vision implemented in low vision rehabilitation services. Patient Educ Couns. 2015 Feb;98(2):174-81. doi: 10.1016/j.pec.2014.11.008. Epub 2014 Nov 20. PMID: 25481576.
35. Lamoureux EL, Pallant JF, Pesudovs K, Hassell JB, Keeffe JE. The Impact of Vision Impairment Questionnaire: an evaluation of its measurement properties using Rasch analysis. Invest Ophthalmol Vis Sci. 2006 Nov;47(11):4732-41. doi: 10.1167/iovs.06-0220. PMID: 17065481.
36. Brunes A, Hansen MB, Heir T. General self-efficacy in individuals with visual impairment compared with the general population. PLoS One. 2021 Jul 2;16(7):e0254043. doi: 10.1371/journal.pone.0254043. PMID: 34214108; PMCID: PMC8253439.
37. Hernandez Trillo A, Dickinson CM. The impact of visual and nonvisual factors on quality of life and adaptation in adults with visual impairment. Invest Ophthalmol Vis Sci. 2012 Jun 28;53(7):4234-41. doi: 10.1167/iovs.12-9580. PMID: 22599581.
38. Jackson ML, Schoessow KA, Selivanova A, Wallis J. Adding access to a video magnifier to standard vision rehabilitation: initial results on reading performance and well-being from a prospective, randomized study. Digit J Ophthalmol. 2017 Mar 31;23(1):1-10. doi: 10.5693/djo.01.2017.02.001. PMID: 28924412; PMCID: PMC5596951.